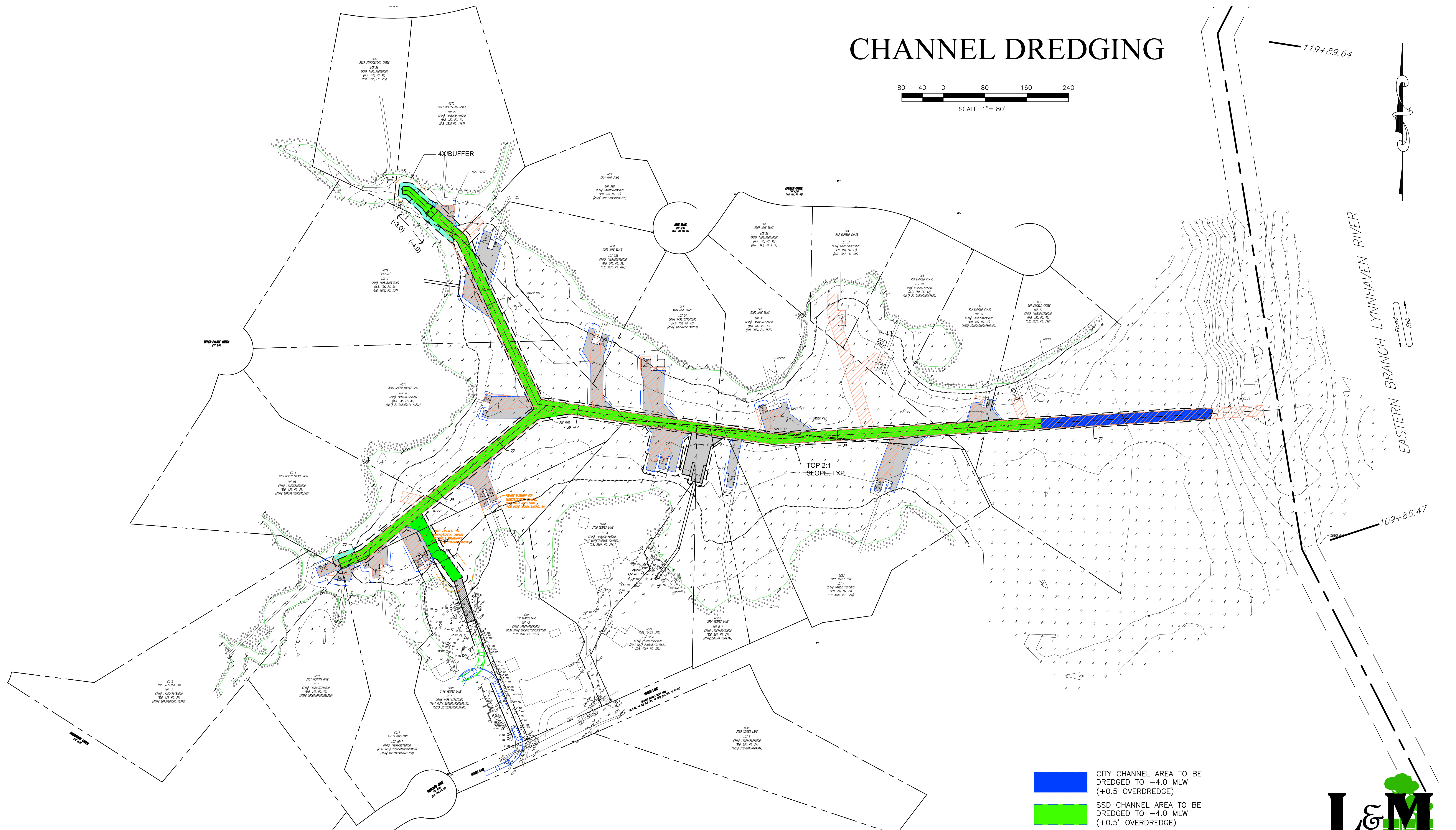
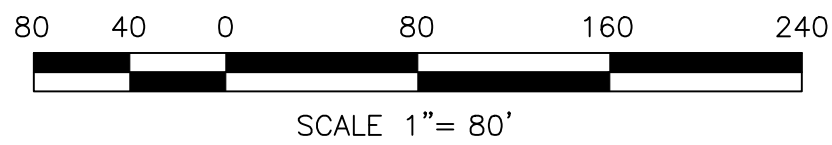


CHANNEL DREDGING



EASTERN BRANCH LYNNHAVEN RIVER

119+89.64



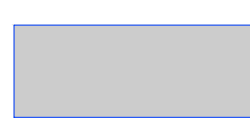
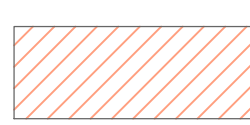
109+86.47

Flood
Ebb

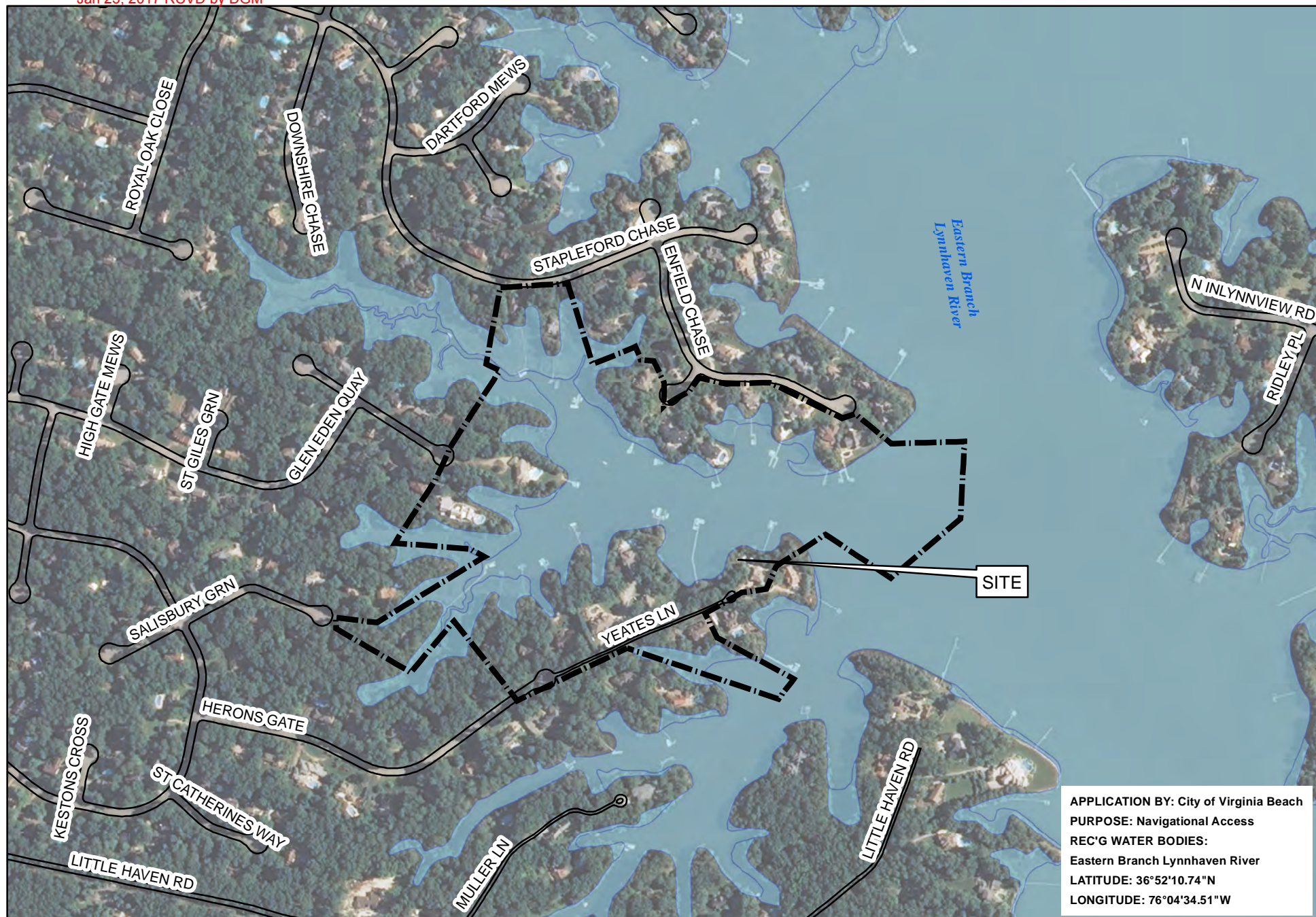
GILLS COVE
VIRGINIA BEACH, VIRGINIA

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-  CITY CHANNEL AREA TO BE DREDGED TO -4.0 MLW (+0.5' OVERDREDGE)
-  SSD CHANNEL AREA TO BE DREDGED TO -4.0 MLW (+0.5' OVERDREDGE)
-  ACCESS BASIN AREA TO BE DREDGED TO -4.0 MLW (+0.5' OVERDREDGE)
-  PREVIOUSLY PERMITTED & DREDGED (1993) CHANNELS & ACCESS BASINS

L&M
Langley & McDonald, Inc.
Engineering • Planning • Surveying
309 Lynnhaven Parkway
Virginia Beach, VA 23452
PH: (757) 463-4306 FAX: (757) 463-3563
L&M PROJECT NUMBER: 2011-019-25, 06/27/16
L&M FILE NAME: EXHIBIT-02_(-4)



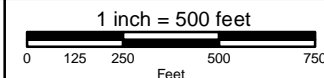
APPLICATION BY: City of Virginia Beach
PURPOSE: Navigational Access
REC'G WATER BODIES:
Eastern Branch Lynnhaven River
LATITUDE: 36°52'10.74"N
LONGITUDE: 76°04'34.51"W

JOINT PERMIT APPLICATION DRAWINGS

VICINITY MAP

GULLS COVE SSD NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA



Date:
1/11/2017

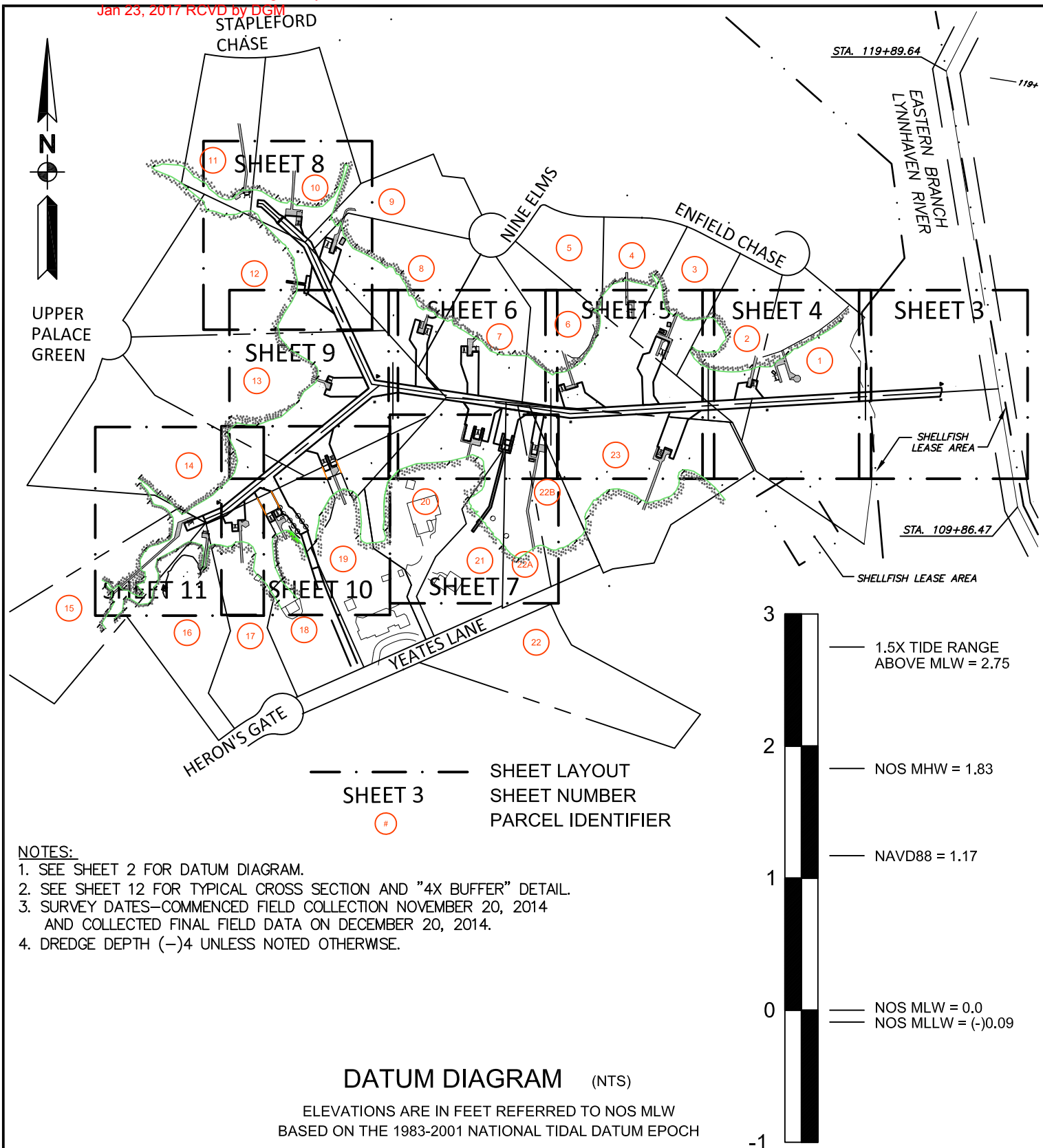
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1 OF 15

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Engineering Planning Services

JOINT PERMIT APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA

150' 0 300'



SCALE 1"=300'

DATUM: MLW = 0.0

DATE:
01/11/17

SHEET:
2 OF 15

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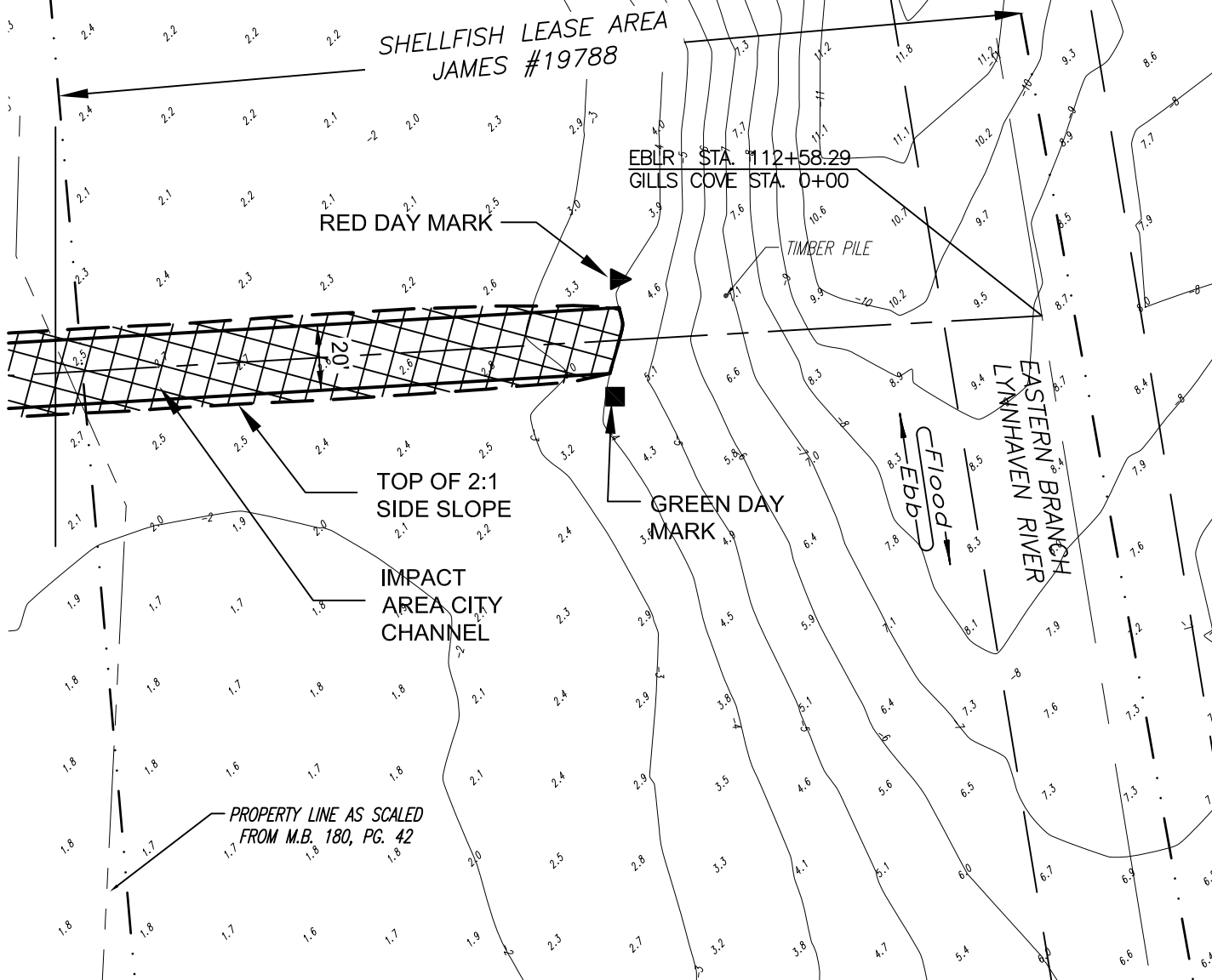
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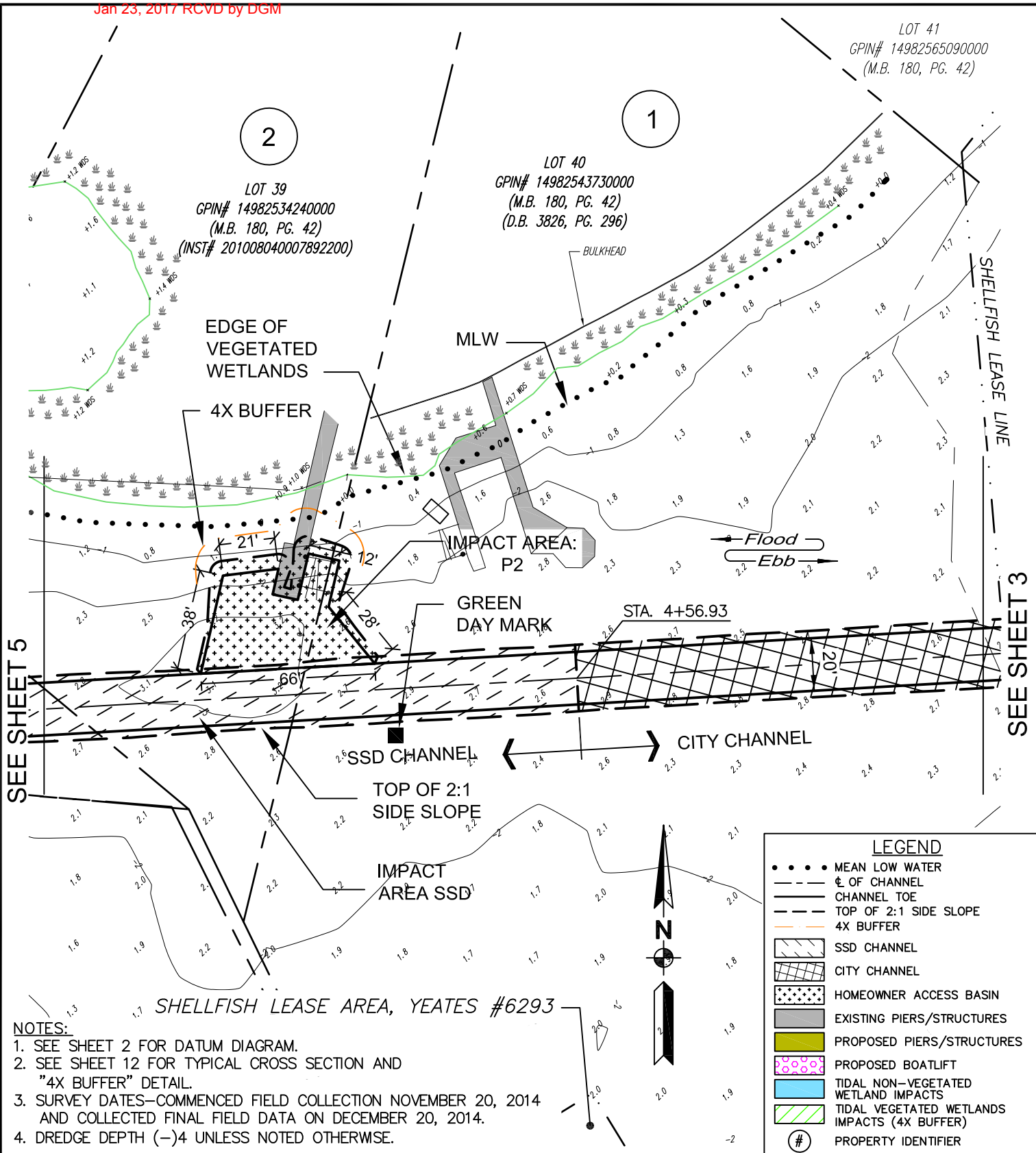
1. SEE SHEET 2 FOR DATUM DIAGRAM.
2. SEE SHEET 12 FOR TYPICAL CROSS SECTION AND "4X BUFFER" DETAIL.
3. SURVEY DATES—COMMENCED FIELD COLLECTION NOVEMBER 20, 2014 AND COLLECTED FINAL FIELD DATA ON DECEMBER 20, 2014.
4. DREDGE DEPTH (-)4 UNLESS NOTED OTHERWISE.

LEGEND

- • • • • MEAN LOW WATER
- - - - - CENTER OF CHANNEL
- - - - - CHANNEL TOE
- - - - - TOP OF 2:1 SIDE SLOPE
- - - - - 4X BUFFER
- [Pattern] SSD CHANNEL
- [Pattern] CITY CHANNEL
- [Pattern] HOMEOWNER ACCESS BASIN
- [Pattern] EXISTING PIERS/STRUCTURES
- [Pattern] PROPOSED PIERS/STRUCTURES
- [Pattern] PROPOSED BOATLIFT
- [Pattern] TIDAL NON-VEGETATED WETLAND IMPACTS
- [Pattern] TIDAL VEGETATED WETLANDS IMPACTS (4X BUFFER)
- # PROPERTY IDENTIFIER

SEE SHEET 4





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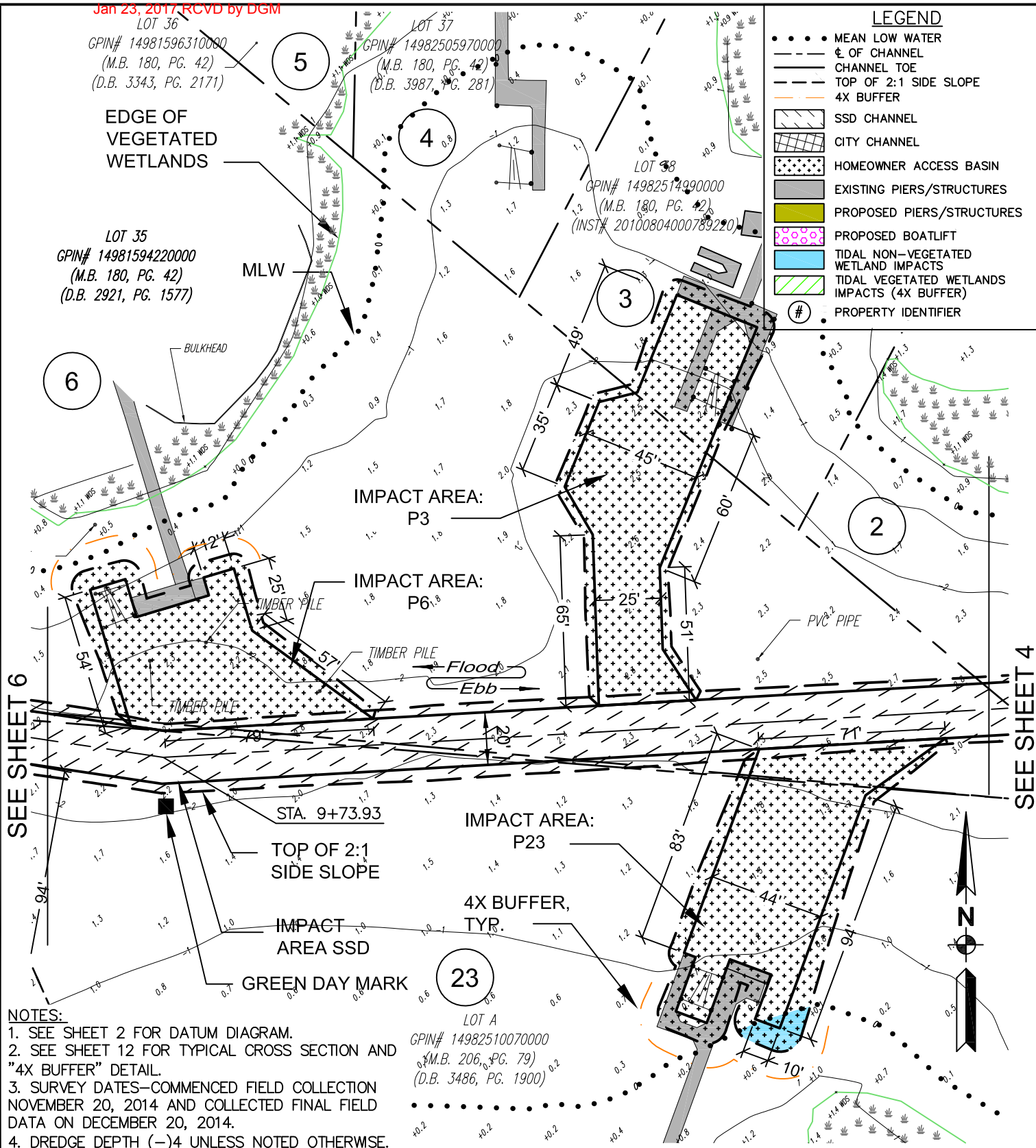
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JOINT PERMIT APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA



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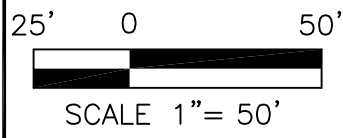
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JOINT PERMIT APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA



DATUM: MLW = 0.0

DATE:
01/11/17

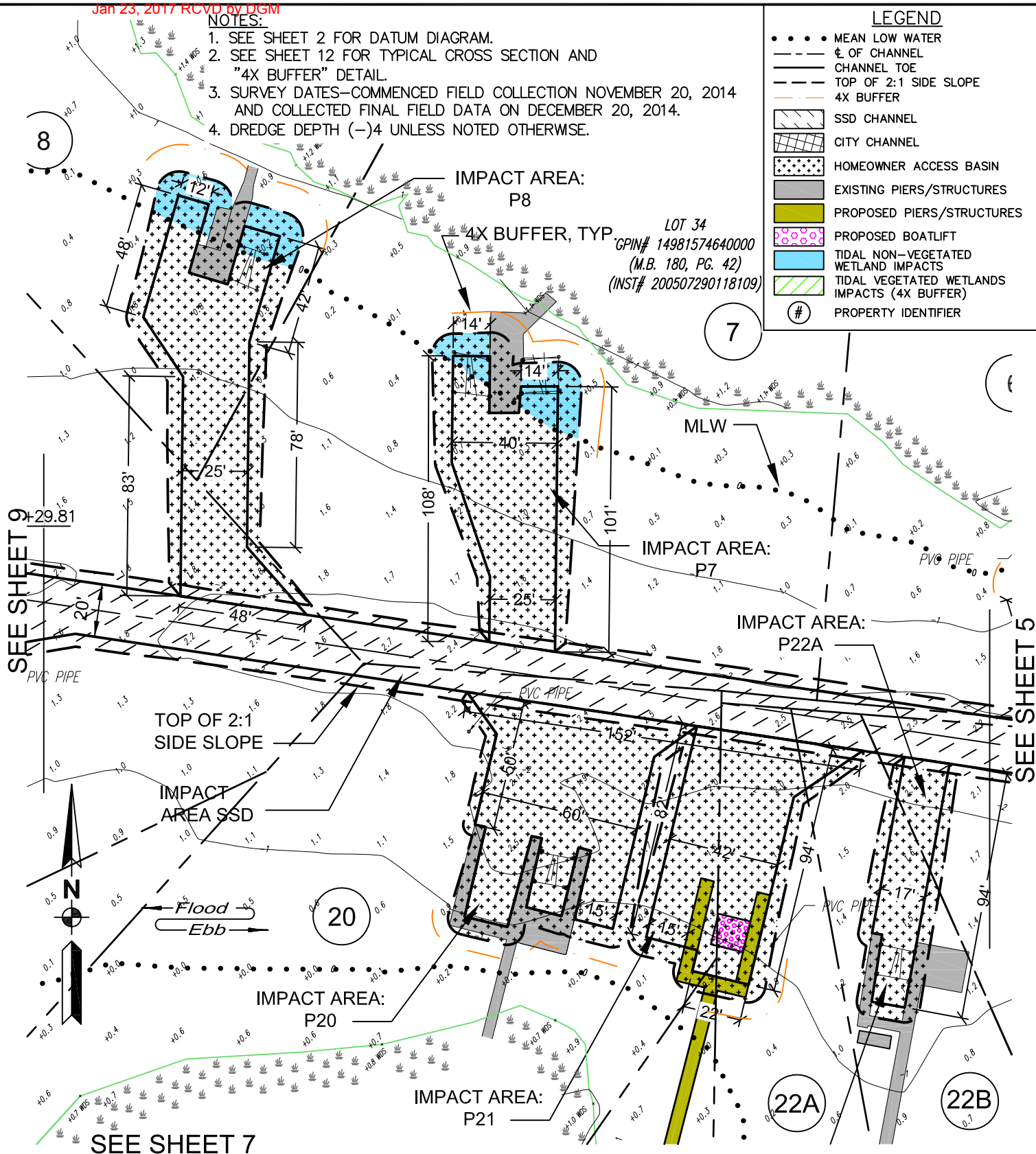
SHEET:
5 OF 15

NOTES:

1. SEE SHEET 2 FOR DATUM DIAGRAM.
2. SEE SHEET 12 FOR TYPICAL CROSS SECTION AND "4X BUFFER" DETAIL.
3. SURVEY DATES—COMMENCED FIELD COLLECTION NOVEMBER 20, 2014 AND COLLECTED FINAL FIELD DATA ON DECEMBER 20, 2014.
4. DREDGE DEPTH (-)4 UNLESS NOTED OTHERWISE.

LEGEND

- • • MEAN LOW WATER
- OF CHANNEL
- CHANNEL TOE
- TOP OF 2:1 SIDE SLOPE
- 4X BUFFER
- [Pattern] SSD CHANNEL
- [Pattern] CITY CHANNEL
- [Pattern] HOMEOWNER ACCESS BASIN
- [Pattern] EXISTING PIERS/STRUCTURES
- [Pattern] PROPOSED PIERS/STRUCTURES
- [Pattern] PROPOSED BOATLIFT
- [Pattern] TIDAL NON-VEGETATED WETLAND IMPACTS
- [Pattern] TIDAL VEGETATED WETLANDS IMPACTS (4X BUFFER)
- # PROPERTY IDENTIFIER



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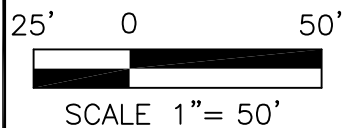
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**JOINT PERMIT
APPLICATION DRAWINGS**

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA



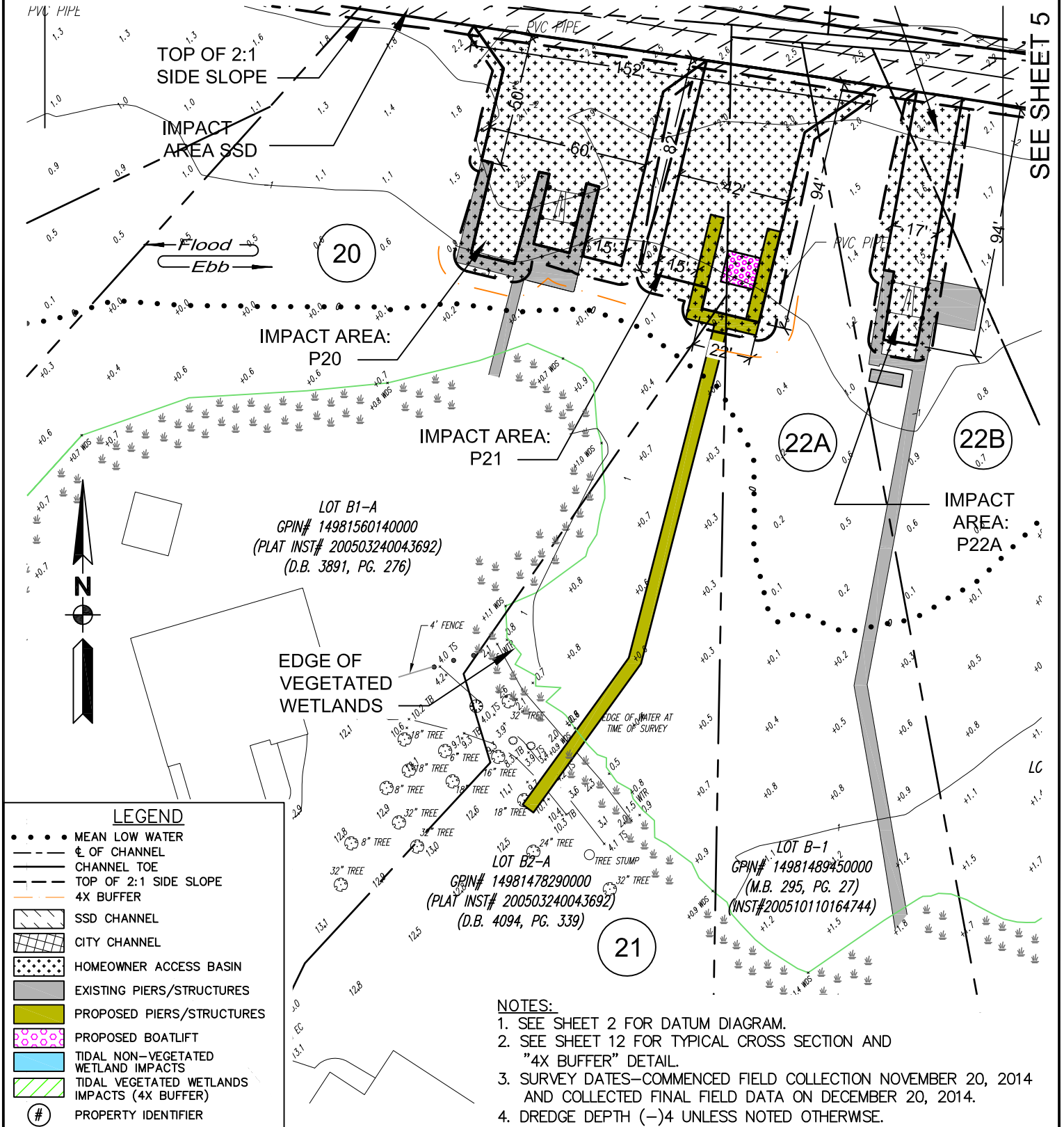
DATUM: MLW = 0.0

DATE:
01/11/17

SHEET:
6 OF 15

SEE SHEET 6

SEE SHEET 5



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JOINT PERMIT APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA

25' 0 50'
SCALE 1"= 50'

DATUM: MLW = 0.0

DATE:
01/11/17

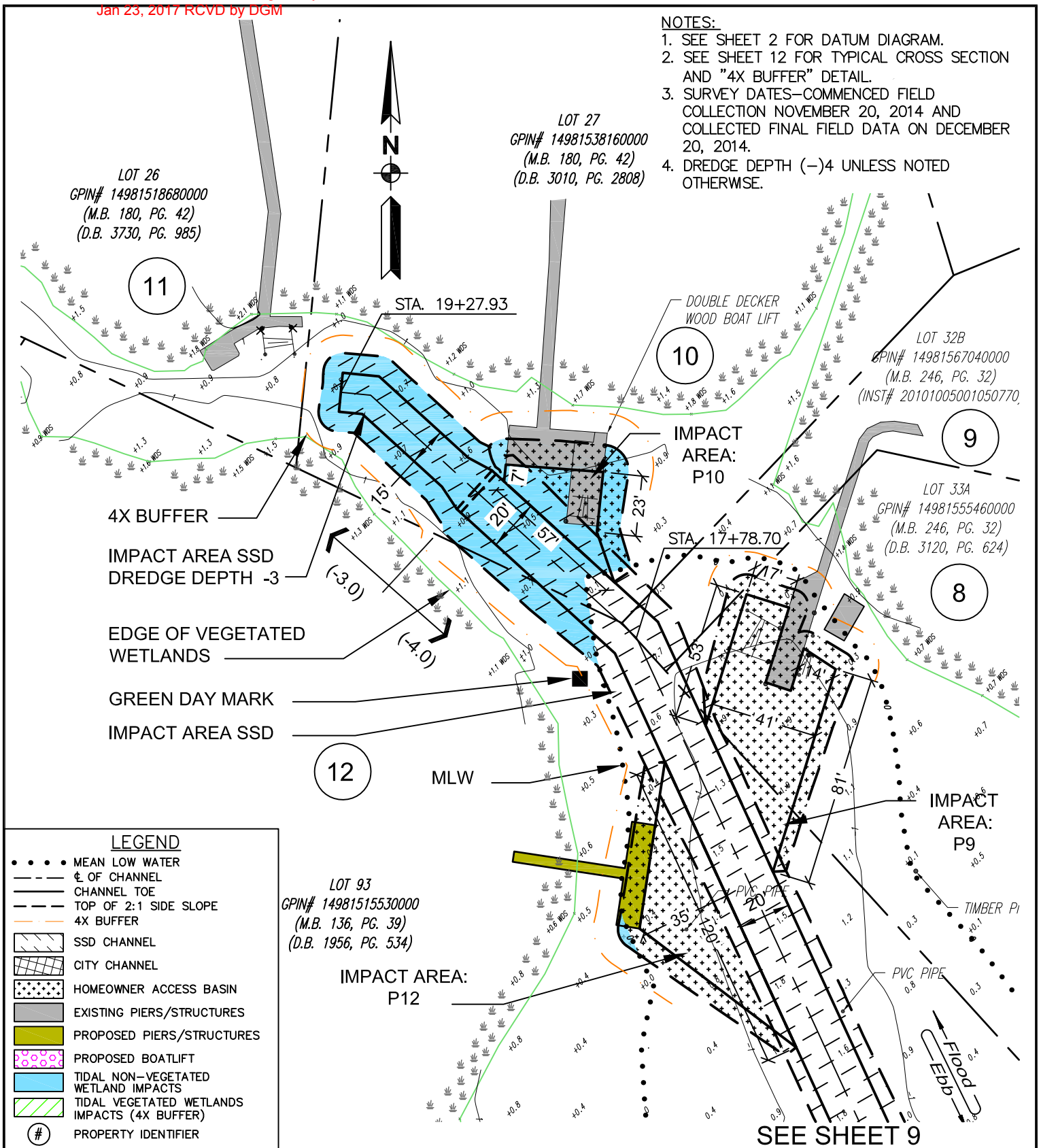
SHEET:
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NOTES:

1. SEE SHEET 2 FOR DATUM DIAGRAM.
2. SEE SHEET 12 FOR TYPICAL CROSS SECTION AND "4X BUFFER" DETAIL.
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Engineering, Planning, Science

JOINT PERMIT
APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA

25' 0 50'
SCALE 1" = 50'

DATUM: MLW = 0.0

DATE:
01/11/17

SHEET:
8 OF 15

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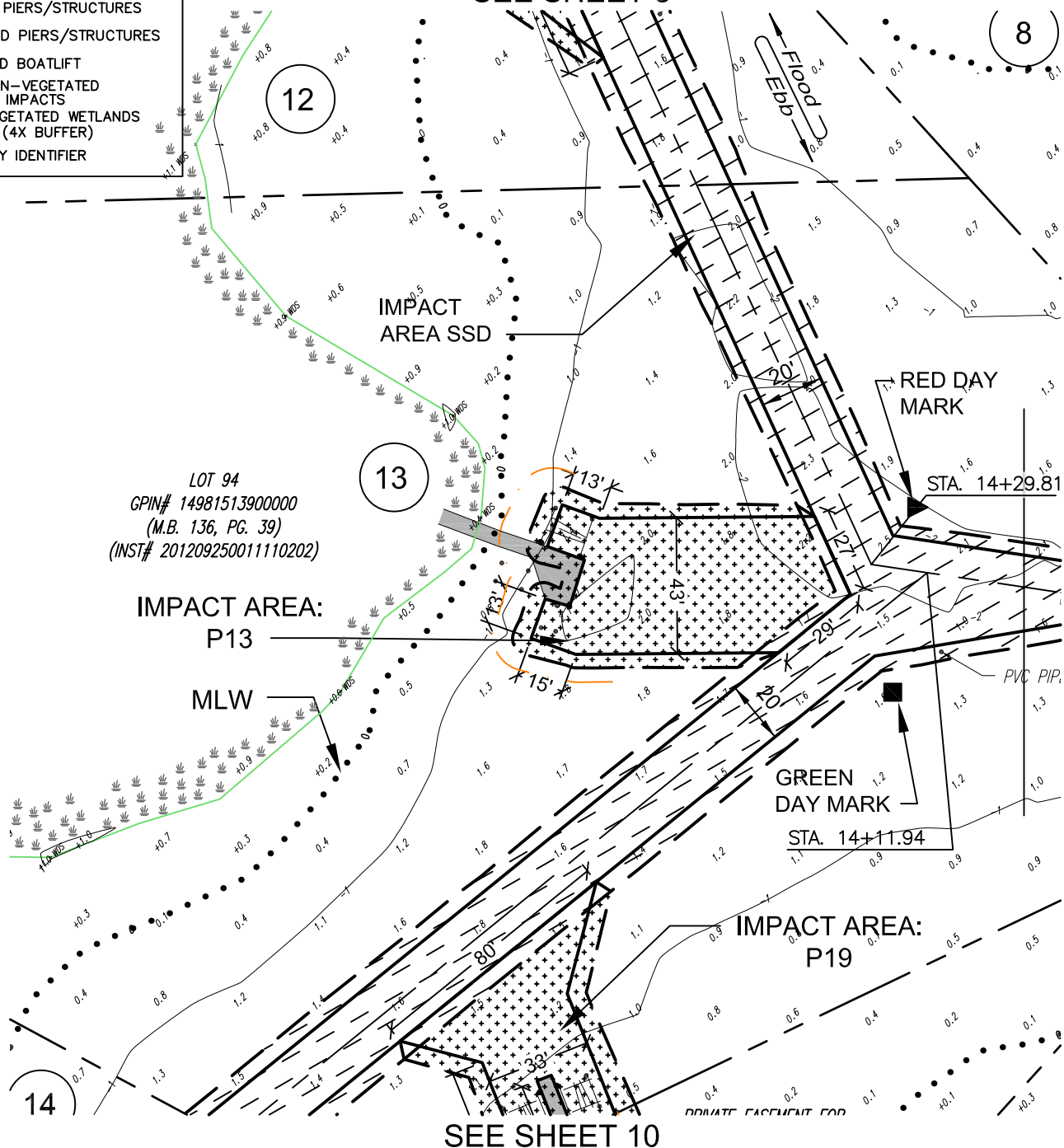
LEGEND

- • • MEAN LOW WATER
- - - C.O. OF CHANNEL
- CHANNEL TOE
- - - TOP OF 2:1 SIDE SLOPE
- - - 4X BUFFER
- [Pattern] SSD CHANNEL
- [Pattern] CITY CHANNEL
- [Pattern] HOMEOWNER ACCESS BASIN
- [Pattern] EXISTING PIERS/STRUCTURES
- [Pattern] PROPOSED PIERS/STRUCTURES
- [Pattern] PROPOSED BOATLIFT
- [Pattern] TIDAL NON-VEGETATED WETLAND IMPACTS
- [Pattern] TIDAL VEGETATED WETLANDS IMPACTS (4X BUFFER)
- # PROPERTY IDENTIFIER

NOTES:

1. SEE SHEET 2 FOR DATUM DIAGRAM.
2. SEE SHEET 12 FOR TYPICAL CROSS SECTION AND "4X BUFFER" DETAIL.
3. SURVEY DATES—COMMENCED FIELD COLLECTION NOVEMBER 20, 2014 AND COLLECTED FINAL FIELD DATA ON DECEMBER 20, 2014.
4. DREDGE DEPTH (-)4 UNLESS NOTED OTHERWISE.

SEE SHEET 8



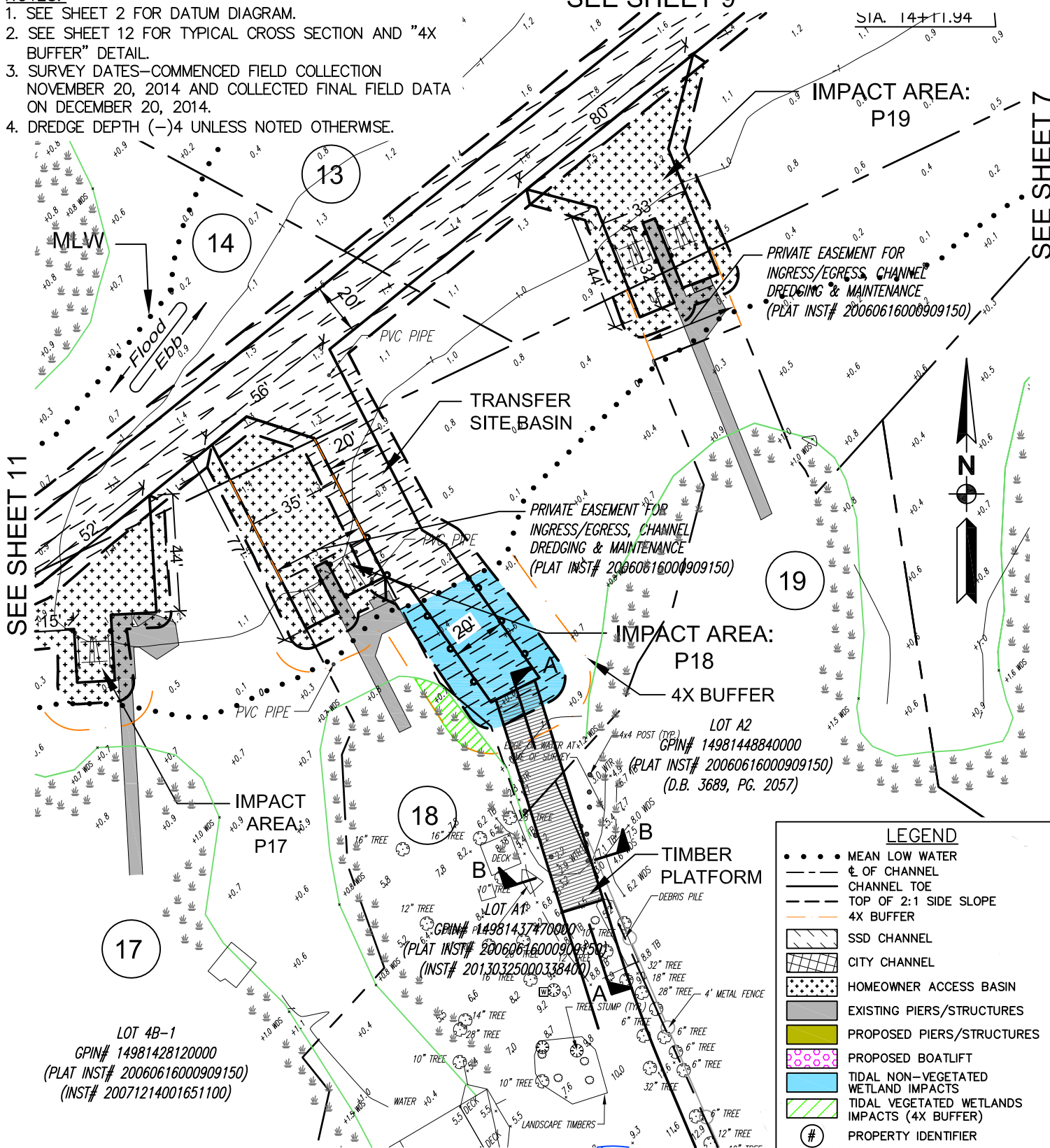
NOTES:

1. SEE SHEET 2 FOR DATUM DIAGRAM.
2. SEE SHEET 12 FOR TYPICAL CROSS SECTION AND "4X BUFFER" DETAIL.
3. SURVEY DATES—COMMENCED FIELD COLLECTION NOVEMBER 20, 2014 AND COLLECTED FINAL FIELD DATA ON DECEMBER 20, 2014.
4. DREDGE DEPTH (-)4 UNLESS NOTED OTHERWISE.

SEE SHEET 11

SEE SHEET 9

SEE SHEET 7



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JOINT PERMIT
APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA

25' 0 50'



SCALE 1"= 50'

DATUM: MLW = 0.0

DATE:
01/11/17

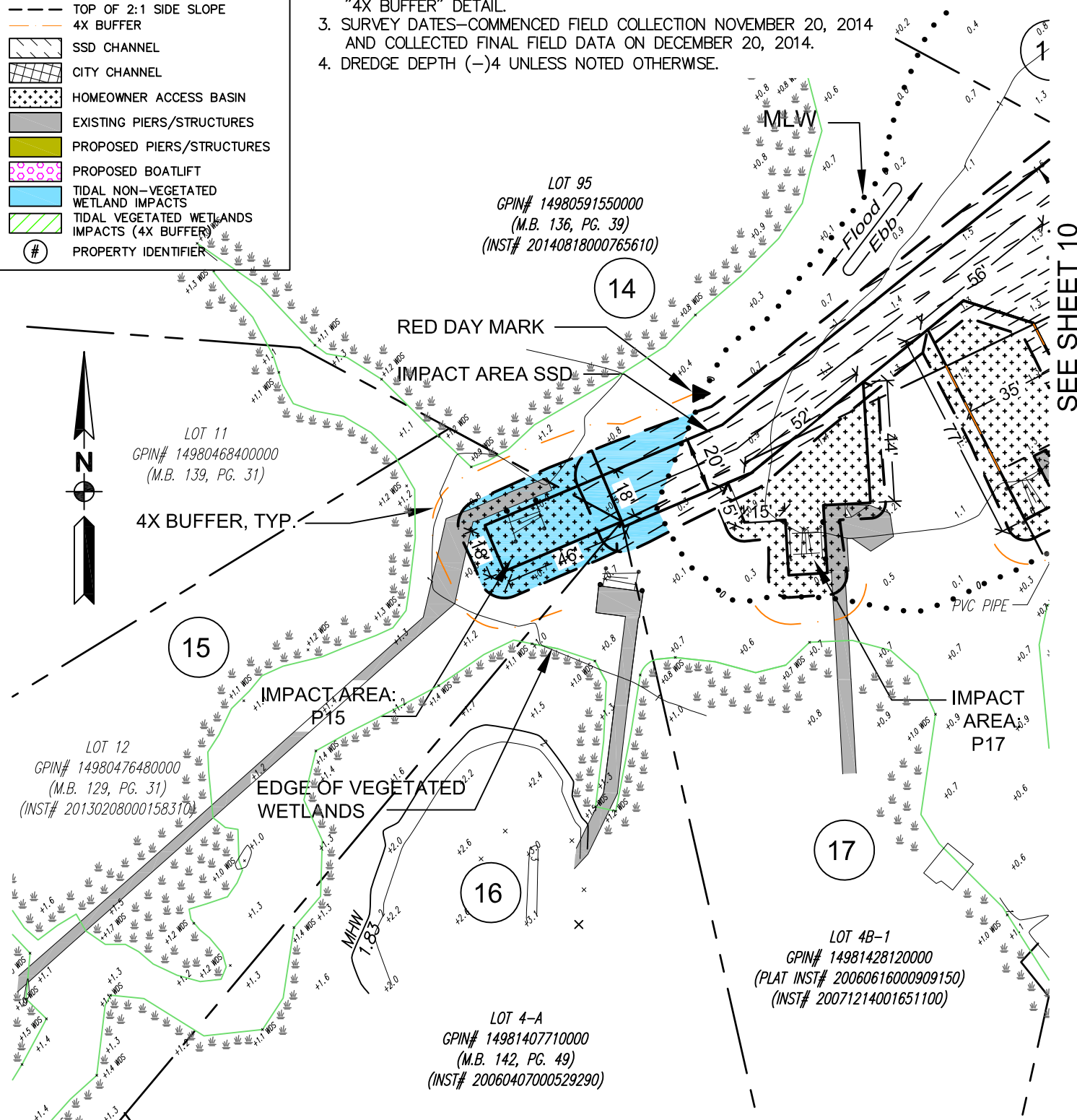
SHEET:
10 OF 15

LEGEND

- • • • MEAN LOW WATER
- OF CHANNEL
- CHANNEL TOE
- TOP OF 2:1 SIDE SLOPE
- 4X BUFFER
- SSD CHANNEL
- CITY CHANNEL
- HOMEOWNER ACCESS BASIN
- EXISTING PIERS/STRUCTURES
- PROPOSED PIERS/STRUCTURES
- PROPOSED BOATLIFT
- TIDAL NON-VEGETATED WETLAND IMPACTS
- TIDAL VEGETATED WETLANDS IMPACTS (4X BUFFER)
- # PROPERTY IDENTIFIER

NOTES:

1. SEE SHEET 2 FOR DATUM DIAGRAM.
2. SEE SHEET 12 FOR TYPICAL CROSS SECTION AND "4X BUFFER" DETAIL.
3. SURVEY DATES—COMMENCED FIELD COLLECTION NOVEMBER 20, 2014 AND COLLECTED FINAL FIELD DATA ON DECEMBER 20, 2014.
4. DREDGE DEPTH (-)4 UNLESS NOTED OTHERWISE.



SEE SHEET 10



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JOINT PERMIT APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA

25' 0 50'

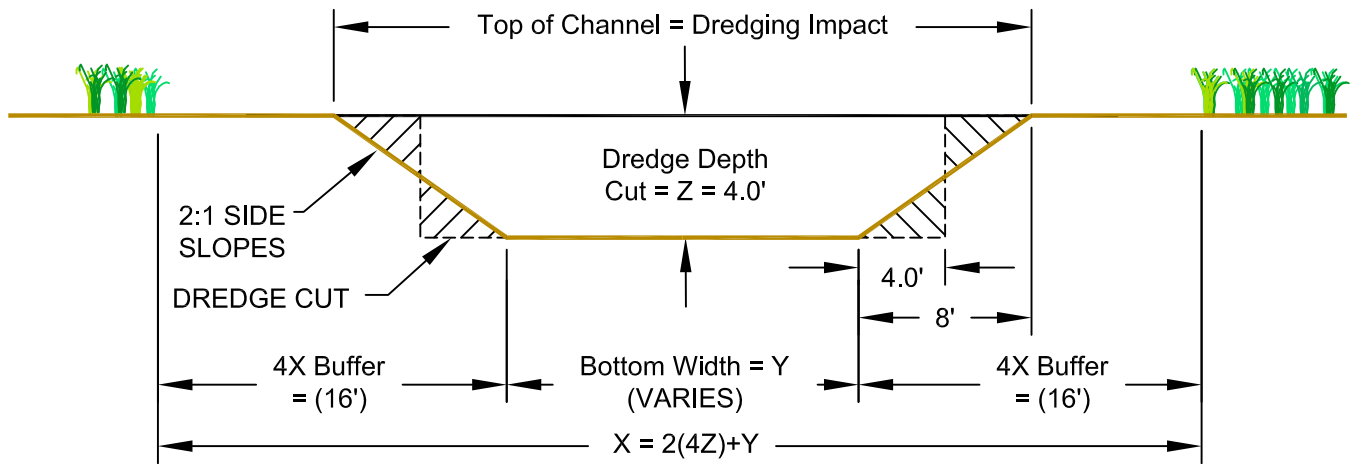


SCALE 1" = 50'

DATUM: MLW = 0.0

DATE:
01/11/17

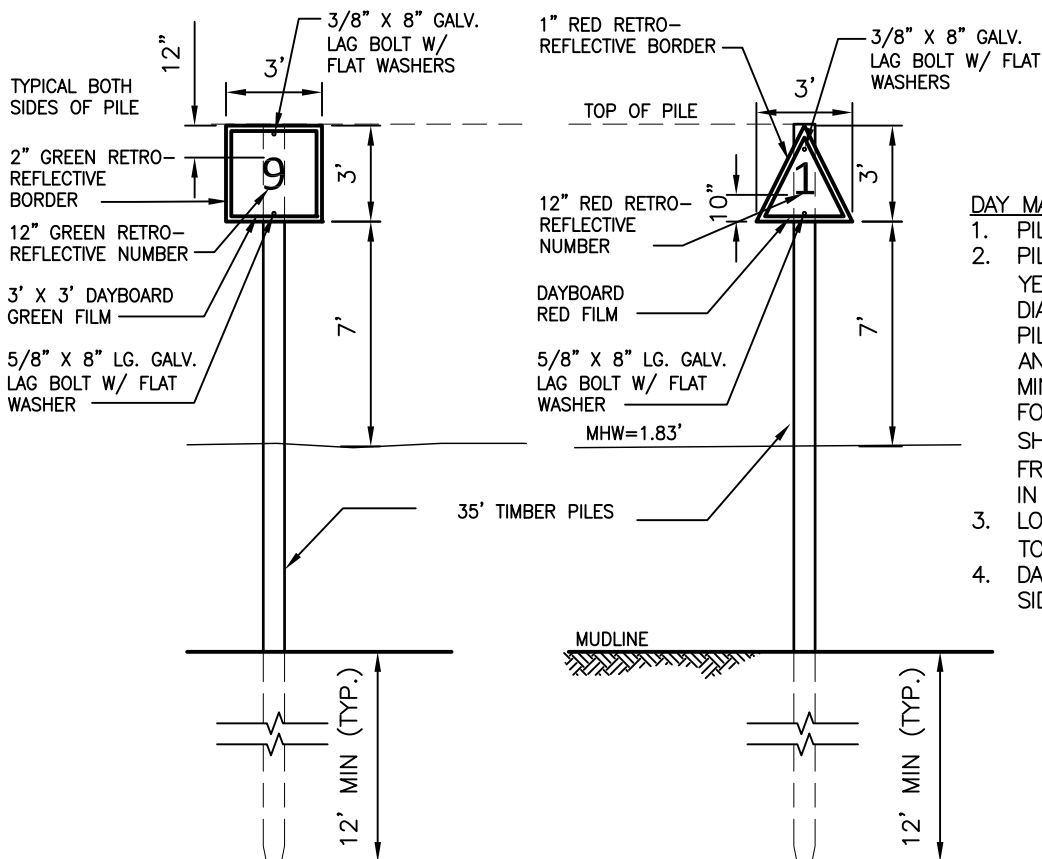
SHEET:
11 OF 15



NOTE:

"4X BUFFER" IS FOUR TIMES THE DREDGE CUT DEPTH.

TYPICAL DREDGE SECTION (NTS)



DAY MARKER NOTES:

1. PILES DESIGNED TO BE FRICTION PILE.
2. PILES SHALL BE ROUND, SOUTHERN YELLOW PINE PILES WITH AN 8" TIP DIAMETER, CONFORMING TO ASTM D25. PILES SHALL BE UNUSED CLEAN-PEELED, AND PRESERVATIVE TREATED WITH A MINIMUM 2.5 CCA RETAINED PER CUBIC FOOT. MINIMUM BUTT CIRCUMFERENCE SHALL BE 38" MEASURED THREE FEET FROM BUTT END. PILES SHALL BE 35' IN LENGTH.
3. LOCATED TIMBER PILE WITH A LOCATION TOLERANCE OF 6".
4. DAY MARKER BOARD TYPICAL BOTH SIDES.

TYPICAL DAY MARK DETAILS (NTS)



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JOINT PERMIT APPLICATION DRAWINGS

GILLS COVE
NEIGHBORHOOD DREDGING

VIRGINIA BEACH, VIRGINIA

DATUM: MLW = 0.0

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