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081391_Xbase.dwg
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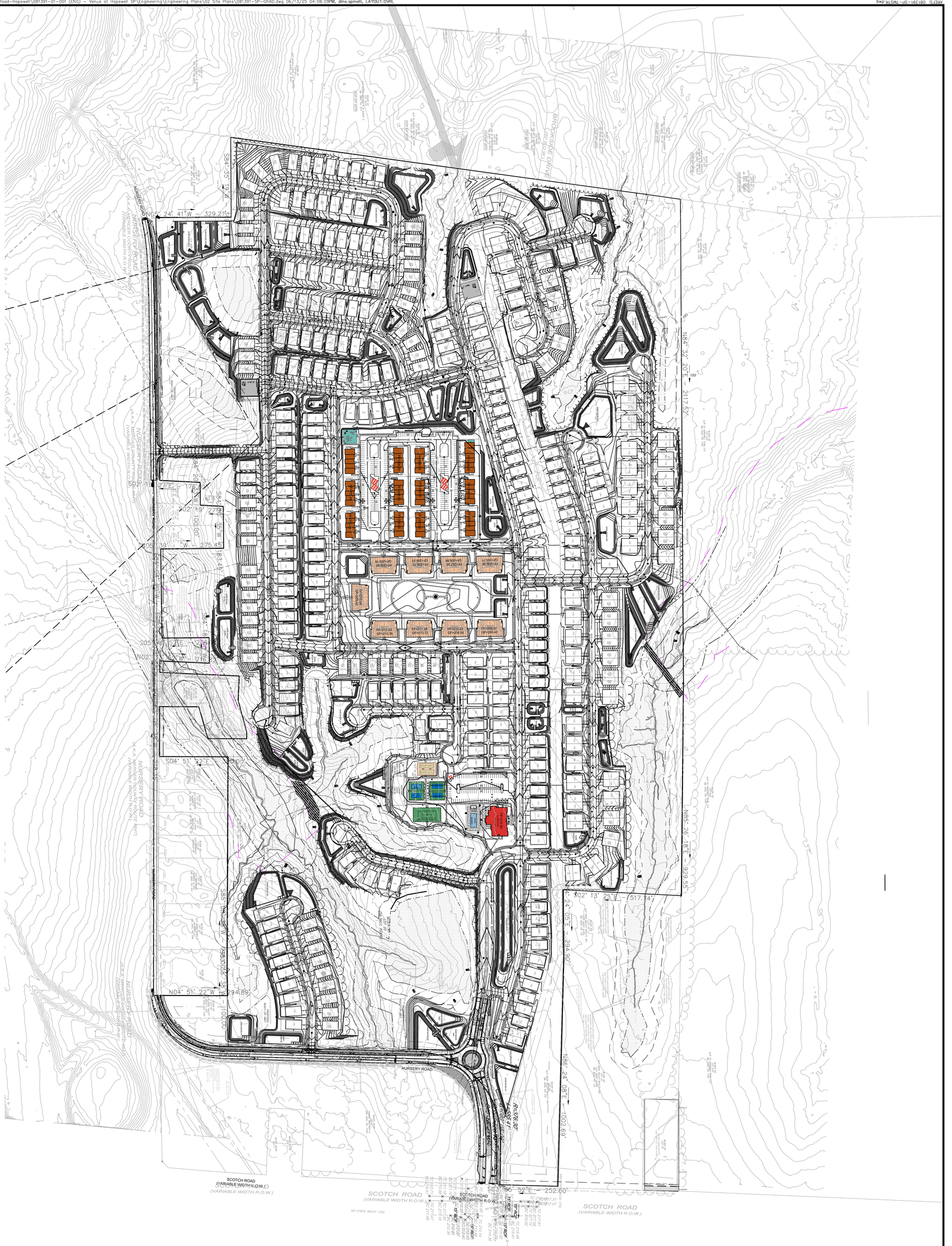
081077.01 Deer Valley-Hopewell-Streets 2-13.dwg


NURSERY ROAD
(A.K.A. MERCER COUNTY ROUTE #627)
(VARIABLE WIDTH R.O.W.)
BROOKSIDE DRIVE
(VARIABLE WIDTH R.O.W.)
SCOTCH ROAD
(VARIABLE WIDTH R.O.W.)
ROAD 1
ROAD 2
ROAD 3
ROAD 4
ROAD 5
ROAD 6
ROAD 7
ROAD 8
ROAD 9
ROAD 10
S84° 35' 13"W - 329.21'
N04° 24' 41"W - 329.21'
N84° 35' 13"E - 329.21'
S04° 24' 41"E - 329.21'
N84° 35' 13"E - 329.21'
S04° 51' 22"E - 300.00'
N04° 51' 22"W - 294.89'
S35° 08' 38"W - 100.00'
S02° 19' 27"W - 100.00'
S39° 16' 39"W - 275.45'
S84° 35' 13"W - 183.49'
S05° 24' 47"E - 16.00'
N02° 19' 27"E - 16.00'
N85° 26' 18"E - 929.55'
S02° 13' 29"W - 517.74'
N86° 24' 08"E - 294.90'
N86° 24' 08"E - 100.69'
S03° 35' 52"E - 252.60'
R=526.30'
L=395.41'
CH=N64° 52' 04"E
CH=386.19'
FF=211.03
GF=210.36
FF=211.39
GF=210.72
FF=210.23
GF=209.56
FF=209.07
GF=208.40
FF=212.39
GF=211.72
FF=208.73
GF=208.06
FF=208.18
GF=207.51
FF=208.73
GF=208.06
FF=207.73
GF=207.06
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GF=207.51
FF=208.73
GF=208.06
FF=208.73
GF=208

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XREFS: 081391-SP-TMSTR.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

SEE SHEET C

SEE SHEET B

SEE SHEET D

ROAD B

SWM BASIN #4B

SWM BASIN #4A

SWM BASIN #5

SWM BASIN #2

SWM BASIN #1

PROPOSED R.O.W.

NURSERY ROAD

(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

NURSERY ROAD

SCOTCH ROAD

(VARIABLE WIDTH R.O.W.)

50' RIPARIAN BUFFER

PROPOSED RIGHT-OF-WAY

APPROXIMATE LOCATION DRAINAGE EASEMENT (REF. #5)

APPROXIMATE LOCATION DITCH EASEMENT (REF. #5)

50' WIDE RIGHT-OF-WAY EASEMENT TO SUN PIPE LINE COMPANY (DB. 1217, PG. 70)

DECLARATION OF TAKING BY THE COMMISSIONER OF TRANSPORTATION STATE OF NEW JERSEY. DB. 3936, PG. 16

BLOCK 93 LOT 60 N/F DEER VALLEY REALTY, INC. DB. 3404, PG. 119

N86° 24' 08"E - 1002.69'

S03° 35' 52"E - 252.60'

S86° 24' 08"W - 893.96'

SCALE: 1"=30'

0 30 60 120 ft.

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN A

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8A OF

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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

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2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

	REVISION	DATE	CHKD
12			
11			
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9			
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7			

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
GRADING PLAN B
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8B OF

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5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
6			

	REVISION	DATE	CHKD
7			
8			
9			
10			
11			
12			

SEE SHEET A

SEE SHEET B

SEE SHEET C

SEE SHEET D

50' RIPARIAN BUFFER

50' WETLANDS BUFFER
PER NJDEP LOI APPROVAL
1106-19-0003.1 FWW 190001

EXISTING TOP OF BANK (TYP.)

FRESHWATER WETLANDS / WATERS
BOUNDARY LINE AS VERIFIED BY NJDE
FILE NO.: 1106-19-0003.1 FWW 190001
(WETLANDS 'B' AND 'BB' LINES)
(REF. #8)

50' WIDE RIGHT-OF-WAY EASEMENT
TO SUN PIPE LINE COMPANY
(DB. 1217, PG. 70)

N/F DEER VALLEY REALTY, INC.
C/O CREST ULTRA
DB. 5624, PG. 115

BLOCK 93
LOT 44

N/F DEER VALLEY REALTY, INC.
C/O CREST ULTRA
DB. 5624, PG. 115

BLOCK 93
LOT 45.01

N85° 26' 18"E – 929.55'

S02° 13' 25"E – 617.74'

N84° 24' 05"E – 294.90'

SWM BASIN #58

SWM BASIN #57

SWM BASIN #3

ROAD B
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD C
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

FF=212.50

FF=212.50
CLUBHOUSE
(10,179 SF)
POOL
(25'x60')
TENNIS COURT 1 (60'x120')
TYCKLEBALL COURT (40'x64')
OPEN SPACE / LAWN
ROAD B
(TO BE DEDICATED AS PUBLIC STREET)
(80' R.O.W.)
ROAD C
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)
ROAD 12
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)
SWM BASIN #3
SWM BASIN #4A
SWM BASIN #4B
SWM BASIN #5
SEE SHEET B
SEE SHEET C
SEE SHEET D
SEE SHEET A
BLOCK 93
LOT 20
(DB. 3907, PG136)
BLOCK 93
LOT 19
NOW OR FORMERLY
LEVITTOWN REALTY, INC.
DB. 3404, PG. 119
50' WETLANDS BUFFER
50' RIPARIAN BUFFER, TYP.
(TO BE VERIFIED BY NJDEP)
50' RIPARIAN BUFFER
PROPOSED
RIGHT-OF-WAY
APPROXIMATE LOCATION
DRAINAGE EASEMENT (REF. #5)
APPROXIMATE LOCATION
DITCH EASEMENT (REF. #5)
EXISTING TOP OF BANK (TYP.)
WETLANDS LINE
STREAM CORRIDOR 150' BUFFER LINE
EWING CREEK
DITCH
ASPHALT PAVEMENT
GRAVEL DRIVEWAY
INLET 159
GR. 210.00
INLET 189
GR. 209.98
INLET 41
GR. 213.09
INLET 42
GR. 213.58
INLET 47
GR. 208.98
INLET 49
GR. 194.16
INLET 6
GR. 212.78
INLET 5
GR. 212.79
SMH S57
RIM 211.38
SMH S53
RIM 212.32
SMH S129
RIM 213.36
SMH S58
RIM 215.79
SMH S59
RIM 216.70
SMH S61
RIM 214.96
SMH S62
RIM 213.10
SMH S135
RIM 211.83
SMH S134
RIM 209.23
SMH S133
RIM 208.10
SMH S159
RIM 200.28
SMH S117
RIM 191.75
SMH S116
RIM 196.65
SMH S136
RIM 202.85
SMH S118 (DROP)
RIM 188.81
SMH S146
RIM 188.98
STM MH 44
RIM 213.48
STM MH 45
RIM 212.66
STM MH 46
RIM 212.17
STM MH 48
RIM 195.81
STM MH 50
RIM 191.60
STM MH 51
RIM 186.66
STM MH 54
RIM 209.41
STM MH 55
RIM 211.76
STM MH 56
RIM 195.81
STM MH 2
RIM 210.45
HEADWALL 43
I.E. 208.00
HEADWALL 40
I.E. 202.00
HEADWALL 39
I.E. 201.50
HEADWALL 10
I.E. 195.00
OS 39
GR. 217.00
OS 11
GR. 203.29
TW 210.90
BW 209.00
TW 210.50
BW 207.00
TW 209.90
BW 204.00
TW 209.80
BW 202.00
TW 209.60
BW 193.55
TW 208.90
BW 188.40
TW 208.10
BW 190.00
TW 207.00
BW 190.00
PI: 15+06.31
PI: 11+00.00
PI: 10+41.22
PC: 10+00.00
PC: 38+00.11
PC: 12+00.00
PC: 13+50.00
PC: 14+78.89
PC: 186.44
PRC: 11+80.44
PRC: 13+50.00
PRC: 14+78.89
PRC: 191.00
PRC: 193.00
PRC: 195.00
PRC: 197.00
PRC: 199.00
PRC: 201.00
PRC: 203.00
PRC: 205.00
PRC: 207.00
PRC: 209.00
PRC: 211.00
PRC: 213.00
PRC: 215.00
PRC: 217.00
PRC: 219.00
PROPOSED R.O.W.
PROPOSED R.O.W.
PROPOSED R.O.W.

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XREFS: 081391-SP-TNSTR.dwg
081391_PBASE.dwg
081391_Xbase.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

SEE SHEET G

SEE SHEET P

SEE SHEET C

SEE SHEET A

ROAD 12

ROAD G

NURSERY ROAD

(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

SWM BASIN #10

SWM BASIN #9

SWM BASIN #8

SWM BASIN #7

SWM BASIN #6

50' WETLANDS BUFFER

50' RIPARIAN BUFFER

WETLANDS LINE

EXISTING TOP OF BANK (TYP.)

PROPOSED RIGHT-OF-WAY

APPROXIMATE LOCATION SLOPE E.W. (REF. #5)

APPROXIMATE LOCATION DRAINAGE EASEMENT (REF. #5)

DITCH EASEMENT (REF. #5)

EVING CREEK

FLOOD HAZARD AREA

100' DRCC BUFFER

STREAM CORRIDOR BUFFER REDUCTION

SAWCUT

PROPOSED R.O.W.

BLOCK 93 LOT 20 (DB 3907, PG136)

BLOCK 93 LOT 34

BLOCK 93 LOT 37

BLOCK 93 LOT 30

BLOCK 93 LOT 27

BLOCK 93 LOT 46 (DB 6161, PG 1140)

N/F DEER VALLEY REALTY, INC. (DB 6161, PG 1140)

N/F WEINTRAUB

N/F BURD JAMES

N04° 51' 22"W 294.89'

S85° 08' 38"W 101.00'

S85° 08' 38"W 860.63'

SCALE: 1"=30'

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN D

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8D OF

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No. 24GA28222600

SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

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SEE SHEET B

SEE SHEET A

SEE SHEET F

50' RIPARIAN BUFFER

50' WETLANDS BUFFER

STREAM CORRIDOR 150' BUFFER LINE

100' DRCC BUFFER

FLOOD HAZARD AREA

WOOLSEY CREEK

EXISTING TOP OF BANK (TYP.)

50' WIDE RIGHT-OF-WAY EASEMENT TO SUN PIPE LINE COMPANY (DB. 1217, PG. 70)

FRESHWATER WETLANDS / WATERS BOUNDARY LINE AS VERIFIED BY NJDEP FILE NO. 1106-19-0002.1 FWW190001 (WETLANDS 'C' LINE) (REF. #6)

SWM BASIN #49

SWM BASIN #50

SWM BASIN #51

SWM BASIN #52

SWM BASIN #53

SWM BASIN #54

SWM BASIN #55

SWM BASIN #56

SWM BASIN #39

SWM BASIN #40

ROAD A
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD B
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD C
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

CLUBHOUSE

FF=212.50

12			
11			
10			
9			
8			
7			
6	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN E

BLOCK 69, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
8E
OF

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
GRADING PLAN F
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8F OF

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SEE SHEET C
SEE SHEET E
SEE SHEET G
SEE SHEET I

ROAD 12
ROAD 11
ROAD 10
ROAD C
ROAD D

FF=212.50
CLUBHOUSE
(10,179 SF)

POOL
(25'x60')

OPEN SPACE / LAWN

TENNIS COURT 1 (60'x120')

PICKLEBALL COURT (40'x64')
PICKLEBALL COURT (40'x64')
PICKLEBALL COURT (40'x64')
PICKLEBALL COURT (40'x64')

DOG PARK - LARGE DOGS
7,680 SF
(60'x128')

DOG PARK - SMALL DOGS
3,600 SF
(60'x60')

BOCCE BALL COURT 1
BOCCE BALL COURT 2

SWM BASIN #11
SWM BASIN #12
SWM BASIN #13
SWM BASIN #14
SWM BASIN #40

FF=209.07
GF=208.40

FF=210.23
GF=209.56

FF=211.39
GF=210.72

FF=211.03
GF=210.36

XREFS: 081391-SP-TMSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
GRADING PLAN F
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8F OF

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PROJ. 081391-01-001
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SEE SHEET C
SEE SHEET E
SEE SHEET G
SEE SHEET I

ROAD 12
ROAD C
ROAD D
ROAD 11
ROAD 10

FF=212.50
CLUBHOUSE
(10,179 SF)

POOL
(25'x60')

OPEN SPACE / LAWN

TENNIS COURT 1 (60'x120')

PICKLEBALL COURT (40'x64')
PICKLEBALL COURT (40'x64')
PICKLEBALL COURT (40'x64')
PICKLEBALL COURT (40'x64')

DOG PARK - LARGE DOGS
7,680 SF
(60'x128')

DOG PARK - SMALL DOGS
3,600 SF
(60'x60')

BOCCE BALL COURT 1
BOCCE BALL COURT 2

SWM BASIN #11
SWM BASIN #12
SWM BASIN #13
SWM BASIN #14
SWM BASIN #40

FF=209.07
GF=208.40

FF=210.23
GF=209.56

FF=211.39
GF=210.72

FF=211.03
GF=210.36

XREFS: 081391-SP-TMSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

PageSetup:---- PlotStyleTable: BCC-NJ.ctb
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XREFS: 08139T-SP-_MAIN.dwg
08139T_Plat35.dwg
08139T_Plat36.dwg
08077-01 Deer Valley-Hopewell-sheets 2-13.dwg

N84° 32' 20"E – 2117.52'

ROAD A
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD B
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD C
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

SWM BASIN #39
SWM BASIN #41
SWM BASIN #42
SWM BASIN #46B
SWM BASIN #47
SWM BASIN #48
SWM BASIN #49

50' WETLANDS BUFFER
50' RIPARIAN BUFFER, TYP.
(TO BE VERIFIED BY NJDEP)
50' WETLANDS BUFFER
50' WETLANDS BUFFER
50' WETLANDS BUFFER

FRESHWATER WETLANDS / WATERS BOUNDARY LINE VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 19000[illegible] (WETLANDS 'C' LINE) (REF. #3)

FRESHWATER WETLANDS / WATERS BOUNDARY LINE VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 19000[illegible] (WETLANDS 'A' LINE) (REF. #6)

FRESHWATER WETLANDS / WATERS BOUNDARY LINE VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 19000[illegible] (WETLANDS 'B' LINE) (REF. #5)

50' WIDE RIGHT-OF-WAY EASEMENT TO SUN PIPE LINE COMPANY (DB. 1217, PG. 70)

EXISTING 50 FOOT GAS MAIN EASEMENT

STREAM CORRIDOR 150' BUFFER LINE

PROPOSED SINGLE FAMILY SEMI-DETACHED DWELLINGS (TYP.)

JACOBS CREEK

SEE SHEET

SEE SHEET

SEE SHEET

SWM

REVISION	DATE	CHKD
12		
11		
10		
9		
8		
7		
6	06/13/25	SAD
REVISED PER ENGINEERING COMMENTS		
5	03/31/25	SAD
REVISED PER TOWNSHIP COMMENTS		
4	2/14/25	SAD
REVISED PER ENGINEERING REVIEW		
3	12/18/24	SAD
REVISED PER TOWNSHIP COMMENTS		
2	09/10/24	SAD
REVISED PER PB COMPLETENESS REVIEW		
1		

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DATE: 06/13/2024
CHKD: SAD

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Bowman

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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN H

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
8H
OF

SCALE: 1"=30'
0 30 60

PageSetUp: ----- PrintStyleTable: BCG-NJ.ctb
V:\08139T - Nursery Road-Hopewell\08139T-01-001 (ENG) - Venue at Hopewell SP\Engineering Plans\02 Site Plans\08139T-SP-GRAD.dwg 06/13/25 04:16:08PM dms.spinelli LAYOUT:GRAD PLAN H

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

GRADING PLAN I

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 18 OF

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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

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REVISION	DATE	CHK'D
1	REVISED PER PB COMPLETENESS REVIEW	09/03/24	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
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P:\01_081391-01-001
DATE: 06/25/2024
CHK'D: SAD

SEE SHEET E
SEE SHEET H
SEE SHEET I
ROAD C
ROAD 9
ROAD 6
SWM BASIN #40
SWM BASIN #39
SWM BASIN #38
SWM BASIN #37A
SWM BASIN #37B
SWM BASIN #36A
SWM BASIN #36B
SWM BASIN #34
SWM BASIN #48
BLOCK 19 LOT 19
DB. 6367 PG. 2276
50' WIDE EASEMENT FOR SANITARY SEWER AND WATER LINE
AREA TO BE DEDICATED AS PUBLIC STREET
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)
(TO BE DEDICATED AS PUBLIC STREET) (

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

GRADING PLAN J

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

SHEET No. 8J OF

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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

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P:\01_Projects\2019\081391-01-001\CAD\Plan Sheets\081391-SP-GRAD.dwg

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DATE: 06/25/2024

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3 REVISED PER ENGINEERING REVIEW	2/14/25	SAD
4 REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
5 REVISED PER ENGINEERING COMMENTS	06/19/25	SAD
6		

REVISION	DATE	CHKD
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XREFS: 081391-SP-TMSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

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XREFs: 081391-SP-TMSTR.dwg
081391_XS-sss.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-Sheets 2-13.dwg

SEE SHEET L

SEE SHEET H

FILED MAP #3196

SIDE DRIVE
R.O.W.)

ROAD 1

ROAD 3

ROAD A

SWM BASIN #43

SWM BASIN #44

SWM BASIN #45

SWM BASIN #46A

SWM BASIN #46B

SWM BASIN

FRESHWATER WETLANDS / WATERS
BOUNDARY LINE AS VERIFIED BY NJDEP FILE
NO. 1106-19-0002.1 FWW 190001 (WETLANDS
'F' AND 'FF' LINES)
(REF. #6)

50 FT RIPARIAN BUFFER

50' WETLANDS BUFFER

WETLANDS BUFFER

WETLANDS 0.15 AC
(TO BE FILLED)

WETLANDS 0.44 AC
(TO BE FILLED)

EXISTING STREAM

JACOBS CREEK

SCALE: 1"=60'

N84° 32' 20"E - 2117.52'

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN K

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8K OF

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5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
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3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

	REVISION	DATE	CHKD
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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

GRADING PLAN L

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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1 REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
2 REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
3 REVISED PER ENGINEERING REVIEW	2/14/25	SAD
4 REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
5 REVISED PER ENGINEERING COMMENTS	06/19/25	SAD
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SEE SHEET K

SEE SHEET L

SEE SHEET M

ROAD 2 (TO BE DEDICATED AS PUBLIC STREET) (50' R.O.W.)

ROAD 3 (TO BE DEDICATED AS PUBLIC STREET) (50' R.O.W.)

ROAD 4 (TO BE DEDICATED AS PUBLIC STREET) (50' R.O.W.)

ROAD 5 (TO BE DEDICATED AS PUBLIC STREET) (50' R.O.W.)

ROAD 6 (TO BE DEDICATED AS PUBLIC STREET) (50' R.O.W.)

ROAD C (TO BE DEDICATED AS PUBLIC STREET) (50' R.O.W.)

SWM BASIN #29

SWM BASIN #30

SWM BASIN #31

SWM BASIN #32

SWM BASIN #33

50' RIPARIAN BUFFER

EXISTING 50 FOOT GAS MAIN EASEMENT

50' WIDE RIGHT-OF-WAY EASEMENT IN FAVOR OF SUNOCO (SEE NOTE)

EXISTING 50' RIPARIAN BUFFER

WETLANDS 0.44 AC (TO BE FILLED)

CHAIN LINK FENCE

ACTIVE FARM

XREFS: 081391-SP-TMSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

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PageSetUp: ----- PlotStyleTable: BCG-NJ.ctb
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XREFs: 081391-SP-INSTR.dwg
081391_XBase.dwg
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081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN M

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 8M OF

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6			
5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

	REVISION	DATE	CHKD
12			
11			
10			
9			
8			
7			

SCALE: 1"=30'
0 30 60 120 Ft

XREFs: 081391-SP-TABLE.dwg
081391_Plat.dwg
081391_Plat_Base.dwg
081077-01 Deer Valley-Hopewell-sheets 2-13.dwg

SEE SHEET M

SWM BASIN #24

SWM BASIN #23

OS 532
GR. 149.00

OS 534
GR. 149.00

HEADWALL 525
I.E. 148.00

HEADWALL 533
I.E. 141.00

50' WETLANDS BUFFER

PROPOSED RIGHT-OF-WAY

PROPOSED R.O.W.

LIMIT OF GRADING

EDGE OF PAVEMENT

ASPHALT DRIVEWAY

DITCH

SAWCUT

S84° 04' 20" W - 1150.19'

CONC. HEADWALL

CONC. PAD

NURSERY ROAD
(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

NURSERY ROAD
(A.K.A. MERCER COUNTY ROUTE #647)

SEE SHEET L

SEE SHEET J

SEE SHEET G

BLOCK 93
LOT 33
DB. 6133, PG. 1004

BLOCK 93
LOT 48
DB. 3716, PG. 70

BLOCK 93
LOT 47
DB. 5856, PG. 78

S02° 19' 27"E - 176.82'

N05° 40' 27"W - 275.45'

FRESHWATER WETLANDS / WATERS BOUNDARY LINE AS VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 190001 (WETLANDS 'G' LINE) (REF. #6)

WETLANDS 0.13 AC (TO REMAIN)

S15° 41' 52"E - 206.15'

FLOOD HAZARD AREA

EWING CREEK

METAL GUIDE RAIL

RIP-RAP AREA

S84° 04' 20" W - 390.34

SECONDARY ACCESS

LIMIT OF MILLING

SEE SHEET D

REALTY, INC.
DB. 6161, PG. 1140

BLOCK
LOT 28

APPROXIMATE LOCATION SLOPE E.W. (REF. #5)

SCALE: 1"=30'
0 30 60 120 ft.

No.	REVISION	DATE	CHKD
12			
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6			
5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

GRADING PLAN N, O & P

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
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OF

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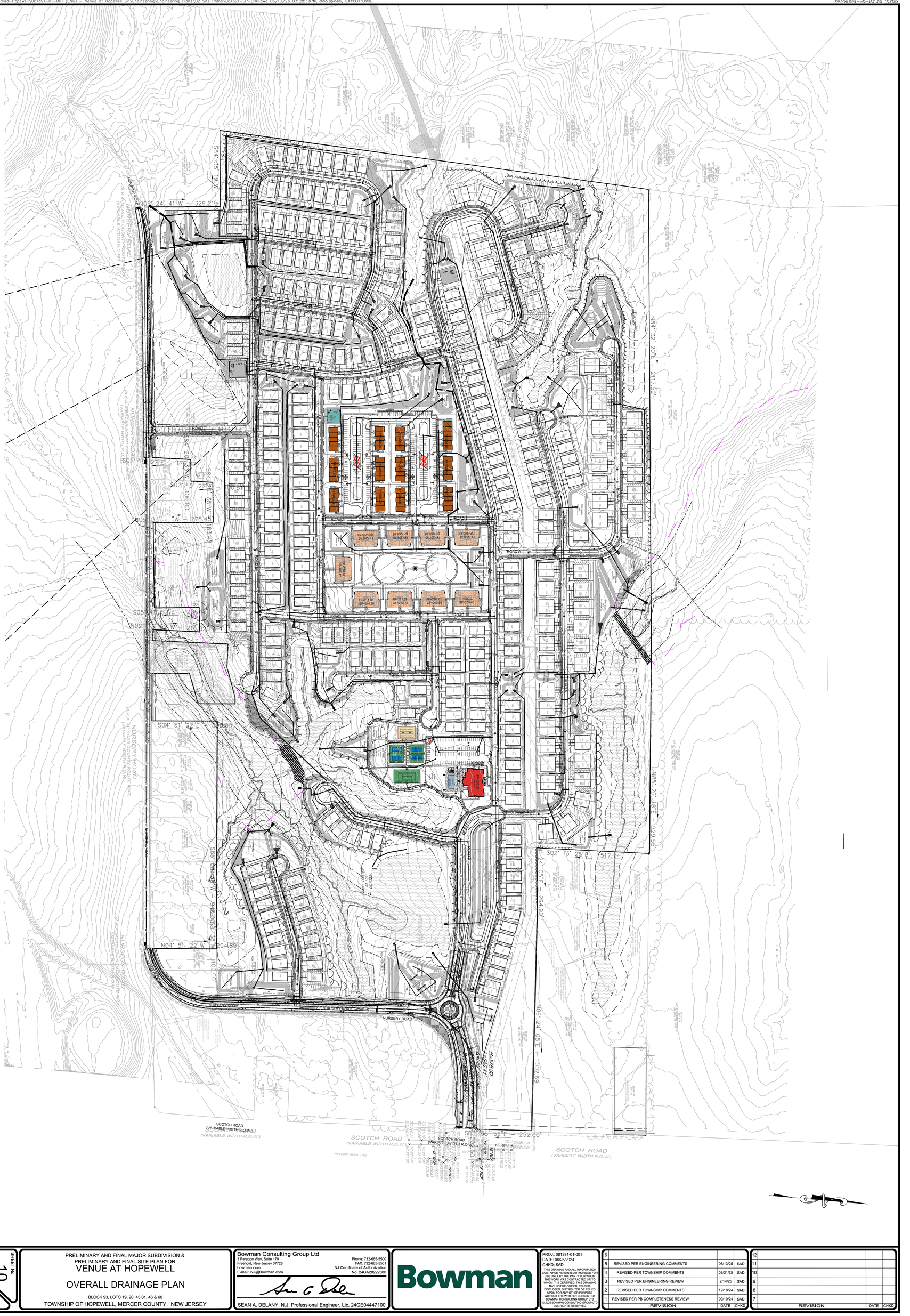
XREFs: 081391-SP-TMS.dwg
081391_XbaseA.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-Streets 2-13.dwg


NURSERY ROAD
(A.K.A. MERCER COUNTY ROUTE 641)
(VARIABLE WIDTH R.O.W.)
BROOKSIDE DRIVE
SCOTCH ROAD
(VARIABLE WIDTH R.O.W.)
N04° 24' 41"W 329.21'
S84° 35' 19"W
N84° 35' 19"E 217.52'
N86° 24' 08"E 1002.69'
N85° 26' 18"E 929.55'
S02° 13' 26"E 517.14'
S04° 51' 22"E 76.00'
N04° 51' 22"W 294.89'
S85° 08' 38"W 100.00'
S85° 08' 38"W 385.14'
S84° 24' 38"W 100.00'
S02° 19' 27"E 100.00'
S84° 35' 19"W 275.45'
S05° 39' 16"E 183.49'
S02° 19' 27"E 216.18'
S85° 08' 38"W 252.60'
R=278.30'
L=285.41'
FF=211.03
GF=210.36
FF=211.39
GF=210.72
FF=210.23
GF=209.56
FF=209.07
GF=208.40
FF=208.18
GF=207.51
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GF=206.03
FF=206.54
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GF=204.71
FF=204.22
GF=203.55
FF=203.06
GF=202.39
FF=202.90
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GF=200.79
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GF=200.15
FF=200.66
GF=199.99
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FF=200.34
GF=199.67
FF=200.18
GF=199.51
FF=200.02
GF=199.35

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XREFS: 081391-SP-TMSTR.dwg
081391_XR-ltbs.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-Sheets 2-13.dwg

SEE SHEET C

SEE SHEET B

SEE SHEET D

PROPOSED 50' RIPARIAN BUFFER

PROPOSED RIGHT-OF-WAY

APPROXIMATE LOCATION DRAINAGE/EASEMENT (REF. #5)

PROPOSED R.O.W.

NURSERY ROAD

(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

SWM BASIN #4B
BOTTOM BASIN: 205

SWM BASIN #4A
BOTTOM BASIN: 203

SWM BASIN #5
BOTTOM BASIN: 200

SWM BASIN #3
BOTTOM BASIN: 209

SWM BASIN #1
BOTTOM BASIN: 209

ROAD B

MAIN ENTRANCE

APPROXIMATE LOCATION OF FUTURE TRAFFIC CIRCLE

NURSERY ROAD

(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

CONSTRUCTION ENTRANCE

SAWCUT

BELGIAN BLOCK CURB

GRASS AREA

LOM

S65° 39' 42"W – 295.96'

S03° 35' 52"E – 252.60'

N85° 24' 08"E – 1002.69'

BLOCK 93
LOT 60
N/F DEER VALLEY REALTY, INC.
DB. 3404, PG. 119

APPROXIMATE LOCATION DITCH EASEMENT (REF. #5)

50' WIDE RIGHT-OF-WAY COMPANY (DB. 1217, PG. 70)

50' RIGHT-OF-WAY EASEMENT TO SUN PIPE LINE

EDGE OF PAVEMENT

DECLARATION OF TAKING BY THE STATE OF NEW JERSEY, COMMISSIONER OF TRANSPORTATION DB. 3936, PG. 16

SCOTCH ROAD
(VARIABLE WIDTH R.O.W.)

D.W.P.

CONC. WALK

BELGIAN BLOCK CURB

CONC. CULVERT

SCALE: 1"=30'
0
30
60
120 ft.

6			
5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

12			
11			
10			
9			
8			
7			
	REVISION	DATE	CHKD

SHEET No. 10A OF

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN A

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

Bowman

PROJ.: 081391-01-001
DATE: 06/25/2024
CHKD: SAD

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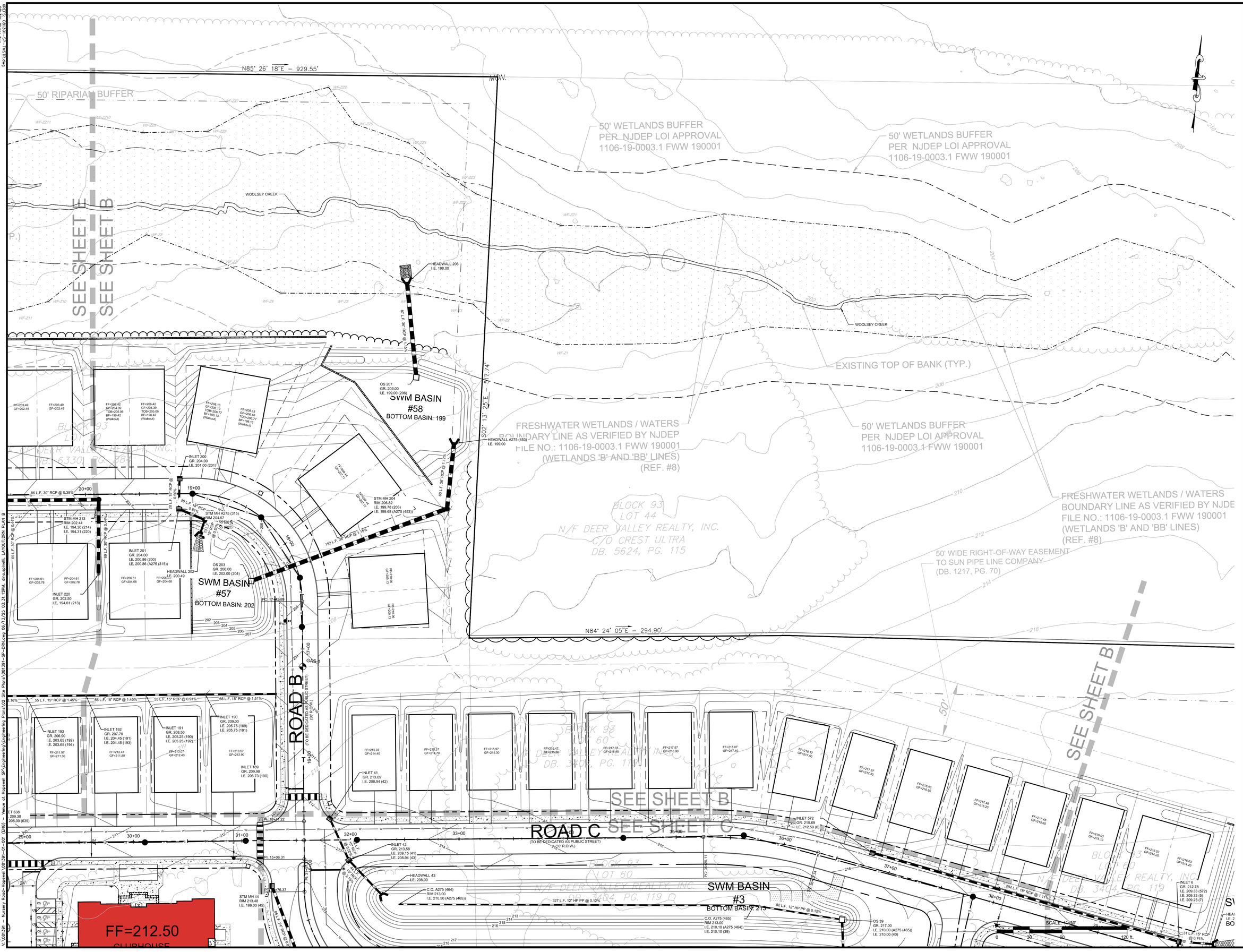

12			
11			
10			
9			
8			
7			
	REVISION	DATE	CHKD

6			
5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

PROJ. 08139'-01-001
DATE: 8/16/2024
CHKD: SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
DRAINAGE PLAN B
BLOCK 90, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
10B
OF

XREFS: 08139'-SP-TABLE.dwg
08139'-Plat35.dwg
08139'-Plat36.dwg
08077'-01 Deer Valley-Hopewell-sheets 2~13.dwg

PageSetUp ~~~~~ PlotStyleTable: BCG~NJ.ctb
V:\08139'~Nursery Road-Hopewell\08139'-01-001 (ENG) ~ Venue at Hopewell\SP\Engineering\Engineering Plans\02 Site Plans\08139'-SP-DRN.dwg 09/13/25 03:31:18PM dmcspinelli, LAYOUT(DRN) PLAN B

XREFs: 081391-SP-TABLE.dwg
081391_Plat35.dwg
081077-01 Deer Valley-Hopewell-sheets 2-13.dwg

ROAD C
(TO BE DEDICATED AS PUBLIC STREET)
(60' R.O.W.)

ROAD B
(TO BE DEDICATED AS PUBLIC STREET)
(80' R.O.W.)

ROAD 12
(TO BE DEDICATED AS PUBLIC STREET)
(60' R.O.W.)

SEE SHEET B
SEE SHEET C
SEE SHEET D
SEE SHEET F

FF=212.50
CLUBHOUSE
(10,179 SF)

POOL
(25'x60')

OPEN SPACE / LAWN

TENNIS COURT 1 (60'x120')

PICKLEBALL COURT (40'x64')

SWM BASIN #3
BOTTOM BASIN: 215

SWM BASIN #4A
BOTTOM BASIN: 203

SWM BASIN #4B
BOTTOM BASIN: 203

SWM BASIN #5
BOTTOM BASIN: 200

BLOCK 93
LOT 20
(DB. 3907, PG. 136)

N/F DEER VALLEY REALTY, INC.
(DB. 3404, PG. 119)

BLOCK 93
LOT 60
N/F DEER VALLEY REALTY, INC.
(DB. 3404, PG. 119)

50' WETLANDS BUFFER

50' RIPARIAN BUFFER, TYP.
(TO BE VERIFIED BY NJDEP)

50' RIPARIAN BUFFER

EXISTING TOP OF BANK (TYP.)

WETLANDS LINE

APPROXIMATE LOCATION
DRAINAGE EASEMENT (REF. #5)

APPROXIMATE LOCATION
DITCH EASEMENT (REF. #5)

PROPOSED RIGHT-OF-WAY

EXISTING R.O.W.

GRAVEL DRIVEWAY

ASPHALT PAVEMENT

EWING CREEK

DITCH

STREAM CORRIDOR 150' BUFFER LINE

INLET 189
GR. 209.96
I.E. 206.73 (190)

INLET 41
GR. 213.09
I.E. 208.94 (42)

INLET 42
GR. 213.58
I.E. 209.15 (41)
I.E. 208.94 (43)

INLET 572
GR. 215.59
I.E. 212.59 (6)

INLET 6
GR. 212.78
I.E. 209.33 (572)
I.E. 209.33 (5)
I.E. 209.23 (7)

INLET 5
GR. 212.79
I.E. 209.45 (6)

INLET 47
GR. 208.98
I.E. 193.95 (46)
I.E. 193.85 (48)

INLET 49
GR. 194.16
I.E. 187.91 (48)
I.E. 187.81 (50)

INLET 670
GR. 204.21
I.E. 202.00 (A275 (512))

STM MH 44
RIM 213.48
I.E. 199.00 (45)

STM MH 45
RIM 212.86
I.E. 198.08 (46)
I.E. 198.18 (44)

STM MH 46
RIM 212.17
I.E. 194.30 (47)
I.E. 194.50 (55)
I.E. 196.90 (45)

STM MH 48
RIM 195.81
I.E. 189.39 (47)
I.E. 192.00 (56)
I.E. 189.29 (49)

STM MH 50
RIM 191.60
I.E. 185.68 (49)
I.E. 185.58 (51)

STM MH 51
RIM 186.66
I.E. 181.50 (50)
I.E. 181.40 (52)

STM MH 54
RIM 209.41
I.E. 203.22 (55)

STM MH 55
RIM 211.76
I.E. 196.40 (46)
I.E. 196.50 (54)

STM MH 56
RIM 195.81
I.E. 192.30 (48)

STM MH A275 (439)
RIM 209.80
I.E. 188.10 (A275 (438))
I.E. 188.00 (A275 (441))

HEADWALL 43
I.E. 208.00

HEADWALL 40
I.E. 202.00

HEADWALL 3
I.E. 201.50

HEADWALL 10
I.E. 195.00

HEADWALL A275 (441)
I.E. 186.00

HEADWALL A275 (510)
I.E. 200.00

HEADWALL A275 (512)
I.E. 200.00

C.O. A275 (464)
RIM 213.00
I.E. 210.50 (A275 (465))

C.O. A275 (465)
RIM 213.00
I.E. 210.10 (A275 (464))
I.E. 210.10 (39)

C.O. A275 (460)
RIM 200.00
I.E. 197.90 (A275 (459))
I.E. 197.90 (A275 (461))

C.O. A275 (461)
RIM 200.00
I.E. 197.80 (A275 (460))
I.E. 197.80 (A275 (462))

C.O. A275 (459)
RIM 200.00
I.E. 198.00 (A275 (460))

OS 39
GR. 217.00
I.E. 210.00 (A275 (465))
I.E. 210.00 (40)

OS 671
GR. 204.00
I.E. 202.00 (A275 (510))

OS 11
GR. 203.29
I.E. 197.50 (A275 (462))
I.E. 197.50 (10)

PC: 10+78.89

PC: 30+53.11

PI: 15+06.31

PI: 11+41.22

BP: 10+00.00

EP: 14+00.00

246 L.F. 18" RCP @ 0.81%

119 L.F. 24" RCP @ 0.99%

57 L.F. 24" RCP @ 3.31%

302 L.F. 24" RCP @ 2.22%

81 L.F. 24" RCP @ 0.50%

327 L.F. 12" HP PP @ 0.12%

82 L.F. 12" HP PP @ 0.12%

31 L.F. 15" RCP @ 0.74%

294 L.F. 16" RCP @ 1.11%

104 L.F. 30" RCP @ 2.40%

151 L.F. 12" HP PP @ 0.13%

91 L.F. 18" RCP @ 0.55%

72 L.F. 18" RCP @ 0.56%

28 L.F. 24" RCP @ 1.07%

85 L.F. 24" RCP @ 2.00%

85 L.F. 24" RCP @ 2.00%

153 L.F. 24" RCP @ 2.00%

246 L.F. 18" RCP @ 4.62%

HEADWALL A275 (356)
I.E. 180.00

NO.	DATE	REVISION
1	09/10/24	REVISED PER PB COMPLETENESS REVIEW
2	12/18/24	REVISED PER TOWNSHIP COMMENTS
3	2/14/25	REVISED PER ENGINEERING REVIEW
4	03/31/25	REVISED PER TOWNSHIP COMMENTS
5	06/13/25	REVISED PER ENGINEERING COMMENTS
6		
7		
8		
9		
10		
11		
12		

PROJ.: 081391-01-001
DWG.: 081391-DRN
CRWD: SAD

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NJ Certificate of Authorization No. 24GA28222900
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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN C

BLOCK 93, LOTS 19, 20, 45.01, 46 & 89
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
10C
OF

SCALE: 1"=30'
0 30 60 120 ft.

PageSetUp: ------ PlotStyleTable: BCG-NJ.ctb
X:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\02 Site Plans\081391-SP-DRN.dwg 06/13/25 03:32:53PM dmcspinelli LAYOUT:DRN PLAN C

PageSetUp: ---- PlotStyleTable: BCG-NJ.ctb
V:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\02 Site Plans\081391-SP-DRN.dwg 06/13/25 11:37:59AM, dino.spinelli, LAYOUT:DRN PLAN D
XREFS: 081391-SP-TNSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

SEE SHEET G
SEE SHEET D
SEE SHEET D
SEE SHEET P
SEE SHEET G
SEE SHEET D
SEE SHEET D

ROAD 12
ROAD G
NURSERY ROAD
NURSERY ROAD

SWM BASIN #9
BOTTOM BASIN: 179
SWM BASIN #8
BOTTOM BASIN: 179
SWM BASIN #7
BOTTOM BASIN: 207
SWM BASIN #6
BOTTOM BASIN: 199

BLOCK 93 LOT 20 (DB 3907, PG 136)
BLOCK 93 LOT 34
BLOCK 93 LOT 37
BLOCK 93 LOT 30
BLOCK 93 LOT 27
BLOCK 93 LOT 46
DEER VALLEY REALTY, INC. DB 3907, PG 884
DEER VALLEY REALTY, INC. DB 6161, PG 1140
N/F BURD JAMES

50' WETLANDS BUFFER
100' RBGC BUFFER
50' RIPARIAN BUFFER
WETLANDS LINE
EWING CREEK
FLOOD HAZARD AREA
STREAM CORRIDOR BUFFER
APPROXIMATE LOCATION OF BANK (TYP.)
APPROXIMATE LOCATION OF STREAM CORRIDOR BUFFER REDUCTION
APPROXIMATE LOCATION OF STREAM CORRIDOR BUFFER (REF. #5)
APPROXIMATE LOCATION OF DITCH EASEMENT (REF. #5)
APPROXIMATE LOCATION OF DRAINAGE EASEMENT (REF. #5)
75' SETBACK TO NURSERY ROAD
PROPOSED RIGHT-OF-WAY
PROPOSED R.O.W.
EXISTING R.O.W.
SAWCUT
EDGE OF PAVEMENT
MAINTAIN EX. UTILITY POLE
(TO BE DEDICATED AS PUBLIC STREET) (VARIABLE WIDTH R.O.W.)

SCALE: 1"=30'

6			
5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

12			
11			
10			
9			
8			
7			
	REVISION	DATE	CHKD

SHEET No. 10D OF

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN D

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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PROJ.: 081391-01-001
DATE: 06/25/2024
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XREFs: 08139-SP-TMSE.dwg
08139_Phase 3.dwg
08077-01 Deer Valley-Hopewell-sheets 2~3.dwg

SWM BASIN #49
BOTTOM BASIN: 183

SWM BASIN #50
BOTTOM BASIN: 184

SWM BASIN #51
BOTTOM BASIN: 184

SWM BASIN #52
BOTTOM BASIN: 195

SWM BASIN #53
BOTTOM BASIN: 192

SWM BASIN #54
BOTTOM BASIN: 201

SWM BASIN #55
BOTTOM BASIN: 192

SWM BASIN #39
BOTTOM BASIN: 201

SWM BASIN #40
BOTTOM BASIN: 202

ROAD A
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD B
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD C
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

50' RIPARIAN BUFFER

50' WETLANDS BUFFER

100' DRCC BUFFER

FLOOD HAZARD AREA

WOOLSEY CREEK

STREAM CORRIDOR BUFFER COMPENSATION 6,916 SF (0.159 AC)

STREAM CORRIDOR BUFFER REDUCTION 6,916 SF (0.159 AC)

150' HOPEWELL TOWNSHIP STREAM CORRIDOR BUFFER

STREAM CORRIDOR 150' BUFFER LINE

EXISTING TOP OF BANK (TYP.)

50' WIDE RIGHT-OF-WAY EASEMENT TO SUN PIPE LINE COMPANY (DB. 1217, PG. 70)

FRESHWATER WETLANDS / WATERS BOUNDARY LINE AS VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 190001 ('WETLANDS 'C' LINE') (REF. #6)

SEE SHEET E

SEE SHEET F

SEE SHEET B

REVISION	DATE	CHKD
12		
11		
10		
9		
8		
7		
6 REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
5 REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
4 REVISED PER ENGINEERING REVIEW	2/14/25	SAD
3 REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
2 REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
1 REVISED PER PB COMPLETENESS REVIEW	DATE	CHKD

PROJ.: 08139-01-001
DWG.: 08139-DR-E
CHKD: SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN E

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
10E
OF

SCALE: 1" = 30'
0 30 60 120 ft.

PageSetUp: ---- PlotStyleTable: BCG-NJ.ctb
V:\08139\ - Nursery Road-Hopewell\08139-01-001 (ENG) - Venue at Hopewell\3PW\Engineering Plans\02 Site Plans\08139-3P-DRN.dwg 09/17/25 03:34:28PM, dino.spinelli, LAYOUT:DRN PLAN E

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

DRAINAGE PLAN F

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

SHEET No. 10F OF

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NJ Certificate of Authorization No. 24GA28222600

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Bowman

P:\01_081391-01\Engineering\Drawings\Site Plans\081391-SP-DRN.dwg, 06/13/25 03:35:29PM, dno.sbrell, LAYOUT:DRN PLAN F

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P:\01_081391-01-001
DATE: 06/25/2024
CHKD: SAD

REVISION	DATE	CHKD
1 REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
2 REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
3 REVISED PER ENGINEERING REVIEW	2/14/25	SAD
4 REVISED PER TOWNSHIP COMMENTS	03/12/25	SAD
5 REVISED PER ENGINEERING COMMENTS	06/19/25	SAD
6		
7		
8		
9		
10		
11		
12		

REVISION	DATE	CHKD

FF=212.50
CLUBHOUSE
(10,179 SF)

POOL
(25'x60')

OPEN SPACE / LAWN

TENNIS COURT 1 (60'x120')

PICKLEBALL COURT (40'x64')

PICKLEBALL COURT (40'x64')

PICKLEBALL COURT (40'x64')

PICKLEBALL COURT (40'x64')

DOG PARK - LARGE DOGS 7,680 SF (60'x128')

DOG PARK - SMALL DOGS 3,600 SF (60'x60')

BOCCE BALL COURT 1

BOCCE BALL COURT 2

SWM BASIN #1
BOTTOM BASIN: 180

SWM BASIN #12
BOTTOM BASIN: 192

SWM BASIN #14
BOTTOM BASIN: 192

SWM BASIN #40
BOTTOM BASIN: 202

ROAD 10

ROAD 11

ROAD C

ROAD D

FF=209.07
GF=208.40

FF=210.23
GF=209.56

FF=211.39
GF=210.72

FF=211.03
GF=210.36

SEE SHEET C

SEE SHEET E

SEE SHEET F

SEE SHEET G

XREFS: 081391-SP-TMSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

PageSetup:---- PlotStyleTable: BCG-NJ.ctb
V:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\02 Site Plans\081391-SP-DRN.dwg 06/13/25 03:35:29PM, dno.sbrell, LAYOUT:DRN PLAN F

PageSetUp: ----- PlotStyleTable: BCG-NJ.ctb
X:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\02 Site Plans\081391-SP-DRN.dwg 06/13/25 03:36:29PM dms.spinelli LAYOUT: DRN PLAN G

XREFS: 081391-SP-TABLE.dwg
081391-Base.dwg
081391-Base_Valley-Hopewell-sheets 2~13.dwg
081077-01 Deer Valley-Hopewell-sheets 2~13.dwg

FF=210.09
GF=209.42

ROAD F
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD E
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

ROAD 10
(TO BE DEDICATED AS PUBLIC STREET)
(50' R.O.W.)

SWM BASIN #14
BOTTOM BASIN: 192

SWM BASIN #15
BOTTOM BASIN: 190

SWM BASIN #16A
BOTTOM BASIN: 178

SWM BASIN #16B
BOTTOM BASIN: 176

SWM BASIN #17A
BOTTOM BASIN: 179

SWM BASIN #17B
BOTTOM BASIN: 179

SEE SHEET F

SEE SHEET G

SEE SHEET D

SEE SHEET O

CONSERVATION EASEMENT "A" ON LOT 45.01, BLOCK 93 DB. 5056, PG. 281

50' WIDE ACCESS EASEMENT IN FAVOR OF LOT 45, BLOCK 3 DB. 1519, PG. 229

25' WIDE ACCESS AND UTILITY EASEMENT ON LOT 37.01 BENEFITS LOT 45.01 DB. 5056, PG. 286

FRESHWATER WETLANDS / WATERS BOUNDARY LINE AS VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 190001 (WETLANDS 'G' LINE) (REF. #6)

FRESHWATER WETLANDS / WATERS BOUNDARY LINE AS VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 190001 (WETLANDS 'F' AND 'G' LINES) (REF. #7)

50' WETLANDS BUFFER

50' RIPARIAN BUFFER, TYP. (TO BE VERIFIED BY NJDEP)

50' RIPARIAN BUFFER

STREAM CORRIDOR BUFFER COMPENSATION 8,790 SF (0.26 AC)

STREAM CORRIDOR BUFFER REDUCTION 8,636 SF (0.20 AC)

150' HOPEWELL TOWNSHIP STREAM CORRIDOR BUFFER

FLOOD HAZARD AREA

EWING CREEK

S84° 18' 08"W – 441.83'

S04° 51' 22"E – 300.00'

BLOCK 93 LOT 37.01 N/F LOMNICKI JESSICA Z & ZBIGNIEW DB. 5083, PG. 25

BLOCK 93 LOT 36 N/F GALLAGHER JOHN F III & SETTZ ERICA DB. 5925, PG. 218

BLOCK 93 LOT 35 N/F STEVENSON THOMAS P DB. 5765, PG. 43

BLOCK 93 LOT 34 N/F LYNCH TIMOTHY M DB. 6135, PG. 5

BLOCK 93 LOT 42 DB. 4040, PG. 246

BLOCK 93 LOT 19 N/F DEER VALLEY PROPERTY INVESTORS DB. 6567, PG. 1787

BLOCK 9 LOT 20 N/F CF DEER VALLEY DB. 6330, PG.

SCALE: 1"=30'
0 30 60 120 ft.

REVISION	DATE	CHKD
1 REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
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3 REVISED PER ENGINEERING REVIEW	2/14/25	SAD
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5 REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
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PROJ.: 081391-01-001
DWG.: 081391-SP-DRN
CHKD: SAD

Bowman

Bowman Consulting Group Ltd
Freehold, New Jersey 07728
E-mail: ht@bowman.com
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NJ Certificate of Authorization
No. 24GA28222600

SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN G

BLOCK 93, LOTS 19, 20, 45.01, 46 & 89
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
10G
OF

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

DRAINAGE PLAN H

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 10H OF

Bowman Consulting Group Ltd
3 Paragon Way, Suite 120
Freehold, New Jersey 07728
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FAX: 732-665-6501
Construction@BowmanConsulting.com
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NJ Certificate of Authorization No. 24GA28222600

SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

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4 REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
5 REVISED PER ENGINEERING COMMENTS	06/19/25	SAD
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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

DRAINAGE PLAN I

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

SHEET No. 10I OF

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2 REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
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SCALE: 1"=30'

0 30 60 120 ft.

FF=210.09
GF=209.42

FF=206.38
GF=205.71

FF=207.55
GF=206.88

FF=208.70
GF=208.03

FF=209.85
GF=209.18

FF=207.00

FF=209.00

FF=206.50

FF=208.50

FF=206.00

FF=208.00

ROAD C

ROAD 9

ROAD 6

SWM BASIN #40
BOTTOM BASIN: 202

SWM BASIN #39
BOTTOM BASIN: 203

SWM BASIN #38
BOTTOM BASIN: 205

SWM BASIN #37A
BOTTOM BASIN: 194

SWM BASIN #37B
BOTTOM BASIN: 194

SWM BASIN #36A
BOTTOM BASIN: 191

SWM BASIN #36B
BOTTOM BASIN: 191

SWM BASIN #35
BOTTOM BASIN: 190

SWM BASIN #34
BOTTOM BASIN: 191

SWM BASIN #42
BOTTOM BASIN: 181

SWM BASIN #41
BOTTOM BASIN: 182

SEE SHEET E

SEE SHEET I

SEE SHEET H

SEE SHEET J

SEE SHEET L

SEE SHEET K

SEE SHEET F

SEE SHEET G

XREFS: 081391-SP-TMSTR.dwg
081391_Xbase.dwg
081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

DRAINAGE PLAN J

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 10J OF

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4 REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
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081391_PBASE.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN K

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 10K OF

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SCALE: 1"=30'

FILED MAP #3196

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN L

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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REVISION	DATE	CHKD

XREFS: 081391-SP-TMSTR.dwg
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XREFS: 081391-SP-TMSTR.dwg
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081391_XBase.dwg
081027-01 Deer Valley-Hopewell-sheets 2-13.dwg

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

DRAINAGE PLAN M

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 10M OF

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2 REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1 REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

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SCALE: 1"=30'
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XREFs: 081391-SP-TMSite.dwg
081391-Plat.dwg
081391-Plat-Title.dwg
081077.01 Deer Valley-Hopewell-sheets 2-13.dwg

SEE SHEET M

WETLANDS BUFFER

BOTTOM RIM: 146

STM MH 587
RIM 153.15
I.E. 145.79 (586)
I.E. 145.79 (664)
I.E. 145.69 (576)

OS 664
RIM 152.00
I.E. 145.90 (A275 (490))
I.E. 145.90 (587)

21 LF. 18" RCP @ 0.52%

STM MH 585
RIM 155.25
I.E. 147.78 (433)
I.E. 147.78 (584)
I.E. 147.68 (586)

148 LF. 36" RCP @ 0.56%

CHAIN LINK FENCE

STM MH 531
RIM 150.13
I.E. 141.44 (599)
I.E. 141.44 (534)
I.E. 141.44 (577)
I.E. 141.34 (533)

OS 532
GR. 149.00
I.E. 143.90 (A275 (494))
I.E. 143.90 (577)

107 LF. 54" RCP @ 0.71%

STM MH 576
RIM 150.97
I.E. 143.90 (588)
I.E. 143.90 (587)
I.E. 143.80 (577)

43 LF. 36" RCP @ 4.16%

103 LF. 36" RCP @ 1.46%

STM MH 577
RIM 150.21
I.E. 143.04 (576)
I.E. 143.04 (532)
I.E. 142.94 (531)

SWM BASIN #23

HEADWALL 525
I.E. 148.00

STM MH 586
RIM 153.15
I.E. 146.82 (585)
I.E. 146.72 (587)

BOTTOM RIM: 145

93 LF. 12" RP PP @ 0.11%

OS 534
GR. 149.00
I.E. 142.90 (A275 (495))
I.E. 142.90 (531)

C.O. A275 (495)
RIM 145.00
I.E. 143.00 (534)

69 LF. 12" RCP @ 3.50%

PROPOSED RIGHT-OF-WAY

ASPHALT DRIVEWAY

DITCH

PROPOSED R.O.W.

LIMIT OF GRADING

EDGE OF PAVEMENT

HEADWALL 533
I.E. 141.00

S84° 04' 20"W - 1150.19'

SAWCUT

NURSERY ROAD
(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

LIMIT OF MILLING

CONC. HEADWALL

CONC. PAD

NURSERY ROAD
(A.K.A. MERCER COUNTY ROUTE #647)
(VARIABLE WIDTH R.O.W.)

SEE SHEET J
SEE SHEET O

BLOCK 93
LOT 33
DB. 6133, PG. 1004

BLOCK 93
LOT 48
DB. 3716, PG. 70

BLOCK 93
LOT 47
DB. 5856, PG. 78

N02° 19' 27"E - 176.82'

ASPHALT DRIVEWAY

STONE DRIVEWAY

ASPHALT DRIVEWAY

N05° 40' 27"W - 275.45'

FRESHWATER WETLANDS / WATERS BOUNDARY LINE AS VERIFIED BY NJDEP FILE NO.: 1106-19-0002.1 FWW 190001 (WETLANDS 'G' LINE) (REF. #6)

SEE SHEET G
SEE SHEET O

50' WETLANDS BUFFER

WETLANDS 0.13 AC (TO REMAIN)

CONC. HEADWALL

METAL GUIDE RAIL

PROPOSED R.O.W.

S84° 04' 20"W - 390.34

S15° 41' 52"E - 206.15'

FLOOD HAZARD AREA

EWING CREEK

FLOOD HAZARD AREA

EDGE OF PAVEMENT

METAL GUIDE RAIL

RIP-RAP AREA

SEE SHEET D
SEE SHEET P

REALTY, INC.
DB. 6161, PG. 1140

N04° 47' 51"E

EDGE OF PAVEMENT

PROPOSED R.O.W.

LIMIT OF GRADING

APPROXIMATE LOCATION SLOPE E.W. (REF. #5)

ASPHALT DRIVEWAY

NURSERY ROAD
(TO BE DEDICATED AS PUBLIC STREET)
(VARIABLE WIDTH R.O.W.)

LIMIT OF MILLING

EDGE OF PAVEMENT

CONC. PAD

SCALE: 1"=30'
0 30 60 120 ft.

NO.	REVISION	DATE	CHKD
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5	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

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SEAN A. DELANY, N.J. Professional Engineer, Lic. 24GE04447100

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
DRAINAGE PLAN N
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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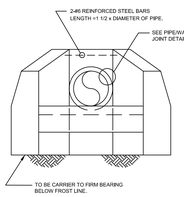

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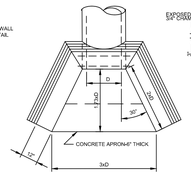
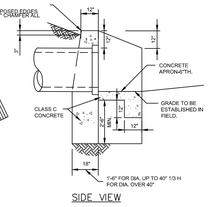


PLAN



SIDE VIEW

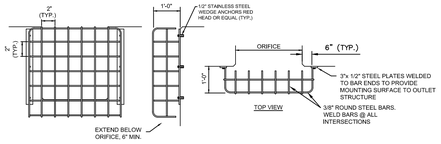
HEADWALLS IN CUBIC YARDS

PIPE SIZE	CORR. STEEL PIPE IN C.Y.	REIN. CONC. PIPE IN C.Y.	APRONS IN C.Y.
12"	1.4	1.4	0.2
15"	1.7	1.7	0.2
18"	2.1	2.1	0.3
21"	2.5	2.5	0.4
24"	2.9	2.9	0.5
27"	3.3	3.4	0.6
30"	3.7	3.8	0.7
36"	4.7	4.8	0.9
42"	5.8	6.3	1.2
48"	7.6	8.4	1.5
54"	9.7	10.7	1.8
60"	12.2	13.4	2.1
66"	15.0	16.4	2.5
72"	18.1	19.9	3.0

GENERAL NOTES
1. ALL EDGES TO BE CHAMFERED 1".
2. THE RUBBING OF HEADWALLS TO REMOVE FORM MARKS AS REQUIRED IN SUBSECTIONS 501.14 FOR CONCRETE STRUCTURES, WILL NOT BE REQUIRED FOR HEADWALLS AT THE BOTTOM OF EMBANKMENTS IN RURAL AREAS.
3. FOR SLOPE DRAIN HEADWALLS, DIMENSIONS AND APRON GRADES SHALL BE SET BY ENGINEER.
4. FOR MORE THAN ONE PIPE, SET THE PIPES A MINIMUM OF ONE FOOT APART (OUTSIDE BARREL TO OUTSIDE BARREL); THERE SHALL BE 12" ABOVE THE TOP OF A PIPE IN A WINGWALL; THE TERMINUS OF THE WINGWALL SHALL BE 2D FROM THE CENTERLINE OF THE PIPE IN A WINGWALL.
5. THE TERMINUS FOR OUTLET AND INLET APRONS SHALL BE SET BY EXTENDING THE PIPE GRADE AHEAD AND BACK, RESPECTIVELY.
6. FOR ARCH PIPE, THE SPAN SHALL BE SUBSTITUTED FOR D.
7. IF PRECAST HEADWALLS ARE TO BE USED, SHOP DRAWINGS OF THE UNITS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL.

PRECAST CONCRETE HEADWALL WITH WINGWALLS

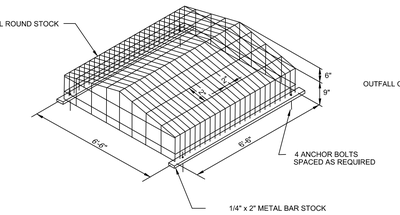
NOT TO SCALE



NOTES:
1. ALL JOINTS SHALL BE WELDED.
2. ALL METAL SHALL CONSIST OF STAINLESS STEEL OR GALVANIZED STEEL.

ORIFICE TRASH RACK DETAIL

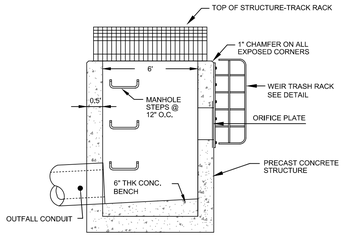
NOT TO SCALE



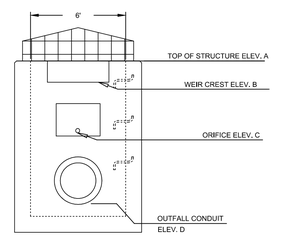
NOTES:
1. ALL JOINTS SHALL BE WELDED.
2. ALL METAL SHALL CONSIST OF STAINLESS STEEL OR GALVANIZED STEEL.

TOP OF STRUCTURE TRASH RACK

NOT TO SCALE



SECTION

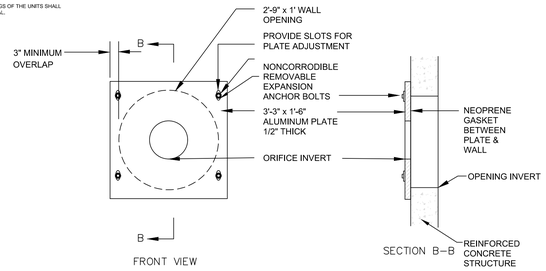


FRONT ELEVATION

TRASH RACKS NOT SHOWN FOR CLARITY
SEE PLAN FOR WING WALLS AND GRADING

OUTLET CONTROL STRUCTURE DETAIL

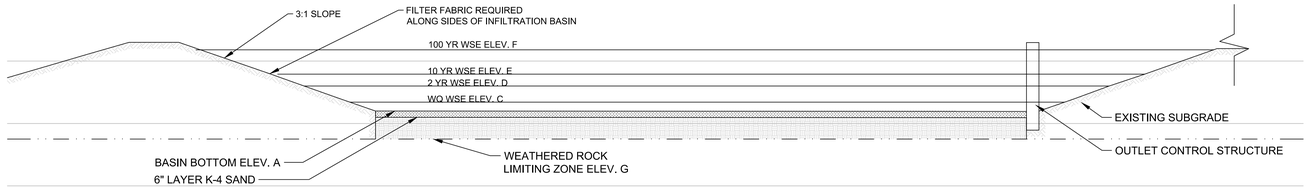
NOT TO SCALE



ORIFICE PLATE DETAIL

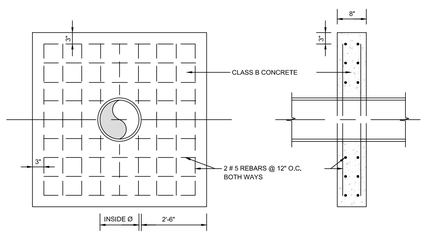
NOT TO SCALE

BASIN	ID	ELEV. "A"	WEIR LENGTH	ELEV. "B"	ORIFICE SIZE	ELEV. "C"	OUTLET PIPE SIZE	ELEV. "D"	WEIR 2 LENGTH	ELEV. "B"	ORIFICE 2 SIZE	ELEV. "C"
1	OS 1	210.86	4'	209.67	2.5"	209.17	30"	206.86				
2	OS 669	211.00	4'	210.20	2.5"	209.05	18"	209.12				
3	OS 39	217.00	4'	215.50	2.5"	212.90	18"	208.00				
4A	OS 670	206.00	4'	205.00	36" L x 12" H	203.85	18"	202.00				
4B	OS 671	206.00	4'	205.00	36" L x 12" H	203.77	18"	202.00				
5	OS 11	202.21	4'	201.25	2.5"	200.02	30"	200.00				
6	OS 28	203.00	4'	200.10	2.5"	199.50	24"	198.65				
7	OS 30	208.86	4'	207.99	2.5"	207.17	30"	206.65				
8	OS 35	183.00	4'	179.79	2.5"	179.17	24"	178.65	3'	158.30		
9	OS 32	183.00	4'	179.93	2.5"	179.30	24"	178.65				
10	OS 568	183.00	4'	182.00	2' L x 0.16' H	179.88	18"	179.00				
11	OS 57	184.00	4'	182.75	2.5"	181.00	24"	180.00				
12	OS 91	205.00	4'	203.02	7.5"	201.90	30"	200.65				
13	OS 84	196.00	4'	193.95	2.5"	192.70	18"	191.30				
14	OS 104	194.21	4'	193.45	2.5"	192.40	24"	192.00				
15	OS 105	197.86	4'	198.58	6.5"	197.35	30"	195.30				
16A	OS 668	182.00	4'	179.91	24" L x 4" H	179.16	18"	178.65				
16B	OS 59	182.00	4'	180.00	2' L x 0.16' H	179.00	18"	178.00				
17A	OS 657	183.00	4'	182.00	2.5"	179.18	18"	178.65				
17B	OS 144	183.00	4'	179.86	2.5"	179.35	18"	179.00				
18	OS 121	190.00	4'	189.34	2.5"	187.25	24"	186.00				
19	OS 379	199.00	4'	197.75	2.5"	196.00	15"	194.30				
20	OS 431	154.00	4'	152.75	2.5"	151.68	30"	151.00				
21	OS 433	154.00	4'	152.33	2.5"	150.68	24"	149.30				
22	OS 664	152.00	4'	149.47	2.5"	148.15	18"	147.30				
23	OS 534	149.00	4'	146.50	2.5"	145.28	18"	144.30				
24	OS 532	149.00	4'	146.25	5"	145.17	18"	144.30				
25	OS 530	148.00	4	145.95	4.5"	144.42	18"	144.00				
26	OS 598	148.00	4'	146.00	2.5"	144.36	24"	143.65				
27	OS 592	172.00	4'	172.25	8"	170.47	15"	167.65	2'	171.75		
28	OS 593	168.40	4'	170.00	2.5' L x 0.75' H	167.87	24"	165.65	1'	169.50		
29	OS 461	188.21	4'	187.49	2.5"	186.87	18"	186.00				
30	OS 462	180.00	4'	179.00	2.5"	175.93	18"	176.00				
31	OS 459	197.00	4'	195.00	2.5"	192.97	24"	192.30				
32	OS 661	196.21	4'	197.00	3' L x 0.5' H	194.53	24"	195.00				
33	OS 443	191.00	4'	186.25	2.5"	184.96	18"	184.00				
34	OS 616	195.00	4'	192.33	2.5"	191.09	15"	190.00				
35	OS 617	194.00	4'	193.05	2.5"	191.44	15"	189.65				
36A	OS 672	195.00	4'	194.00	4"	192.24	18"	190.50				
36B	OS 367	195.00	4'	193.55	3' L x 0.2' H	192.53	15"	190.65				
37A	OS 620	198.00	4'	196.48	2.5"	194.77	15"	193.65				
37B	OS 358	195.86	4'	196.63	2.5"	194.81	18"	193.00				
38	OS 315	209.00	4'	206.69	2.5"	205.26	18"	205.00				
39	OS 629	205.00	4'	203.04	6"	201.71	15"	200.65				
40	OS 630	206.00	4'	204.67	2' L x 0.5' H	202.65	15"	201.65				
41	OS 269	186.00	4'	184.13	2.5"	182.50	24"	182.00				
42	OS 272	185.00	4'	184.01	2.5"	182.60	18"	181.00				
43	OS 285	181.00	4'	178.58	2.5"	177.62	24"	177.00				
44	OS 289	170.00	4'	167.50	2.5"	166.41	24"	166.00				
45	OS 290	170.00	4'	169.00	2.5"	167.25	18"	166.00	2'	168.50		
46A	OS 673	184.00	4'	183.84	2.5"	180.77	18"	181.28				
46B	OS 260	184.00	4'	184.45	2.5"	183.82	18"	179.65				
47	OS 262	189.00	4'	189.52	2.5"	188.84	18"	189.00				
48	OS 242	195.00	4'	193.00	2.5"	191.40	24"	191.00				
49	OS 641	187.00	4'	184.74	2.5"	183.55	24"	183.00				
50	OS 240	188.00	4'	185.30	2.5"	184.32	24"	183.65				
51	OS 238	191.00	4'	185.71	4' L x 1' H	184.05	30"	184.00				
52	OS 633	199.00	4'	195.72	3' L x 0.5' H	195.08	18"	195.00				
53	OS 665	204.00	4'	201.91	2' L x 0.33' H	201.02	24"	201.00				
54	OS 666	203.00	4'	202.42	2' L x 0.33' H	201.40	24"	201.00				
55	OS 227	196.00	4'	193.82	1.83' L x 0.2' H	192.80	18"	191.65				
56	OS 230	196.00	4'	193.62	3' L x 0.5' H	192.19	18"	191.65				
57	OS 203	206.00	4'	203.60	2.5"	202.34	36"	202.00				
58	OS 207	203.00	4'	199.91	2.5"	198.97	36"	199.00				



BIORETENTION BASIN TYPICAL CROSS SECTION
NTS

BASIN	ELEV. "A"	ELEV. "C"	ELEV. "D"	ELEV. "E"	ELEV. "F"	ELEV. "G"	BMP TYPE	INFILTRATION/UNDERDRAIN
1	209.00	209.02	209.29	209.51	210.07	205.30	LARGE-SCALE BIORETENTION	UNDERDRAIN
2	209.00	209.05	210.28	211.38	211.61	205.30	SMALL-SCALE BIORETENTION	UNDERDRAIN
3	213.00	213.31	213.60	214.09	215.07	206.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
4A	200.00	201.53	204.59	205.47	205.77	190.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
4B	200.00	201.51	204.36	205.46	205.74	190.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
5	200.00	200.02	200.16	201.11	201.99	190.50	LARGE-SCALE BIORETENTION	UNDERDRAIN
6	199.00	199.49	200.14	200.38	200.72	193.40	SMALL-SCALE BIORETENTION	UNDERDRAIN
7	207.00	207.16	207.80	208.16	208.61	193.40	SMALL-SCALE BIORETENTION	UNDERDRAIN
8	179.00	179.17	179.64	179.94	180.40	174.30	SMALL-SCALE BIORETENTION	INFILTRATION
9	179.00	179.29	179.78	180.08	180.48	174.30	SMALL-SCALE BIORETENTION	INFILTRATION
10	179.00	179.83	180.43	181.09	182.19	173.70	SMALL-SCALE BIORETENTION	UNDERDRAIN
11	180.00	181.0	182.35	183.01	183.68	179.20	SMALL-SCALE BIORETENTION	UNDERDRAIN
12	201.00	201.90	202.74	203.38	203.94	200.40	SMALL-SCALE BIORETENTION	UNDERDRAIN
13	192.00	192.70	193.74	194.22	194.84	185.80	SMALL-SCALE BIORETENTION	UNDERDRAIN
14	192.00	192.37	193.27	193.72	194.31	185.80	SMALL-SCALE BIORETENTION	UNDERDRAIN
15	196.00	197.35	198.47	199.06	199.58	193.80	SMALL-SCALE BIORETENTION	UNDERDRAIN
16A	178.00	179.17	179.74	180.18	180.60	175.90	SMALL-SCALE BIORETENTION	UNDERDRAIN
16B	178.00	178.97	179.68	180.28	180.72	175.90	SMALL-SCALE BIORETENTION	UNDERDRAIN
17A	179.00	179.18	179.71	180.39	180.47	173.80	SMALL-SCALE BIORETENTION	INFILTRATION
17B	179.00	179.31	179.87	180.09	179.00	173.80	SMALL-SCALE BIORETENTION	INFILTRATION
18	186	187.25	188.87	189.62	190.08	198.70	SMALL-SCALE BIORETENTION	INFILTRATION
19	195	196	197.53	198.09	198.59	201.40	SMALL-SCALE BIORETENTION	INFILTRATION
20	151.00	151.68	152.80	153.18	153.76	145.80	SMALL-SCALE BIORETENTION	UNDERDRAIN
21	150.00	150.68	151.95	152.60	153.29	138.60	SMALL-SCALE BIORETENTION	UNDERDRAIN
22	148.00	148.15	149.16	149.71	150.36	137.10	SMALL-SCALE BIORETENTION	UNDERDRAIN
23	145.00	145.28	146.23	146.82	147.44	137.10	SMALL-SCALE BIORETENTION	UNDERDRAIN
24	145.00	145.17	145.89	146.50	147.10	138.10	SMALL-SCALE BIORETENTION	UNDERDRAIN
25	146.00	144.42	145.46	146.24	146.92	142.30	SMALL-SCALE BIORETENTION	UNDERDRAIN
26	144	144.36	145.62	146.28	146.99	146.20	SMALL-SCALE BIORETENTION	UNDERDRAIN
27	168	170.47	171.73	172.37	172.77	181.20	SMALL-SCALE BIORETENTION	INFILTRATION
28	167	167.87	168.44	168.79	168.69	181.20	SMALL-SCALE BIORETENTION	INFILTRATION
29	186	186.88	187.34	187.63	187.99	186.30	SMALL-SCALE BIORETENTION	INFILTRATION
30	176	175.93	176.62	177.42	179.02	175.70	LARGE-SCALE BIORETENTION	UNDERDRAIN
31	193	192.97	193.37	193.84	194.72	189.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
32	193	194.53	195.02	195.35	196.21	192.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
33	187	187.79	189.14	189.79	190.35	182.30	SMALL-SCALE BIORETENTION	UNDERDRAIN
34	191	191.09	192.03	192.56	193.10	190.30	SMALL-SCALE BIORETENTION	INFILTRATION
35	191	191.44	192.7	193.37	193.93	190.30	SMALL-SCALE BIORETENTION	INFILTRATION
36A	191	192.24	193.77	194.45	195.00	190.30	SMALL-SCALE BIORETENTION	INFILTRATION
36B	191	192.53	193.30	193.89	194.44	190.30	SMALL-SCALE BIORETENTION	INFILTRATION
37A	194	194.77	196.06	196.83	197.42	194.90	SMALL-SCALE BIORETENTION	INFILTRATION
37B	194	194.81	196.24	196.90	197.55	194.90	SMALL-SCALE BIORETENTION	INFILTRATION
38	205	205.26	206.35	206.94	207.55	195.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
39	201	201.71	202.70	203.39	203.88	197.50	SMALL-SCALE BIORETENTION	UNDERDRAIN
40	202	202.65	203.18	203.64	204.67	201.30	SMALL-SCALE BIORETENTION	UNDERDRAIN
41	182	182.69	184.13	184.55	185.14	183.60	SMALL-SCALE BIORETENTION	INFILTRATION
42	181	181.53	182.74	183.36	184.27	183.60	SMALL-SCALE BIORETENTION	INFILTRATION
43	177	177.53	178.70	179.14	179.69	178.10	SMALL-SCALE BIORETENTION	INFILTRATION
44	166	165.96	166.66	167.28	167.86	161.90	SMALL-SCALE BIORETENTION	UNDERDRAIN
45	166.00	167.05	168.62	169.16	169.66	161.90	SMALL-SCALE BIORETENTION	INFILTRATION
46A	181	181.66	183.25	184.40	186.37	171.00	SMALL-SCALE BIORETENTION	UNDERDRAIN
46B	184	183.42	183.79	183.94	184.21	171.00	LARGE-SCALE BIORETENTION	UNDERDRAIN
47	189	188.76	189.21	189.58	189.98	181.90	SMALL-SCALE BIORETENTION	INFILTRATION
48	191	191.36	192.12	192.97	193.53	187.00	SMALL-SCALE BIORETENTION	UNDERDRAIN
49	183	183.55	184.46	184.96	185.57	182.90	SMALL-SCALE BIORETENTION	INFILTRATION
50	184	184.32	185.04	185.49	186.05	184.50	SMALL-SCALE BIORETENTION	INFILTRATION
51	184	184.03	184.88	185.71	187.55	183.80	SMALL-SCALE BIORETENTION	INFILTRATION
52	193	195.08	195.47	195.69	196.09	191.30	SMALL-SCALE BIORETENTION	INFILTRATION
53	200	201.01	201.69	202.24	202.79	194.70	SMALL-SCALE BIORETENTION	INFILTRATION
54	200	201.39	202.17	202.77	203.39	194.70	SMALL-SCALE BIORETENTION	INFILTRATION
55	192	192.78	193.55	194.17	194.77	188.20	SMALL-SCALE BIORETENTION	INFILTRATION
56	192	192.19	192.48	192.71	193.18	188.20	SMALL-SCALE BIORETENTION	INFILTRATION
57	202	202.34	203.34	203.84	204.32	201.10	SMALL-SCALE BIORETENTION	INFILTRATION
58	199	198.97	199.67	200.11	200.61	195.00	LARGE-SCALE BIORETENTION	INFILTRATION

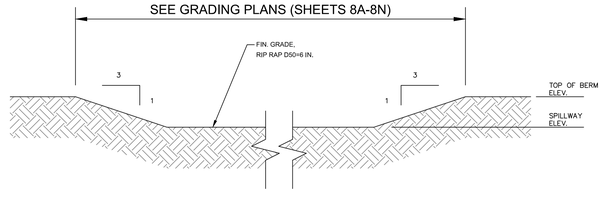


ELEVATION SECTION

NOTES:
1. PRIOR TO CONSTRUCTION OF COLLAR, THE OUTSIDE OF THE PIPE SHALL BE CLEANED.
2. ALL REINFORCEING STEEL SHALL BE GRADE 40.
3. ANTI-SEEP COLLARS SHALL BE INSTALLED ON ALL BASIN DISCHARGE PIPES IN ACCORDANCE WITH CLAY CORE DETAILS. DOWNSTREAM OF CLAY CORE, ANTI-SEEP COLLARS SHALL BE INSTALLED AT MAX. 50' INTERVALS TO DISCHARGE POINT.
4. ALL DIMINSIONS APPLY FOR R.C.P., H.E.R.C.P., CONCRETE BOX CULVERTS, ETC.

TYPICAL ANTI-SEEP COLLAR (OR APPROVED EQUAL)

NOT TO SCALE



TYPICAL SECTION THRU SPILLWAY

EMERGENCY SPILLWAY DETAIL

NOT TO SCALE

12							
11							
10							
9							
8							
7							
6							
5	REVISED PER ENGINEERING COMMENTS	SAD	06/13/25	SAD
4	REVISED PER TOWNSHIP COMMENTS	SAD	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	SAD	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	SAD	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	SAD	09/10/24	SAD
	REVISION	CKD	DATE	CKD

PROJ. 08139-01-001
DWG. 08139-DET
CKD. SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
CONSTRUCTION DETAILS
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
18G
OF

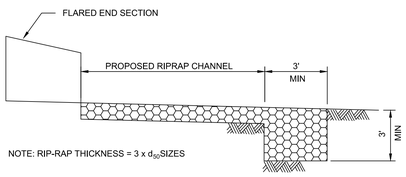
X:\08139 - Nursery Road-Hopewell\08139-01-001 (ENG) - Venue at Hopewell (PV)\Engineering\Engineering Plans\02 Site Plans\08139-SP-DET.dwg 05/13/25 05:20:52PM, anthony.gadaleta, LAYOUT:SHT-18S-UTILITY

THE WIDTH OF THE APRON AT THE CULVERT SHALL BE AT LEAST TRIPLE D_0 . WHERE THERE IS A WELL-DEFINED CHANNEL DOWNSTREAM OF THE APRON, THE APRON BOTTOM WIDTH SHALL BE AT LEAST EQUAL TO THE CHANNEL BOTTOM WIDTH THE LINING SHALL EXTEND AT LEAST ONE FOOT ABOVE THE TAILWATER ELEVATION BUT NO LOWER THAN 2/3 OF THE VERTICAL CONDUIT DIMENSION ABOVE THE CONDUIT INVERT. THE BOTTOM GRADE SHALL BE 0.0% AND LEVEL. THERE SHALL BE NO OVERFALL AT THE END OF THE APRON OR THE CULVERT.

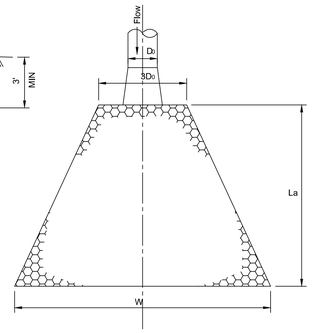
50% BY WEIGHT OF THE RIPRAP MIX SHALL BE SMALLER THAN d_{50}, LARGEST STONE SHALL BE LESS THAN 1.5 TIMES d_{50}, APRON THICKNESS SHALL BE EITHER:

1) THREE TIMES THE d_{50}SIZE, OR
2) TWO TIMES THE d_{50}SIZE WITH A FILTER LAYER

CONDUIT OUTLET PROTECTION SUMMARY						
F.E.S. No.	Q (CFS)	D_0 (FT)	TW (FT)	La (FT)	Wa (FT)	D(50) (IN)
HW 115	8.38	3.50	0.70	27.0	37.5	6

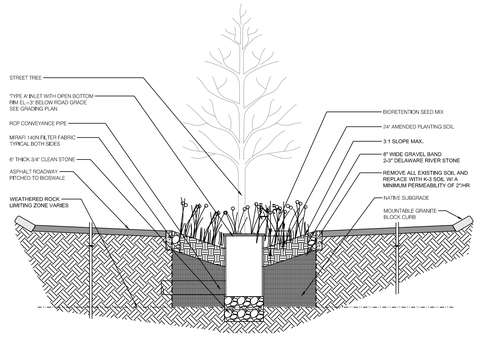


NOTE: RIP-RAP THICKNESS = 3 x d_{50}SIZES

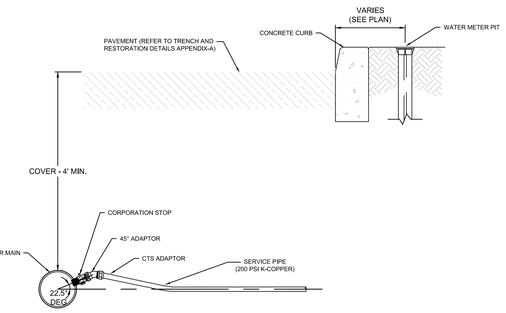


Q = 25 YEAR PEAK FLOW IN CUBIC FEET PER SECOND
D_0 = MAXIMUM CONDUIT WIDTH IN FEET
TW = TAILWATER DEPTH AT THE END OF THE APRON (OR 0.2 D WHERE TW IS INDETERMINATE)
La = APRON LENGTH IN FEET
Wa = APPRON WIDTH AT THE OUTFALL END (NOT APPLICABLE FOR WELL-DEFINED CHANNELS)
d_{50} = MEDIAN RIPRAP SIZE IN INCHES

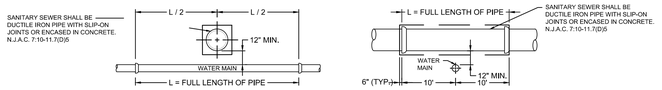
RIP RAP APRON
CONDUIT OUTLET PROTECTION DETAIL
N.T.S



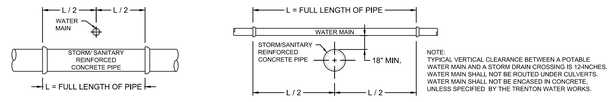
ROAD B BIORETENTION SWALE DETAIL
TYPICAL
NOT TO SCALE



TYPICAL WATER SERVICE LINE INSTALLATION
NOT TO SCALE

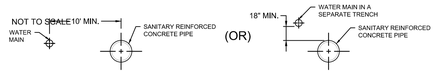


SANITARY SEWER OVER WATER MAIN



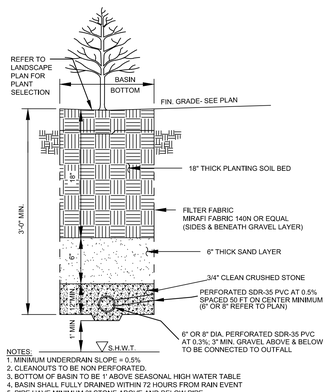
NOTE:
TYPICAL VERTICAL CLEARANCE BETWEEN A POTABLE WATER MAIN AND A STORM DRAIN CROSSING IS 12-INCHES. WATER MAIN SHALL NOT BE ROUTED UNDER CULVERTS. WATER MAIN SHALL NOT BE ENCASED IN CONCRETE. UNLESS SPECIFIED BY THE TRENTON WATER WORKS.

WATER MAIN OVER STORM/ SANITARY



SEWER PARALLEL INSTALLATION

STORM/ SANITARY INSTALLATION
AROUND WATER MAIN

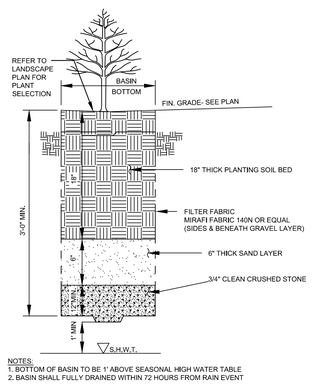


NOTES:
1. MINIMUM UNDERDRAIN SLOPE = 0.5%
2. CLEANOUTS TO BE NON PERFORATED.
3. BOTTOM OF BASIN TO BE 1' ABOVE SEASONAL HIGH WATER TABLE
4. BASIN SHALL FULLY DRAINED WITHIN 72 HOURS FROM RAIN EVENT
5. PIPE HAVE MINIMUM 3" STONE ABOVE AND BELOW PIPE

BIORETENTION BASIN W/ UNDERDRAIN DETAIL
N.T.S.

BIORETENTION BASIN SPECIFICATIONS

1. THE SUBGRADE OF THE BASIN SHALL BE CLEANED OF ANY AND ALL SEDIMENT ACCUMULATED DURING ITS USE AS A TEMPORARY SEDIMENT BASIN. PRIOR TO INSTALLING THE CLEAN STONE AND UNDERDRAIN SYSTEM, THE GRADE AND CONDITION OF THE SUBGRADE SHALL BE VERIFIED ACCEPTABLE BY THE ENGINEER.
2. PLANTING BED MATERIAL SHALL BE INSTALLED IN THREE LIFTS OF 8–INCH DEPTH AND CONSIST OF THE FOLLOWING MIX, BY WEIGHT,:
   85% TO 95% SAND
   LESS THAN 25% SAND TO BE FINE OR VERY FINE SAND
   LESS THAN 5% SILT OR CLAY
   EACH LIFT OF SAND SHALL BE SPREAD BY LABORERS (WITHOUT ANY HEAVY CONSTRUCTION EQUIPMENT DRIVING ACROSS THE INSTALLED SAND). PEAT, AT THE RATE OF FIVE TO SEVEN PERCENT, BY WEIGHT, SHALL BE UNIFORMLY ADDED AND RAKED INTO EACH LIFT BY THE LABORERS. UPON COMPLETION OF EACH LIFT, THE ENGINEER SHALL VERIFY THE THICKNESS IS ACCEPTABLE AND CONDUCT PERMEABILITY TEST TO ASSURE A MINIMUM PERMEABILITY OF 1 INCH PER HOUR IS ATTAINED.
3. SAND LAYER SHALL CONSIST OF CLEAN, AGGREGATE, CONCRETE SAND CONFORMING TO THE ASTM C–33 SPECIFICATION. THE SAND SHALL BE INSTALLED AND SPREAD IN ONE SIX–INCH THICK LIFT BY LABORERS (WITHOUT ANY HEAVY CONSTRUCTION EQUIPMENT DRIVING ACROSS THE INSTALLED SAND). PRIOR TO PROCEEDING WITH PLANTING BED MATERIAL, THE SAND DEPTH SHALL BE VERIFIED BY THE ENGINEER AND TESTED FOR PERMEABILITY. THE MINIMUM PERMEABILITY SHALL BE TWO–INCHES PER HOUR.
4. CRUSHED STONE LAYER SHALL COMPLY WITH THE REQUIREMENTS OF ASSHTO M–43 AND HAVE A MINIMUM PERMEABILITY OF FOUR INCHES PER HOUR. PRIOR TO INSTALLING THE SAND LAYER, THE ENGINEER SHALL VERIFY THAT THE THICKNESS AND PERMEABILITY OF THE STONE COMPLIES WITH THE SPECIFICATIONS.
5. UNDERDRAIN PIPE SHALL BE PERFORATED SDR–35 PVC PIPE.
6. INSPECTION PORTS SHALL BE PROVIDED AT THE END OF EACH UNDERDRAIN SEGMENT, AS SHOWN ON THE PLAN. EACH INSPECTION PORT SHALL EXTEND AT LEAST 18–INCHES ABOVE THE PLANTING BED, WITH A PAINTED LINE 12–INCHES ABOVE THE PLANNING BED TO INDICATE THE DESIGN WATER SURFACE.



NOTES:
1. BOTTOM OF BASIN TO BE 1' ABOVE SEASONAL HIGH WATER TABLE
2. BASIN SHALL FULLY DRAINED WITHIN 72 HOURS FROM RAIN EVENT

BIORETENTION BASIN DETAIL
N.T.S.

BIORETENTION BASIN SPECIFICATIONS

1. THE SUBGRADE OF THE BASIN SHALL BE CLEANED OF ANY AND ALL SEDIMENT ACCUMULATED DURING ITS USE AS A TEMPORARY SEDIMENT BASIN. PRIOR TO INSTALLING THE CLEAN STONE, THE GRADE AND CONDITION OF THE SUBGRADE SHALL BE VERIFIED ACCEPTABLE BY THE ENGINEER.
2. PLANTING BED MATERIAL SHALL BE INSTALLED IN THREE LIFTS OF 8–INCH DEPTH AND CONSIST OF THE FOLLOWING MIX, BY WEIGHT,:
   85% TO 95% SAND
   LESS THAN 25% SAND TO BE FINE OR VERY FINE SAND
   LESS THAN 5% SILT OR CLAY
   EACH LIFT OF SAND SHALL BE SPREAD BY LABORERS (WITHOUT ANY HEAVY CONSTRUCTION EQUIPMENT DRIVING ACROSS THE INSTALLED SAND). PEAT, AT THE RATE OF FIVE TO SEVEN PERCENT, BY WEIGHT, SHALL BE UNIFORMLY ADDED AND RAKED INTO EACH LIFT BY THE LABORERS. UPON COMPLETION OF EACH LIFT, THE ENGINEER SHALL VERIFY THE THICKNESS IS ACCEPTABLE AND CONDUCT PERMEABILITY TEST TO ASSURE A MINIMUM PERMEABILITY OF 1 INCH PER HOUR IS ATTAINED.
3. SAND LAYER SHALL CONSIST OF CLEAN, AGGREGATE, CONCRETE SAND CONFORMING TO THE ASTM C–33 SPECIFICATION. THE SAND SHALL BE INSTALLED AND SPREAD IN ONE SIX–INCH THICK LIFT BY LABORERS (WITHOUT ANY HEAVY CONSTRUCTION EQUIPMENT DRIVING ACROSS THE INSTALLED SAND). PRIOR TO PROCEEDING WITH PLANTING BED MATERIAL, THE SAND DEPTH SHALL BE VERIFIED BY THE ENGINEER AND TESTED FOR PERMEABILITY. THE MINIMUM PERMEABILITY SHALL BE TWO–INCHES PER HOUR.
4. CRUSHED STONE LAYER SHALL COMPLY WITH THE REQUIREMENTS OF ASSHTO M–43 AND HAVE A MINIMUM PERMEABILITY OF FOUR INCHES PER HOUR. PRIOR TO INSTALLING THE SAND LAYER, THE ENGINEER SHALL VERIFY THAT THE THICKNESS AND PERMEABILITY OF THE STONE COMPLIES WITH THE SPECIFICATIONS.

	REVISION	DATE	CHKD
12			
11			
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6	REVISED PER ENGINEERING COMMENTS	06/13/25	SAD
5	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
4	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
3	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
2	REVISED PER RB COMPLETENESS REVIEW	09/19/24	SAD
1			

PROJ. 08139-01-001
DWG. 08139DD24
CHKD. SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
CONSTRUCTION DETAILS
BLOCK 90, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
18H
OF

X:\08139 – Nursery Road-Hopewell\08139-01-001 (Old) – Venue at Hopewell SP\Engineering\Engineering Plans\02 Site Plans\08139-SP-DET.dwg 06/13/25 05:01:51PM anthony.paddetta LAYOUT: SH1–18H–UTILITY

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLANS FOR
VENUE AT HOPEWELL
PUMP STATION 1 - LAYOUT PLAN
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No. 21A OF

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TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05882000

Bowman

PROJ.: 081391-01-001
DATE: 06/25/2024
CHKD: SAD

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1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
2	REVISED PER TOWNSHP COMMENTS	12/18/24	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
4	REVISED PER TOWNSHP COMMENTS	03/31/25	SAD
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NOT FOR CONSTRUCTION
DRAWING 99%

170

172

8' CHAIN LINK PERIMETER FENCE

EMERGENCY GENERATOR ON CONCRETE PAD

17'-4"x14'-6" CONTROL BUILDING
F.F.= 206.50

LAVATORY

CLEAN OUT

1" RPZ BACKFLOW PREVENTOR

PUMP STATION LOT LINE, TYP.

4" PVC SEWER LATERAL @ 2.00% MIN.

8'x6' VALVE VAULT

HOIST SOCKET

6" BOLLARD, TYP. SEE DETAIL SHEET 3F

ASPHALT PAVED SURFACE

WET WELL

6" FORCE MAINS

1" PVC WATER SUPPLY

MUFFIN MONSTER COMMUTER WITH GUIDE RAIL & FRAME ASSEMBLY

8" INLFLENT GRAVITY SEWER

INFLUENT MANHOLE

12' MANUAL HINGE GATE

12' WIDE DRIVEWAY APRON, BY OTHERS

SEE CIVIL SITE PLANS FOR ALIGNMENT OF WATER LINES

XREFS: 081391_PBASE.dwg
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081391_Xbase.dwg
081391_FGRD.dwg
Deer Valley Easement.dwg

V:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\++081391-01-001-PSTA-SITE.dwg 06/13/25 01:30:48PM, daddona, LAYOUT:SITE LAYOUT_PS1

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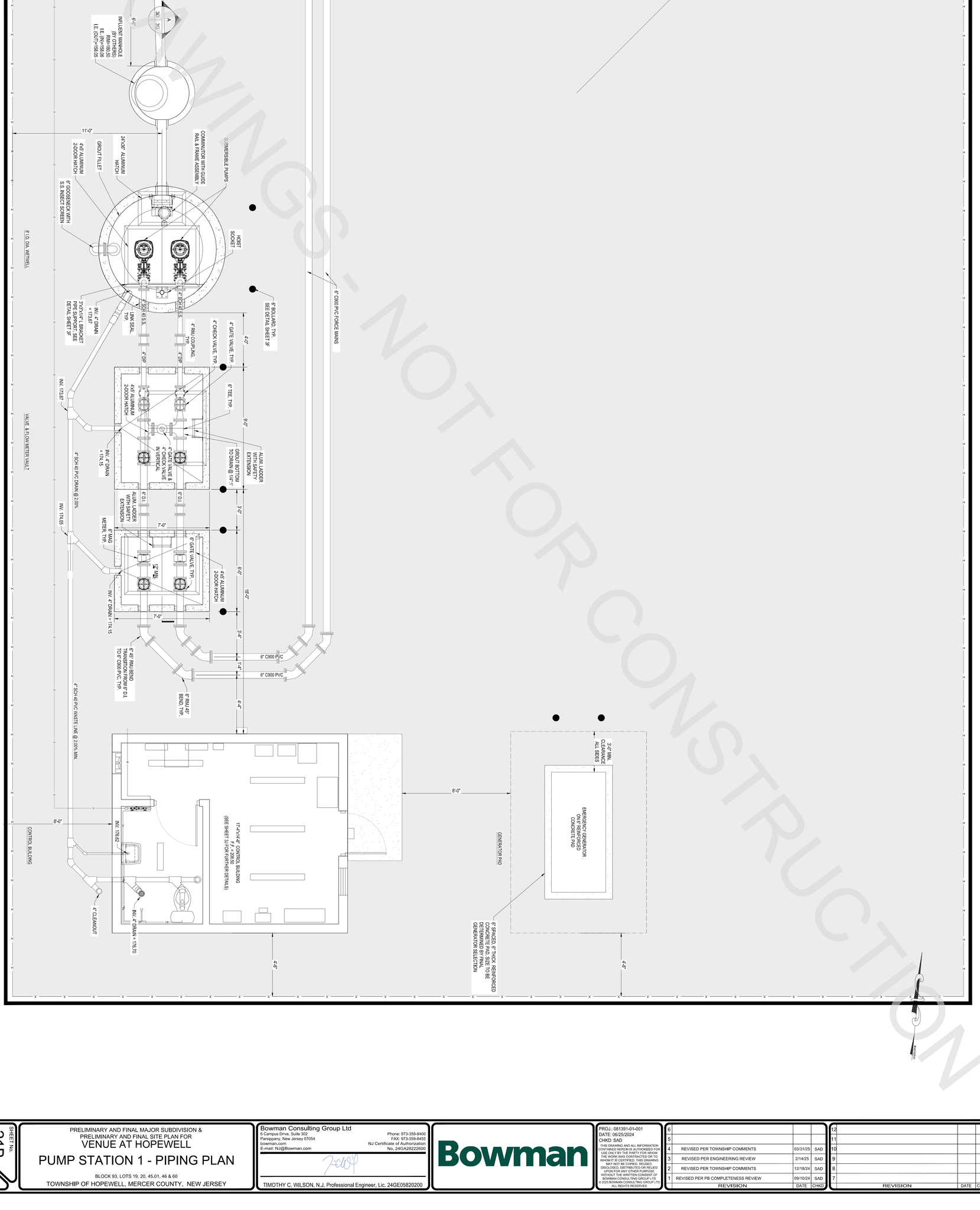
90% DRAWINGS - NOT FOR CONSTRUCTION



SHEET No.	21B
CF	

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

PUMP STATION 1 - PIPING PLAN

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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6			
5			
4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

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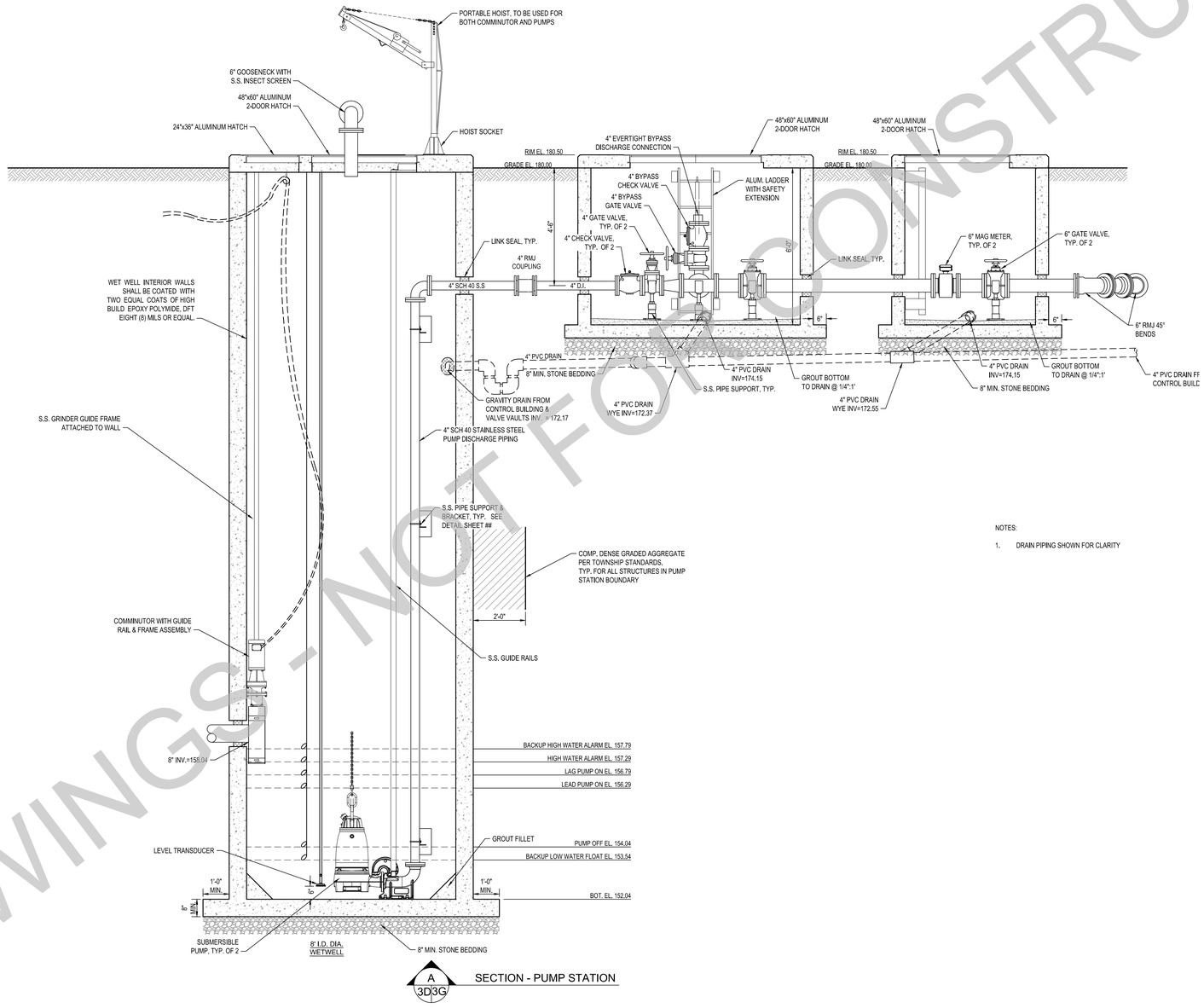

A 3D3G SECTION - PUMP STATION

NOTES:

1. DRAIN PIPING SHOWN FOR CLARITY

GRAPHIC SCALE

0 1' 2' 4' 8'

1/2 in. = 1 ft.

12				
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4	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD	
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD	
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD	
1	REVISED PER PB COMPLETENESS REVIEW	08/19/24	SAD	
	REVISION	DATE	CHKD	

PROJ. 0813911-01-001
DATE: 06/25/2024
CHKD: SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

PUMP STATION 1 - SECTION VIEW

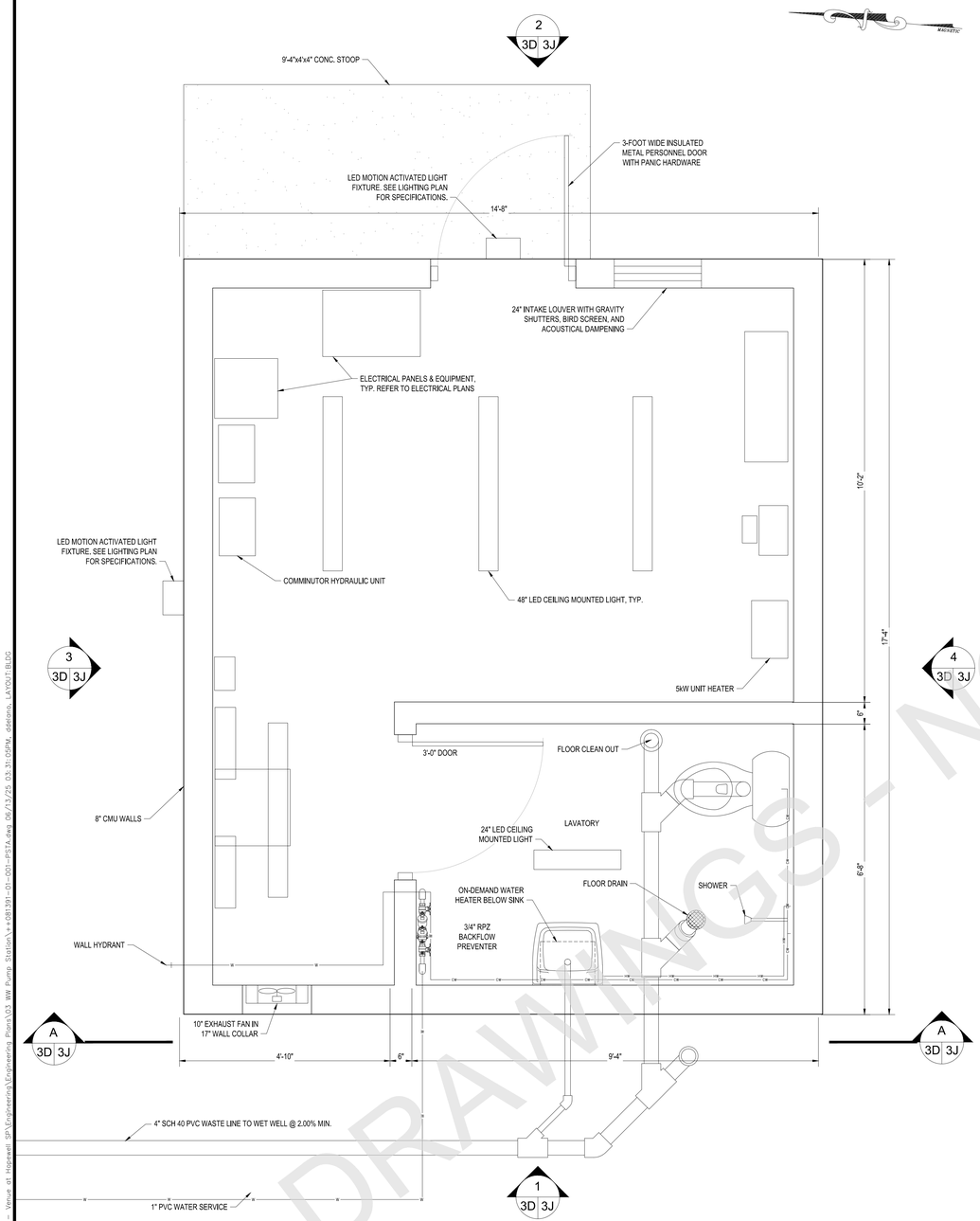
BLOCK 69, LOTS 19, 20, 45.01, 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21C
OF

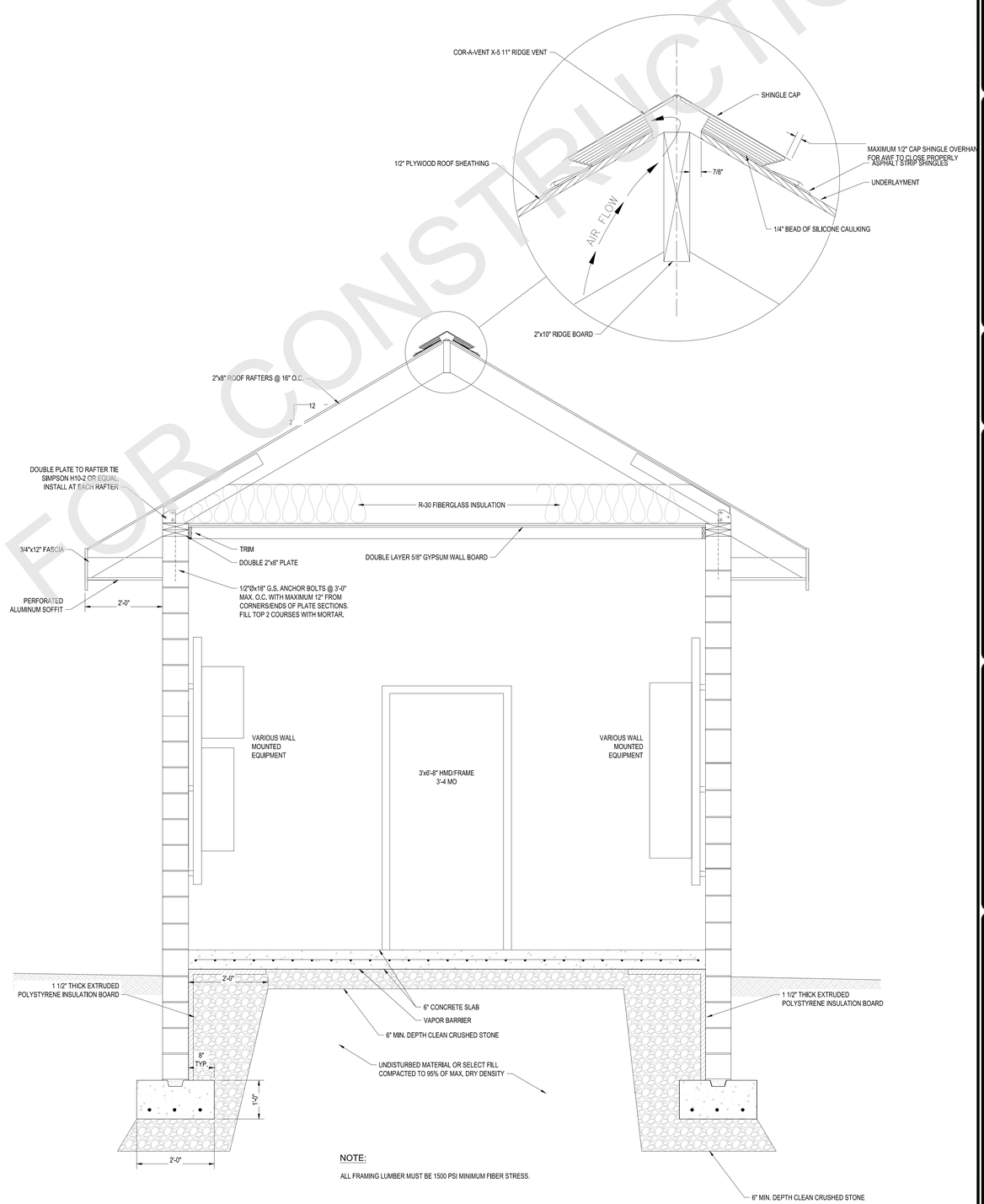
90% DRAWINGS - NOT FOR CONSTRUCTION

Saved: 6/13/2025 10:05:16 PM by: Sarah Dougherty
Plotted: 6/13/2025 10:05:16 PM by: Sarah Dougherty
File: J:\0813911 - Nursery Road-Hopewell\0813911-01-001 (Dwg) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\J:\0813911-01-001-PS1A.dwg 06/13/25 03:31:00PM sdougherty LAYOUT: SECTION_PS1



CONTROL BUILDING FLOOR PLAN

SCALE: 3/4 IN. = 1 FT.



NOTE:

ALL FRAMING LUMBER MUST BE 1500 PSI MINIMUM FIBER STRESS.

A
3D 3D
SECTION A-A

GRAPHIC SCALE

0 6" 1' 2' 4'

3/4 in. = 1 ft.

90% DRAWINGS - NOT FOR CONSTRUCTION

NO.	DATE	REVISION	CHKD
12			
11			
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9			
8			
7		REVISION	DATE CHKD
6	03/31/05	REVISED PER TOWNSHIP COMMENTS	SAD
5	2/14/25	REVISED PER ENGINEERING REVIEW	SAD
4	12/18/24	REVISED PER TOWNSHIP COMMENTS	SAD
3	09/10/24	REVISED PER PB COMPLETENESS REVIEW	SAD
2		REVISION	DATE CHKD
1			

PROJ. 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR:

VENUE AT HOPEWELL

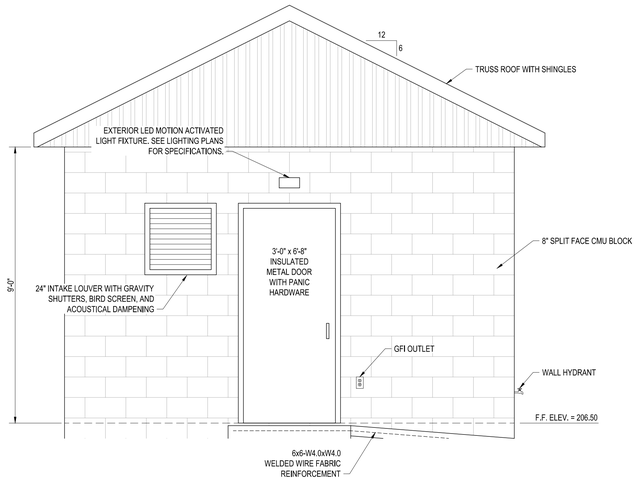
CONTROL BLDG. FLOOR PLAN

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60

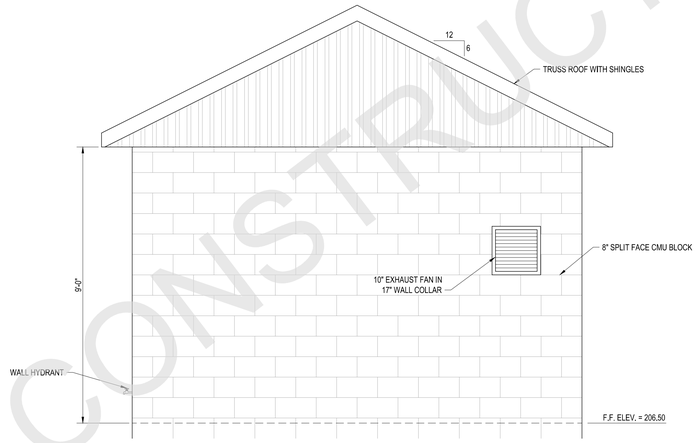
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21D
OF

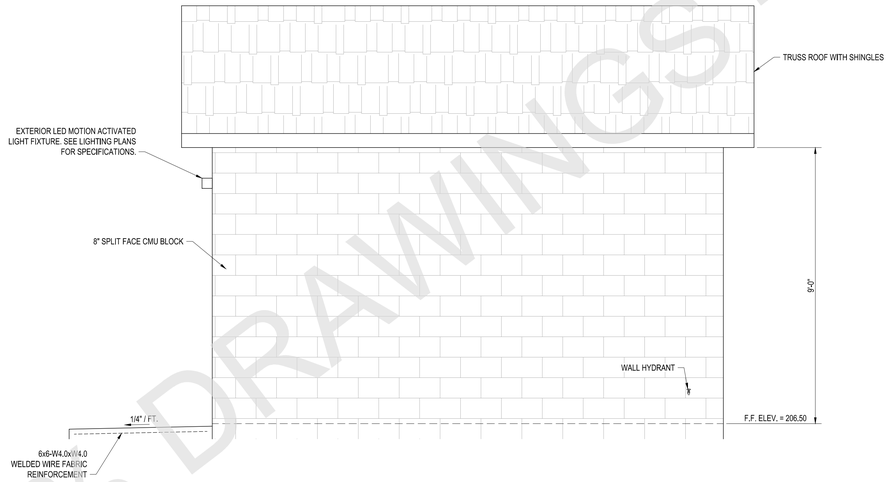
X:_08139 – Nursery Roads-Hopewell\08139-01-001 (ENG) – Venue at Hopewell, SP\Engineering\Engineering Plans\03_WW Pump Station\★★08139-01-001-PS3A.dwg, 06/13/25 03:31:05PM, dtebbins, LAYOUT-BLDG



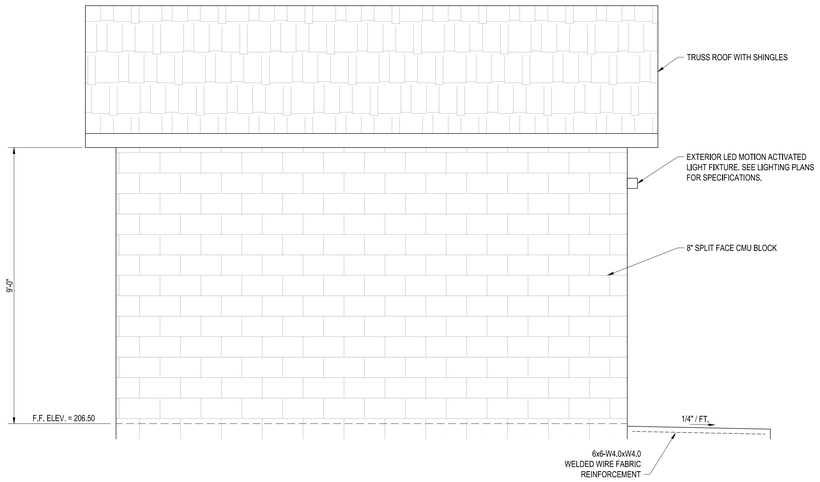
1 3D 3E FRONT ELEVATION



2 3D 3E REAR ELEVATION



3 3D 3E LEFT ELEVATION



4 3D 3E RIGHT ELEVATION

90% DRAWINGS - NOT FOR CONSTRUCTION

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7	REVISION	DATE	CHKD

6	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
5			
4	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
3			
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

PROJ. 081391-01-001
DATE: 06/25/2024
CHKD: SAD

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NJ Certificate of Authorization
No. 24GA28223600

TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

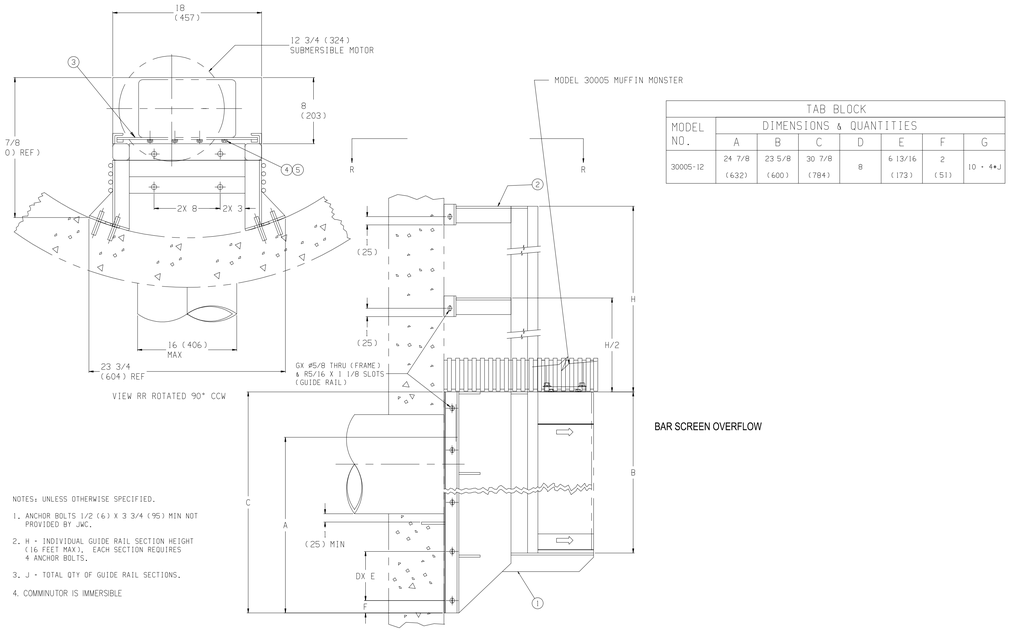
PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

CONTROL BLDG. ELEVATIONS

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21E
OF

\\081391 - Nursery Roads-Hopewell\081391-01-001 (ENG) - Venue at Hopewell \SP\Engineering Plans\03 WW Pump Station\+\081391-01-001-#STA.dwg 06/13/25 03:33:19PM dalleva LAYOUT: BLDG. ELEVS
Dwg Name: \\081391-01-001-#STA.dwg
Dwg Name: \\081391-01-001-#STA-V15.dwg
Dwg Name: \\081391-01-001-#STA-R-R.dwg
Dwg Name: \\081391-01-001-#STA-R-R-V15.dwg
Dwg Name: \\081391-01-001-#STA-R-R-V15-ADA.dwg

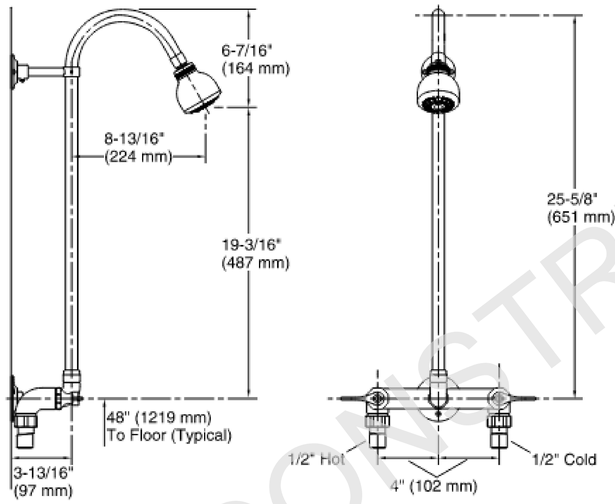


TAB BLOCK							
MODEL NO.	DIMENSIONS & QUANTITIES						
	A	B	C	D	E	F	G
30005-12	24 7/8 (632)	23 5/8 (600)	30 7/8 (784)	8	6 13/16 (173)	2 (51)	10 • 4•J

NOTES: UNLESS OTHERWISE SPECIFIED.

1. ANCHOR BOLTS 1/2 (6) X 3 3/4 (95) MIN NOT PROVIDED BY JWC.
2. H - INDIVIDUAL GUIDE RAIL SECTION HEIGHT (16 FEET MAX.). EACH SECTION REQUIRES 4 ANCHOR BOLTS.
3. J - TOTAL QTY OF GUIDE RAIL SECTIONS.
4. COMMINUTOR IS IMMERSIBLE

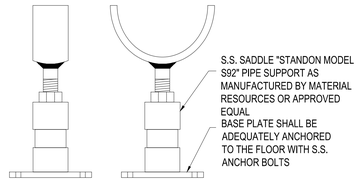
COMMINUTOR MOUNTING DETAIL
NOT TO SCALE



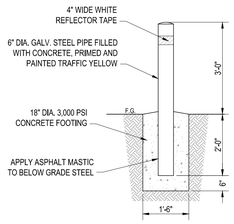
SUPPLIER TO PROVIDE:
1. FRAME TO FIT INLET CHANNEL 1'-6" WIDE X 2'-0" HIGH.
2. GUIDE RAIL ASSEMBLY.
3. HYDRAULIC HOSES.
4. DRIVE UNIT ENCLOSURE.

JWC MUFFIN MONSTER MODEL 30005-0008 DETAIL
SCALE: 1/2" = 1'-0"

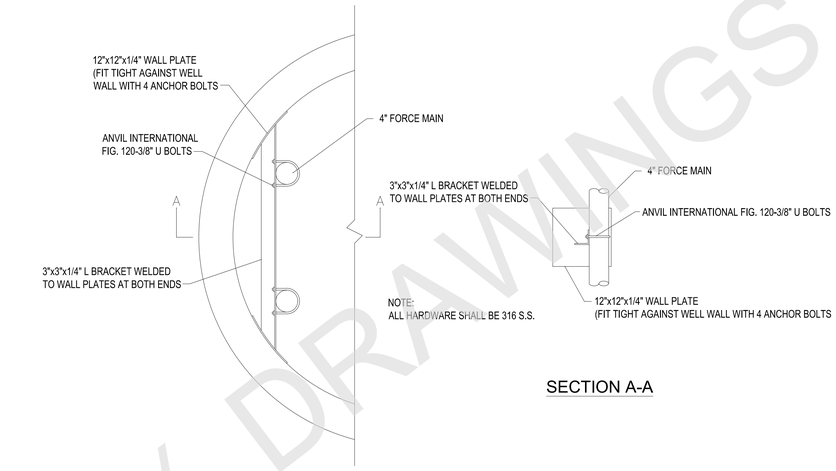
SECTION
NOTES:
1. #4 BARS SHALL BE SPACED 12" ON CENTER.
2. CONCRETE SHALL BE 3000 PSI AND BE SLOPED TO DRAIN.



TYPICAL PIPE SUPPORT DETAIL
NOT TO SCALE



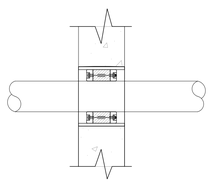
6" BOLLARD DETAIL
SCALE: 1/2" = 1'-0"



PLAN VIEW

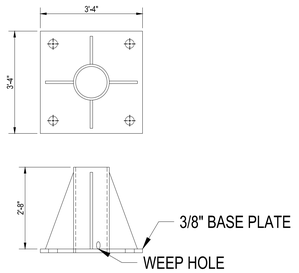
SECTION A-A

DISCHARGE PIPE SUPPORT DETAIL
NOT TO SCALE

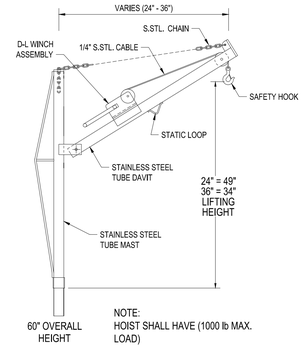


PIPE SIZE NOM.	ACTUAL O.D.	LINK SEAL SIZE	LINK PER SEAL	CORE HOLE DIA
2"	2.375"	LS-300-***	6	4"
4"	4.5"	LS-300-***	10	6"

LINK SEAL CONNECTION DETAIL
SCALE: NONE



FLOOR MOUNTED S.S. SOCKET DETAIL
SCALE: 1" = 1'-0"



NOTE:
HOIST SHALL HAVE (1000 lb MAX. LOAD)

ADJUSTABLE PORTABLE HOIST DETAIL
SCALE: NONE

NO.	REVISION	DATE	CHKD
12			
11			
10			
9			
8			
7	REVISION	DATE	CHKD
6	REVISED PER TOWNSHIP COMMENTS	03/31/05	SAD
5			
4	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
3	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
2			
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

PROJ: 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

PUMP STATION DETAILS - 1

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21F
OF

90% DRAWINGS - NOT FOR CONSTRUCTION

Saved: 6/13/2025 3:31:19 PM By: dstelzer
File: J:\08139 – Nursery Roads-Hopewell\08139-01-001 (ENG) – Venue at Hopewell SP\Engineering Plans\03 WW Pump Station\4 e08139-01-001-PSTA.dwg 06/13/25 03:31:19PM, dstelzer, LAYOUT: DETAIL S

SERIES S1S ACCESS DOOR

HALLIDAY PRODUCTS
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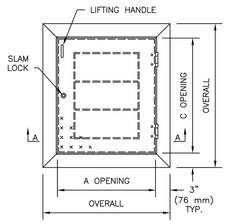
Phone 800-298-1027
Fax 407-298-4534
Sales@HallidayProducts.com

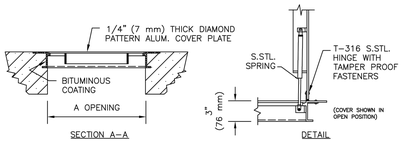
STANDARD FEATURES:

- 300 LBS. PER SQ. FT. LOAD RATING (1464 kg PER SQ. METER LOAD RATING)
- EXTRUDED ALUMINUM ANGLE FRAME
- SINGLE LEAF CONSTRUCTION
- AUTO-LOCK T-316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T-316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- BUILT-IN EPDM CUSHION/GASKET
- NON-OZONE DEPLETING BITUMINOUS COATING
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

STANDARD SIZES

QTY.	MODEL NO.	A DIM. INCHES (MM)	C DIM. INCHES (MM)	UNIT WT. LBS. (KG.)
	S1S2424	24 (610)	24 (610)	37 (17)
	S1S2430	24 (610)	30 (762)	42 (19)
	S1S2436	24 (610)	36 (914)	48 (22)
	S1S2442	24 (610)	42 (1067)	55 (25)
	S1S2448	24 (610)	48 (1219)	61 (28)
	S1S3030	30 (762)	30 (762)	49 (22)
	S1S3036	30 (762)	36 (914)	57 (26)
	S1S3042	30 (762)	42 (1067)	64 (29)
	S1S3048	30 (762)	48 (1219)	71 (32)
	S1S3054	30 (762)	54 (1372)	79 (36)
	S1S3060	30 (762)	60 (1524)	87 (39)
	S1S3636	36 (914)	36 (914)	65 (25)
	S1S3642	36 (914)	42 (1067)	79 (36)
	S1S3648	36 (914)	48 (1219)	85 (39)
	S1S3654	36 (914)	54 (1372)	91 (41)
	S1S3660	36 (914)	60 (1524)	100 (45)
	S1S3666	36 (914)	66 (1676)	109 (49)
	S1S3672	36 (914)	72 (1829)	116 (53)
	S1S4242	42 (1067)	42 (1067)	93 (42)





SERIES S2S ACCESS DOOR

HALLIDAY PRODUCTS
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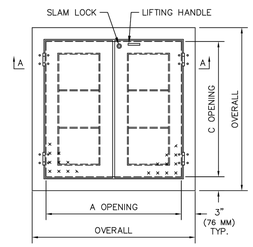
Phone 800-298-1027
Fax 407-298-4534
Sales@HallidayProducts.com

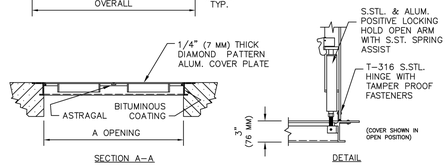
STANDARD FEATURES:

- AUTO-LOCK T-316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T-316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- BUILT-IN NEOPRENE CUSHION/GASKET
- NON-OZONE DEPLETING BITUMINOUS COATING
- DOUBLE LEAF CONSTRUCTION
- 300 LBS. PER SQ. FT. LOAD RATING (1464 KG. PER SQ. METER LOAD RATING)
- EXTRUDED ALUMINUM FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

STANDARD SIZES

QTY.	MODEL NO.	A DIM. INCHES (MM)	C DIM. INCHES (MM)	UNIT WT. LBS. (KG.)
	S2S4242	42 (1067)	42 (1067)	93 (42)
	S2S4842	48 (1219)	42 (1067)	99 (45)
	S2S4848	48 (1219)	48 (1219)	110 (50)
	S2S5442	54 (1372)	42 (1067)	108 (49)
	S2S5448	54 (1372)	48 (1219)	119 (54)
	S2S5454	54 (1372)	54 (1372)	127 (58)
	S2S6030	60 (1524)	30 (762)	87 (39)
	S2S6036	60 (1524)	36 (914)	100 (45)
	S2S6042	60 (1524)	42 (1067)	115 (52)
	S2S6048	60 (1524)	48 (1219)	130 (59)
	S2S6054	60 (1524)	54 (1372)	143 (65)
	S2S6060	60 (1524)	60 (1524)	158 (72)
	S2S6636	66 (1676)	36 (914)	109 (49)
	S2S6648	66 (1676)	48 (1219)	141 (64)
	S2S7236	72 (1829)	36 (914)	116 (53)
	S2S7242	72 (1829)	42 (1067)	135 (61)
	S2S7248	72 (1829)	48 (1219)	151 (68)
	S2S7254	72 (1829)	54 (1372)	168 (76)
	S2S7260	72 (1829)	60 (1524)	178 (81)



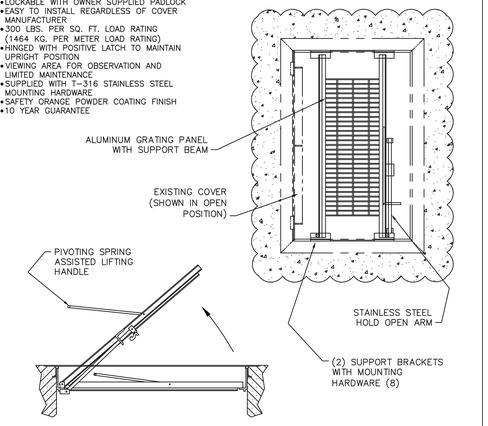


SERIES X RETRO-GRATING

HALLIDAY PRODUCTS
www.HallidayProducts.com
Phone 800-298-1027
Fax 407-298-4534
Sales@HallidayProducts.com

STANDARD FEATURES:

- ALUMINUM "I" BAR CONSTRUCTION
- T-316 STAINLESS STEEL HARDWARE
- SPRING LOADED LIFTING HANDLE
- LOCKABLE WITH OWNER SUPPLIED PADLOCK
- EASY TO INSTALL REGARDLESS OF COVER MANUFACTURER
- 300 LBS. PER SQ. FT. LOAD RATING (1464 KG. PER METER LOAD RATING)
- HINGED WITH POSITIVE LATCH TO MAINTAIN UPRIGHT POSITION
- VIEWING AREA FOR OBSERVATION AND LIMITED MAINTENANCE
- SUPPLIED WITH T-316 STAINLESS STEEL MOUNTING HARDWARE
- SAFETY ORANGE POWDER COATING FINISH
- 10 YEAR GUARANTEE



APPLICATIONS:
THE SERIES X RETRO-GRATE IS A HINGED ALUMINUM GRATING PANEL THAT IS EASILY INSTALLED BENEATH EXISTING ACCESS COVERS REGARDLESS OF THE ORIGINAL COVER MANUFACTURER. THE RETRO-GRATE PROVIDES ADDITIONAL PROTECTION AGAINST FALL THROUGH ACCIDENTS WHEN THE COVER IS LEFT IN THE OPEN POSITION. THE UNIT IS LOCKABLE BY AN OWNER SUPPLIED PADLOCK AND INCORPORATES A SPRING ASSISTED LIFTING HANDLE THAT POSITIONS THE HANDLE NEAR THE SLAB LEVEL. THE UNIT IS SUPPLIED WITH T-316 STAINLESS STEEL MOUNTING HARDWARE AND AN AUTOMATIC HOLD OPEN ARM WITH ALUMINUM RELEASE LATCH. THE RETRO-GRATE IS DESIGNED TO BE INSTALLED BY MOUNTING THE SUPPORT BRACKETS TO EITHER THE EXISTING FRAMEWORK OR TO THE CONCRETE SLAB BELOW THE FRAMEWORK.

SER-X-N 07/27/05

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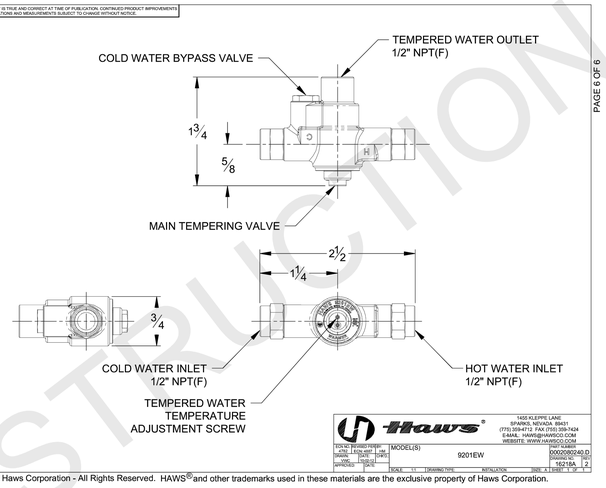

Haws
1455 KLEPPE LANE
SPARKS, NEVADA 89431
(775) 359-4712 FAX (775) 359-7424
E-MAIL HAWS@HAWSCO.COM
WEBSITE WWW.HAWSCO.COM

TOTAL WEIGHT	MODEL(S)	DRAWING NO.
4.5 LBS. (2.0 KG.)	9201EW	000208024O D
SCALE NONE		SHEET 1 OF 1
APPROVED DATE		16218A 2

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TEMPERING VALVE DETAIL

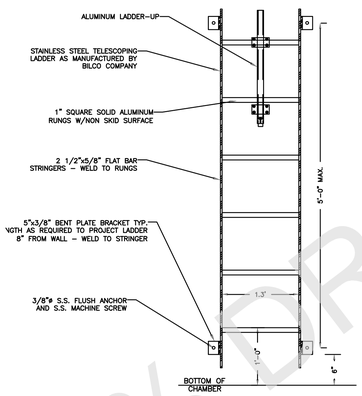
NOT TO SCALE

CAUTION
HEARING PROTECTION *REQUIRED* IN THIS AREA

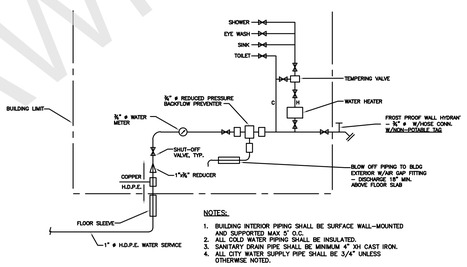
HEARING PROTECTION REQUIRED SIGN DETAIL
NOT TO SCALE

DANGER
PERMIT REQUIRED
CONFINED SPACE
DO NOT ENTER

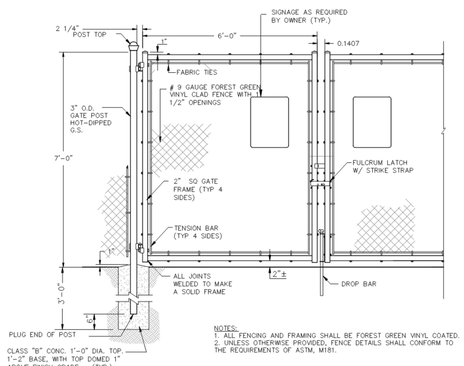
CONFINED SPACE ENTRY SIGN DETAIL
NOT TO SCALE



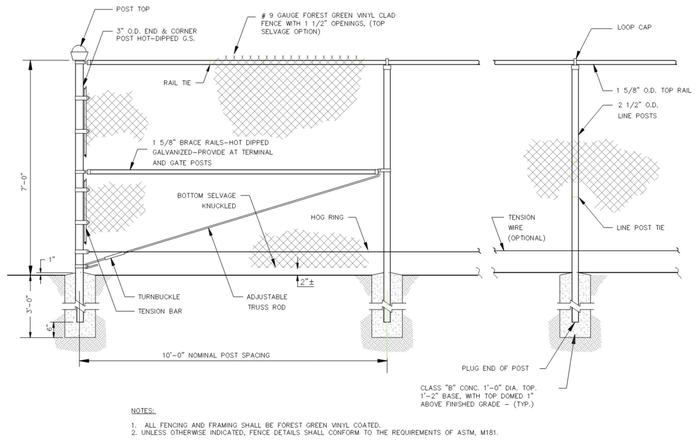
ALUMINUM LADDER DETAIL
NOT TO SCALE



WATER SUPPLY SCHEMATIC
NOT TO SCALE



GATE DETAIL
NOT TO SCALE



CHAIN LINK FENCE DETAIL
NOT TO SCALE

90% DRAWINGS - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	CHKD
12			
11			
10			
9			
8			
7			
6			
5			
4	REVISED PER TOWNSHIP COMMENTS	03/31/05	SAD
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1	REVISED PER PB COMPLETENESS REVIEW	09/10/04	SAD
NO.	REVISION	DATE	CHKD

PROJ. 08139-I-01-001
DATE 06/25/2024
CHKD SAD

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Fax: 973-335-8565
NJ Certificate of Authorization No. 24GA28222600
Email: NJ@Bowman.com

TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR:
VENUE AT HOPEWELL

PUMP STATION DETAILS - 2

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

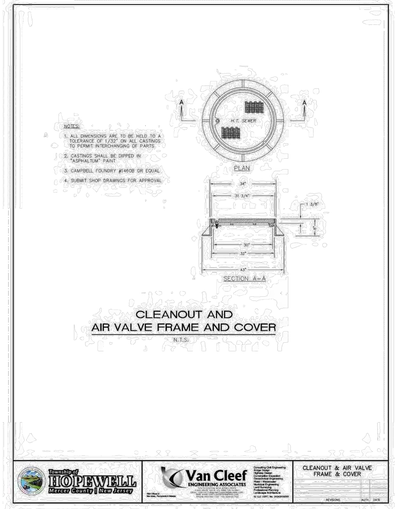
SHEET No.
21G
OF

X:\08139 - Nursery Roads-Hopewell\08139-I-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03_MW Pump Station***08139-I-01-001-PS2A.dwg 06/13/25 03:31:21PM dfedorko LAYOUT: DETAILS - 2

HOPEWELL TOWNSHIP
SANITARY SEWER DESIGN STANDARDS

Page 57 of 94

HOPEWELL TOWNSHIP
SANITARY SEWER DESIGN STANDARDS



Page 43 of 94

HOPEWELL TOWNSHIP
SANITARY SEWER DESIGN STANDARDS

NUMBER AND SIZE OF RODS REQUIRED AND PIPE LENGTH IN FEET* TO BE RESTRAINED

PIPE SIZE IN INCHES	DEAD END PLUG		90° TEE OR		45°		22 1/2°	
	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE
4	2	3/4"	30'	2	3/4"	10'	2	3/4" 5'
6	2	3/4"	42'	2	3/4"	10'	2	3/4" 5'
8	4	3/4"	50'	2	3/4"	15'	2	3/4" 5'
10	4	3/4"	60'	2	3/4"	20'	2	3/4" 5'
12	4	7/8"	70'	2	3/4"	25'	2	3/4" 5'
14	4	1"	80'	2	3/4"	25'	2	3/4" 5'
16	4	1"	80'	2	3/4"	25'	2	3/4" 5'

* LENGTH OF PIPE TO BE RESTRAINED IS FOR EACH SIDE OF BEND

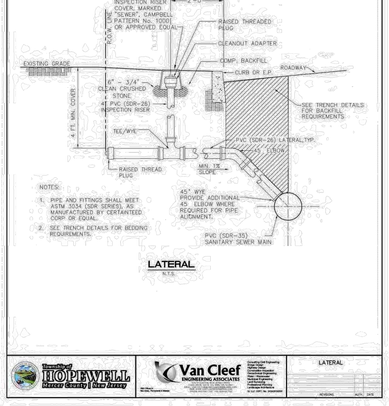
NOTES:
1. USE MECHANICAL JOINT RETAINER GLANDS OF "FIELD LOK" GASKETS SHALL PROVIDE A THRUST RESTRAINT SYSTEM EQUIVALENT TO THAT LISTED IN THE TABLE FOR CLAMPS AND RODS. ALL JOINTS WITHIN THE LENGTH LISTED IN THE TABLE SHALL BE RESTRAINED.
2. LENGTHS ARE BASED ON THE FOLLOWING CRITERIA: 150 PSI MAXIMUM PRESSURE AND 3' +6" OF COVER. TABLE IS FOR USE WITH DI/DIP ONLY. IF TEST CONDITIONS ARE MORE SEVERE OR LARGER PIPES ARE PROPOSED, THEN SPECIAL COMPUTATIONS MUST BE MADE BY DESIGNER.
3. A BITUMASTIC COATING SHALL BE APPLIED TO ALL BOLTS, NUTS, WASHERS, RODS, THRUST, RESTRAINT BOLTS AND ALL UNCOATED HARDWARE.

FORCE MAIN JOINT RESTRAINT SCHEDULE
NOT TO SCALE

Township of HOPEWELL Mercer County | New Jersey
Van Cleef ENGINEERING ASSOCIATES
FORCE MAIN JOINT RESTRAINT SCHEDULE

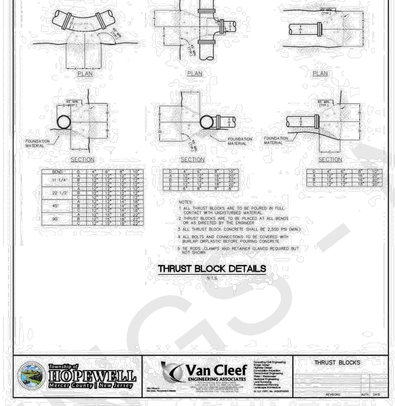
Page 51 of 94

HOPEWELL TOWNSHIP
SANITARY SEWER DESIGN STANDARDS



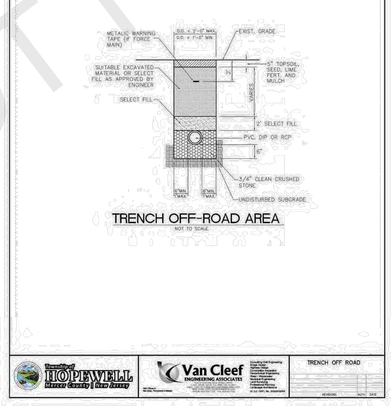
Page 58 of 94

HOPEWELL TOWNSHIP
SANITARY SEWER DESIGN STANDARDS



Page 85 of 94

HOPEWELL TOWNSHIP
SANITARY SEWER DESIGN STANDARDS



Page 86 of 94

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2 REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1 REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
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NJ Certificate of Authorization No. 24GA28222600

TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

HOPEWELL TOWNSHIP DETAILS

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21H
OF

90% DRAWINGS - NOT FOR CONSTRUCTION

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLANS FOR

VENUE AT HOPEWELL

PUMP STATION 2 - LAYOUT PLAN

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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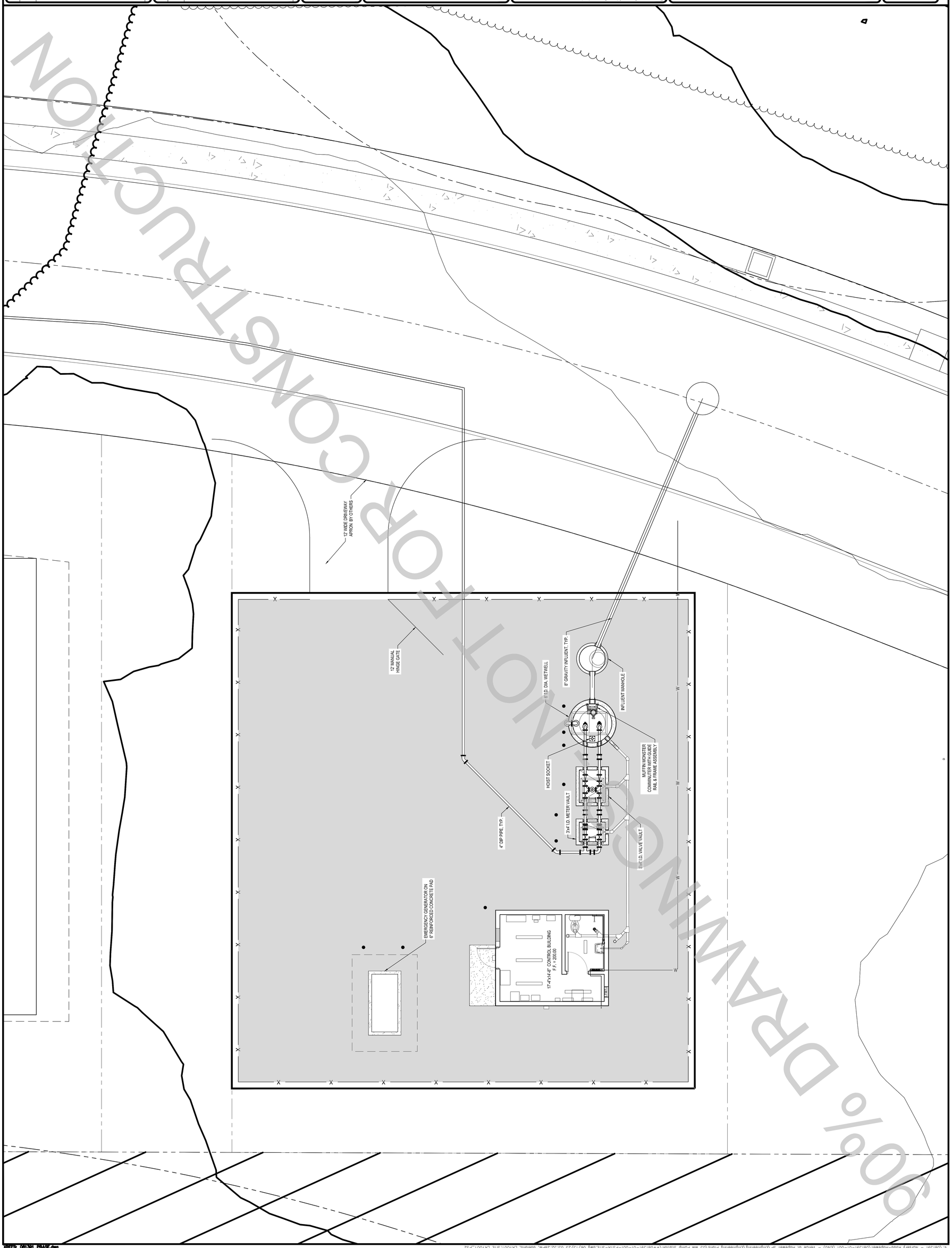

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

PUMP STATION 2 - PIPING PLAN

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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3 REVISED PER ENGINEERING REVIEW	2/14/25	SAD
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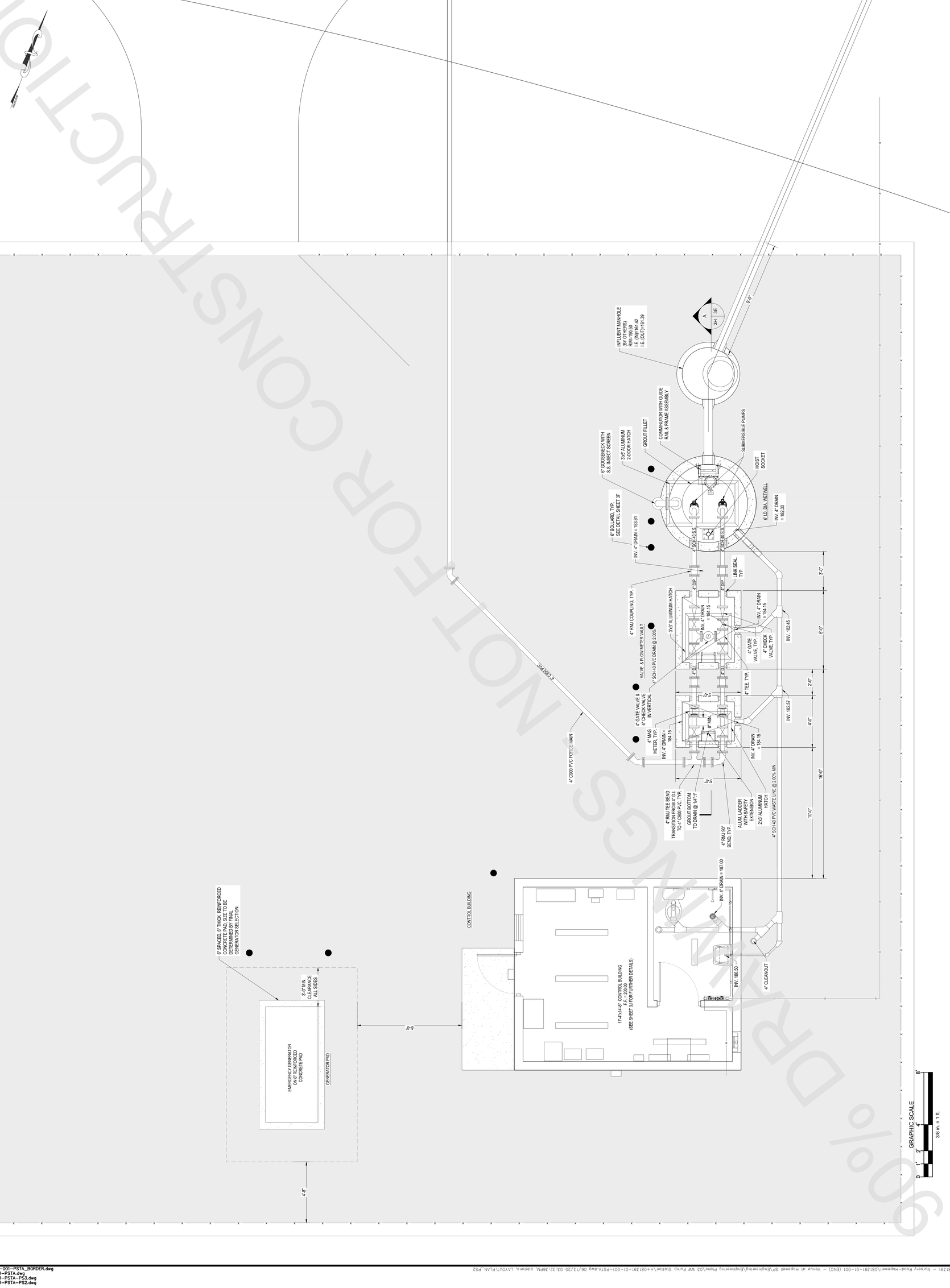

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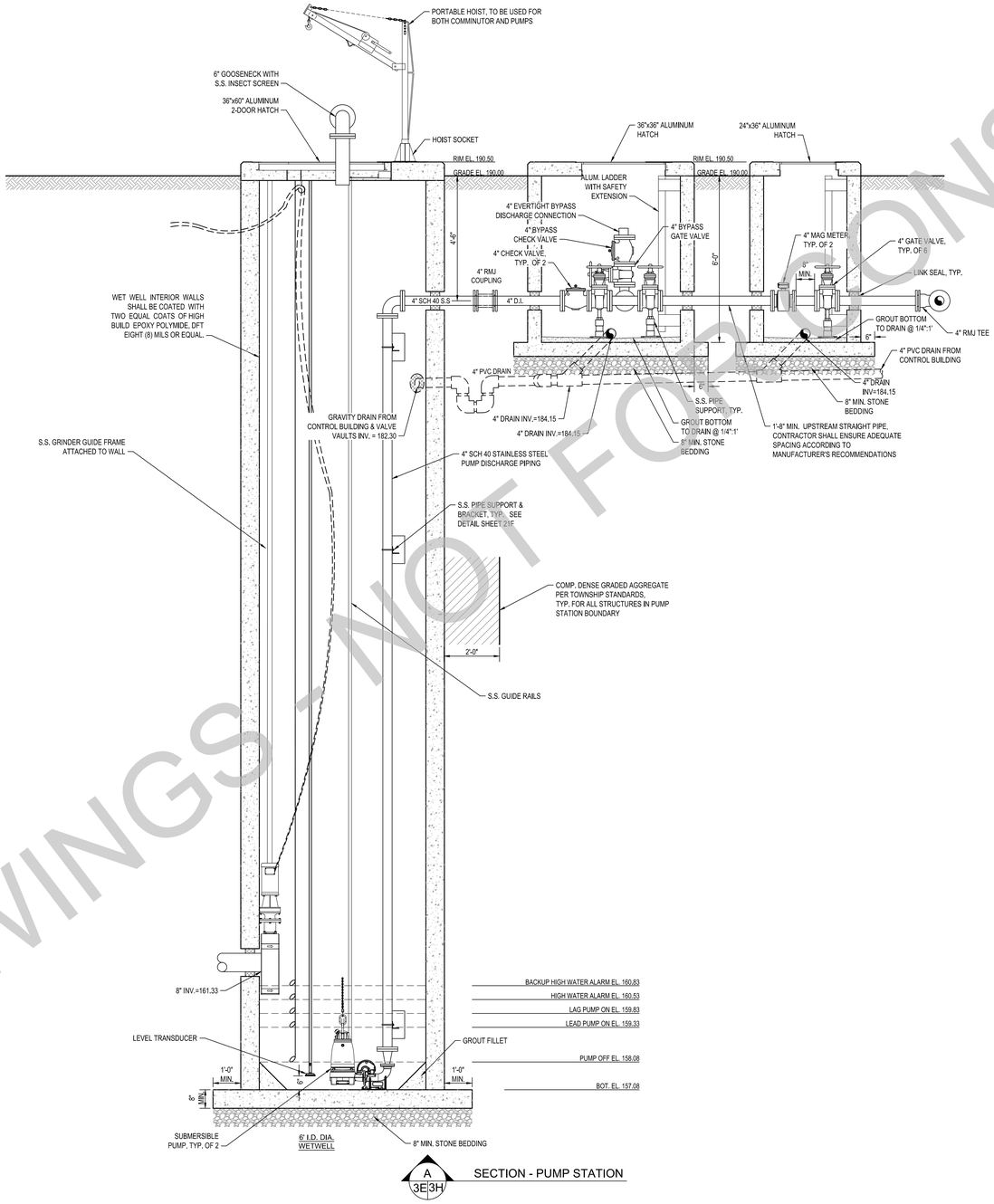

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NOTES:

1. DRAIN PIPING SHOWN FOR CLARITY

GRAPHIC SCALE

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1/2 in. = 1 ft.

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL

PUMP STATION 2 - SECTION VIEW

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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OF

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
PUMP STATION 3 - LAYOUT PLAN
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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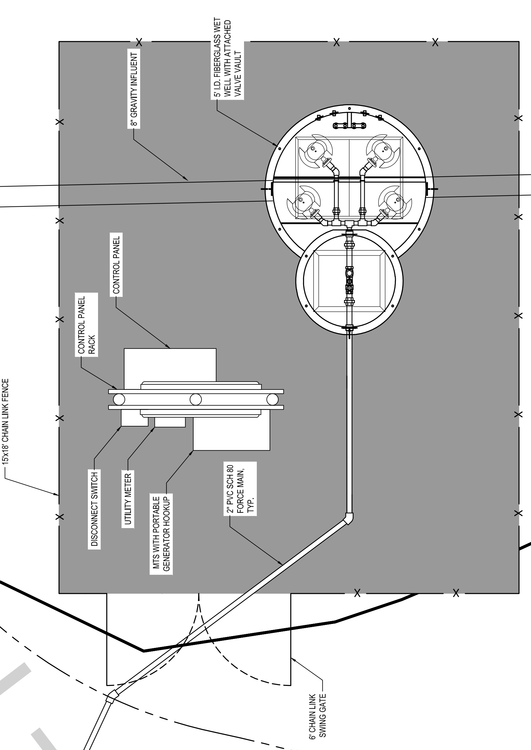

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PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

PUMP STATION 3 - PIPING PLAN

BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

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GRAPHIC SCALE
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1 in. = 1 ft.

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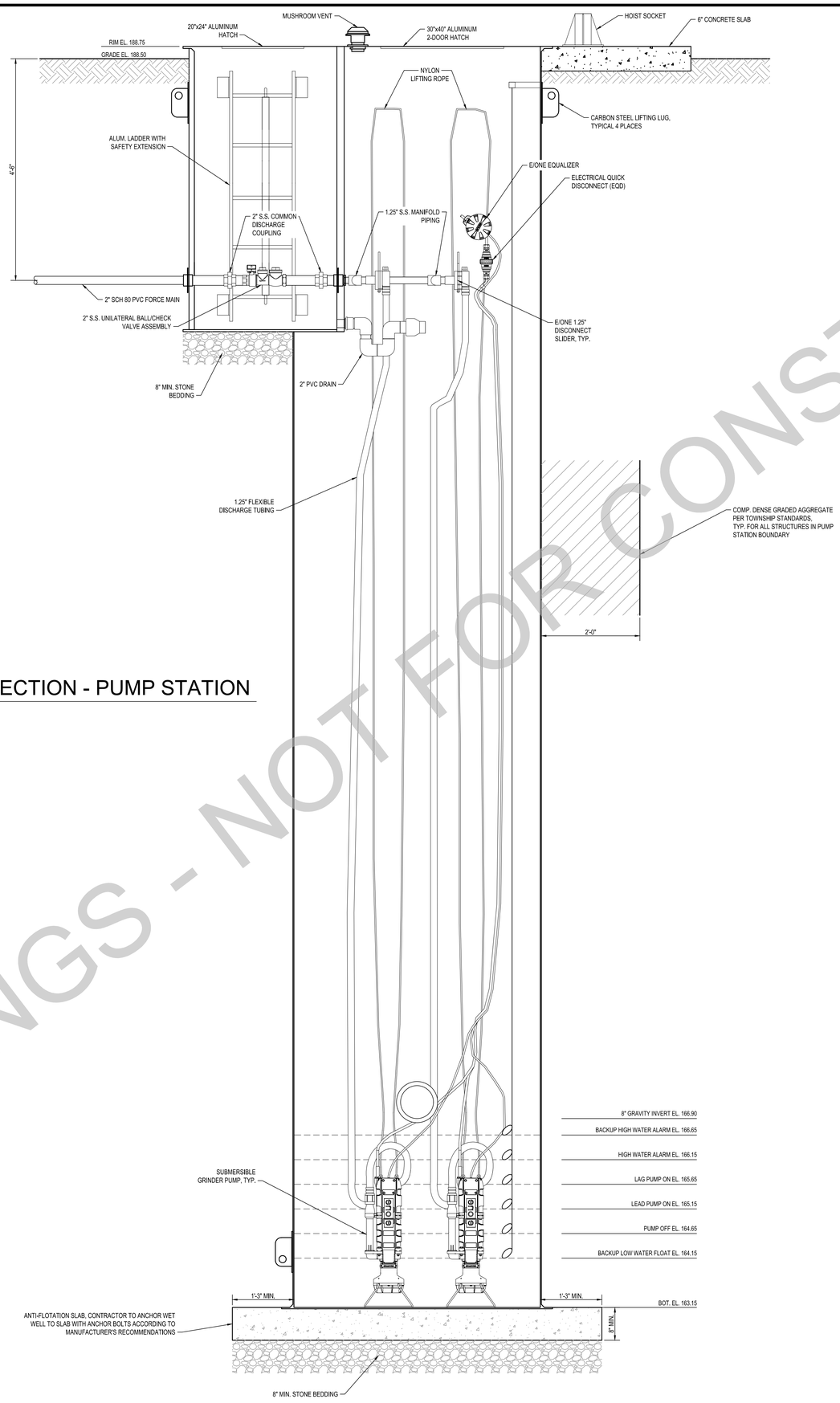

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SECTION - PUMP STATION

GRAPHIC SCALE
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1 in. = 1 ft.

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
PUMP STATION 3 - SECTION VIEW
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
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ELECTRICAL NOTES AND SPECIFICATIONS

1. ALL WORK SHALL BE DONE IN CONFORMANCE WITH ALL LOCAL AND STATE CODES RULES AND REGULATIONS, THE LATEST ADOPTED JURISDICTIONAL CODES, AND OF THE AUTHORITY HAVING JURISDICTION.

2. OBTAIN AND PAY FOR ALL PERMITS, ALL FEES AND ALL TAXES.

3. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHENEVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE".

4. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, FIXTURES, SERVICES AND PERFORM ALL OPERATIONS REQUIRED FOR A COMPLETE AND SAFE INSTALLATION OF THE ELECTRICAL SYSTEMS AND RELATED WORK. ELECTRICAL SYSTEMS AND EQUIPMENT SHALL IN GENERAL INCLUDE THE FOLLOWING:
   - 4.A. GENERAL PROVISIONS FOR ELECTRICAL WORK
   - 4.B. WIRING, DISTRIBUTION EQUIPMENT, RACEWAYS AND DEVICES
   - 4.C. LIGHTING FIXTURES AND LAMPS
   - 4.D. GROUNDING SYSTEM
   - 4.E. MECHANICAL EQUIPMENT, MOTORS AND PLUMBING EQUIPMENT, WIRING AND CONDUIT
   - 4.F. INSTALLATION AND ALL CONNECTIONS.

5. PROVIDE ALL MATERIAL AND EQUIPMENT NOT INDICATED AS EXISTING IN THE CONTRACT DOCUMENTS. ALL MATERIAL SHALL BE NEW AND THE BEST PRODUCTS OF REPUTABLE MANUFACTURERS AND SHALL
6. BE IN NEW CONDITION AT ACCEPTANCE OF WORK.

7. PROVIDE A GUARANTEE TO COVER ALL MATERIALS, LABOR AND EQUIPMENT. GUARANTEE SHALL BE
8. FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. GUARANTEE SHALL COVER PAYMENT FOR ANY REPAIRS OR REPLACEMENTS CAUSED BY DEFECTIVE WORKMANSHIP OR FAULTY MATERIALS WITHIN THE PERIOD COVERED BY THE GUARANTEE.

9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NECA-1 GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION.

10. THE CONTRACTOR SHALL WALK THE WORK SITE PRIOR TO BIDDING AND VERIFY EXISTING CONDITIONS. DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE ENGINEERING ASSESSMENT AT THE TIME OF DESIGN.CIRCUITS SHOWN ARE BASED ON RECORD DRAWING AND FIELD CONDITIONS. CONDUIT SHALL NOT BE CONSIDERED AS DIRECT PATH STRAIGHT RUNS. THE CONTRACTOR SHALL EXPECT TO ROUTE CONDUIT AROUND EXISTING STRUCTURAL COMPONENTS AND ALL EQUIPMENT. THE CONTRACTOR SHALL PROVIDE REQUIRED PULL BOXES TO MAINTAIN NO MORE THAN FOUR 90 DEGREE EQUIVALENT BENDS IN EACH CONDUIT RUN.

11. PROVIDE ALL SCAFFOLDING, RIGGING, HOISTING, AND SERVICES NECESSARY FOR ERECTION AND DELIVERY INTO THE PREMISES OF ANY EQUIPMENT AND APPARATUS, WHETHER FURNISHED BY THIS CONTRACT OR OWNER, AND REMOVAL OF SAME FROM PREMISES WHEN NO LONGER REQUIRED.

12. INSTALL ALL WORK IN A NEAT AND ORDERLY MANNER, USING ONLY WORKMEN THOROUGHLY QUALIFIED IN THE TRADE OR DUTIES THEY ARE TO PERFORM. ROUGH WORK WILL BE REJECTED.

13. UNLESS OTHERWISE REQUIRED BY TRADE CUSTOM OR SPECIFIED UNDER ANOTHER SECTION OF THE SPECIFICATIONS, CUTTING AND PATCHING SHALL BE DONE BY THE APPROPRIATE TRADE. PROVIDE SKETCHES SHOWING THE LOCATIONS AND SIZES OF ALL OPENINGS, CHASES ETC. REQUIRED.

14. DO NOT CUT STRUCTURAL MEMBERS WITHOUT THE APPROVAL OF THE ARCHITECT/ENGINEER, AND ALL SUCH CUTTING SHALL BE DONE IN MANNER DIRECTED BY HIM.

15. MAINTAIN CLEAN WORK AREA AT ALL TIMES DURING CONSTRUCTION.

16. TEST ALL LIGHTING, POWER, FIRE ALARM AND OTHER SYSTEMS, SYSTEMS SHALL OPERATE SATISFACTORILY AS DESIGNED AND INTENDED. REPORT ANY DEFICIENCIES TO THE ARCHITECT/ENGINEER.

17. PROVIDE A FIELD-APPLIED WARNING LABEL ON EACH SWITCHBOARD, PANELBOARD, CONTROL PANEL, STARTER, VFD, AND MOTOR CONTROL CENTER TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARD, PER NEC 110.16.

18. GENERAL PROVISION FOR ELECTRICAL WORK:

   18.A. DRAWINGS: ELECTRICAL DRAWINGS ARE CONSIDERED DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND SYSTEMS. REFER TO ARCHITECTURAL DRAWINGS TO VERIFY LOCATION OF EQUIPMENT, ETC. COORDINATE ROUGH-IN REQUIREMENTS AND INSTALLATION REQUIREMENTS WITH OTHER TRADES.

   18.B. QUALITY OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KIND, FREE FROM DEFECTS, AND LISTED BY UNDERWRITERS LABORATORIES, INC. AND BEARING THEIR LABEL.

   18.C. VOLTAGE CHARACTERISTICS: 480/277 VOLT - 3 PHASE, 4 WIRE AND 240/120 VOLT, 1 PHASE, 3 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL AS NOTED.

   18.D. SHOP DRAWINGS:
   - 18.D.1. SUBMIT ELECTRONIC SHOP DRAWINGS FOR ALL FIXTURES AND DEVICES. OBTAIN APPROVAL BEFORE EQUIPMENT IS ORDERED, BUILT OR INSTALLED. CATALOGS, PAMPHLETS, OR OTHER DOCUMENTS SUBMITTED TO DESCRIBE ITEMS FOR WHICH APPROVAL IS BEING REQUESTED SHALL BE AS SPECIFIED AND IDENTIFICATION CATALOG, PAMPHLET, ETC., OF ITEM SUBMITTED SHALL BE CLEARLY NAMED IN INK. DATA OF A GENERAL NATURE AND FAXES WILL NOT BE ACCEPTED. SUBMITTAL SHALL INCLUDE CONTRACTOR'S NAME AND NAME OF JOB.
     - 18.D.1.a. LIGHTING FIXTURES AND CONTROLS
     - 18.D.1.b. WIRING DEVICES AND DEVICE PLATES
     - 18.D.1.c. BUILDING WIRE
     - 18.D.1.d. DISTRIBUTION EQUIPMENT (PANEL BOARDS, TRANSFORMERS, ETC)
     - 18.D.1.e. SAFETY SWITCHES
     - 18.D.1.f. RGS, IMC, EMT, PVC CONDUIT

   18.E. INSTALL ALL NEW WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES.

   18.F. VISIT SITE AND INSPECT EXISTING FACILITIES BEFORE BID IN ORDER TO ENSURE PROPER EVALUATION OF WORKING CONDITIONS AND LOCATION OF EXISTING EQUIPMENT.

19. ELECTRICAL DISTRIBUTION SYSTEMS STUDIES:

   19.A. SUBMIT A COMPUTER BASED ELECTRICAL DISTRIBUTION SYSTEMS STUDY FOR THE NEW CRITICAL SYSTEMS INCLUDING BUT NOT LIMITED TO PANELBOARDS, CIRCUIT BREAKERS, DISCONNECTS, AND AUTOMATIC TRANSFER SWITCHES.SERVED FROM THE NEW CRITICAL GENERATOR, STUDIES SHALL INCLUDE THE FOLLOWING:
   - 19.A.1. COORDINATION STUDY:OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDIES TO DETERMINE OVERCURRENT PROTECTIVE DEVICES AND TO DETERMINE OVERCURRENT PROTECTIVE DEVICE SETTINGS FOR SELECTIVE TRIPPING.
     - 19.A.1.a. STUDY RESULTS SHALL BE USED TO DETERMINE COORDINATION OF SERIES-RATED DEVICES.
   - 19.A.2. SHORT CIRCUIT STUDY:FAULT-CURRENT STUDY TO DETERMINE THE MINIMUM INTERRUPTING CAPACITY OF CIRCUIT PROTECTIVE DEVICES.
   - 19.A.3. ARC-FLASH HAZARD ANALYSIS: ARC-FLASH STUDY TO DETERMINE THE ARC-FLASH HAZARD DISTANCE AND THE INCIDENT ENERGY TO WHICH PERSONNEL COULD BE EXPOSED DURING WORK ON OR NEAR ELECTRICAL EQUIPMENT.
   - 19.A.4. PRIOR TO RELEASE AND INSTALLATION OF ANY ELECTRICAL DISTRIBUTION EQUIPMENT, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORM A COORDINATION STUDY AND VERIFY EQUIPMENT RATINGS.

   19.B. STUDIES SHALL COMPLY WITH THE FOLLOWING:
   - 19.B.1. IEEE 242, RECOMMENDED PRACTICE FOR PROTECTION AND COORDINATION OF INDUSTRIAL AND COMMERCIAL POWER SYSTEMS.
   - 19.B.2. IEEE 399, RECOMMENDED PRACTICE FOR INDUSTRIAL AND COMMERCIAL POWER SYSTEMS ANALYSIS.
   - 19.B.3. IEEE 1584, GUIDE FOR PERFORMING ARC FLASH CALCULATION

   19.C. SUBMITTALS:
   - 19.C.1. FOR COMPUTER SOFTWARE PROGRAM TO BE USED FOR STUDIES.
   - 19.C.2. COORDINATION STUDY
     - 19.C.2.a. SUBMIT THE FOLLOWING AFTER THE APPROVAL OF SYSTEM PROTECTIVE DEVICES SUBMITTALS. SUBMITTALS SHALL BE IN DIGITAL FORM.
     - 19.C.2.a.1. COORDINATION-STUDY INPUT DATA, INCLUDING COMPLETED COMPUTER PROGRAM INPUT DATA SHEETS.
     - 19.C.2.a.2. STUDY AND EQUIPMENT EVALUATION REPORTS.
     - 19.C.2.b. OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY REPORT; SIGNED, DATED, AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER.
     - 19.C.2.b.1. SUBMIT STUDY REPORT FOR ACTION PRIOR TO RECEIVING FINAL APPROVAL OF DISTRIBUTION EQUIPMENT SUBMITTALS. IF FORMAL COMPLETION OF STUDIES WILL CAUSE DELAY IN EQUIPMENT MANUFACTURING, OBTAIN APPROVAL FROM ARCHITECT FOR PRELIMINARY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT SELECTION OF DEVICES AND ASSOCIATED CHARACTERISTICS IS SATISFACTORY.
   - 19.C.3. SHORT CIRCUIT STUDY
     - 19.C.3.a. SUBMIT THE FOLLOWING AFTER THE APPROVAL OF SYSTEM PROTECTIVE DEVICES SUBMITTALS. SUBMITTALS SHALL BE IN DIGITAL FORM.
     - 19.C.3.a.1. SHORT-CIRCUIT STUDY INPUT DATA, INCLUDING COMPLETED COMPUTER PROGRAM INPUT DATA SHEETS,
     - 19.C.3.a.2. SHORT-CIRCUIT STUDY AND EQUIPMENT EVALUATION REPORT; SIGNED, DATED, AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER.
     - 19.C.3.a.2.a. SUBMIT STUDY REPORT FOR ACTION PRIOR TO RECEIVING FINAL APPROVAL OF DISTRIBUTION EQUIPMENT SUBMITTALS. IF FORMAL COMPLETION OF STUDIES WILL CAUSE DELAY IN EQUIPMENT MANUFACTURING, OBTAIN APPROVAL FROM ARCHITECT FOR PRELIMINARY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT SELECTION OF DEVICES AND ASSOCIATED CHARACTERISTICS IS SATISFACTORY.
     - 19.C.3.a.2.b. REVISED ONE-LINE DIAGRAM, REFLECTING FIELD INVESTIGATION RESULTS AND RESULTS OF SHORT-CIRCUIT STUDY
   - 19.C.4. ARC FLASH HAZARD ANALYSIS
     - 19.C.4.a. STUDY SUBMITTALS: SUBMIT THE FOLLOWING SUBMITTALS AFTER THE APPROVAL OF SYSTEM PROTECTIVE DEVICES SUBMITTALS. SUBMITTALS SHALL BE IN DIGITAL FORM.
     - 19.C.4.a.1. ARC-FLASH STUDY INPUT DATA, INCLUDING COMPLETED COMPUTER PROGRAM INPUT DATA SHEETS.
     - 19.C.4.a.2. ARC-FLASH STUDY REPORT; SIGNED, DATED, AND SEALED BY POWER SYSTEMS ANALYSIS SPECIALIST.
     - 19.C.4.a.3. SUBMIT STUDY REPORT FOR ACTION PRIOR TO RECEIVING FINAL APPROVAL OF DISTRIBUTION EQUIPMENT SUBMITTALS. IF FORMAL COMPLETION OF STUDIES WILL CAUSE DELAY IN EQUIPMENT MANUFACTURING, OBTAIN APPROVAL FROM ARCHITECT FOR PRELIMINARY SUBMITTAL OF SUFFICIENT STUDY DATA TO ENSURE THAT SELECTION OF DEVICES AND ASSOCIATED CHARACTERISTICS IS SATISFACTORY.
   - 19.C.5. ELECTRICAL EQUIPMENT ORDERED PRIOR TO SUBMITTAL OF POWER SYSTEM STUDIES ARE NOT COMPLIANT WITH THESE SPECIFICATIONS, AND ARE SUBJECT TO REMOVAL AND REPLACEMENT AT NO COST TO OWNER WHERE NOT IN COMPLIANCE WITH CODE AND CONTRACT DOCUMENTS FOR SELECTIVE COORDINATION.

   19.D. QUALITY ASSURANCE:
   - 19.D.1. STUDY SHALL BE PERFORMED USING COMMERCIALLY DEVELOPED AND DISTRIBUTED SOFTWARE DESIGNED SPECIFICALLY FOR POWER SYSTEM ANALYSIS.
   - 19.D.2. SOFTWARE ALGORITHMS SHALL COMPLY WITH REQUIREMENTS OF STANDARDS AND GUIDES SPECIFIED IN THIS SECTION.
   - 19.D.3. STUDIES SPECIALIST QUALIFICATIONS: PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE PROJECT IS LOCATED. ALL ELEMENTS OF THE STUDY SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION AND CONTROL OF THIS PROFESSIONAL ENGINEER.
   - 19.D.4. STUDY REPORTS SHALL BE SIGNED AND SEALED BY POWER SYSTEMS ANALYSIS SPECIALIST.

   19.E. PRODUCTS:
   - 19.E.1. ESA INC.
   - 19.E.2. POWER ANALYTICS, CORPORATION
   - 19.E.3. SKM SYSTEM ANALYSIS, INC
   - 19.E.4. OR APPROVED EQUAL

   19.F. REPORT CONTENTS:
   - 19.F.1. EXECUTIVE SUMMARY OF STUDY FINDINGS
   - 19.F.2. STUDY DESCRIPTIONS, PURPOSE, BASIS, AND SCOPE, INCLUDE CASE DESCRIPTIONS, DEFINITION OF TERMS, AND GUIDE FOR INTERPRETATION OF RESULTS.
   - 19.F.3. ONE-LINE DIAGRAM OF MODELED POWER SYSTEM
   - 19.F.4. COMMENTS AND RECOMMENDATIONS FOR SYSTEM IMPROVEMENTS OR REVISIONS IN A WRITTEN DOCUMENT, SEPARATE FROM ONE-LINE DIAGRAM.
   - 19.F.5. PROTECTIVE DEVICE COORDINATION STUDY,
   - 19.F.6. TIME-CURRENT COORDINATION CURVES
   - 19.F.7. PROTECTIVE DEVICE EVALUATION
   - 19.F.8. SHORT-CIRCUIT STUDY INPUT DATA
   - 19.F.9. SHORT-CIRCUIT STUDY OUTPUT REPORTS.
   - 19.F.10. ARC-FLASH STUDY OUTPUT REPORTS
   - 19.F.11. INCIDENT ENERGY AND FLASH PROTECTION BOUNDARY CALCULATIONS
   - 19.F.12. ARC FLASH WARNING LABEL

20. UTILITY COORDINATION: IT SHALL BE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE INSTALLATION OF ALL UTILITY ITEMS, INCLUDING THOSE THAT ARE LISTED IN NEC 90.2(D)(4) - (5), WITH THE UTILITY PROVIDER AND THE UTILITY PROVIDER'S CONTRACTOR. THESE ITEM INCLUDE, BUT ARE NOT LIMITED TO:
   - 20.A. ANY REQUIRED CONDUIT SIZES, TYPES AND INSTALLATION METHODS.
   - 20.B. ENCLOSURE SIZES AND TYPES,
   - 20.C. CONCRETE EQUIPMENT PADS AND UTILITY EQUIPMENT LOCATIONS.
   - 20.D. REQUIRED UTILITY FAULT AND SHORT-CIRCUIT CURRENT INFORMATION,
   - 20.E. ANY ITEMS RELATED TO THIS PARAGRAPH SHOWN OR IMPLIED IN THE DRAWINGS, ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY.

21. WIRING, DISTRIBUTION EQUIPMENT AND DEVICES:

   21.A. CONDUCTORS: COPPER, IN ACCORDANCE WITH ASTM STANDARDS, SIZE REFERENCES AWG. CONDUCTORS ARE BASED ON 90°C RATING. #10 AWG AND SMALLER - SOLID, STRANDED THHW OR THHN 600 VOLT. MINIMUM SIZE: #12 AWG.
   - 21.A.1. INTERIOR AND MAIN SERVICE WIRING: 600V, THHN/THWN: #8 AWG AND LARGER - STRANDED THHW OR THHN 600 VOLT. MINIMUM SIZE: #12 AWG.
   - 21.A.2. WIRING FOR PUMP POWER CONNECTIONS NOT MADE IN WET WELL, LIGHTING, AND RECEPTACLES: 600V, XHHW-2: #8 AWG AND LARGER - STRANDED THHW OR THHN 600 VOLT. MINIMUM SIZE: #12 AWG.
   - 21.A.3. PUMP POWER WIRING: 600V, RHW-2/RW90: ASTM B3, ASTM B172, ASTM B173, ASTM B174, UL-44 SUBMERSIBLE PUMP CABLE , BASED ON 90°C RATING, MULTIPLEX PLUS GROUND CABLE. COORDINATE TYPE WITH PUMP MANUFACTURER'S RECOMMENDATION.
   - 21.A.4. PUMP CONTROL WIRING: 600V, UL-83 AND UL-1581 SUBMERSIBLE PUMP CABLE , BASED ON 75°C RATING, MULTIPLEX PLUS GROUND CABLE. COORDINATE TYPE WITH PUMP MANUFACTURER'S.
   - 21.A.5. PUMP MONITORING, NON-SUBMERSIBLE, 600V, TWISTED SHIELDED PAIR: UL-1581, UL-1202.
   - 21.A.6. PUMP POWER PANEL: 600V, MTW-90: #14 AWG MINIMUM SIZE.
   - 21.A.7. ACCORDANCE WITH THE NEC. CABLE MUST BE SUPPORTED IN A NEAT AND ORDERLY MANNER. CONTRACTOR SHALL PROVIDE NEUTRAL CONDUCTOR IN SWITCH BOXES COMPLYING WITH NEC 404.2(C).
   - 21.A.8. ALL CONDUCTORS SHALL BE IDENTIFIED BY COLOR AS INDICATED IN THE COLOR CODE CHART.

	PHASE A	PHASE B	PHASE C	NEUTRAL	GROUND
240/120V	BLACK	RED	N/A	WHITE	GREEN
480/277V	BROWN	ORANGE	YELLOW	GRAY	GREEN

22. RACEWAYS:

   22.A. ABOVE GRADE: RIGID ALUMINUM CONDUIT (RAL).

   22.B. MINIMUM 1/2" EXCEPT AS NOTED OR REQUIRED FOR WIRING.

   22.C. ALL FITTINGS AND COUPLINGS SHALL BE COMPRESSION, LISTED FOR ENVIRONMENT INSTALLED - CAST FITTINGS PROHIBITED.

   22.D. BELOW GRADE:
   - 22.D.1. NON-HAZARDOUS LOCATIONS: MINIMUM 3/4" RIGID NON-METALLIC CONDUIT: PVC SCHEDULE 80.
   - 22.D.2. HAZARDOUS LOCATIONS: DIRECT BURIED TYPE PVC SCHEDULE 80 WITH THREADED RAL CONDUIT, COUPLINGS AND FITTINGS SHALL BE LISTED FOR BIRRET BURRY. CONDUIT SHALL BE INSTALLED A MINIMUM OF 24" BELOW GRADE AND SEALED IN ACCORDANCE WITH NEC 515.8 AND 515.9.
   - 22.D.3. NON-HAZARDOUS CONDUIT CONNECTIONS ROUTED THROUGH HAZARDOUS
   - 22.D.4. LOCATION BOUNDARIES SHALL MEET THE REQUIREMENTS OF 18.D.2.

   22.E. ELBOWS: PVC COATED RIGID STEEL.

   22.F. EMT AND IMC ARE PROHIBITED.

   22.G. HAZARDOUS LOCATIONS: PROVIDE CONDUIT, FITTINGS, SEALS, AND BOXES LISTED FOR THE INDICATED CLASS AND DIVISION.

23. ENCLOSURES:

   23.A. INTERIOR: U.O.N., NEMA 12 TYPE 316 STAINLESS STEEL (SS).

   23.B. EXTERIOR, POWER: U.O.N.,NEMA 4X TYPE 316 STAINLESS STEEL (SS).

   23.C. TELECOMM/DATA: .NEMA 4X HOT COMPRESSION MOLDED FIBERGLASS REINFORCED POLYESTER MATERIAL

   23.D. HANDHOLE: QUAZITE POLYMER CONCRETE RATED TIER-15 .

24. TERMINATIONS: ALL EQUIPMENT PROVIDED ON THE PROJECT, INCLUDING PANELBOARDS AND DISCONNECT SWITCHES, SHALL HAVE MANUFACTURER TERMINATIONS RATED AT 75°C.

SHORT-CIRCUIT STUDY:

25. PANELBOARDS: PANELBOARD(S) SHALL HAVE MOLDED CASE, BOLT-ON CIRCUIT BREAKERS AND HARD-DRAWN COPPER PHASE, NEUTRAL AND GROUND BUSSES, BARRIERS SHALL BE PLACED SUCH THAT NO ENERGIZED, UNINSULATED, UNGROUNDED BUSBAR OR TERMINAL IS EXPOSED TO INADVERTENT CONTACT BY PERSONS OR MAINTENANCE EQUIPMENT WHILE SERVICING LOAD TERMINATIONS IN PANELBOARDS. PANELBOARDS SHALL BE MOUNTED IN A STEEL CABINET, FLUSH OR SURFACE MOUNTED AS SHOWN ON DRAWINGS. NEMA -12 TYPE 316 STAINLESS STEEL ENCLOSURE CABINETS SHALL BE BUILT OF MATERIAL NOT THINNER THAN NO. 12 GAUGE STAINLESS STEEL AND LARGE ENOUGH TO CONTAIN THE PANELS AND ALLOW MINIMUM OF 4" GUTTER SPACE ALL AROUND. PROVIDE A TYPEWRITTEN DIRECTORY, NOT HANDWRITTEN, ON FACTORY PROVIDE PANEL DIRECTORY INSIDE EACH PANEL INDICATING THE FUNCTION AND LOCATION OF OUTLETS SERVING EACH CIRCUIT. COMPUTER GENERATED PANEL SCHEDULES OR COMPUTER GENERATED FACSIMILES NOT PROVIDED BY MANUFACTURER, WILL NOT BE ACCEPTED. ALL NEW PANELS SHALL PROVIDE SUFFICIENT SPACE WITHIN THE PANEL ENCLOSURES TO ALLOW FOR CHECK METERING PROVISIONS AS REQUIRED BY 1989 ASHRAE 90.1 ARTICLE 5.4. BASIS OF DESIGN: ABB/GE SELLMGEAR TYPE 'RS' (480/277V-3P,4W) AND TYPE 'RQ' (240/120V-1P,3W). CULTER-HAMMER, SIEMENS, AND SQUARE-D SHALL BE ACCEPTABLE.

26. CIRCUIT BREAKERS: CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC QUICK-MAKE, QUICK-BREAK, BOLT-ON TYPE WITH MANUALLY OPERATED INSULATED TRIP-FREE HANDLE, MULTI-POLE TYPES WITH INTERNAL COMMON TRIP BAR. TERMINALS SUITABLE FOR COPPER CONDUCTORS.

27. TRANSFORMER: TRANSFORMER SHALL BE DRY TYPE, COPPER WINDING AND SHALL CONFORM TO NEMA STANDARDS ST-1, TP-1, AND ASA STANDARDS FOR TRANSFORMERS, REGULATOR CLASS 220°C INSULATION WHEN OPERATING AT 40°C AMBIENT TEMPERATURE. PROVIDE FOUR 2-1/2% TAPS BELOW AND TWO 2/1/2% TAPS ABOVE, LISTED TO US UL-E25872 AND UL-E77014, UL-LISTED TO TYPE NEMA-3R, SQUARE-D EE25S3H OR EQUAL.

28. DISCONNECT SWITCHES: DISCONNECT SWITCHES SHALL BE HEAVY-DUTY, ENCLOSED SAFETY SWITCHES AS MANUFACTURED BY SIEMENS. SWITCHES SHALL BE OF THE QUICK-MAKE, QUICK-BREAK TYPE WITH INTERLOCKING COVERS AND STEEL BOXES OF THE TYPE ENCLOSURE REQUIRED FOR EACH LOCATION, SQUARE D, CUTLER HAMMER WILL BE CONSIDERED. MATCH BASE BUILDING DISTRIBUTION EQUIPMENT.

   28.A. SERVICE RATED DISCONNECT: BARRIERS SHALL BE PLACED IN SERVICE EQUIPMENT SUCH THAT NO UNINSULATED, UNGROUNDED SERVICE BUSBAR OR SERVICE TERMINAL IS EXPOSED TO INADVERTENT

   28.B. CONTACT BY PERSONS OR MAINTENANCE EQUIPMENT WHILE SERVICING LOAD

   28.C. TERMINATIONS. PROVIDE LABEL INDICATING "MAIN SERVICE SWITCH".

29. WIRING DEVICES: ALL DEVICES SHALL BE MOUNTED IN A RECESSED JUNCTION BOX AND SHALL BE THE PRODUCT OF THE SAME MANUFACTURER, P&S, HUBBELL, BRYANT OR ARROW-HART. SEE ARCHITECTS SPECIFICATION FOR DEVICE COLOR AND COVER PLATE.

   29.A. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLES: 20A, FEED THROUGH TYPE, TAMPER-RESISTANT, WEATHER RESISTANCE SELF TESTING WITH INDICATOR LIGHT.

   29.B. CLASS I, DIVISION 1 NEMA 7 RECEPTACLE: HUBBEL UGR2-20231QW, OR MANUFACTURER EQUAL, WITH DEAD END ENCLOSURE.

   29.C. ALL RECEPTACLES SHALL BE SPECIFICATION GRADE WITH A GROUNDING CONDUCTOR WIRED THROUGH AND CONNECTED TO ALL RECEPTACLES. ALL VERITICALLY INSTALLED INTERIOR RECEPTACLES SHALL BE INSTALLED GROUND UP.

   29.D. PROVIDE PIGTAILS FROM GROUND CONDUCTOR, ONE TO GROUND CONNECTOR ON RECEPTACLE AND ONE TO THE BACK BOX.

   29.E. DEVICE PLATES: SPECIFICATIONS FOR TYPE AND COLOR.

   29.F. OUTLET BOXES: OUTLET BOXES SHALL BE RECESSED MOUNTED AND SHALL BE CODE GAUGE STEEL AND OF SIZE REQUIRED FOR SPECIFIC CONDITIONS. BOXES SHALL BE RATE FOR ENVIRONMENT,

30. WALL UNIT HEATER/FAN (UH-1)

   30.A. HEATER/FAN SHALL BE 5000W, 480V-3P, WITH 500-CFM FAN, WITH 24 VDC CONTROL VOLTAGE CEILING MOUNTED,PROVIDE CEILING BRACKET.

   30.B. BASIS OF DESIGN: MARKEL P3PUH05-C-A-1-E-UHB-1-D, OR APPROVED EQUAL.

   30.C. DISCONNECT SHALL BE INTEGRAL TO THE HEATER/FAN AS PART OF A UL-LISTED ASSEMBLY.

31. EXHAUST FAN:

   31.A. LOUVER SHALL BE 17" X 17" WITH BACKDRAFT DAMPERS.

   31.B. BASIS OF DESIGN: LOREN COOK 12A17D (519 CFM) PROVIDE FAN WITH BACKDRAFT DAMPERS.

32. THERMOSTAT

   32.A. THERMOSTAT SHALL BE WALL-MOUNTED AND CONTROL BOTH HEATER AND EXHAUST FAN.

   32.B. THERMOSTAT SHALL HAVE 24 VDC CONTROL POWER.

   32.C. SEQUENCE OF OPERATION:
   - 32.C.1. SEQUENCE OF OPERATION FOR HEATER: ON A FALL IN SPACE TEMPERATURE BELOW 62-DEGREES FAHRENHEIT, ENERGIZE THE UNIT HEATER; ON A RISE IN SPACE TEMPERATURE ABOVE 68-FAHRENHEIT, DE-ENERGIZE THE UNIT HEATER.
   - 32.C.2. SEQUENCE OF OPERATION FOR EXHAUST FAN: ON A RISE IN SPACE TEMPERATURE ABOVE 80-DEGREES FAHRENHEIT, ENERGIZE THE EXHAUST FAN; ON A FALL IN SPACE TEMPERATURE BELOW 70- FAHRENHEIT , DE-ENERGIZE THE EXHAUST FAN.

33. INSTAHOT (APPROVED MANUFACTURERS):

   33.A. SEICCO CA-12-240, 240V, 1PH , 12 KW.

   33.B. TEMPRA 12 TREND 239213 240V, 12 KW (BASIS OF DESIGN).

34. LIGHTING FIXTURES AND LAMPS:

   34.A. PROVIDE COMPLETE SYSTEM OF LIGHTING FIXTURES, LAMPS, ACCESSORIES AND SUPPORTS AS SPECIFIED AND SHOWN. FOR TYPES, REFER TO SCHEDULE.

   34.B. PROVIDE 0° BALLASTS FOR EXTERIOR FIXTURES.

35. GROUNDING SYSTEM:

   35.A. SERVICE: PROVIDE COMPLETE SYSTEM OF GROUND CONDUCTORS, ELECTRODES AND ACCESSORIES TO EFFECTIVELY AND PERMANENTLY GROUND ELECTRIC SERVICE.

   35.B. EQUIPMENT: GROUND NON-CURRENT CARRYING METAL PARTS OF THE ELECTRICAL SYSTEM. PROVIDE A SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR WITH ALL FEEDERS AND BRANCH CIRCUITS, SIZED IN ACCORDANCE WITH THE OVERPROTECTIVE DEVICE SERVING THAT FEEDER OR BRANCH CIRCUIT.

36. INSTALLATION:

   36.A. CUT CONDUIT ENDS SQUARE, REAM SMOOTH AND DRAW UP TIGHT WITH CONDUIT COUPLINGS. PROVIDE NYLON BUSHING AT ALL OPEN CONDUIT ENDS.

   36.B. LEAVE WIRE SUFFICIENTLY LONG TO PERMIT MAKING FINAL CONNECTIONS.

   36.C. SET BOXES SQUARE AND TRUE WITH BUILDING FINISH.

   36.D. MAINTAIN CODE REQUIRED CLEARANCES FOR DISTRIBUTION EQUIPMENT AND DEVICES IN ALL LOCATIONS.

   36.E. THE QUANTITY OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS. ONLY THOSE WHERE CLARIFICATION IS NECESSARY ARE INDICATED. PROVIDE ALL WIRES NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON PLANS OR NOT.

   36.F. ALL EQUIPMENT, SUCH AS STARTERS, RELAYS, CONTACTORS, SWITCHES, PANELS, AND OTHER DISTRIBUTION EQUIPMENT SHALL HAVE IDENTIFICATION PLATES OF BLACK LAMINATED PLASTIC WITH 1/2" WHITE LETTERS. EQUIPMENT IDENTIFICATION SHALL MATCH THE CONTRACT DOCUMENTS.

   36.G. PROCESS MECHANICAL EQUIPMENT MOTORS AND CONTROLLERS: PROVIDE ALL POWER WIRING FROM PANELS, SWITCHES, ETC. THROUGH CONTROLLERS AND TO THE MOTORS AND OTHER EQUIPMENT INDICATED ON THE PLANS. ALL CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE PROCESS MECHANICAL EQUIPMENT.

37. CONTACTOR-TYPE AUTOMATIC TRANSFER SWITCHES:

   37.A. MANUFACTURERS:
   - 37.A.1. GENERAC
   - 37.A.2. KOHLER
   - 37.A.3. ASCO
   - 37.A.4. SAME AS GENERATOR VENDOR.

   37.B. COMPLY WITH LEVEL 1 EQUIPMENT ACCORDING TO NFPA 110. ENCLOSURE SHALL BE NEMA 4XSS.

   37.C. SWITCH CHARACTERISTICS: DESIGNED FOR CONTINUOUS-DUTY REPETITIVE TRANSFER OF FULL-RATED CURRENT BETWEEN ACTIVE POWER SOURCES.

   37.D. LIMITATION: SWITCHES USING MOLDED-CASE SWITCHES OR CIRCUIT BREAKERS OR INSULATED-CASE CIRCUIT-BREAKER COMPONENTS ARE UNACCEPTABLE.

   37.E. SWITCH ACTION: DOUBLE THROW; MECHANICALLY HELD IN BOTH DIRECTIONS.

   37.F. CONTACTS: SILVER COMPOSITION OR SILVER ALLOY FOR LOAD-CURRENT SWITCHING. CONTACTOR-STYLE AUTOMATIC TRANSFER-SWITCH UNITS, RATED 600 A AND HIGHER, SHALL HAVE SEPARATE ARCING CONTACTS.

   37.G. CONDUCTOR CONNECTORS: SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES.

   37.H. MATERIAL: HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVITY.

   37.I. MAIN AND NEUTRAL LUGS: COMPRESSION TYPE.

   37.J. GROUND LUGS AND BUS-CONFIGURED TERMINATORS: COMPRESSION TYPE.

   37.K. CONNECTORS SHALL BE MARKED FOR CONDUCTOR SIZE AND TYPE ACCORDING TO UL 1008.

   37.L. AUTOMATIC DELAYED-TRANSITION TRANSFER SWITCHES: PAUSES OR STOPS IN INTERMEDIATE POSITION TO MOMENTARILY DISCONNECT BOTH SOURCES, WITH TRANSITION CONTROLLED BY PROGRAMMING IN THE AUTOMATIC TRANSFER-SWITCH CONTROLLER. INTERLOCKED TO PREVENT THE LOAD FROM BEING CLOSED ON BOTH SOURCES AT THE SAME TIME.
   - 37.L.1. ADJUSTABLE TIME DELAY: FOR OVERRIDE OF NORMAL-SOURCE VOLTAGE SENSING TO DELAY TRANSFER AND ENGINE START SIGNALS FOR ALTERNATIVE SOURCE. ADJUSTABLE FROM ZERO TO SIX SECONDS, AND FACTORY SET FOR ONE SECOND FIELD SET FOR 4 SECONDS.
   - 37.L.2. SOURCES SHALL BE MECHANICALLY AND ELECTRICALLY INTERLOCKED TO PREVENT CLOSING BOTH SOURCES ON THE LOAD AT THE SAME TIME.

   37.M. MANUAL SW

PUMP CONTROL PANEL (PCP) SPECIFICATIONS

1. PUMP CONTROL PANEL (PCP)

1.A. THIS SECTION SPECIFIES THE REQUIREMENTS FOR THE PUMP CONTROL PANEL (PCP), ITS COMPONENTS AND ASSOCIATED EQUIPMENT. THE PCP SHALL BE CAPABLE OF PROVIDING PUMP STATION CONTROL, MONITORING AND ALARM SIGNALIZATION AS REQUIRED IN THIS SECTION AND IN ACCORDANCE WITH THE TOWNSHIP OF HOPEWELL STANDARDS.

1.B. ALL PANEL COMPONENTS SHALL BE OF THE MOST CURRENT AND PROVEN DESIGN. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE PCP.

1.C. THE PUMP MANUFACTURER SHALL WARRANT THE UNITS BEING SUPPLIED AGAINST DEFECTS IN WORKMANSHIP AND MATERIAL FOR A PERIOD OF FIVE (5) YEARS OR 10,000 HOURS UNDER THE MUNICIPAL WASTEWATER PERMANENT INSTALLATION WARRANTY POLICY UNDER NORMAL USE, OPERATING AND SERVICE. THE WARRANTY SHALL BE IN PRINTED FORM AND APPLY TO ALL SIMILAR UNITS.

1.D. SUBMITTALS

1.D.1. SHOP DRAWINGS: SHOP DRAWINGS SHALL BE SUBMITTED AND SHALL INCLUDE A COMPLETE BILL OF MATERIAL, CATALOG INFORMATION, DESCRIPTIVE LITERATURE OF ALL COMPONENTS, WIRING DIAGRAMS, PLC SOFTWARE, AND PANEL LAYOUT DRAWINGS SHOWING DIMENSIONS TO ALL DEVICES.

2. PCP COMPONENTS

2.A. PANEL ENCLOSURE:
- 2.A.1. CODE GAUGE STAINLESS STEEL: NEMA 12 (INTERIOR - PUMP STATION #1 AND #2) OR NEMA 4X (EXTERIOR - PUMP STATION #3) , GASKETED WITH DRIP SHIELD. PROVIDE FOR RACK MOUNTING WITH EXTERIOR FLANGES.
- 2.A.2. PROVIDE LEG STAND KIT FOR ENCLOSURES WITH A HEIGHT GREATER THAN 48".
- 2.A.3. SINGLE 3-POINT LOCKING LATCH. ATTACH WITH STAINLESS STEEL SCREWS.
  - 2.A.3.a. REMOVABLE ALUMINUM INNER SWING PANEL.
  - 2.A.3.a. MINIMUM THICKNESS OF 0.125".
  - 2.A.3.b. CONTINUOUS STAINLESS STEEL PIANO TYPE HINGE.
  - 2.A.3.c. MINIMUM HORIZONTAL SWING OF 90°.
- 2.A.4. REMOVABLE ALUMINUM BACK PANEL,0.125" MINIMUM THICKNESS.
  - 2.A.4.a. ATTACH TO ENCLOSURE ON COLLAR STUDS.
  - 2.A.4.b. DO NOT USE SELF-TAPPING SCREWS.
- 2.A.5. FAN AND FILTER KIT/THERMOSTAT
  - 2.A.5.a. 24 VDC, 155-CFM.
  - 2.A.5.b. PFANNENBERG PF 43000 OR EQUAL
  - 2.A.5.c. PROVIDE THE NECESSARY EXHAUST.
- 2.A,6. GROUNDING BAR
  - 2.A.6.a. SQUARE D PK15GTA OR EQUAL.
- 2.A.7. MINIMUM AIC RATING: 10,000A
- 2.A.8. ENGRAVED NAMEPLATES ON DOOR MOUNTED HARDWARE. ATTACH WITH STAINLESS STEEL SCREWS.

2.B. MOTOR STARTING COMPONENTS:
- 2.B.1. NEMA RATED MAGNETIC MOTOR STARTERS.
  - 2.B.1.a. ACCEPTABLE PRODUCTS: SQUARE D (CLASS 8606), OR ABB.
  - 2.B.1.b. USE MOTOR STARTER CONTACTS EASILY REPLACEABLE WITHOUT REMOVING THE MOTOR'S STARTER FROM ITS MOUNTED POSITION.
  - 2.B.1.c. PROVIDE PHASE FAILURE, UNDERVOLTAGE RELEASE AND OVERLOAD PROTECTION ON ALL PHASES.
  - 2.B.1.d. REDUCED VOLTAGE SOFT-STARTER, VERIFY AND COORDINATE PRODUCT COMPATIBILITY WITH PUMP VENDOR .
  - 2.B.1.d.a. 240/120V-1P 1 HP: SCHNEIDER ATS01N112FT OR APPROVED EQUAL.
  - 2.B.1.d.b. 480V-3P: 2.4 HP AND 3.0 HP: SCHNEIDER ATS01N209RT OR APPROVED EQUAL.
  - 2.B.1.d.c. 480V-3P: 6.5 HP: SCHNEIDER ATS01N212RT OR APPROVED EQUAL.
  - 2.B.1.d.d. PROVIDE FUSE BLOCK AND FACT-ACTING FUSES PER NEC 430.52.
  - 2.B.1.d.e. FOR EACH PUMP PROVIDE COMPATIBLE H-O-A SWITCH FOR EACH PUMP.

2.C. CIRCUIT BREAKER AND OPERATING MECHANISM:
- 2.C.1. INPUT VOLTAGE 480V-3P,3W OR 240/120V-1P,3W, 60HZ.
- 2.C.2. PROVIDE THERMAL MAGNETIC AIR CIRCUIT BREAKER HAVING A MINIMUM SYMMETRICAL RMS INTERRUPTING RATING OF 14,000 AMPERES AT 480V-3P; 10,000 AMPS AT 240/120V .
- 2.C.3. PROVIDE 120W 24VDC POWER SUPPLY FOR FAN, THERMOSTAT, AND CONTROLLER.
- 2.C.4. FOR EXTERIOR PUMP PANEL , PROVIDE 500W STRIP HEATER, CHROMALOX SE-600 OR EQUAL.
- 2.C.5. PROVIDE PADLOCK OPERATING MECHANISM ON EACH MOTOR CIRCUIT BREAKER.
  - 2.C.5.a. LOCATE MECHANISM OPERATOR HANDLES ON EXTERIOR OF THE INNER SWING PANEL WITH INTERLOCKS WHICH PERMIT THE PANEL TO BE OPENED ONLY WHEN CIRCUIT BREAKERS ARE IN THE OFF POSITION.
- 2.C.6. PROVIDE CIRCUIT BREAKERS FROM SQUARE D OR GENERAL ELECTRIC/ABB.
- 2.C.7. PROVIDE INDUSTRIAL LOAD CENTER FOR EXTERIOR PUMP (BACKBOX, PANEL, COVER, AND CIRCUIT BREAKER), REFER TO PANEL SCHEDULE.
- 2.C.8. PROVIDE INTERNALLY MOUNTED SURGE PROTECTIVE DEVICE (SPD) FOR PUMP STATION #3 (REFER TO PLANS):
  - 2.C.8.a. MANUFACTURERS:
    - 2.C.8.a.a. ABB
    - 2.C.8.a.b. EATON
    - 2.C.8.a.c. SCHNEIDER
    - 2.C.8.a.d. SURGE SUPPRESSION (ILSCO).
  - 2.C.8.b. FOLLOWING CHARACTERISTICS:
    - 2.C.8.b.a. TYPE 2
    - 2.C.8.b.b. INTERNALLY MOUNTED, DIN-RAIL MOUNTED.
    - 2.C.8.b.c. MCOV: 300V, UL 1449 LISTED.
    - 2.C.8.b.d. NOMINAL DISCHARGE: 30 KA.
    - 2.C.8.b.e. MAX PEAK PER PHASE: 50 KA
    - 2.C.8.b.f. MAX SURGE CURRENT: 75 KA
    - 2.C.8.b.g. SCCR: EQUAL OR EXCEED 200 KA.
    - 2.C.8.b.h. PROTECTION MODES AND UL 1449 VPR FOR GROUNDED WYE CIRCUITS.
    - 2.C.8.b.i. 208/120V OR 240/120V SINGE-PHASE,THREE-WIRE CIRCUITS SHALL NOT EXCEED THE FOLLOWING: LINE TO NEUTRAL:1500V; LINE TO LINE: 600V.
    - 2.C.8.b.j. PROVIDE GREEN AND RED INDICATOR LIGHTS.

2.D. RECEPTACLE
- 2.D.1. FOR EXTERIOR CONTROL PANEL, 20A, 125V, 1P TAMPER-RESISTANT WEATHER-PROOF GFCI, ARROW-HART TWRSGF20B OR EQUAL.

2.E. COMPONENTS:
- 2.E.1. PROVIDE ALL NECESSARY CONTROL TRANSFORMERS AND OVERCURRENT DEVICES.
- 2.E.2. PROVIDE "H-O-A" SWITCHES FOR EACH MOTOR.
  - 2.E.2.a. UL RATED, HEAVY DUTY, 600 VAC, NEMA 4X, OIL-TIGHT SWITCHES.
  - 2.E.2.b. ACCEPTABLE PRODUCTS: ALLEN BRADLEY 800H OR SQUARE D CLASS 9001 SK.
  - 2.E.2.c. "HAND" POSITION NOT TO OVERRIDE MOTOR OVERLOAD SHUTDOWN.
- 2.E.3. PROVIDE THE FOLLOWING COMPONENTS WITH THE PANEL
  - 2.E.3.a. PILOT RUN LIGHT FOR EACH MOTOR.
  - 2.E.3.b. LOCKABLE ENCLOSURE.
  - 2.E.3.c. CONDENSATION HEATER.
  - 2.E.3.d. HIGH LEVEL ALARM INDICATION LIGHT.
  - 2.E.3.e. ALARM BELL SILENCE.
  - 2.E.3.f. GFI 20A DUPLEX RECEPTACLE WITH STAINLESS STEEL COVER.
  - 2.E.3.g. WEATHERPROOF SWITCH FOR FLOOD LIGHTS.
  - 2.E.3.h. CONTROL RELAYS.
  - 2.E.3.i. REMOTE ALARM TERMINALS.
  - 2.E.3.j. "SEAL FAILURE" INDICATOR LAMP.
- 2.E.4. "HIGH TEMPERATURE" INDICATOR LAMP.
  - 2.E.4.a. "POWER ON" INDICATING LAMP.
  - 2.E.4.b. TEMPERATURE FAILURE TEST PUSH-BUTTON.
  - 2.E.4.c. SEAL FAILURE TEST PUSH-BUTTON.
  - 2.E.4.d. TEMPERATURE AND SEAL FAILURE RESETS.
- 2.E.5. PUMP ALTERNATOR RELAY
  - 2.E.5.a. PROVIDE ELECTRICAL/MECHANICAL INDUSTRIAL DESIGN, CLASS 47, ACCEPTABLE PRODUCT: MODEL 47AB10AF BY FURNAS ELECTRIC.
  - 2.E.5.b. PROVIDE PUMP SEQUENCE SELECTOR SWITCH.
    - 2.E.5.b.a. PROVIDE MANUAL SELECTION OF EITHER PUMP NO. 1 OR NO. 2 AS THE "LEAD" PUMP.
    - 2.E.5.b.b. ACCEPTABLE PRODUCTS: ALLEN BRADLEY SERIES 800H OR SQUARE D CLASS 9001SK.
- 2.E.6. HIGH TEMPERATURE SHUTDOWN
  - 2.E.6.a. PROVIDE HIGH TEMPERATURE SHUTDOWN FOR EACH MOTOR UTILIZING THE TEMPERATURE SWITCHES EMBEDDED IN THE MOTOR WINDINGS.
    - 2.E.6.a.a. UNDER HIGH TEMPERATURE CONDITIONS THE SWITCH SHALL OPEN, DE-ENERGIZE THE MOTOR STARTER AND STOP THE PUMP MOTOR.
    - 2.E.6.a.b. AUTOMATIC RESET TYPE.
- 2.E.7. MOISTURE DETECTOR CONTROL (SEAL FAILURE):
  - 2.E.7.a. PROVIDE FOR EACH PUMP A FLOAT SWITCH SENSOR TO DETECT MOISTURE IN THE STATOR CHAMBER.
  - 2.E.7.b. DETECTION OF MOISTURE BY THE SENSOR SHALL DISRUPT THE MOTOR STARTING CIRCUIT OF THE PUMP.
  - 2.E.7.c. MOTOR SHALL REMAIN INOPERATIVE UNTIL PROBLEM IS CORRECTED, AND THE CONTROL CIRCUIT IS MANUALLY RESET.
- 2.E.8. PROVIDE OVERLOAD RESET DEVICE
  - 2.E.8.a. OPERABLE WITHOUT OPENING THE INNER SWING PANEL.

2.F. PROVIDE THE FOLLOWING COMPONENTS MOUNTED ON THE BACK PLATE:
- 2.F.1. LIGHTNING ARRESTOR: ACCEPTABLE PRODUCT: DELTA TYPE "LA".
- 2.F.2. PROVIDE POWER TERMINALS AND CONTROL TERMINALS.

2.G. DESIGN CONTROL SEQUENCE SO THAT PANEL IS FUNCTIONING AUTOMATICALLY AGAIN AFTER A POWER FAILURE AND MANUAL RESET IS NOT NECESSARY:
- 2.G.1. PROVIDE A TIME DELAY RELAY TO PREVENT BOTH PUMPS FROM STARTING SIMULTANEOUSLY AFTER POWER FAILURE. DELAY SHALL BE SET TO DELAY STARTING OF LEAD PUMP UNTIL GENERATOR VOLTAGE/FREQUENCY STABILIZES AND LAG PUMP SHALL BE EXTENDED UNTIL GENERATOR VOLTAGE/FREQUENCY HAS STABILIZED FOLLOWING STARTING OF LEAD PUMP.

2.H. PROVIDE ELAPSED TIME METER WIRED TO EACH MOTOR STARTER AT THE BOTTOM OF THE HEATER BLOCK:
- 2.H.1. SIX DIGIT, NON-RESETTABLE.
- 2.H.2. INDICATE TOTAL RUN TIME IN HOURS AND TENTHS.

2.I. PROVIDE A MOTOR AMMETER:
- 2.I.1. PANEL MOUNTED.
  - 2.I.1.a. SCALE RANGE GREATER THAN PUMP RATING.
  - 2.I.1.b. PROVIDE AN "OFF-L1-L2-L3" SELECTOR SWITCH.
  - 2.I.1.c. PROVIDE A "PUMP 1 - PUMP 2" SELECTOR SWITCH.
  - 2.I.1.d. ACCEPTABLE MANUFACTURER: GENERAL ELECTRIC.

2.J. CONTROL RELAYS:
- 2.J.1. HEAVY-DUTY INDUSTRIAL GRADE, TUBE BASE, PLUG-IN TYPE.
- 2.J.2. SILVER CADMIUM OXIDE CONTACTS AND LED INDICATING LIGHT.
- 2.J.3. ACCEPTABLE PRODUCTS
  - 2.J.3.a. ALLEN BRADLEY, BULLETIN 700, TYPE H.
  - 2.J.3.b. SQUARE D, CLASS 8501, TYPE K

2.K. ELECTRICAL SCHEMATIC:
- 2.K.1. PROVIDE A NUMBER INDEXED, LAMINATED ELECTRICAL SCHEMATIC DIAGRAM OF THE PUMP CONTROLS INCLUDING TERMINAL BOARD CONNECTIONS.
- 2.K.2. PERMANENTLY MOUNT ON THE INSIDE OF THE ENCLOSURE DOOR.

2.L. ATTACHMENT SCREWS:
- 2.L.1. 316 STAINLESS STEEL.

2.M. WIRING:
- 2.M.1. FACTORY WIRED COMPLETELY, EXCEPT FOR POWER SUPPLY, MOTOR, TEMPERATURE SWITCHES AND MOISTURE SENSOR, CONNECTIONS, AND MERCURY FLOAT SWITCHES. PROVIDE TERMINAL STRIP FOR ALL EXTERIOR CONNECTIONS.
  - 2.M.1.a. COMPLY WITH APPLICABLE STANDARDS OF NATIONAL ELECTRIC CODE.
  - 2.M.1.b. COLOR CODE AND NUMBER AS INDICATED ON FACTORY WIRING DIAGRAM.
  - 2.M.1.c. CONTROL WIRE: MTW 90°C #14 AWG.
- 2.M.2. ELECTRICALLY GROUND ALL COMPONENTS TO A COMMON GROUND SCREW MOUNTED ON THE REMOVABLE BACK PANEL.
- 2.M.3. GROUP ALL WIRING IN PLASTIC WIRE TROUGHS EXCEPT WIRING FROM THE 14 GAUGE BACKPLATE TO THE DOOR SHALL BE DONE IN SEPARATE BUNDLED HARNESSES FOR CONTROL CIRCUITS.
- 2.M.4. PROVIDE SUFFICIENT MOTOR LEAD WIRING AND FLOAT CONTROL WIRING TO MAKE CONNECTIONS IN THE JUNCTION BOX.

2.N. MOTOR POWER CABLE:
- 2.N.1. PROVIDE CABLE OF ADEQUATE LENGTH TO TERMINATE IN CONTROL PANEL JUNCTION BOX WITHOUT SPLICING.

2.O. ACCEPTABLE MANUFACTURER:
- 2.O.1. CONTROL PANEL: XYLEM/FLYGT WATER SOLUTIONS MULTISMART, OR APPROVED EQUAL.
- 2.O.2. SWITCHES, PUSH-BUTTONS AND INDICATOR LAMPS: ALLEN BRADLEY SERIES 800H OR SQUARE D CLASS 9001 SK.

2.P. REMOTE ALARM CONTACTS AND TERMINALS TO RTU:
- 2.P.1. PROVIDE CONTACTS FOR THE FOLLOWING:
  - 2.P.1.a. MOTOR OVERLOAD (ALL PUMPS).
  - 2.P.1.b. OVER TEMPERATURE (ALL PUMPS).
  - 2.P.1.c. MOISTURE (SEAL FAILURE) - (ALL PUMPS).
  - 2.P.1.d. POWER OFF.
  - 2.P.1.e. HIGH LEVEL.
  - 2.P.1.f. PUMP ON (ALL PUMPS).
  - 2.P.1.g. FLOW FAILURE (ALL PUMPS)
  - 2.P.1.h. PHASE FAILURE.

2.Q. GAS DETECTION SYSTEM:
- 2.Q.1. PROVIDE COMBUSTIBLE GAS SENSOR MODULE SUITABLE FOR INSTALLATION IN WETWELL. (SMC MODEL 201 FROM J.H. INSTRUMENTS, CHARLOTTE, NC (704) 527-6920.
- 2.Q.2. PROVIDE DUAL CHANNEL GAS ALARM PANEL FOR LOCAL ALARM. (SMC MODEL 2102 FROM J.C. INSTRUMENTS, CHARLOTTE, NC (704)527-6920).
- 2.Q.3. PROVIDE FOR DUPLEX OPERATION:
  - 2.Q.3.a. UTILIZE "LEAD/LAG" PRINCIPAL USING LEVEL TRANSDUCER IN WET WELL.
  - 2.Q.3.b. DESIGN CIRCUITRY SO THAT OPERATION OF THE "LAG" PUMP START CIRCUIT IS NOT CONTINGENT ON PROPER OPERATION OF THE "LEAD" PUMP START CIRCUIT.
- 2.Q.4. SWITCHES:
  - 2.Q.4.a. MERCURY TYPE.
  - 2.Q.4.b. SEAL IN A POLYPROPYLENE HOUSING.
  - 2.Q.4.c. NO LESS THAN 40' OF CABLE.
  - 2.Q.4.d. POLYPROPYLENE CORD GRIPS AND MOUNTING HARDWARE.
- 2.Q.5. CABLE HOLDER:
  - 2.Q.5.a. 316L STAINLESS STEEL, SIX HOOK DESIGN.
  - 2.Q.5.b. MOUNT WITH 316 STAINLESS STEEL ANCHORS.
  - 2.Q.5.c. ACCEPTABLE MANUFACTURER: HALLIDAY METALS.
- 2.Q.6. CONFIGURE THE CONTROL PANEL TO ALLOW THE FLOATS TO CONTROL THE PUMPS IN THE EVENT THE ULTRASONIC LEVEL FAILS.

2.R. SPARE PARTS:
- 2.R.1. PROVIDE THE MINIMUM SPARE PARTS:
  - 2.R.1.a. ONE OF EACH TYPE RELAY.
  - 2.R.1.b. ONE PUMP STARTER.
  - 2.R.1.c. ONE PUMP ALTERNATOR.

3. PRESSURE GAUGES

3.A. PRESSURE GAUGES SHALL BE COMPLETELY ISOLATED FROM WASTE STREAM BY DIAPHRAGM.

3.B. PRESSURE GAUGES SHALL BE SERIES 550L OIL FILLED PRESSURE GAUGES AS MANUFACTURED BY U.S. GAUGE, OR AN APPROVED EQUAL.

3.C. PUMP DISCHARGE GAUGES SHALL HAVE A PRESSURE RANGE OF 0 TO 100 PSI OR 1.5 TIMES WORKING PRESSURE WHICHEVER IS HIGHER.

3.D. GAUGES SHALL HAVE STAINLESS STEEL SOCKET, BOURDON TUBE, CASE, AND RING.

3.E. ALL PRESSURE GAUGES SHALL HAVE A VALVE TO ALLOW GAUGE REMOVAL WITHOUT SYSTEM SHUTDOWN.

3.F. GAUGES SHALL BE LOCATED AS INDICATED ON THE CONTRACT DRAWINGS WITH MINIMUM PLACEMENT ON EACH PUMP DISCHARGE IN THE VALVE VAULT PRECEDING THE CHECK VALVE.

3.G. PROVIDE ONE SPARE GAUGE OF EACH PRESSURE RANGE.

4. WARRANTY

4.A. THE EQUIPMENT SUPPLIER SHALL WARRANTY THE EQUIPMENT FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF START-UP. ALL OTHER EQUIPMENT SHALL HAVE A MINIMUM TWO (2) YEAR WARRANTY FROM PROJECT FINAL ACCEPTANCE.

4.B. TESTING, START-UP, AND OPERATOR TRAINING

- 4.B.1. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND TESTED UNDER OPERATING CONDITIONS TO ENSURE THAT THE EQUIPMENT IS WORKING PROPERLY.
- 4.B.2. REPRESENTATIVES OF THE PUMPING EQUIPMENT AND CONTROL PANEL MANUFACTURERS SHALL SUBMIT WRITTEN VERIFICATION THAT THE EQUIPMENT IS INSTALLED PROPERLY AND IS WORKING CORRECTLY PRIOR TO INSPECTIONS. THE ENGINEER, AND THE CONTROL PANEL SUPPLIER SHALL BE PRESENT WHEN EQUIPMENT IS TESTED. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND NOTIFYING ALL PARTIES FOR TESTING.
- 4.B.3. THE MANUFACTURER SHALL PROVIDE TWO (2) DAYS OF OPERATOR TRAINING ON-SITE, FOR UP TO TWO (2) OPERATORS. ALL TRAVEL EXPENSES AND LODGING ARE TO BE PROVIDED BY THE MANUFACTURER.

5. CONTROL SEQUENCE:

5.A. TWO SETS (2) OF IDENTICAL SEWAGE SUBMERSIBLE PUMPS SHALL BE PROVIDED. THE PUMPS WILL OPERATE IN A LEAD/LAG MODE. THE PUMPS SHALL AUTOMATICALLY ALTERNATE BASED ON A TIME SCHEDULE..

5.B. A PHASE MONITOR WILL MONITOR THE INCOMING POWER LINE QUALITY AND SHUT DOWN THE PUMPS IF INADEQUATE POWER QUALITY IS DETECTED.

5.C. THE FOLLOWING WILL CAUSE PUMP SHUTDOWN: H-O-A SWITCH IN "OFF"; MOTOR OVERLOAD, PUMP FLOW FAILURE; MOTOR OVER TEMPERATURE; AND PHASE LOSS/REVERSAL AND LEAKAGE. MOTOR OVER TEMPERATURE AND PHASE LOSS/REVERSAL WILL AUTOMATICALLY RESET ONCE; THE SECOND OCCURRENCE SHALL CAUSE SHUT DOWN AND ALARM. MOTOR OVERLOAD, FLOW FAILURE, AND LEAKAGE WILL REQUIRE A MANUAL RESET. MOTOR OVER TEMPERATURE WILL ILLUMINATE A PANEL LIGHT WHICH WILL LATCH "ON" TO ADVISE THE CONDITION HAS OCCURRED.

5.D. IN THE EVENT OF ANY POWER FAILURE, RE-STARTING OF PUMPS SHALL BE STAGGERED TO REDUCE SYSTEM VOLTAGE/FREQUENCY DIP.

6. ALARM SUMMARY

6.A. ALL ALARM CONNECTIONS SHALL BE CONNECTED TO THE CONTROL PANEL.

6.B. THE CONTROL PANEL SHALL HAVE AN OUTSIDE HORN, AND FLASHING LIGHT WHICH ACTIVATE UPON A CRITICAL ALARM AS REQUIRED BY THE CHARLESTON WATER SYSTEM DESIGN STANDARDS. USER ADJUSTABLE DELAYS MAY BE INCORPORATED IN ACTIVATING THE ALARM TO PREVENT NUISANCE ALARMS. THE HORN IS DEACTIVATED UPON PRESSING AN "ALARM SILENCE" PUSHBUTTON, AND THE ALARM IS RESET BY A "RESET" PUSHBUTTON.

6.C. A TEST PUSHBUTTON SHALL BE PROVIDED TO ACTIVATE THE ALARMS FOR TESTING THE SYSTEM. THE ALARM SILENCE PUSHBUTTON SHALL BE MOUNTED EXTERNAL OF THE CONTROL PANEL SUCH THAT THE CONTROL PANEL DOOR DOES NOT HAVE TO BE OPENED TO SILENCE THE ALARM.

6.D. THE FOLLOWING ALARM POINTS SHALL BE CONNECTED TO THE OUTSIDE HORN AND LIGHT:

- 6.D.1. PHASE LOSS/REVERSAL (DELAY TO ALLOW GENERATOR START)
- 6.D.2. PUMP (EACH) FAILURE
- 6.D.3. HIGH WATER LEVEL
- 6.D.4. GAS DETECTION

ELECTRICAL ABBREVIATIONS

A	AMPS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AWG	AMERICAN WIRE GUAGE
BRK	BREAKER
C OR COND	CONDUIT
CIRC	CIRCUIT
CLG	CEILING
CU	CONDENSING UNIT
DHC	DUCT HEATING COIL
(E) OR EXIST	EXISTING
EC	EMPTY CONDUIT W/PULL WIRE
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FLA	FULL LOAD AMPS
FT	FOOT
FRACT	FRACTIONAL
FSS	FUSED SAFETY SWITCH
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GPR	GROUND PENETRATING RADAR
HP	HORSEPOWER
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KVA	KILOVOLT AMPS
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MH	MOUNTING HEIGHT (ABOVE FINISHED FLOOR)
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFSS	NON-FUSED SAFETY SWITCH
NO.	OR # NUMBER
OCPD	OVER CURRENT PROTECTION DEVICE
PNL	PANEL
P	POLE
Ø	OR PH PHASE
PFF	PROVISIONS FOR FUTURE
PVC	POLYVINYL CHLORIDE
R OR RE	RELOCATED
RAL	RIGID ALUMINUM CONDUIT
RGS	RIGID GALVANIZED STEEL
RLA	RUNNING LOAD AMPS
RM	ROOM
RTU	REMOTE TERMINAL UNIT
SG PUMP	SUBMERSIBLE GRINDER PUMP
SS	STAINLESS STEEL
SS PUMP	SUBMERSIBLE SEWAGE PUMP
SWBD	SWITCHBOARD
TELE	TELEPHONE
TYP	TYPICAL
UH	UNIT HEATER
V	VOLTAGE
VAV	VARIABLE AIR VOLUME
W	WIRE
W/	WITH
WP	WEATHERPROOF
WH	WALL HEATER
UON	UNLESS OTHERWISE NOTED

ELECTRICAL SYMBOLS

* ALL MOUNTING HEIGHTS SHALL BE AS INDICATED BELOW, UNLESS OTHERWISE NOTED OR INDICATED ON PLANS. (HEIGHT INDICATED IS TO TOP OF DEVICE).
* ALL DEVICES SHALL BE RECESSED MOUNTED FLUSH IN WALL, CEILING OR FLOOR UNLESS OTHERWISE NOTED.

GENERAL SYMBOLS
- 480/277 VOLT, 3 PHASE, 4 WIRE PANELBOARD
- 240/120 VOLT, 1 PHASE, 3 WIRE PANELBOARD

POWER SYMBOLS
- JUNCTION BOX
- SAFETY SWITCH
- MOTOR CONNECTION
- GFCI SURFACE MOUNTED 5mA DUPLEX RECEPTACLE
- SURFACE MOUNTED DUPLEX RECEPTACLE
- EXTERIOR,SURFACE MOUNTED 125V-1P 20A 5-20R RECEPTACLE SINGLE GANG NEMA 4X BOX. SURFACE MOUNT 24" ABOVE CONCRETE FINISHED SURFACE.
- WALL-MOUNTED THERMOSTAT
- S LIGHT SWITCH.
- 3/4" D X 10' L COPPER GROUNDING ROD.

90% DRAWINGS - NOT FOR CONSTRUCTION

	DATE	CHKD
12		
11		
10		
9		
8		
7	REVISION	
6		
5		
4	REVISED PER TOWNSHIP COMMENTS	03/31/05 SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25 SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24 SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24 SAD
	REVISION	DATE CHKD

PROJ: 0B1391-01-001
DATE: 06/25/2024
CHKD: SAD

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PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
ELECTRICAL NOTES 2
BLOCK 80, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21P
OF

V:\0B1391 – Nursery Roads-Hopewell\0B1391-01-001 (ENG) – Venue at Hopewell SP\Engineering\Engineering Plans\03_WW Pump Station\Electrical\++0B1391-01-001-ELEC.dwg, 06/13/25, 04:03:14PM, dsteiano, LAYOUT: 21P ELECTRICAL NOTES 2

Xrefs: +0B1391-00PANESCHEDULE_1P1.dwg +0B1391-00PANESCHEDULE_1P2.dwg +0B1391-00PANESCHEDULE_1P3.dwg +0B1391-00PANESCHEDULE_3P1.dwg +0B1391-00PANESCHEDULE_3P2.dwg +0B1391-00PANESCHEDULE_3P3.dwg +0B1391-00PANESCHEDULE_PUMPNS.dwg +0B1391-00PANESCHEDULE_PUMPNS2.dwg

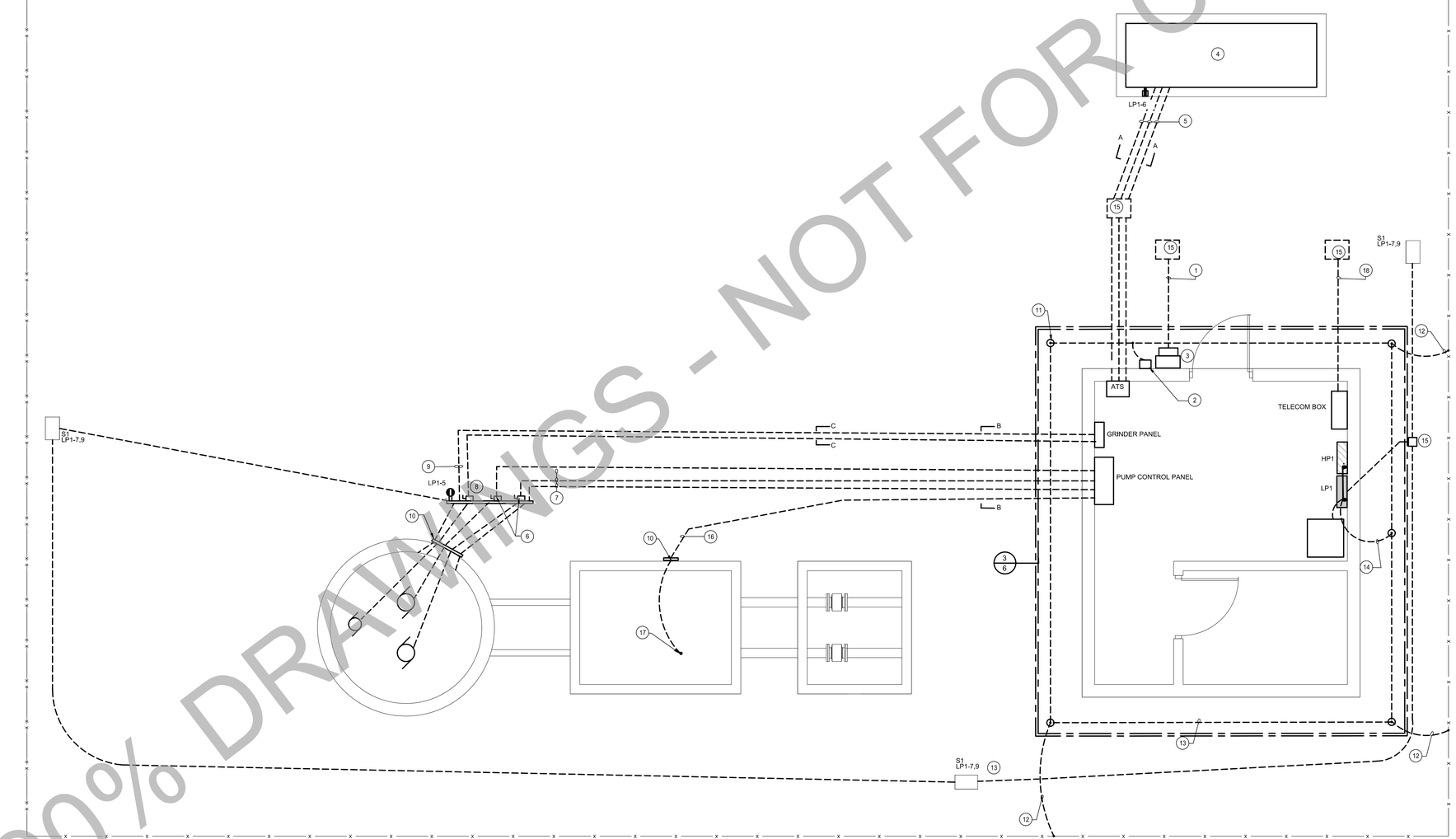
90% DRAWINGS - NOT FOR CONSTRUCTION

GENERAL NOTES

1. REFER TO DRAWING 06, "CONTROL BDG POWER - ELECTRICAL" FOR INCOMING SERVICE LOCATIONS, DETAILS, AND INTERIOR POWER AND LIGHTING LAYOUT; COORDINATE ALL UTILITY CONNECTION WITH LOCAL POWER UTILITY COMPANY.
2. REFER TO DRAWING 09, "LIGHTING DETAILS AND CALCULATIONS - ELECTRICAL" FOR EXTERIOR LIGHT FIXTURE SCHEDULE.
3. ALL CONDUIT ROUTING IS DIAGRAMMATIC. FIELD COORDINATE ALL CONDUIT ROUTING WITH CIVIL.
4. PLACE CONDUIT A MINIMUM 24" BELOW GRADE. COORDINATE WITH CIVIL DRAWINGS. REFER "DETAILS - ELECTRICAL" FOR DETAILS .
5. ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT SHALL BE WEATHERPROOF.
6. CLASS 1 DIVISION 1 AREA: AREA WITHIN WET WELL.
7. CLASS 1 DIVISION 2 AREA: AREA WITHIN 3' FROM ACCESS HATCH. INSTALL NO ELECTRICAL EQUIPMENT WITHIN THESE AREAS.

(#) KEY NOTES (#)

1. COORDINATE ALL SERVICE LATERAL REQUIREMENTS WITH LOCAL UTILITY.
2. 480V-3P+S/N, 100AF/100AS NEMA 4X TYPE 316 STAINLESS STEEL SERVICE-RATED FUSED DISCONNECT.
3. NEMA 4X CT CABINET AND UTILITY METER, COORDINATE ALL REQUIREMENTS WITH LOCAL UTILITY.
4. 480/277V-3P NATURAL GAS GENERATOR, REFER TO SPECIFICATIONS FOR DETAILS
5. POWER AND DATA CONDUIT BETWEEN ATS AND NATURAL GAS GENERATOR, PROVIDE ONE (1) 1" PVC SCHEDULE 80 CONDUIT FOR POWER TO PANEL LP1 (REFER TO PANEL SCHEDULE FOR DETAILS) ONE (1) 3/4" PVC SCHEDULE 80 FOR RECEPTACLE AND ONE (1) 3/4" FOR COMMUNICATIONS TO THE ATS/GCP. REFER TO DETAILS ON DRAWING 8. BOND GENERATOR PER NEC 250-34.
6. SUBMERSIBLE SEWAGE PUMP DISCONNECT 480V-3P, 30A NEMA 4X STAINLESS STEEL N.F.S.S. MOUNTED ON CHANNEL.
7. THREE (3) 1-1/4" PVC SCHEDULE 80: TWO (2) FOR POWER AND ONE (1) WITH EIGHT (8) #14 AWG/TWO(2) #16 AWG STP CABLE FOR CONTROL/DATA. COORDINATE ALL CONNECTION TO PROCESS MECHANICAL EQUIPMENT WITH PROCESS MECHANICAL DRAWINGS.
8. SUBMERSIBLE GRINDER PUMP DISCONNECT: 480V-3P, 30A NEMA 4X STAINLESS STEEL N.F.S.S. MOUNTED ON CHANNEL.
9. TWO (2) 1-1/4" PVC SCHEDULE 80. ONE (1) FOR POWER AND ONE(1) WITH FOUR (4) #14 AWG/ TWO (2) 2-#16 AWG STP CABLE FOR CONTROL/DATA. COORDINATE ALL CONNECTION TO PROCESS MECHANICAL EQUIPMENT WITH PROCESS MECHANICAL DRAWINGS.
10. CLASS 1, DIV 1 INTRINSICALLY SAFE BARRIER FOR ELECTRICAL CONNECTION TO WET WELL DISCONNECTS AND PUMPS. SEAL CONDUITS AT BOTH ENDS.
11. 10' LONG BY 3/4" DIAMETER GROUNDING ROD. EXOTHERMICALLY WELD ALL CONDUCTORS TO ROD (TYP).
12. BOND FENCE WITH #1/0 AWG COPPER CONDUCTOR.
13. #1/0 AWG COPPER CONDUCTOR GROUNDING LOOP (TYP).
14. #4 AWG GROUND TO GROUNDING LOOP.
15. UTILITY HANDHOLE. COORDINATE WITH UTILITY PROVIDER. ROUTE CONDUIT(S) TO HANDHOLD. REFER TO DRAWING 8 FOR HANDHOLE DETAILS.
16. ONE (1) 1" PVC SCHEDULE 80 WITH 4 #14 AWG/ 2 #16 AWG STP FOR WET WELL METER .
17. WET WELL METER. COORDINATE ALL CONNECTION TO PROCESS MECHANICAL EQUIPMENT WITH PROCESS MECHANICAL DRAWINGS
18. ONE (1) 2" PVC SCHEDULE 80 FOR INCOMING TELECOM/NETWORK.



SITE PLAN, PUMP STATION #1 - ELECTRICAL
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE
0 1' 2' 4' 8'
3/8 in. = 1 ft.

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NO.	DATE	BY	REVISION
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5	03/31/25	SAD	
4	REVISED PER TOWNSHIP COMMENTS		
3	2/14/25	SAD	REVISED PER ENGINEERING REVIEW
2	12/18/24	SAD	REVISED PER TOWNSHIP COMMENTS
1	09/10/24	SAD	REVISED PER PB COMPLETENESS REVIEW
	DATE	CHKD	REVISION

PROJ. 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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Email: NJ@Bowman.com

TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR:
VENUE AT HOPEWELL
SITE PLAN, PUMP STATION #1 - ELECTRICAL
BLOCK 43.01, LOTS 19.20, 45.01 (45.6,7&8)
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21Q
OF

X:\08139 - Nursery Roads-Hopewell\08139-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03_WW Pump Station\Electrical\v++08139-01-001-ELEC.dwg 06/13/25 04:03:19PM, sdeleno, LAYOUT: 21Q SITE POWER AND LIGHTING PLAN -ELECTRICAL
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++08139-01-001-E-PUMP_STA_1-LP1.dwg
++08139-01-001-E-SCHEDULE_LP1.dwg
++08139-01-001-E-SCHEDULE_PUMPS.dwg
++08139-01-001-E-SCHEDULE_PUMPS_S2.dwg
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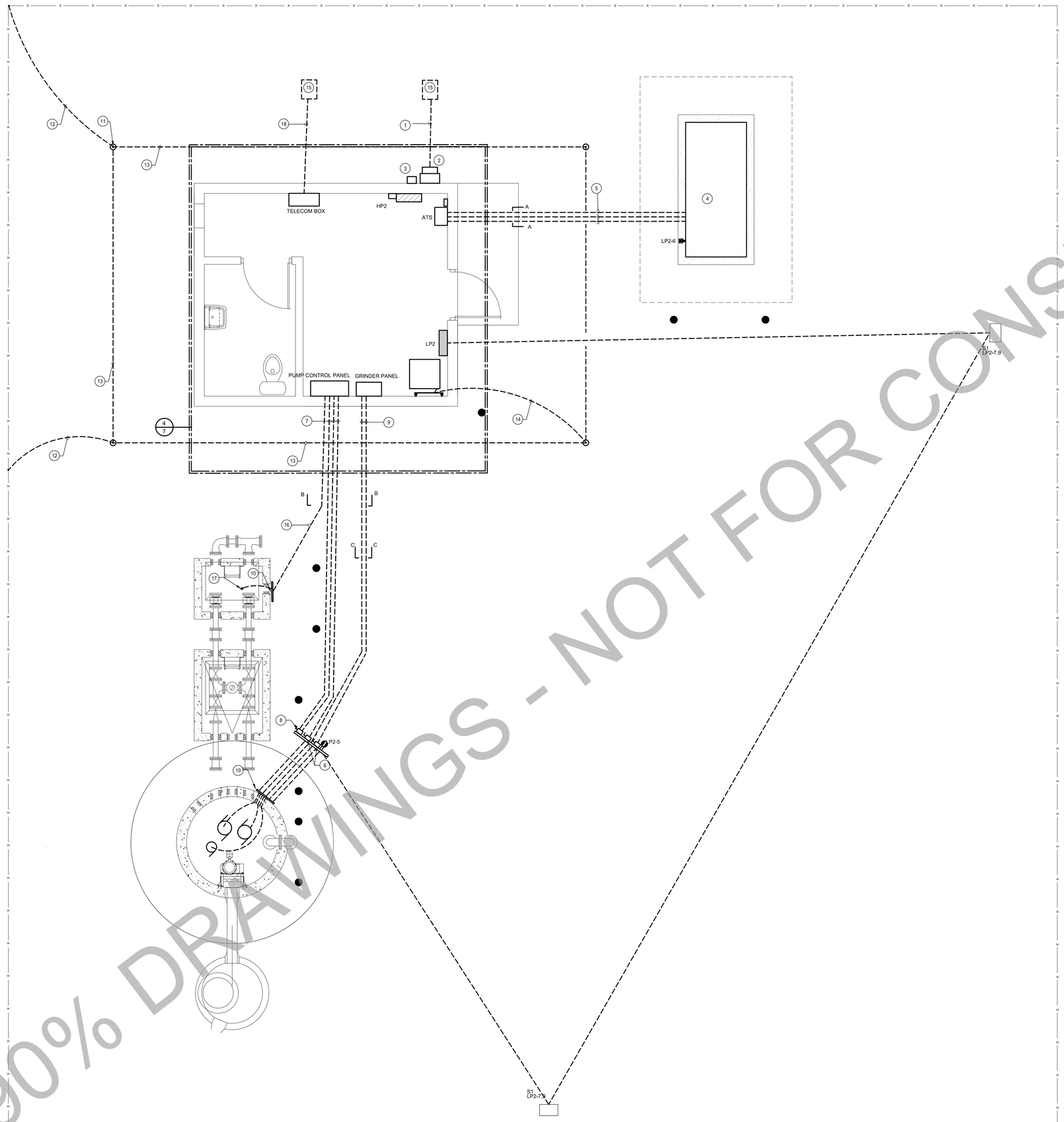

90% DRAWINGS - NOT FOR CONSTRUCTION

GENERAL NOTES

1. REFER TO DRAWING 07, "CONTROL BDG POWER - ELECTRICAL" FOR INCOMING SERVICE LOCATIONS, DETAILS, AND INTERIOR POWER AND LIGHTING LAYOUT, COORDINATE ALL UTILITY CONNECTION WITH LOCAL POWER UTILITY COMPANY.
2. REFER TO DRAWING 10, "LIGHTING DETAILS AND CALCULATIONS - ELECTRICAL" FOR EXTERIOR LIGHT FIXTURE SCHEDULE.
3. ALL CONDUIT ROUTING IS DIAGRAMMATIC. FIELD COORDINATE ALL CONDUIT ROUTING WITH CIVIL.
4. PLACE CONDUIT A MINIMUM 24" BELOW GRADE. COORDINATE WITH CIVIL DRAWINGS. REFER "DETAILS - ELECTRICAL" FOR DETAILS .
5. ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT SHALL BE WEATHERPROOF.
6. CLASS 1 DIVISION 1 AREA: AREA WITHIN WET WELL.
7. CLASS 1 DIVISION 2 AREA: AREA WITHIN 3' FROM ACCESS HATCH. INSTALL NO ELECTRICAL EQUIPMENT WITHIN THESE AREAS.

(#) KEY NOTES (#)

1. COORDINATE ALL SERVICE LATERAL REQUIREMENTS WITH LOCAL UTILITY.
2. 480V-3P+S/N, 100AF/100AS NEMA 4X TYPE 316 STAINLESS STEEL SERVICE-RATED FUSED DISCONNECT.
3. NEMA 4X CT CABINET AND UTILITY METER, COORDINATE ALL REQUIREMENTS WITH LOCAL UTILITY.
4. 480/277V-3P NATURAL GAS GENERATOR, REFER TO SPECIFICATIONS FOR DETAILS
5. POWER AND DATA CONDUIT BETWEEN ATS AND NATURAL GAS GENERATOR, PROVIDE ONE (1) 1" PVC SCHEDULE 80 CONDUIT FOR POWER TO PANEL LP1 (REFER TO PANEL SCHEDULE FOR DETAILS) ONE (1) 3/4" PVC SCHEDULE 80 FOR RECEPTACLE AND ONE (1) 3/4" FOR COMMUNICATIONS TO THE ATS/GCP, REFER TO DETAILS ON DRAWING 8, BOND GENERATOR PER NEC 250-34,
6. SUBMERSIBLE SEWAGE PUMP DISCONNECT 480V-3P, 30A NEMA 4X STAINLESS STEEL N.F.S.S. MOUNTED ON CHANNEL.
7. THREE (3) 1-1/4" PVC SCHEDULE 80: TWO (2) FOR POWER AND ONE (1) WITH EIGHT (8) #14 AWG/TWO(2) #16 AWG STP CABLE FOR CONTROL/DATA. COORDINATE ALL CONNECTION TO PROCESS MECHANICAL EQUIPMENT WITH PROCESS MECHANICAL DRAWINGS.
8. SUBMERSIBLE GRINDER PUMP DISCONNECT: 480V-3P, 30A NEMA 4X STAINLESS STEEL N.F.S.S. MOUNTED ON CHANNEL.
9. TWO (2) 1-1/4" PVC SCHEDULE 80. ONE (1) FOR POWER AND ONE(1) WITH FOUR (4) #14 AWG/ TWO (2) 2-#16 AWG STP CABLE FOR CONTROL/DATA. COORDINATE ALL CONNECTION TO PROCESS MECHANICAL EQUIPMENT WITH PROCESS MECHANICAL DRAWINGS.
10. CLASS 1, DIV 1 INTRINSICALLY SAFE BARRIER FOR ELECTRICAL CONNECTION TO WET WELL DISCONNECTS AND PUMPS. SEAL CONDUITS AT BOTH ENDS.
11. 10' LONG BY 3/4" DIAMETER GROUNDING ROD. EXOTHERMICALLY WELD ALL CONDUCTORS TO ROD (TYP).
12. BOND FENCE WITH #1/0 AWG COPPER CONDUCTOR.
13. #1/0 AWG COPPER CONDUCTOR GROUNDING LOOP (TYP).
14. #4 AWG GROUND TO GROUNDING LOOP.
15. UTILITY HANDHOLE. COORDINATE WITH UTILITY PROVIDER. ROUTE CONDUIT(S) TO HANDHOLD. REFER TO DRAWING 8 FOR HANDHOLE DETAILS.
16. ONE (1) 1" PVC SCHEDULE 80 WITH 4 #14 AWG/ 2 #16 AWG STP FOR WET WELL METER .
17. WET WELL METER. COORDINATE ALL CONNECTION TO PROCESS MECHANICAL EQUIPMENT WITH PROCESS MECHANICAL DRAWINGS
18. ONE (1) 2" PVC SCHEDULE 80 FOR INCOMING TELECOM/NETWORK.

SITE PLAN, PUMP STATION #2 - ELECTRICAL
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE
0 1' 2' 4' 8'
3/8 in. = 1 ft.

	DATE	CHKD
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	DATE	CHKD
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4	03/31/25	SAD
REVISED PER TOWNSHIP COMMENTS		
3	2/14/25	SAD
REVISED PER ENGINEERING REVIEW		
2	12/18/24	SAD
REVISED PER TOWNSHIP COMMENTS		
1	09/10/24	SAD
REVISED PER PB COMPLETENESS REVIEW		
REVISION		

PROJ. 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
SITE PLAN, PUMP STATION #2 - ELECTRICAL
BLOCK 65, LOTS 18.20, 48.01 & 48.99
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21R
OF

W:\08139 - Nursery Roads-Hopewell\08139-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\Electrical\A++08139-01-001-ELEC.dwg 06/11/25 04:03:24PM, ddelano, LAYOUT: 21R SITE POWER AND LIGHTING PLAN - ELECTRICAL
Xrefs: A++08139-01-001-ANESSCHEDULE_PLP1.dwg, A++08139-01-001-ANESSCHEDULE_PLP1S.dwg, A++08139-01-001-ANESSCHEDULE_PLP2.dwg, A++08139-01-001-ANESSCHEDULE_PLP2S.dwg, A++08139-01-001-ANESSCHEDULE_PLP3.dwg, A++08139-01-001-ANESSCHEDULE_PLP3S.dwg, A++08139-01-001-ANESSCHEDULE_PLP4.dwg, A++08139-01-001-ANESSCHEDULE_PLP4S.dwg, A++08139-01-001-ANESSCHEDULE_PLPUMPS.dwg, A++08139-01-001-ANESSCHEDULE_PLPUMPS2.dwg

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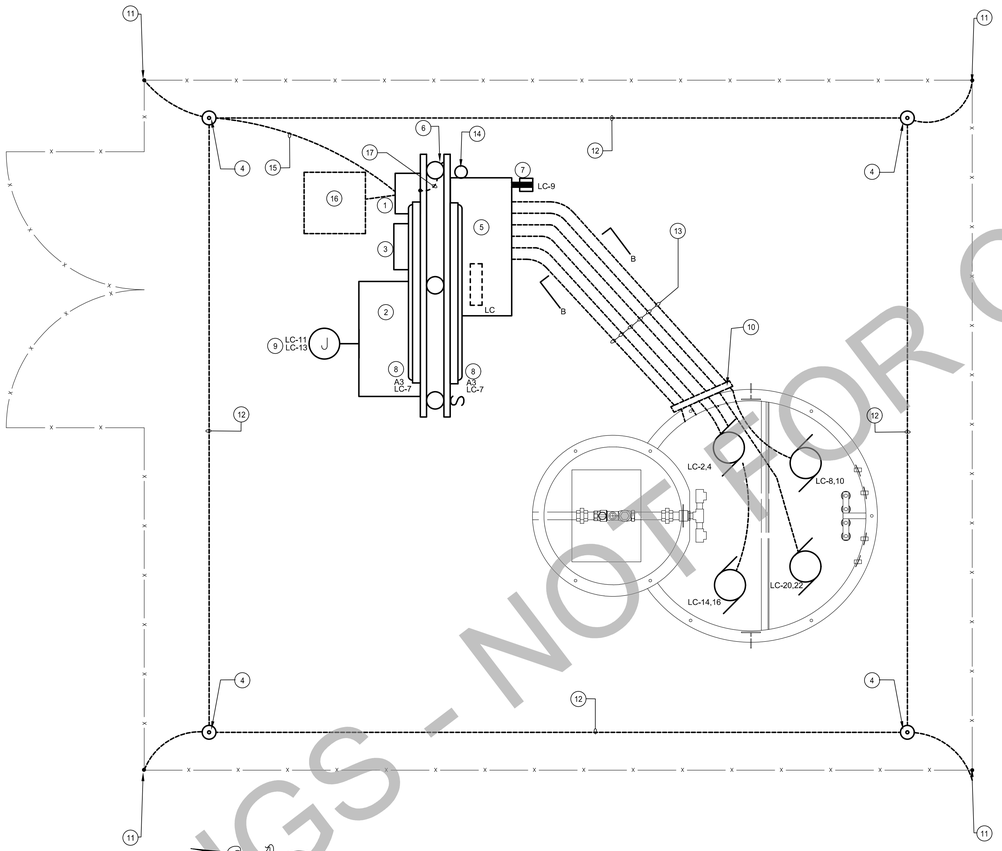

SITE PLAN, PUMP STATION #3 - ELECTRICAL

SCALE: 3/4" = 1'-0"

GENERAL NOTES

1. REFER TO DRAWING 10, "LIGHTING DETAILS AND CALCULATIONS - ELECTRICAL" FOR EXTERIOR LIGHT FIXTURE SCHEDULE. SUBSCRIPT BESIDE LIGHT FIXTURE INDICATES FIXTURE TYPE.
2. ALL CONDUIT ROUTING IS DIAGRAMMAICAL. FIELD COORDINATE ALL CONDUIT ROUTING WITH CIVIL.
3. PLACE CONDUIT A MINIMUM 24" BELOW GRADE COORDINATE WITH CIVIL DRAWINGS. REFER "DETAILS - ELECTRICAL" FOR DETAILS .
4. ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT SHALL BE WEATHERPROOF.
5. CLASS 1 DIVISION 1 AREA: AREA WITHIN WET WELL.
6. CLASS 1 DIVISION 2 AREA AREA WITHIN 3' FROM ACCESS HATCH. INSTALL NO ELECTRICAL EQUIPMENT WITHIN THESE AREAS.

(#) KEY NOTES (#)

1. 240/120V-1P,3W 100AS/100AF SERVICE RATED FUSED DISCONNECT IN NEMA 4X S.S. ENCLOSURE. FOR CONDUIT AND CABLE SIZE REFER TO FEEDER SCHEDULE. COORDINATE INCOMING SERVICE LOCATION AND CONNECTIONS WITH LOCAL UTILITY COMPANY.
2. 240/120V,2W PLUS S/N 100A GENERAL PURPOSE GENERATOR DOCKING STATION TRYSTAR GDS-3 OR MANUFACTURER'S EQUAL IN NEMA 4X STAINLESS STEEL ENCLOSURE.
3. UTILITY METER. COORDINATE WITH UTILITY COMPANY.
4. SERVICE GROUNDING. COPPERCLAD 3/4" DIAMETER X 10' GROUNDING ROD. RESISTANCE NOT TO EXCEED 5-OHMS.
5. 60"H X 36"W X 16"D NEMA 4X TYPE 316 STAINLESS STEEL PUMP CONTROL PANEL WITH LOAD CENTER LC. REFER TO SPECIFICATIONS, ONE-LINE, AND PANEL SCHEDULE FOR ALL REQUIREMENTS.
6. 4" GALVANIZE STEEL PIPE WITH SS 1-5/8" X 1-5/8" SLOTTED CHANNEL.CONTRACTOR TO PROVIDE STRUCTURAL SHOP DRAWINGS ON ALL REQUIRED MATERIALS AND CONNECTIONS, INCLUDING ALL REQUIREMENTS FOR CONCRETE BASES AND FOOTERS, BOND FRAMING WITH #4 AWG COPPER EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH NEC 250. PROVIDE STRUCTURAL SUPPORT/ HOUSEKEEPING PAD IN ACCORDANCE WITH NEC 110.26(A). PAD SHOULD EXTEND 2" ABOVE GRADE. CONTRACTOR SHALL COORDINATE WITH CIVIL ENGINEER/STRUCTURAL ENGINEER.
7. 20A, 120V GFCI RECEPTACLE IN WEATHERPROOF ENCLOSURE.
8. CURRENT LIGHTING CVT4-LSCS-MV-120V-ML-3500K LINEAR LED .
9. POWER CONNECTIONS FOR RECEPTACLE AND HEATER FOR DOCKING STATION
10. CLASS 1, DIV 1 INTRINSICALLY SAFE BARRIER FOR ELECTRICAL CONNECTION TO WET WELL DISCONNECTS AND PUMPS. SEAL BOTH ENDS OF THE CONDUIT.
11. BOND FENCE WITH #1/0 AWG COPPER CONDUCTOR.
12. #1/0 AWG COPPER CONDUCTOR GROUNDING LOOP (TYP).
13. FOUR (4) 1-1/4" PVC SCHEDULE 80 FOR PUMP POWER AND TWO (2) 1-1/4" PVC SCHEDULE 80 CONDUIT WITH EIGHT (8) #14 AWG/FOUR (4) #16 AWG STP FOR DATA. REFER TO ONE-LINE AND DETAILS.
14. ALARM AND HORN.
15. #6 AWG SERVICE GROUND CONNECTION PER NEC 250.66.
16. UTILITY HANDHOLE. COORDINATE WITH UTILITY PROVIDER.
17. #6 AWG SERVICE GROUND CONNECTION.

90% DRAWINGS - NOT FOR CONSTRUCTION

GRAPHIC SCALE

0 6" 1' 2' 4'

3/4 in. = 1 ft.

NO.	REVISION	DATE	CHKD
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4	REVISED PER TOWNSHIP COMMENTS	03/31/05	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD

PROJ. 081391-01-001
DATE: 06/25/2024
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NJ Certificate of Authorization No. 24GA28222600

TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR

VENUE AT HOPEWELL
SITE PLAN, PUMP STATION #3 - ELECTRICAL

BLOCK 61, LOTS 19 & 20, 48-51 / 46 & 60

TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
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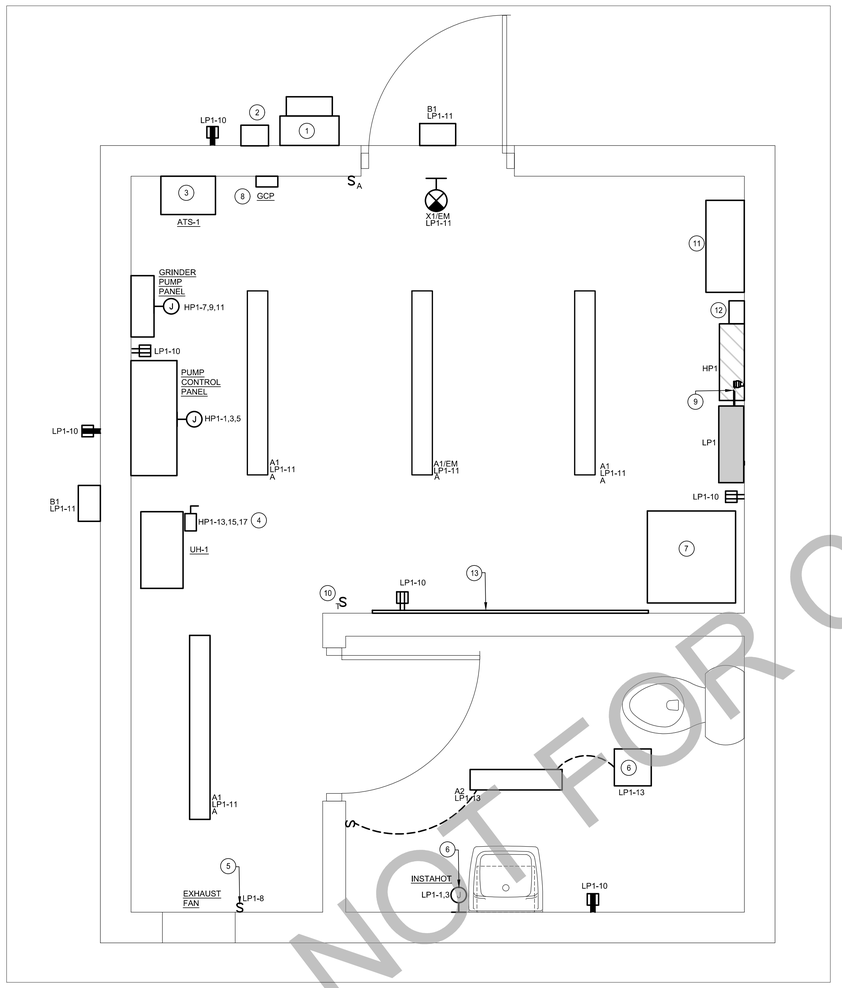
OF



CONTROL BUILDING, PUMP STATION #1 FLOOR PLAN
SCALE: 3/4" = 1 FT.

KEY NOTES

1. NEMA 4X TYPE 316 STAINLESS STEEL BOX FOR UTILITY METERING. COORDINATE WITH UTILITY COMPANY.
2. 480V-3P+S/N, 100AF/100AS NEMA 4X TYPE 316 STAINLESS STEEL FUSED DISCONNECT, FUSE WITH 100%-RATED TYPE J FUSES. COORDINATE ALL INSTALLATION REQUIREMENTS WITH LOCAL UTILITY.
3. 480/277V-3P,4W (S/N) 130A NEMA-4X ATS. PROVIDE ONE (1) 1" CONDUIT TO GENERATOR FOR MONITORING AND COMMUNICATIONS.
4. UNIT HEATER/FAN: 480V, 3PH, 5-KW WITH 400-CFM FAN. PROVIDE INTEGRAL DISCONNECT. REFER TO THE SPECIFICATIONS/SEQUENCE OF OPERATIONS, PARAGRAPH 26, ON DRAWING 1.
5. EXHAUST FAN : 115V, 1PH, 4.4A. PROVIDE 20A TOGGLE DISCONNECT, REFER TO SPECIFICATIONS/SEQUENCE OF OPERATIONS ON DRAWING 1.
6. 240V, 1PH, 12-KW INSTAHOT. PROVIDE LOCKABLE CIRCUIT BREAKER.
7. T-LP1: 25 KVA 480V-240/120V TRANSFORMER .
8. GENERATOR CONTROL AND MONITOR PANEL.
9. GROUNDING BUSBAR, MOUNT 4" ABOVE FINISHED FLOOR.
10. WALL-MOUNTED THERMOSTAT FOR HEATER AMD EXHAUST FAN.
11. NEMA 4X FIBERGLASS ENCLOSURE TELECOMM TERMINATION BOX. COORDINATE ALL CONNECTIONS AND REQUIREMENTS WITH TELECOM/DATA PROVIDER.
12. SURGE PROTECTIVE DEVICE.
13. 72" W X 48"H X 3/4"T 2-HOUR FIRE-RATED PLYWOOD FOR EQUIPMENT MOUNTING.
14. BATHROOM FAN SIG80-110LED WITH 0.25 STATIC PRESSURE. INTERCONNECT WITH LIGHTING SWITCH.

NO	REVISION	DATE	CHKD
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5	REVISED PER TOWNSHIP COMMENTS	03/31/25	SAD
4	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
3	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
2	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
1			

PROJ. 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR:
VENUE AT HOPEWELL
CONTROL BLDG. PUMP STATION #1
PLAN -ELECTRICAL
BLOCK 85, LOTS 19, 20, 45-51, 48 & 50
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21T
OF

GRAPHIC SCALE
0 6" 1' 2' 4'
3/4 in. = 1 ft.

90% DRAWINGS - NOT FOR CONSTRUCTION

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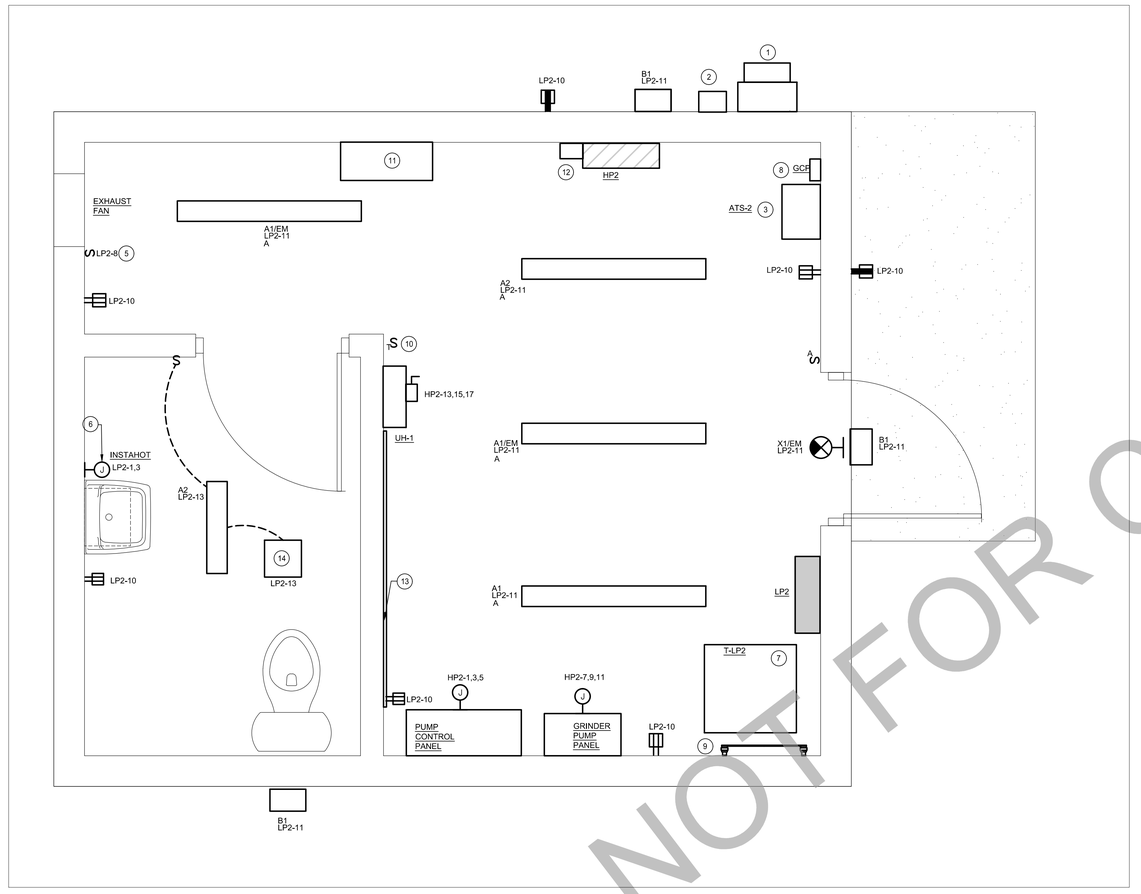

CONTROL BUILDING, PUMP STATION #2 FLOOR PLAN

SCALE: 3/4" = 1 FT.

KEY NOTES

1. NEMA 4X TYPE 316 STAINLESS STEEL BOX FOR UTILITY METERING. COORDINATE WITH UTILITY COMPANY.
2. 480V-3P+S/N, 100AF/100AS NEMA 4X TYPE 316 STAINLESS STEEL FUSED DISCONNECT, FUSE WITH 100%-RATED TYPE J FUSES. COORDINATE ALL INSTALLATION REQUIREMENTS WITH LOCAL UTILITY.
3. 480/277V-3P,4W (S/N) 130A NEMA-4X ATS-1, PROVIDE ONE (1) 1" CONDUIT TO GENERATOR FOR MONITORING AND COMMUNICATIONS.
4. UNIT HEATER/FAN: 480V, 3PH, 5-KW WITH 400-CFM FAN. PROVIDE INTEGRAL DISCONNECT. REFER TO THE SPECIFICATIONS/SEQUENCE OF OPERATIONS, PARAGRAPH 26, ON DRAWING 1.
5. EXHAUST FAN : 115V, 1PH, 4.4A. PROVIDE 20A TOGGLE DISCONNECT, REFER TO SPECIFICATIONS/SEQUENCE OF OPERATIONS ON DRAWING 1.
6. 240V, 1PH, 12 KW INSTAHOT. PROVIDE LOCKABLE CIRCUIT BREAKER.
7. T-LP2: 25 KVA 480V-240/120V TRANSFORMER .
8. GENERATOR CONTROL AND MONITOR PANEL.
9. GROUNDING BUSBAR, MOUNT 4" ABOVE FINISHED FLOOR.
10. WALL-MOUNTED THERMOSTAT FOR HEATER AMD EXHAUST FAN.
11. NEMA 4X FIBERGLASS ENCLOSURE TELECOMM TERMINATION BOX. COORDINATE ALL CONNECTIONS AND REQUIREMENTS WITH TELECOM/DATA PROVIDER.
12. SURGE PROTECTIVE DEVICE.
13. 72" W X 48"H X 3/4"T 2-HOUR FIRE-RATED PLYWOOD FOR EQUIPMENT MOUNTING.
14. BATHROOM FAN SIG80-110LED WITH 0.25 STATIC PRESSURE. INTERCONNECT WITH LIGHTING SWITCH.

90% DRAWINGS - NOT FOR CONSTRUCTION

GRAPHIC SCALE

0 6" 1' 2' 4'

3/4 in. = 1 ft.

NO	DATE	REVISION	CHKD
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NO	DATE	REVISION	CHKD
6	03/31/25	REVISED PER TOWNSHIP COMMENTS	SAD
5	2/14/25	REVISED PER ENGINEERING REVIEW	SAD
4	12/18/24	REVISED PER TOWNSHIP COMMENTS	SAD
3	09/10/24	REVISED PER PB COMPLETENESS REVIEW	SAD
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PROJ. 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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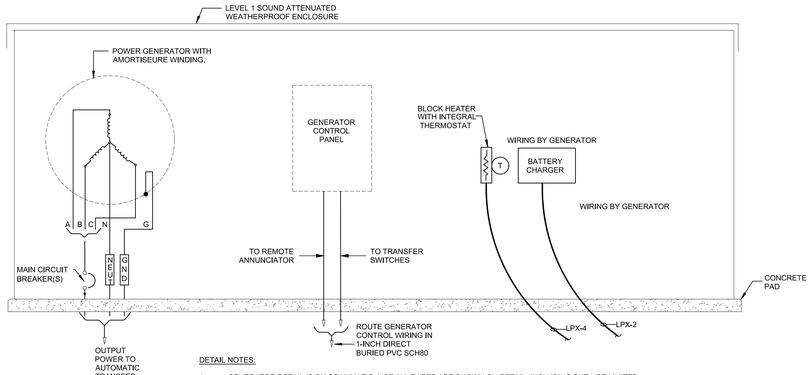
TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
CONTROL BLDG. PUMP STATION #2
PLAN -ELECTRICAL
BLOCK 93, LOTS 19, 20, 45.01 + 46 & 66
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21U
OF

V:\08139 - Nursery Roads-Hopewell\08139-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\Electrical\++08139-01-001-ELEC.dwg 06/11/25, 04:03:39PM, ddelrio, LAYOUT: 21U, 02 CONTROL BLDG PLAN - ELECTRICAL
Xrefs: ++08139-00PANELSCHEDULE_PUPUNIT.dwg ++08139-01-001-R-FST1-PS3.dwg ++08139-00PANELSCHEDULE_LP1.dwg ++08139-00PANELSCHEDULE_PUPUNIT2.dwg

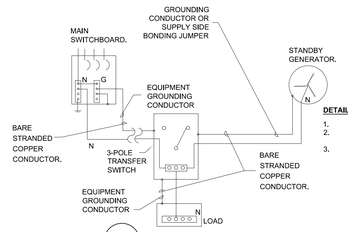


DETAIL NOTES:

1. GENERATOR DETAIL IS DIAGRAMMATIC. NOT ALL PARTS ARE SHOWN ON DETAIL, INCLUDING BUT NOT LIMITED TO, VOLTAGE REGULATOR, ALTERNATOR, CRANKING MOTOR, SUB-BASE TANK. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. REFER TO RISER DIAGRAM FOR NUMBER OF OUTPUT CIRCUIT BREAKERS.
3. CONFIRM ALL REQUIREMENTS, INCLUDING POWER REQUIREMENTS FOR HEATER AND BATTERY CHARGER, WITH GENERATOR MANUFACTURER PRIOR TO INSTALLATION.
4. REFER TO PANEL SCHEDULES FOR CIRCUIT INFORMATION.

3 GENERATOR DETAIL

SCALE: NONE

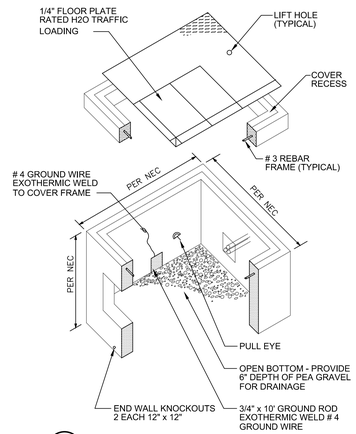


DETAIL NOTES:

1. PHASE CONDUCTORS HAVE BEEN OMITTED FOR CLARITY.
2. THIS DETAIL INDICATES GENERAL ARRANGEMENT OF GROUNDING REQUIREMENTS ONLY.
3. REFER TO PANEL SCHEDULES AND POWER RISER DIAGRAM FOR FOR FEEDER SIZE AND QUANTITY.

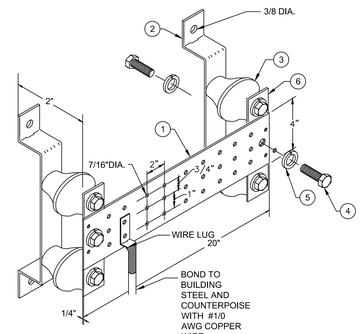
2 NON-SEPARATELY DERIVED GENERATOR GROUNDING DETAIL

SCALE: NONE



4 HANDHOLE DETAIL

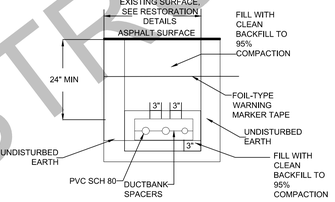
SCALE: NONE



5 INSULATED GROUND BAR 1/4"T x 4"H x 20"W (COPPER)

SCALE: NONE

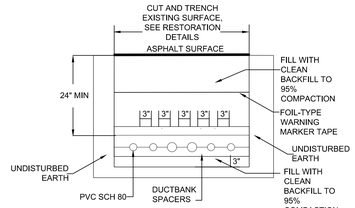
ITEM NO.	REQ.	DESCRIPTION	
1	1	GROUND BAR	
2	2	WALL MTG. BRKT.(OR FLOOR)	
3	4	INSULATORS	
4	4	5/8"-11 X 1 H.H.C.S.	
5	4	5/8" LOCKWASHER	
6	2	GROUND BAR MTG. BRKT.	



SECTION MUTILI WAY DIRECT BURY DUCTBANK - TYPE A-A

SCALE: NONE

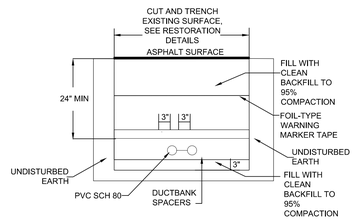
DETAIL IS DIAGRAMMATIC. REFER TO SITE PLAN KEYED NOTES FOR SIZES.



SECTION MUTILI WAY DIRECT BURY DUCTBANK - TYPE B-B

SCALE: NONE

DETAIL IS DIAGRAMMATIC, REFER TO SITE PLAN KEYED NOTES FOR SIZES.



SECTION MUTILI WAY DIRECT BURY DUCTBANK - TYPE C-C

SCALE: NONE

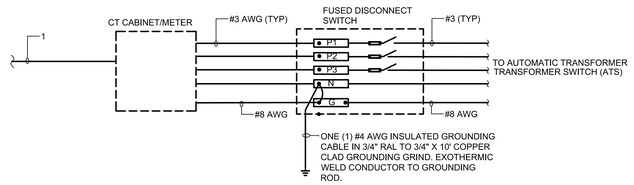
DETAIL IS DIAGRAMMATIC, REFER TO SITE PLAN KEYED NOTES FOR SIZES.

ITEM	DESCRIPTION	I/O
1	AC POWER	DI
2	CONTROL POWER FAULT	DI
3	GENERATOR FAULT STATUS	DI
4	GENERATOR RUN STATUS	DI
5	HIGH WET WELL LEVEL	DI
6	LOW WET WELL LEVEL	DI
7	MAIN POWER FAULT	DI
8	PUMP #1 HOA STATUS	DI
9	PUMP #1 ROTATION BINARY	DI
10	PUMP #1 STATUS	DI
11	PUMP #2 HOA STATUS	DI
12	PUMP #2 ROTATION BINARY	DI
13	PUMP #2 STATUS	DI
14	SPARE	DI
15	SPARE	DI
16	SPARE	DI
17	ANY ALARM	DO
18	ANY PUMP OUT	DO
19	BATTERY TEST	DO
20	PLC FAULT	DO
21	PUMP #1 CALL	DO
22	PUMP #1 OFF	DO
23	PUMP #1 OVERRIDE	DO
24	PUMP #1 STARTER FAULT	DO
25	PUMP #2 CALL	DO
26	PUMP #2 OFF	DO
27	PUMP #2 OVERRIDE	DO
28	PUMP #2 STARTER FAULT	DO
29	PUMP FAILURE	DO
30	SPARE	DO
31	SPARE	DO
32	SPARE	DO
33	PUMP #1 CURRENT	AI
34	PUMP #2 CURRENT	A1
35	WET WELL LEVEL	AI
36	SPARE	A1
37	SPARE	A1
38	SPARE	A1
39	SPARE	A1

6 POINTS LIST,PUMP STATION #1/#2

ITEM	DESCRIPTION	I/O
1	AC POWER	DI
2	CONTROL POWER FAULT	DI
3	SPARE	DI
4	SPARE	DI
5	HIGH WET WELL LEVEL	DI
6	LOW WET WELL LEVEL	DI
7	MAIN POWER FAULT	DI
8	PUMP #1A HOA STATUS	DI
9	PUMP #1A ROTATION BINARY	DI
10	PUMP #1A STATUS	DI
11	PUMP #1B HOA STATUS	DI
12	PUMP #1B ROTATION BINARY	DI
13	PUMP #1B STATUS	DI
14	PUMP #2A HOA STATUS	DI
15	PUMP #2A ROTATION BINARY	DI
16	PUMP #2A STATUS	DI
17	PUMP #2B HOA STATUS	DI
18	PUMP #2B ROTATION BINARY	DI
19	PUMP #2B STATUS	DI
20	ANY ALARM	DO
21	ANY PUMP OUT	DO
22	BATTERY TEST	DO
23	PLC FAULT	DO
24	PUMP #1A CALL	DO
25	PUMP #1A OFF	DO
26	PUMP #1A OVERRIDE	DO
27	SPARE	DO
28	PUMP #1A STARTER FAULT	DO
29	PUMP #1B CALL	DO
30	PUMP #1B OFF	DO
31	PUMP #1B OVERRIDE	DO
32	PUMP #1B STARTER FAULT	DO
33	PUMP #2A CALL	DO
34	PUMP #2A OFF	DO
35	PUMP #2A OVERRIDE	DO
36	PUMP #2A STARTER FAULT	DO
37	PUMP #2B CALL	DO
38	PUMP #2B OFF	DO
39	PUMP #2B OVERRIDE	DO
40	PUMP #2B STARTER FAULT	DO
41	PUMP #1A CURRENT	AI
42	PUMP #1B CURRENT	AI
43	PUMP #2A CURRENT	AI
44	PUMP #2B CURRENT	AI
45	ANY ALARM	DO
46	ANY PUMP OUT	DO
47	BATTERY TEST	DO
48	PLC FAULT	DO

7 POINTS LIST,PUMP STATION #3



1 INCOMING POWER AND GROUNDING DIAGRAM - ELECTRICAL

SCALE: NONE

DETAIL NOTES:

1. COORDINATE SERVICE LATERAL REQUIREMENTS WITH LOCAL UTILITY.

90% DRAWING - NOT FOR CONSTRUCTION

NO.	DATE	REVISION	CHKD
12			
11			
10			
9			
8			
7			
6			
5	03/31/25	REVISED PER TOWNSHIP COMMENTS	SAD
4	2/14/25	REVISED PER ENGINEERING REVIEW	SAD
3	12/18/24	REVISED PER TOWNSHIP COMMENTS	SAD
2	09/10/24	REVISED PER PB COMPLETENESS REVIEW	SAD
1	DATE	REVISION	CHKD

PROJ. 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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VENUE AT HOPEWELL
DETAILS - ELECTRICAL
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21V
OF

X:\08139 - Nursery Road-Hopewell\08139-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\Electrical\+08139-01-001-ELEC.dwg 06/13/25 04:03:44PM, ddelano, LAYOUT:21V DETAILS - ELECTRICAL
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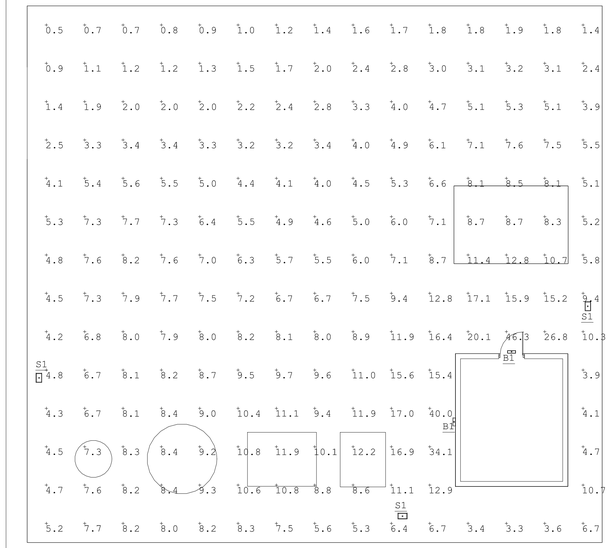
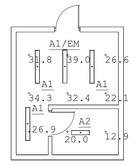


Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height
	2	B1	Single	PGM3-180L-60-3K	0.850	6811	54.42	108.84	7.573
	3	S1	Single	VP=1-160L=135=4K7-4W	0.850	18201	144.5	433.50	16

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site	Illuminance	Fc	7.08	46.3	0.5	14.16	92.60

SITE - LIGHTING CALCULATION POINTS

SCALE: 1/8" = 1'-0"
CONTRACTOR TO FIELD VERIFY POLE BASE SIZE.



Luminaire Schedule									
Symbol	Qty	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height
	4	Single	LXEM4=35LW=DFA=EDU	A1	0.850	4383	33.3	133.2	9
	1	Single	LXEM2=35LW=DFA=EDU	A2	0.850	3348	26.1	26.1	9

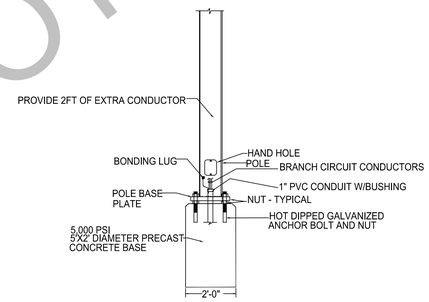
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Building	Illuminance	Fc	27.33	39.0	12.9	2.12	3.02

BUILDING - LIGHTING CALCULATION POINTS

SCALE: 1/8" = 1'-0"

LIGHT FIXTURE SCHEDULE

No	FIXTURE	MANUFACTURER	CATALOG #	DESCRIPTION	LAMPS	VOLT.	INPUT WATTS	NOTES
A1		CURRENT LIGHTING	LXEM-4-35LW-RFA-EDU	4-FOOT LINEAR FIXTURE	LED	UNIV	33W	
A1/EM		CURRENT LIGHTING	LXEM-4-35LW-RFA-EDU-ELL4	4-FOOT LINEAR FIXTURE	LED	UNIV	33W	PROVIDE LISTED 90MIN BATTERY.
A2		CURRENT LIGHTING	LXEM-2-35LW-RFA-EDU	2-FOOT LINEAR FIXTURE	LED	UNIV	26W	
B1		CURRENT LIGHTING	PGM3 - 180L-6-3K	WALLPACK WITH SENSOR	LED	UNIV	54W	PROVIDE INTEGRAL MOTION SENSORS, MOUNT 7'-6" A.F.G.
S1		CURRENT LIGHTING	VP-1-160L-135-4K7-4W-240-3PR-TL (FIXTURE) PS5-5S16-188-16'-BLT (POLE)	EXTERIOR SITE FIXTURE	LED	240V	144W	PROVIDE INTEGRAL PHOTOCELL. REFER TO DETAIL ON THIS SHEET
X1		CURRENT/HUBBELL	SEWL-S-G-E-(4X)	EXIT LIGHT W/INTEGRAL NICAD BATTERY	LAMP INCLUDED	UNIV	4W	



16'-0" POLEBASE DETAIL

SCALE: NONE
CONTRACTOR TO FIELD VERIFY POLE BASE SIZE.

COMcheck Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2019) Standard
Project Title: Venue at Hopewell
Project Type: New Construction
Exterior Lighting Zone: 2 (Light industrial area with limited nighttime use (LZ2))

Construction Site: Block 93, Lots 19,20,45.01,46 & 60, Hopewell, NJ
Owner/Agent:
Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Special feature area	4994 ft2	0.1	Yes	499
			Total Tradable Watts (a) =	499
			Total Allowed Watts =	499
			Total Allowed Supplemental Watts (b) =	400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Special feature area (4994 ft2): Tradable Wattage				
LED 1: Other:	1	3	144	432
LED 2: Other:	1	2	54	108
			Total Tradable Proposed Watts =	540

Exterior Lighting PASSES: Design 40% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title | Signature | Date

Project Title: Venue at Hopewell
Data filename:
Report date: 02/13/24
Page 1 of 4

90% DRAWINGS - NOT FOR CONSTRUCTION

12			
11			
10			
9			
8			
7	REVISION	DATE	CHKD
6			
5			
4	REVISED PER TOWNSHIP COMMENTS	03/31/05	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

PROJ: 08139-01-001
DATE: 06/25/2024
CHKD: SAD

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BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
LIGHTING DETAILS AND CALCS - PMP STA #1 - ELECTRICAL
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
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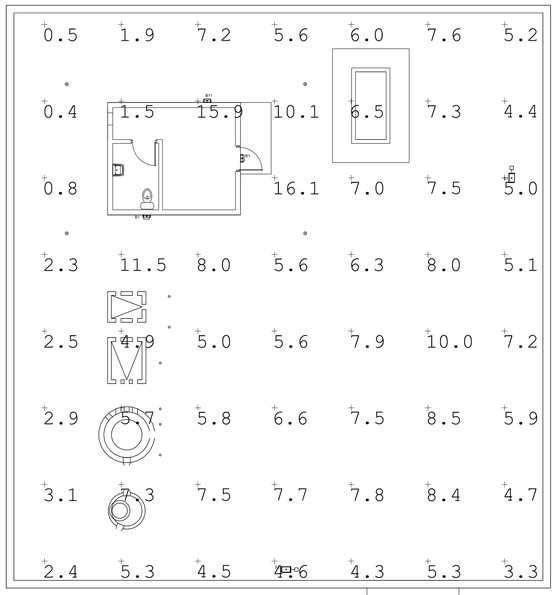


Luminaire Schedule									
Symbol	Qty	Label	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height
	3	KIL_KWPL630	KWPL630	B1	0.850	5750	46	138	7
	2	VP-1-160L-135-4K7-4W (1)	VP-1-160L-135-4K7-4W	S1	0.850	18201	144.5	289	16

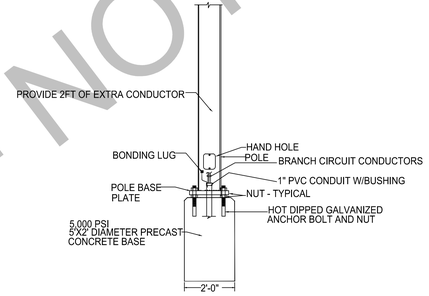
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Illuminance	Fc	6.03	16.1	0.4	15.08	40.25

SITE #2 - LIGHTING CALCULATION POINTS

SCALE: 1/8" = 1'-0"
CONTRACTOR TO FIELD VERIFY POLE BASE SIZE.

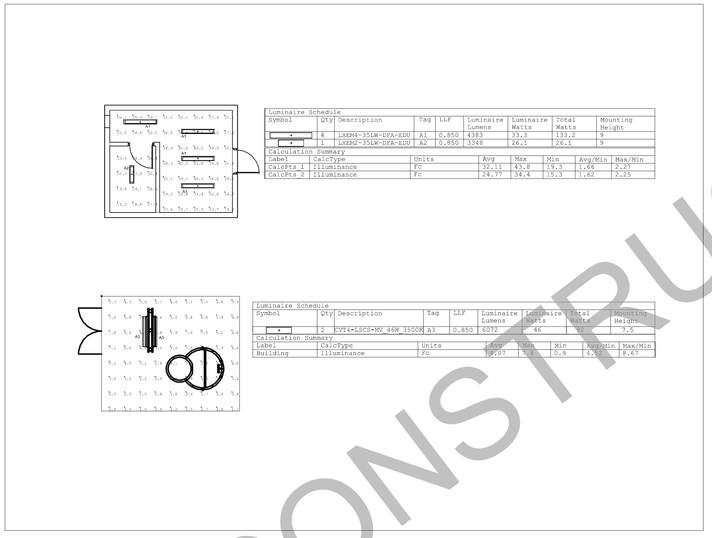
LIGHT FIXTURE SCHEDULE

No	FIXTURE	MANUFACTURER	CATALOG #	DESCRIPTION	LAMPS	VOLT.	INPUT WATTS	NOTES
A1		CURRENT LIGHTING	LXEM-4-35LW-RFA-EDU	4-FOOT LINEAR FIXTURE	LED	UNIV	33W	
A1/EM		CURRENT LIGHTING	LXEM-4-35LW-RFA-EDU-ELL4	4-FOOT LINEAR FIXTURE	LED	UNIV	33W	PROVIDE LISTED 90MIN BATTERY.
A2		CURRENT LIGHTING	LXEM-2-35LW-RFA-EDU	2-FOOT LINEAR FIXTURE	LED	UNIV	26W	
A3		CURRENT LIGHTING	CVT4-LSCS-MV_46W_3500K	4-FOOT LINEAR FIXTURE	LED	UNIV	46W	
B1		CURRENT LIGHTING	PGM3 - 180L-6-3K	WALLPACK WITH SENSOR	LED	UNIV	54W	PROVIDE INTEGRAL MOTION SENSORS, MOUNT 7'-6" A.F.S.
S1		CURRENT LIGHTING	VP-1-160L-135-4K7-4W-240-3PR-TL (FIXTURE) PS5-5S16-188-16'-BLT (POLE)	EXTERIOR SITE FIXTURE	LED	240V	144W	PROVIDE INTEGRAL PHOTOCELL, REFER TO DETAIL ON THIS SHEET
X1	⊗	CURRENT/HUBBELL	SEWL-S-G-E-(4X)	EXIT LIGHT W/INTEGRAL NICAD BATTERY	LAMP INCLUDED	UNIV	4W	



16'-0" POLEBASE DETAIL

SCALE: NONE
CONTRACTOR TO FIELD VERIFY POLE BASE SIZE.



Luminaire Schedule									
Symbol	Qty	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height	
	4	LXEM4-35LW-RFA-EDU	A1	0.850	4383	33.3	133.2	9	
	1	LXEM2-35LW-RFA-EDU	A2	0.850	3348	26.1	26.1	9	
Calculation Summary									
Label	CalcType	Units		Avg	Max	Min	Avg/Min	Max/Min	
CalcPts_1	Illuminance	Fc		32.11	43.8	19.3	1.66	2.27	
CalcPts_2	Illuminance	Fc		24.77	34.4	15.3	1.62	2.25	

Luminaire Schedule									
Symbol	Qty	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	Mounting Height	
	2	CVT4-LSCS-MV_46W_3500K	A3	0.850	6072	46	92	7.5	
Calculation Summary									
Label	CalcType	Units		Avg	Max	Min	Avg/Min	Max/Min	
Building	Illuminance	Fc		10.0	21.3	2.9	4.26	8.67	

BUILDING #2 / PUMP STATION #3 - LIGHTING CALCULATION POINTS

SCALE: 1/8"

COMcheck Software Version 4.1.5.5

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2016) Standard
Project Title: Venue at Hopewell
Project Type: New Construction
Exterior Lighting Zone: 2 (Light industrial area with limited nighttime use (LZ2))

Construction Site: Block 93 Lots 19,20,45.01,46 & 60 Hopewell, Nj
Owner/Agent:
Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Special feature area	5106 ft2	0.1	Yes	511
			Total Tradable Watts (a) =	511
			Total Allowed Watts =	511
			Total Allowed Supplemental Watts (b) =	400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Special feature area (5106 ft2): Tradable Wattage				
LED 1: Other:	1	2	144	288
LED 2: Other:	1	3	54	162
			Total Tradable Proposed Watts =	450

Exterior Lighting PASSES: Design 51% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2016) Standard requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Project Title: Venue at Hopewell
Data filename: V:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\Electrical\VENUE3.cck
Report date: 05/29/25
Page 1 of 5

COMcheck Software Version 4.1.5.5

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2016) Standard
Project Title: Venue at Hopewell
Project Type: New Construction
Exterior Lighting Zone: 2 (Light industrial area with limited nighttime use (LZ2))

Construction Site: Block 93 Lots 19,20,45.01,46 & 60 Hopewell, Nj
Owner/Agent:
Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Special feature area	270 ft2	0.1	Yes	27
			Total Tradable Watts (a) =	27
			Total Allowed Watts =	27
			Total Allowed Supplemental Watts (b) =	400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Special feature area (270 ft2): Tradable Wattage				
LED 1: Other:	1	2	46	92
			Total Tradable Proposed Watts =	92

Exterior Lighting PASSES: Design 78% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2016) Standard requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Project Title: Venue at Hopewell
Data filename: V:\081391 - Nursery Road-Hopewell\081391-01-001 (ENG) - Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\Electrical\VENUE4.cck
Report date: 05/29/25
Page 1 of 5

90% DRAWINGS - NOT FOR CONSTRUCTION

			DATE	CHKD
12				
11				
10				
9				
8				
7	REVISION		DATE	CHKD
6				
5				
4	REVISED PER TOWNSHIP COMMENTS	SAD	03/31/25	SAD
3	REVISED PER ENGINEERING REVIEW	SAD	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	SAD	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	SAD	09/10/24	SAD
	REVISION		DATE	CHKD

PROJ: 081391-01-001
DATE: 06/25/2024
CHKD: SAD
THESE PLANS AND ALL INFORMATION, CONTAINED HEREIN IS AUTHORIZED FOR THE WORK AND CONTRACTED LOTS TO BE PERFORMED AT THE SITE AND SHALL NOT BE USED BY ANY PERSON ENTITY FOR ANY OTHER PROJECT. REPRODUCTION OR RELEASE OF THESE PLANS IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF BOWMAN CONSULTING GROUP, LTD. IS STRICTLY PROHIBITED
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NJ Certificate of Authorization No. 24GA0922600

TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION & PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL
BLOCK 93, LOTS 19, 20, 45.01, 46 & 60
LIGHTING DETAILS AND CALCS - PMP STA #2/3 - ELECTRICAL
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21X
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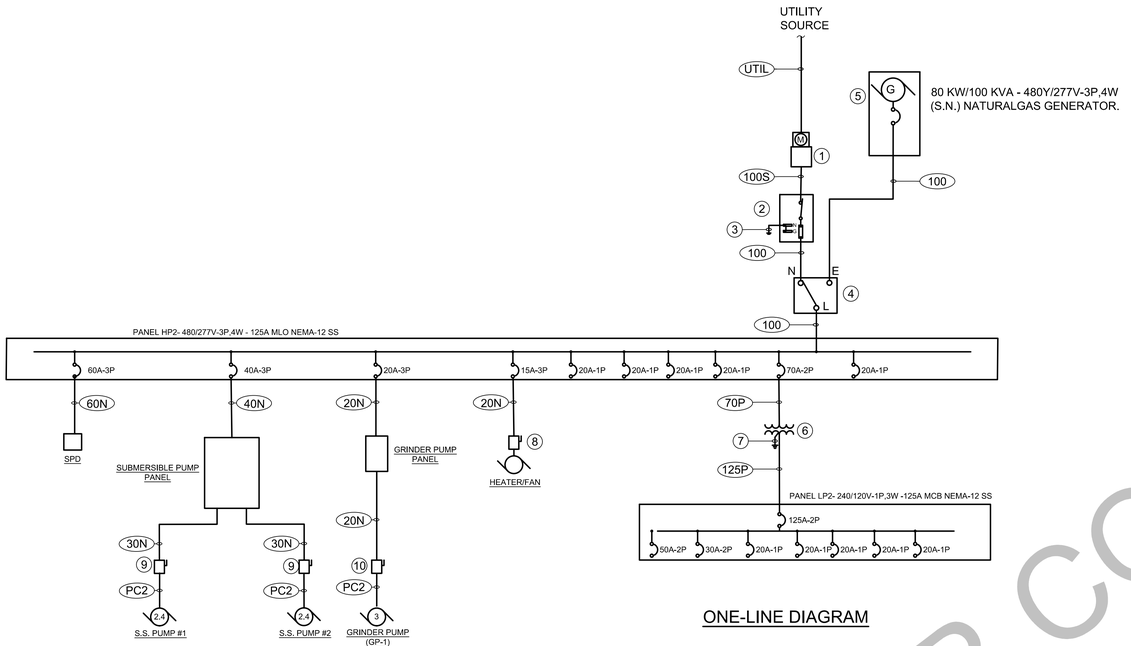
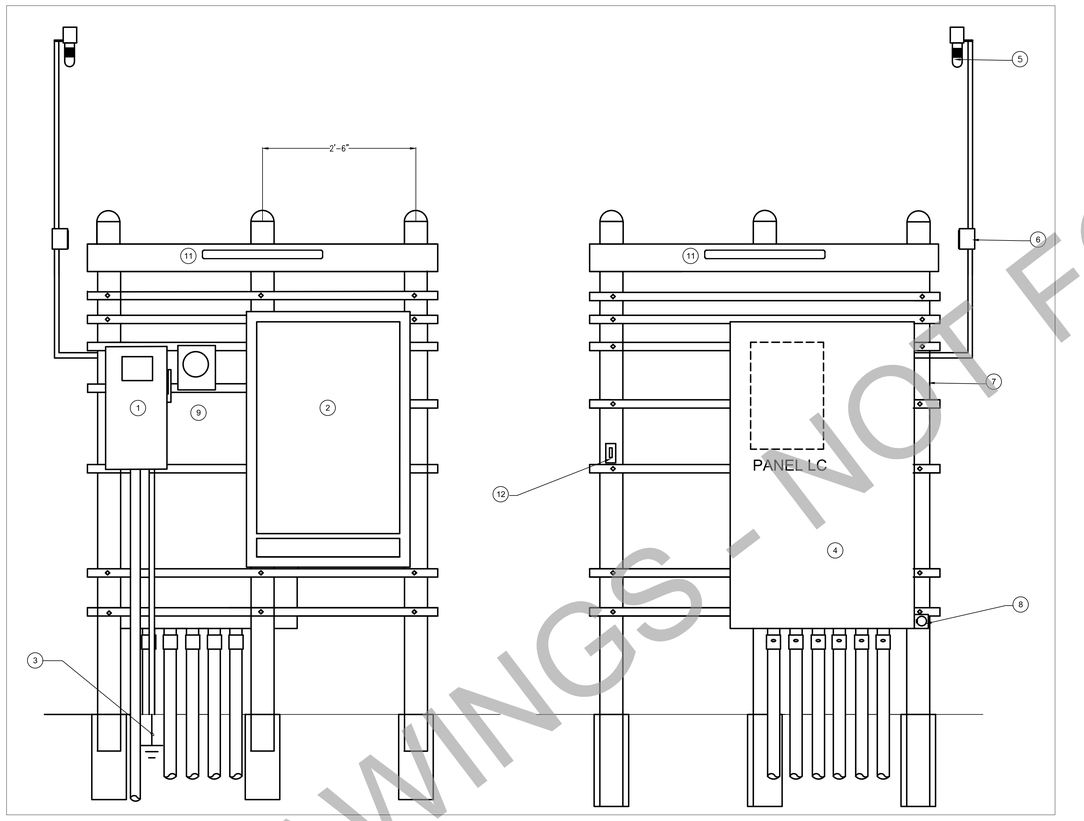
90% DRAWINGS - NOT FOR CONSTRUCTION



ONE-LINE DIAGRAM

PANELBOARD SCHEDULE

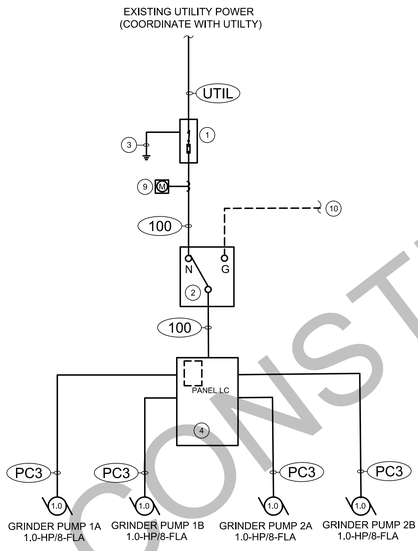
| | | |



PUMP STATION POWER ELEV, FRONT

PUMP STATION POWER ELEV, REAR

PUMP STATION POWER ELEVATION
SCALE: 1" = 1'-0"



PUMP STATION POWER ONE-LINE DIAGRAM
NO SCALE

LOAD CENTER

Panel ID: LC				Condition: NEW								Voltage: 240/120V						
Location: PUMP PANEL ENCLOSURE				Type: NORMAL								Service: 1 PHASE, 3 WIRE						
Mounting: SURFACE				Manufacturer: SQUARE D								Mains: 125A MLO						
Neutral: SOLID												AIC: 22,000						
Load Description	kVA	Wire Size	GND Cond.	Cond Size	Brk	P	Ckt #	A	Ckt #	B	P	Brk	Cond. Size	GND Cond.	Wire Size	kVA	Load Description
PUMP PNL HEATER	0.6	12	12	N/A	15	1	1	"	-	2	2	20	N/A	12	10	2.4	# GP 1A/SFT STRT
PUMP PNL RECIRAN	0.5	12	12	N/A	15	1	3	"	-	4	-	-	-	-	-	-	-
PUMP CONTROLLER FLYGT.	0.4	12	12	N/A	15	1	5	"	-	6	X	X	X	X	X	X	PFF
STANCHION LTGS	0.1	10	12	1/2	15	1	7	"	-	8	2	20	N/A	12	10	2.4	# GP 1B/SFT STRT
STANCHION GFCI	0.2	10	12	1/2	15	1	9	"	-	10	-	-	-	-	-	-	-
DOCKING STATION HTR	0.4	10	12	"	15	1	11	"	-	12	X	X	X	X	X	X	PFF
DOCKING STATION REC	0.2	10	12	"	15	1	13	"	-	14	2	20	N/A	12	10		3 # GP 2A/SFT STRT
PFF	X	X	X	X	X	1	15	-	-	16	-	-	-	-	-	-	-
PFF	X	X	X	X	X	1	17	"	-	18	X	X	X	X	X	X	PFF
PFF	X	X	X	X	X	1	19	-	-	20	2	20	N/A	12	10		3 # GP 2B/SFT STRT
PFF	X	X	X	X	X	X	21	"	-	22	-	-	-	-	-	-	-
PFF	X	X	X	X	X	X	23	-	"	24	X	X	X	X	X	X	PFF

Notes: All circuit breakers are NEW as indicated.

** Conductors shall be routed fin a 3/4" conduit.
S - Redundant load
- Provide lockable circuit breaker

Load Summary

	Connected kVA	Demand Factor	Demand kVA
Lighting (LI)	0.0	100%	0.0
Receptacles (R)	0.2	10 + 50%>10	0.2
Largest Motor Load (LM)	0.0	125%	0.0
Remaining HVAC Loads (M)	0.0	100%	0.0
Miscellaneous (MS)	6.9	100%	6.9
Kitchen (K)	0.0	100%	0.0
Resistance Heat (RH)	1.0	125%	1.2
TOTAL CONNECTED kVA =	7.1		7.4 =TOTAL DEMAND kVA
			30.7 =TOTAL DEMAND AMPS

Additional Options:
- Sub-Feed Lugs
- NO ENCLOSURE
- Isolated Ground
- Service Entrance Rated

KEY NOTES

1. 240/120V-1P,3W 100AS/100AF SERVICE RATED FUSED DISCONNECT IN NEMA 4X S.S. ENCLOSURE. FOR CONDUIT AND CABLE SIZE REFER TO FEEDER SCHEDULE. COORDINATE INCOMING SERVICE LOCATION AND CONNECTIONS WITH LOCAL UTILITY COMPANY.
2. 240/120V,2W PLUS S/N 100A GENERAL PURPOSE GENERATOR DOCKING STATION TYSTAR GDS-3 OR MANUFACTURER'S EQUAL IN NEMA 4X STAINLESS STEEL ENCLOSURE.
3. SERVICE GROUNDING. CONNECT #6 AWG GROUNDING IN 1" CONDUIT TO COPPERCLAD 3/4" DIAMETER X 10' GROUNDING ROD. RESISTANCE NOT TO EXCEED 5-OHMS.
4. 60"H X 36"W X 16"D NEMA 4X TYPE 316 STAINLESS STEEL PUMP CONTROL PANEL WITH LOAD CENTER LC. REFER TO SPECIFICATIONS ON E.2 FOR MORE DETAILS.
5. HIGH LEVEL ALARM STROBE. PROVIDE 2-#12, 1-#12G AWG IN 3/4" RGS CONDUIT. MOUNT STROBE A MINIMUM OF 1'-6" ABOVE TOP OF ELEVATION.
6. HIGH LEVEL ALARM HORN. PROVIDE 3-#12, 1-#12G AWG IN 3/4" RGS CONDUIT.
7. 4" RIGID GALVANIZE STEEL STRUCTURAL MEMBER WITH TYPE 316 STAINLESS STEEL CHANNEL FRAMING FOR EQUIPMENT MOUNTING. PROVIDE STEEL 45-DEGREE REAR ANGLE BRACING FOR LENGTHS OVER 72". BOND METALLIC BONDING PER NEC ARTICLE 250. CONTRACTOR SHALL COORDINATE WITH CIVIL ENGINEER/STRUCTURAL ENGINEER.
8. 20A, 120V GFCI RECEPTACLE IN WEATHERPROOF ENCLOSURE.
9. UTILITY METER. COORDINATE WITH UTILITY COMPANY.
10. TEMPORARY CABLE CONNECTIONS TO GENERATOR BY OTHERS.
11. CURRENT LIGHTING CVT4-LSCS-MV-120V-ML-3500K LINEAR LED.
12. INDUSTRIAL LIGHT SWITCH IN WATERPROOF ENCLOSURE.

FEEDER SIZING SCHEDULE

SYMBOL	# OF SETS	CONDUCTORS (COPPER)	GND.	CONDUIT	AMPS
100	1	2 #3 AWG - #3 AWG	#6 AWG	1-1/2"	100A
PC3	#8AWG/2 - #10AWG GND MULTICONDUCTOR SUBMERSIBLE PUMP CABLE IN 1-1/4" PVC SCH 80. COORDINATE WITH PUMP VENDOR.				
UTIL	COORDINATE ALL SERVICE LATERAL REQUIREMENTS WITH LOCAL UTILITY.				

PANELBOARD (TYP.)			
CIR	LOAD DESCRIPTION	LOAD DESCRIPTION	CIR
1	RECEPTACLE - ROOMS 102,103	RECEPTACLE - ROOMS 104,105	2
3	LIGHTING - ROOMS 102,103,104	LIGHTING - ROOMS 105,106,104	4
5	LIGHTING - ROOMS 108,109		

NOTES:
1. LOAD DESCRIPTION SHALL INCLUDE:
   1.1. ITEM SERVED (EX. RECEPTACLE)
   1.2. ITEM LOCATION (EX. ROOM 102).
2. ROOM NUMBERS SHALL BE VERIFIED WITH ARCHITECT.

PANELBOARD IDENTIFICATION CARD DETAIL
SCALE: NONE

PANEL LEGEND

LC

90% DRAWINGS - NOT FOR CONSTRUCTION

NO.	REVISION	DATE	CHKD
12			
11			
10			
9			
8			
7	REVISION	DATE	CHKD
6			
5			
4	REVISED PER TOWNSHIP COMMENTS	03/31/05	SAD
3	REVISED PER ENGINEERING REVIEW	2/14/25	SAD
2	REVISED PER TOWNSHIP COMMENTS	12/18/24	SAD
1	REVISED PER PB COMPLETENESS REVIEW	09/10/24	SAD
	REVISION	DATE	CHKD

PROJ: DB1391-01-001
DATE: 06/25/2024
CHKD: SAD

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TIMOTHY C. WILSON, N.J. Professional Engineer, Lic. 24GE05820200

PRELIMINARY AND FINAL MAJOR SUBDIVISION &
PRELIMINARY AND FINAL SITE PLAN FOR
VENUE AT HOPEWELL

ONE-LINE AND PANEL SCHEDULES - PMP STA #3 - ELECTRICAL

BLOCK 93, LOTS 19, 20, 45.01 - 46.8, 69
TOWNSHIP OF HOPEWELL, MERCER COUNTY, NEW JERSEY

SHEET No.
21AA
OF

V:\DB1391 – Nursery Roads-Hopewell\DB1391-01-001 (ENG) – Venue at Hopewell SP\Engineering\Engineering Plans\03 WW Pump Station\Electrical\x+-DB1391-01-001-ELEC.dwg 06/11/25, 04:04:08PM, ddelnino, LAYOUT: 21AA ONE-LINE AND PANEL SCHEDULE – ELECTRICAL
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