BORING LOGS ECP-2030 THRU ECP-2037

LOG OF BORING ECP-2030

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13840965.69; E: 3194568.79
DEPTH OF WATER: 34 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: N/A FT
SURFACE ELEVATION: 21.97 FT
DATE: 4/21/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

Columns: ELEVATION, FT | DEPTH, FT | SYMBOL | SAMPLES | DESCRIPTION OF MATERIAL | STANDARD PENETRATION TEST, BLOWS PER FOOT | PERCENT PASSING NO. 200 SIEVE | DRY UNIT WEIGHT, PCF | MOISTURE CONTENT, % | LIQUID LIMIT, % | PLASTIC LIMIT, % | PLASTICITY INDEX, % | UNDRAINED SHEAR STRENGTH, TSF (○ HAND PENETROMETER; ● UNCONFINED COMPRESSION; ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION; △ TORVANE; 0.2 0.4 0.6 0.8 1.0)

DESCRIPTION OF MATERIAL:
- Firm to stiff, reddish brown and gray, CLAY
- -w/ calcareous nodules and ferrous stains at 6'-10'
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ calcareous nodules and ferrous stains at 10'-12' and 16'-20'
- -w/ silt seams at 33'-35'
- Medium dense, brown, SAND
- -w/ clay seams at 38'-40' (SPT: 19)

Remarks: Groundwater was encountered at 34' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-17

LOG OF BORING ECP-2031

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13840819.93; E: 3195100.41
DEPTH OF WATER: 39 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 32 FT
SURFACE ELEVATION: 23.59 FT
DATE: 4/23/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Loose, brown, SAND (SPT: 4)
- Stiff to very stiff, reddish brown and gray, CLAY (SPT: 8)
- -w/ calcareous nodules at 4'-10'
- -w/ ferrous stains at 4'-18'
- -w/ calcareous nodules at 18'-20'
- Loose, brown, SAND
- -w/ clay seams at 38'-40' (SPT: 6)

Remarks: Groundwater was encountered at 39' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-18

LOG OF BORING ECP-2032

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13840322.78; E: 3195299.53
DEPTH OF WATER: 38 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: N/A FT
SURFACE ELEVATION: 23.42 FT
DATE: 4/23/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ calcareous nodules at 6'-10'
- -w/ ferrous stains at 23'-25'
- Very stiff, brown and gray, CLAY
- -w/ sand layers at 38'-40' (SPT: 18)

Remarks: Groundwater was encountered at 38' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-19

LOG OF BORING ECP-2033

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13839829.05; E: 3194508.61
DEPTH OF WATER: Dry FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: N/A FT
SURFACE ELEVATION: 23.76 FT
DATE: 4/21/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ roots at 0'-4'
- -w/ sand seams at 4'-8'
- -w/ calcareous nodules and ferrous stains at 8'-12'
- -w/ calcareous nodules and ferrous stains at 23'-25'

Remarks: Groundwater was not encountered during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-20

LOG OF BORING ECP-2034

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13840474.15; E: 3192891.38
DEPTH OF WATER: 33 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 34 FT
SURFACE ELEVATION: 24.37 FT
DATE: 4/22/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Stiff, dark gray and brown, CLAY
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ ferrous stains and sand seams at 4'-6'
- -w/ calcareous nodules at 6'-10'
- -w/ ferrous stains at 8'-10'
- -w/ ferrous stains and calcareous nodules at 18'-20'
- -w/ ferrous stains and calcareous nodules at 23'-25'

Remarks: Groundwater was encountered at 33' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-21

LOG OF BORING ECP-2035

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13838154.43; E: 3193967.07
DEPTH OF WATER: 33 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 33 FT
SURFACE ELEVATION: 24.38 FT
DATE: 4/22/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ roots at 2'-4'
- -w/ sand seams at 4'-6'
- -w/ calcareous nodules at 4'-10'
- -w/ calcareous nodules and ferrous stains at 18'-20'
- -w/ calcareous nodules at 23'-25'
- Medium dense, brown, SAND (SPT: 21)

Remarks: Groundwater was encountered at 33' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-22

LOG OF BORING ECP-2036

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13838274.31; E: 3194701.76
DEPTH OF WATER: 28 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 28.5 FT
SURFACE ELEVATION: 24.22 FT
DATE: 4/22/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Firm to stiff, dark gray and reddish brown, CLAY
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ sand seams at 4'-8'
- -w/ ferrous stains at 6'-8'
- -w/ sand seams at 12'-14'
- -w/ calcareous nodules at 14'-16' and 18'-20'
- -w/ sand seams at 28'-30'
- Loose to medium dense, brown, SAND (SPT: 16, 6)

Remarks: Groundwater was encountered at 28' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-23

LOG OF BORING ECP-2037

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13839048.44; E: 3194925.94
DEPTH OF WATER: 33 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 33 FT
SURFACE ELEVATION: 23.37 FT
DATE: 4/22/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

DESCRIPTION OF MATERIAL:
- Firm to very stiff, reddish brown and gray, CLAY
- -w/ calcareous nodules at 6'-10'
- -w/ calcareous nodules and ferrous stains at 23'-25'
- Stiff to very stiff, reddish brown and gray, CLAY
- -w/ sand at 33'-35' and 38'-40' (SPT: 27)

Remarks: Groundwater was encountered at 33' during drilling operations.

Drilled By: CH Logged By: Edgar HVJ Associates, Inc. PLATE A-24

NOTE:
BORING LOGS DATED JANUARY 28, 2020 AND JANUARY 29, 2020 ARE PROVIDED BY HVJ ASSOCIATES. THIS NOTE INTENDED FOR INFORMATION ONLY.

BELTWAY 8 DMPA

PORT OF HOUSTON AUTHORITY

CONSULTANT: DESIGN PREPARED BY: HDR

SEAL:
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95% REVIEW

APPROVED: ______ DATE
PORT CONTRACT REPRESENTATIVE MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:
HOUSTON SHIP CHANNEL (HSC) EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)
PROJECT 11: PACKAGE 8

SHEET TITLE:
SEGMENT 4 BOGGY BAYOU TO HUNTING BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA
BORING LOGS ECP-2030 THRU ECP-2037
SHEET 3 OF 4

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	C.LOWE
CADD:	J.BURD
CHECKER:	A.COLWELL
DATE:	12/08/2020
SCALE:	NO SCALE

DRAWING NO. C90-D13-P11-008
SHEET NO. B-010 REV. NO. B

95% REVIEW

BORING LOGS ECP-2038 THRU ECP-2044

LOG OF BORING ECP-2038

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13839688.34; E: 3195091.98
DEPTH OF WATER: Dry FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: N/A FT
SURFACE ELEVATION: 23.76 FT
DATE: 4/20/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 40 FT
WET ROTARY: TO FT

Columns: ELEVATION, FT | DEPTH, FT | SYMBOL | SAMPLES | DESCRIPTION OF MATERIAL | STANDARD PENETRATION TEST, BLOWS PER FOOT | PERCENT PASSING NO. 200 SIEVE | DRY UNIT WEIGHT, PCF | MOISTURE CONTENT, % | LIQUID LIMIT, % | PLASTIC LIMIT, % | PLASTICITY INDEX, % | UNDRAINED SHEAR STRENGTH, TSF (○ HAND PENETROMETER; ● UNCONFINED COMPRESSION; ■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION; △ TORVANE; 0.2 0.4 0.6 0.8 1.0)

DESCRIPTION OF MATERIAL:
- Stiff, brown and gray, CLAY
  - -w/ shells at 0'-2'
  - -w/ ferrous stains at 6'-10'
- Stiff to very stiff, reddish brown and gray, CLAY
  - -w/ ferrous stains at 10'-20'
  - -w/ ferrous stains at 23'-25'

Remarks: Groundwater was not encountered during drilling operations.

Drilled By: CH Logged By: Edgar/Vijay
HVJ Associates, Inc.
PLATE A-25

LOG OF BORING ECP-2039

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13838288.24; E: 3192754.92
DEPTH OF WATER: 35 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 31 FT
SURFACE ELEVATION: 24.61 FT
DATE: 4/14/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 35 FT
WET ROTARY: 35 TO 40 FT

DESCRIPTION OF MATERIAL:
- Brown, SAND
  - -w/ roots at 0'-2'
- Stiff to very stiff, reddish brown and gray, CLAY
  - -w/ calcareous nodules at 6'-12'
- Very stiff, reddish brown and gray, CLAY
  - -w/ calcareous nodules and ferrous stains at 23'-25'
- Stiff, reddish brown and gray, CLAY
  - -w/ sand seams at 33'-35'
- Medium dense, reddish brown, SILT
  - -w/ clay seams at 38'-40' — SPT 15

Remarks: Groundwater was encountered at 35' during drilling operations.

Drilled By: CH Logged By: Edgar
HVJ Associates, Inc.
PLATE A-26

LOG OF BORING ECP-2040

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13836914.45; E: 3193062.68
DEPTH OF WATER: 18 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 17.5 FT
SURFACE ELEVATION: 16.65 FT
DATE: 4/13/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 18 FT
WET ROTARY: 18 TO 40 FT

DESCRIPTION OF MATERIAL:
- Stiff to very stiff, dark gray and brown, CLAY
  - -w/ roots at 0'-4'
  - -w/ calcareous nodules at 0'-6'
  - -w/ sand and silt seams at 6'-12'
- Stiff to very stiff, reddish brown, CLAY
- Firm to stiff, reddish brown, CLAY
- Medium dense, brown, SAND — SPT 15, 27
- Very stiff, reddish brown and gray, CLAY
  - -w/ sand seams at 38'-40'

Remarks: Groundwater was encountered at 18' during drilling operations.

Drilled By: CH Logged By: Edgar
HVJ Associates, Inc.
PLATE A-27

LOG OF BORING ECP-2041

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13837439.82; E: 3192549.76
DEPTH OF WATER: 28 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 18 FT
SURFACE ELEVATION: 24.08 FT
DATE: 4/13/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 30 FT
WET ROTARY: 30 TO 40 FT

DESCRIPTION OF MATERIAL:
- Stiff, gray and brown, CLAY
  - -w/ calcareous nodules at 2'-8'
- Stiff to very stiff, reddish brown and gray, CLAY
  - -w/ sand seams at 8'-14'
  - -w/ calcareous nodules at 14'-16'
  - -w/ ferrous stains at 14'-18'
- Medium dense, brown and gray, SILT — SPT 24
- Very stiff, reddish brown and gray, CLAY
  - -w/ sand seams at 38'-40'

Remarks: Groundwater was encountered at 28' during drilling operations.

Drilled By: CH Logged By: Edgar
HVJ Associates, Inc.
PLATE A-28

LOG OF BORING ECP-2042

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13836660.32; E: 3192689.27
DEPTH OF WATER: 35 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 32 FT
SURFACE ELEVATION: 17.4 FT
DATE: 4/14/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 35 FT
WET ROTARY: 35 TO 40 FT

DESCRIPTION OF MATERIAL:
- Stiff, dark gray and reddish brown, CLAY
  - -w/ calcareous nodules and ferrous stains at 4'-6'
- Stiff to very stiff, reddish brown and gray, CLAY
  - -w/ calcareous nodules at 14'-18'
- Stiff, reddish brown and gray, CLAY
  - -w/ silt pockets at 33'-35' — SPT 10
- Medium dense, brown, SAND
  - -w/ clay seams at 38'-40' — SPT 24

Remarks: Groundwater was encountered at 35' during drilling operations.

Drilled By: CH Logged By: Edgar
HVJ Associates, Inc.
PLATE A-29

LOG OF BORING ECP-2043

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13837042.31; E: 3193502.6
DEPTH OF WATER: 28 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 22.5 FT
SURFACE ELEVATION: 15.65 FT
DATE: 4/13/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 30 FT
WET ROTARY: 30 TO 40 FT

DESCRIPTION OF MATERIAL:
- Stiff to very stiff, dark gray and brown, CLAY
  - -w/ roots at 0'-2'
  - -w/ calcareous nodules at 0'-6'
- Very stiff, reddish brown and gray, CLAY
  - -w/ calcareous nodules at 6'-18'
- Loose to medium dense, brown, SAND
  - -w/ clay seams at 28'-30' — SPT 7, 19
- Very stiff, reddish brown and gray, CLAY

Remarks: Groundwater was encountered at 28' during drilling operations.

Drilled By: CH Logged By: Edgar
HVJ Associates, Inc.
PLATE A-30

LOG OF BORING ECP-2044

PAGE 1 OF 1

PROJECT: HSC Expansion - Beltway 8 DMPA
PROJECT NO.: HG1910092.2.1
LOCATION: N: 13837516.14; E: 3193792.84
DEPTH OF WATER: 8 FT
COMPLETION DEPTH: 40 FT
OFFSET: N/A
CAVE-IN DEPTH: 4.5 FT
SURFACE ELEVATION: 24.88 FT
DATE: 4/15/2020

SAMPLER: Shelby Tube/Split Spoon
DRY AUGER: 0 TO 10 FT
WET ROTARY: 10 TO 40 FT

DESCRIPTION OF MATERIAL:
- Very loose to medium dense, brown, SAND — SPT 5, 9, 22, 7, 3, 4, 1
  - -w/ roots at 0'-4'
  - -w/ clay seams at 2'-4'
- Firm to very stiff, reddish brown and gray, CLAY
  - -w/ sand seams at 14'-16' — SPT 6
  - -w/ calcareous nodules at 28'-30'
  - -w/ sand seams at 38'-40'

Remarks: Groundwater was encountered at 8' during drilling operations.

Drilled By: CH Logged By: Edgar
HVJ Associates, Inc.
PLATE A-31

NOTE:
BORING LOGS DATED JANUARY 28, 2020 AND JANUARY 29, 2020 ARE PROVIDED BY HVJ ASSOCIATES. THIS NOTE INTENDED FOR INFORMATION ONLY.

BELTWAY 8 DMPA

PORT OF HOUSTON AUTHORITY

CONSULTANT:
DESIGN PREPARED BY: HDR

SEAL:
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95% REVIEW

APPROVED: DATE
PORT CONTRACT REPRESENTATIVE MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:
HOUSTON SHIP CHANNEL (HSC)
EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)
PROJECT 11: PACKAGE 8

SHEET TITLE:
SEGMENT 4 BOGGY BAYOU TO HUNTING BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA
BORING LOGS ECP-2038 THRU ECP-2044
SHEET 4 OF 4

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

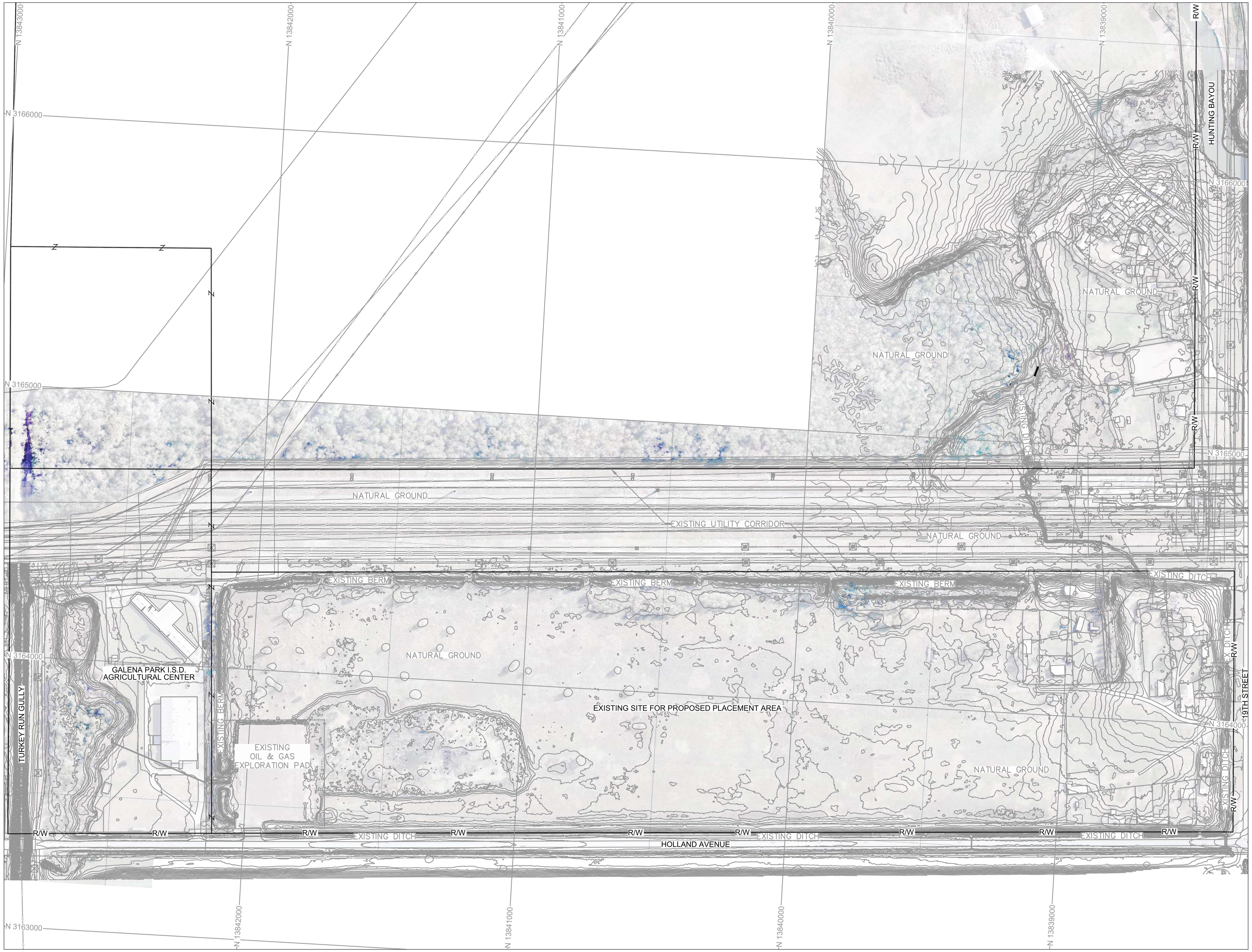
DESIGNER:	C.LOWE
CADD:	J.BURD
CHECKER:	A.COLWELL
DATE:	12/08/2020
SCALE:	NO SCALE

DRAWING NO. C90-D13-P11-008
SHEET NO. B-011
REV. NO. B

95% REVIEW

TIME: 7-25-20 – 5:45pm User: JBURD DWG: C:\pwworking\central01\d1796030\2010-HSC00_G_C_BS-SEG2-4.dwg

TIME: 12-07-20 - 4:40pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-001.dwg



2 EXISTING OVERALL SITE PLAN

SCALE: 1" = 200'   0   200'   400'

NOTE:

1. UNDERGROUND UTILITY LINES IN UTILITY LINE CORRIDOR INCLUDE HIGH PRESSURE GAS PIPELINES.
2. LOCATIONS OF UTILITIES AND PIPELINES SHOWN IS APPROXIMATE. ADDITIONAL UTILITIES AND PIPELINES MAY EXIST.
3. SEE SHEET G-002, GENERAL RE□UIREMENTS NOTE 12 FOR THE CONTRACTOR'S HANDLING OF THE PIPELINE AND UTILITY CROSSINGS WITHIN THE VICINITY OF RE□UIRED WORK AREA.
4. ALL TOPOGRAPHIC SURVEY DATA SHOWN, INCLUDING EXISTING CONTOURS, WERE OBTAINED BY FUGRO USA LAND, INC. ON DECEMBER 14, 2019.

PORT OF HOUSTON AUTHORITY

CONSULTANT:

DESIGN PREPARED BY:

HDR Engineering, INC
TBPELS FIRM
Registration No. F-754

SEAL:

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APPROVED: DATE

PORT CONTRACT REPRESENTATIVE
MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:

HOUSTON SHIP CHANNEL (HSC)

EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)

PROJECT 11: PACKAGE # 8

SHEET TITLE:

SEGMENT 4 BOGGY BAYOU TO SIMS BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA

EXISTING OVERALL SITE PLAN

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

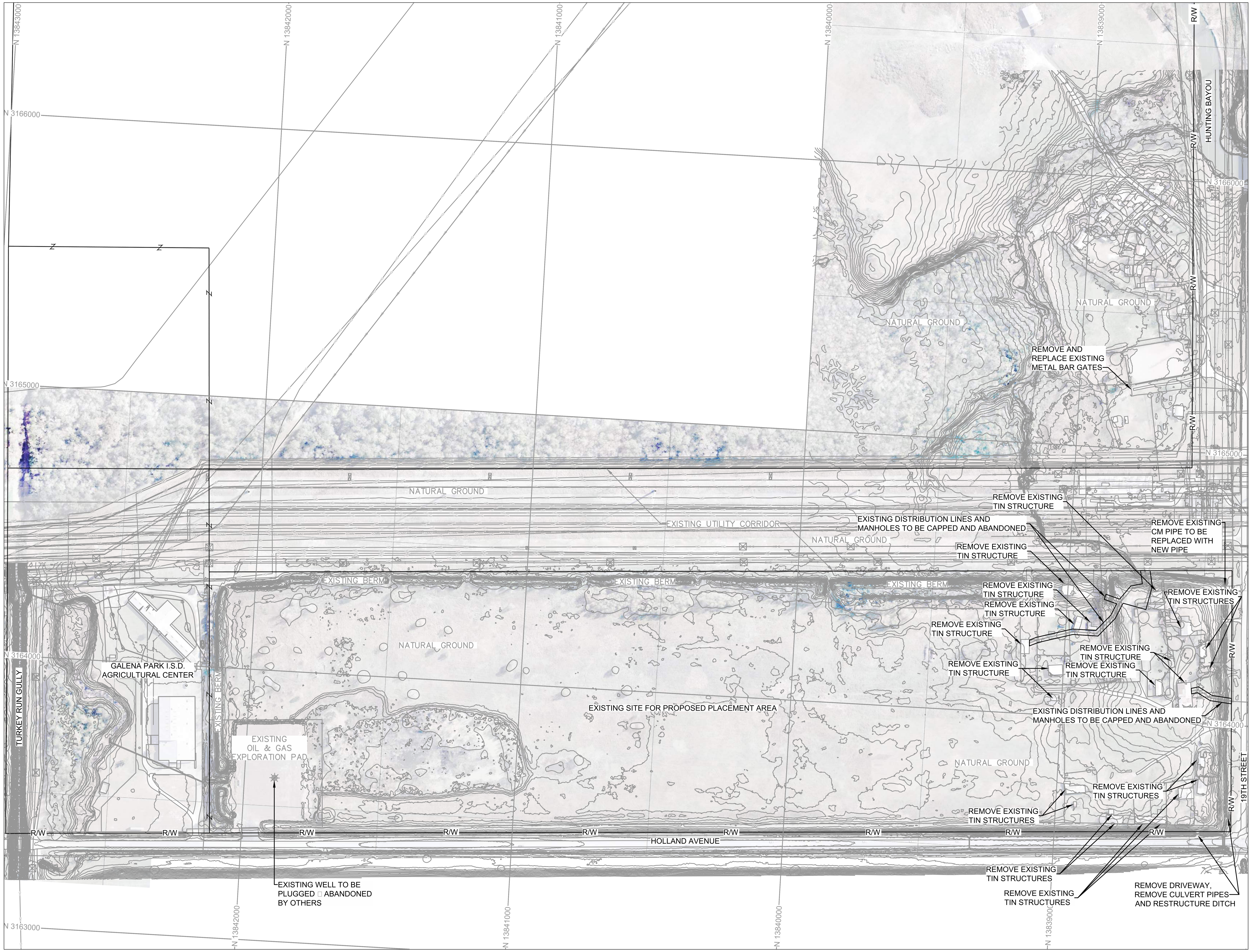
DESIGNER:	G.PENNISON
CADD:	J.DELEON
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

DRAWING NO.: C90-D13-P11-002

SHEET NO.: C-001   REV. NO.: B

E2 CLINTON DMPA

95% REVIEW



3 DEMOLITION PLAN

SCALE: 1" = 200'

0 200' 400'

NOTES:

1. REMOVE ALL METAL FENCING, CORRAL FENCING AND POSTS OFF OF PROPERTY, INCLUDING CHAINLINK FENCING AROUND THE EXISTING OIL AND GAS EXPLORATION PAD AT THE NORTHWEST CORNER OF THE PROPERTY.
2. UNDERGROUND UTILITY LINES IN UTILITY CORRIDOR INCLUDE HIGH PRESSURE GAS PIPELINES.
3. CONTRACTOR TO REMOVE AND DISPOSE DEMOLITION MATERIAL OFFSITE IN PERMITTED CONSTRUCTION DEBRIS LANDFILL.
4. AT THE EXISTING OIL AND GAS EXPLORATION PAD, REMOVE SURFACE AGGREGATE WITHIN LIMITS OF CONSTRUCTION. SCARIFY AND RECOMPACT.
5. EXISTING O/G WELL TO BE PLUGGED AND ABANDONED BY OTHERS. NOT THIS CONTRACT.
6. CONTRACTOR SHALL CONTACT ONECALL AT LEAST 48 HOURS PRIOR TO PERFORMING ANY WORK ONSITE. PRIOR TO PERFORMING ON-SITE DEMOLITION AND EXCAVATION OF ANY KIND AND FOR LOCATION OF EXISTING UNDERGROUND ELECTRIC, OVERHEAD ELECTRIC AND UNDERGROUND GAS UTILITIES FOR DISCONNECTION, CONTACT CENTERPOINT ENERGY OR CALL:

811 Know what's below. Call before you dig.

PORT OF HOUSTON AUTHORITY

CONSULTANT:

DESIGN PREPARED BY:

HDR Engineering, INC
TBPELS FIRM
Registration No. F-754

SEAL:

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95% REVIEW

APPROVED: DATE

PORT CONTRACT REPRESENTATIVE
MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:

HOUSTON SHIP CHANNEL (HSC)

EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)

PROJECT 11: PACKAGE # 8

SHEET TITLE:

SEGMENT 4 BOGGY BAYOU TO SIMS BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA

DEMOLITION PLAN

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	G.PENNISON
CADD:	J.DELEON
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

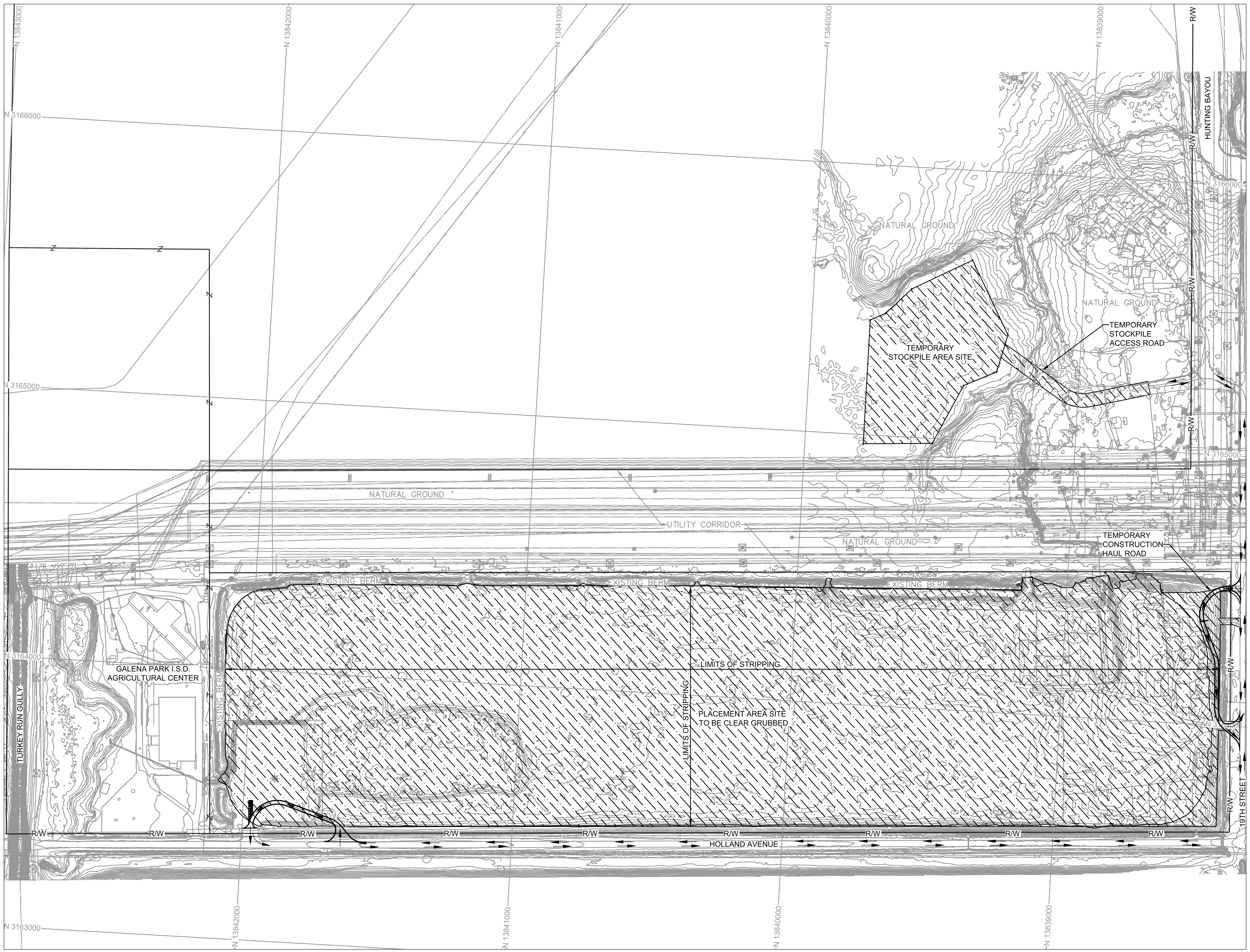
DRAWING NO. C90-D13-P11-002

SHEET NO. C-002 REV. NO. B

E2 CLINTON DMPA

95% REVIEW

TIME: 12-07-20 – 4:52pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-002.dwg



4 CLEAR GRUB AND STRIPPING PLAN LAYOUT

SCALE: 1" = 200'

0 200' 400'

NOTE:

1. TOTAL AREA FOR CLEAR GRUBBING AND STRIPPING IS 81.4 ACRES.
2. NO CONSTRUCTION ACCESS ACROSS UTILITY CORRIDOR.
3. FROM PA AREA THE TOP 6" IS TO BE REMOVED AND STORED IN STOCKPILE AREA FOR PLACEMENT ON DIKE SLOPES AFTER FINISHED GRADING IS COMPLETE.

LEGEND

CLEAR GRUB PRIOR TO SOIL EXCAVATION

TRAFFIC FLOW ARROW

E2 CLINTON DMPA

PORT OF HOUSTON AUTHORITY

CONSULTANT:

DESIGN PREPARED BY:

HDR Engineering, INC
TBPELS FIRM
Registration No. F-754

SEAL:

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95% REVIEW

APPROVED: DATE

PORT CONTRACT REPRESENTATIVE
MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:

HOUSTON SHIP CHANNEL (HSC)

EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)

PROJECT 11: PACKAGE # 8

SHEET TITLE:

SEGMENT 4
BOGGY BAYOU TO SIMS BAYOU TURNING BASIN
E2 CLINTON DMPA & BELTWAY 8 DMPA

CLEAR GRUB AND STRIPPING PLAN LAYOUT

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	G.PENNISON
CADD:	J.DELEON
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

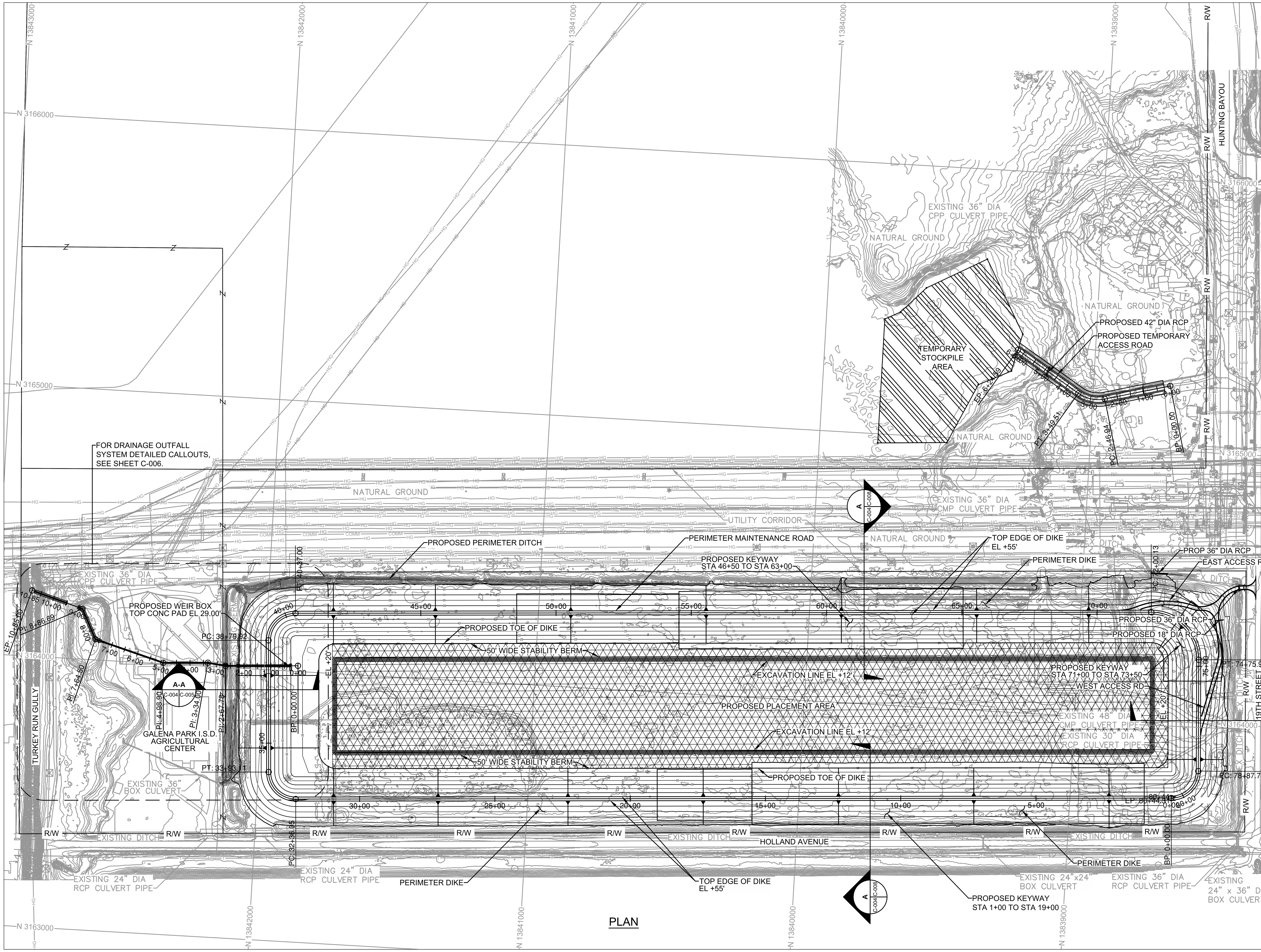
DRAWING NO. C90-D13-P11-002

SHEET NO. C-003

REV. NO. B

95% REVIEW

TIME: 12-07-20 – 5:02pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-003.dwg



5 PROPOSED PLACEMENT AREA PLAN LAYOUT

SCALE: 1" = 200'

0 200' 400'

NOTE:

1. ALL PROPOSED EMBANKMENT ON THIS PRO ECT TO BE FROM ON-SITE BORROW.
2. KEYWAYS RE UIRE REMOVAL, MIXING, PROCESSING AND RECOMPACTION OF INSITU MATERIAL.
3. TEMPORARY CONSTRUCTION DEWATERING TO BE PROVIDED BY CONTRACTOR UNTIL FINISHED GRADING IS COMPLETED. PUMP FROM SUMP ON NORTH END OF +12' EXCAVATION INTO WEIR BOX OUTFALL PIPES AT +29' INVERT.

E2 CLINTON PLACEMENT EXCAVATION TABLE

MILLION CUBIC YARDS (MCY)	
KEYWAYS (ELEVATION VARIES)	0.232 MCY
+12 FEET INTERIOR EXCAVATION	0.789 MCY
+20 FEET STABILITY BERM EXCAVATION	0.039 MCY

E2 CLINTON PLACEMENT FILL TABLE

MILLION CUBIC YARDS (MCY)	
STOCKPILE TEMPORARY ACCESS ROAD	0.001 MCY
DIKE ACCESS RAMPS	0.003 MCY
+55 FEET DIKE EMBANKMENT	0.783 MCY

NOTE:

+52 FEET DESIGN FILL VOLUME = 2.718 MCY (FOR INFORMATION PURPOSES ONLY).

LEGEND

LIMITS OF BORROW AREA FOR DIKE CONSTRUCTION

PORT OF HOUSTON AUTHORITY

CONSULTANT:

DESIGN PREPARED BY: HDR Engineering, INC TBPELS FIRM Registration No. F-754

SEAL:

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APPROVED: DATE

PORT CONTRACT REPRESENTATIVE MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:

HOUSTON SHIP CHANNEL (HSC)

EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)

PROJECT 11: PACKAGE # 8

SHEET TITLE:

SEGMENT 4 BOGGY BAYOU TO SIMS BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA

PROPOSED PLACEMENT AREA PLAN LAYOUT

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	G.PENNISON
CADD:	J.DELEON
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

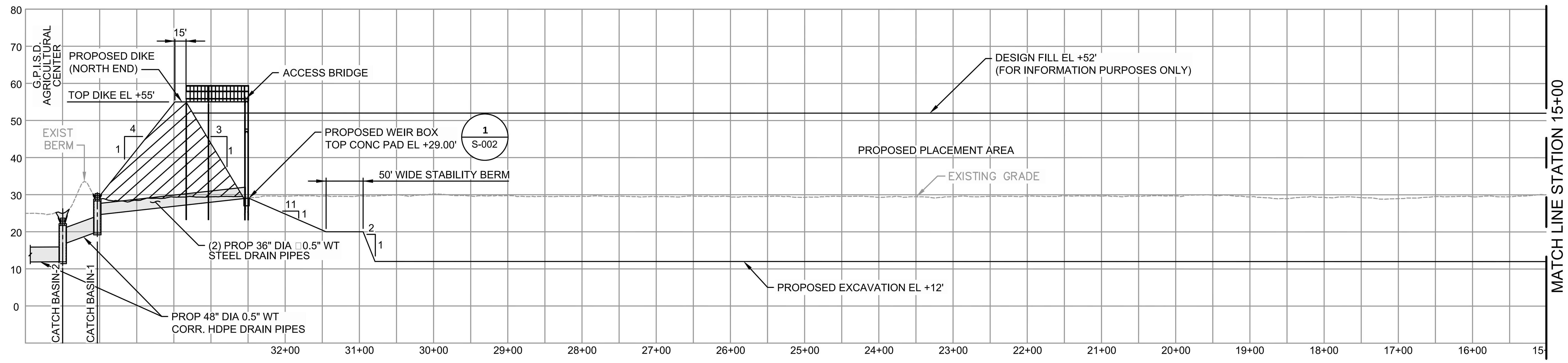
DRAWING NO. C90-D13-P11-002

SHEET NO. C-004 REV. NO. B

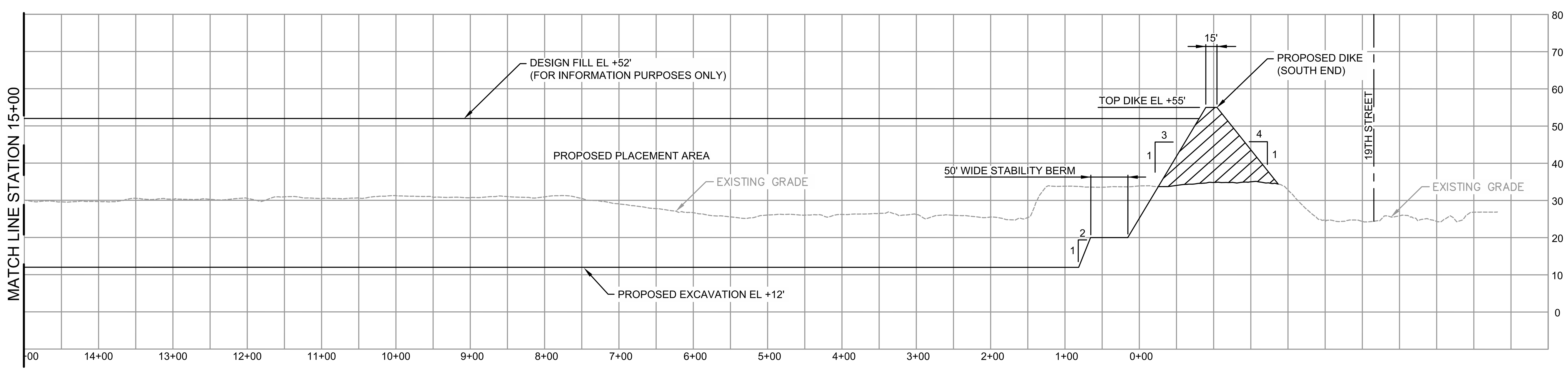
E2 CLINTON DMPA

95% REVIEW

TIME: 12-08-20 – 3:52pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-004.dwg



A-A C-004 C-005 NORTH HALF OF PROFILE LOOKING EAST



B-B C-004 C-005 SOUTH HALF OF PROFILE LOOKING EAST

A PROPOSED PLACEMENT AREA PROFILE

SCALE: 1" = 100' H
SCALE: 1" = 20' V

0 100' 200'
HORIZONTAL

0 20' 40'
VERTICAL

NOTES:

1. ALL PROPOSED EMBANKMENT ON THIS PRO□ECT TO BE FROM ON-SITE BORROW.
2. KEYWAYS RE□UIRE REMOVAL, MIXING, PROCESSING, AND RECOMPACTION OF INSITU MATERIAL.

PORT OF HOUSTON AUTHORITY

CONSULTANT:

DESIGN PREPARED BY:
HDR Engineering, INC
TBPELS FIRM
Registration No. F-754

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95% REVIEW

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PORT CONTRACT REPRESENTATIVE
MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:
HOUSTON SHIP CHANNEL (HSC)
EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)
PROJECT 11: PACKAGE # 8

SHEET TITLE:
SEGMENT 4
BOGGY BAYOU TO SIMS BAYOU TURNING BASIN
E2 CLINTON DMPA & BELTWAY 8 DMPA
PROPOSED PLACEMENT AREA PROFILE

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

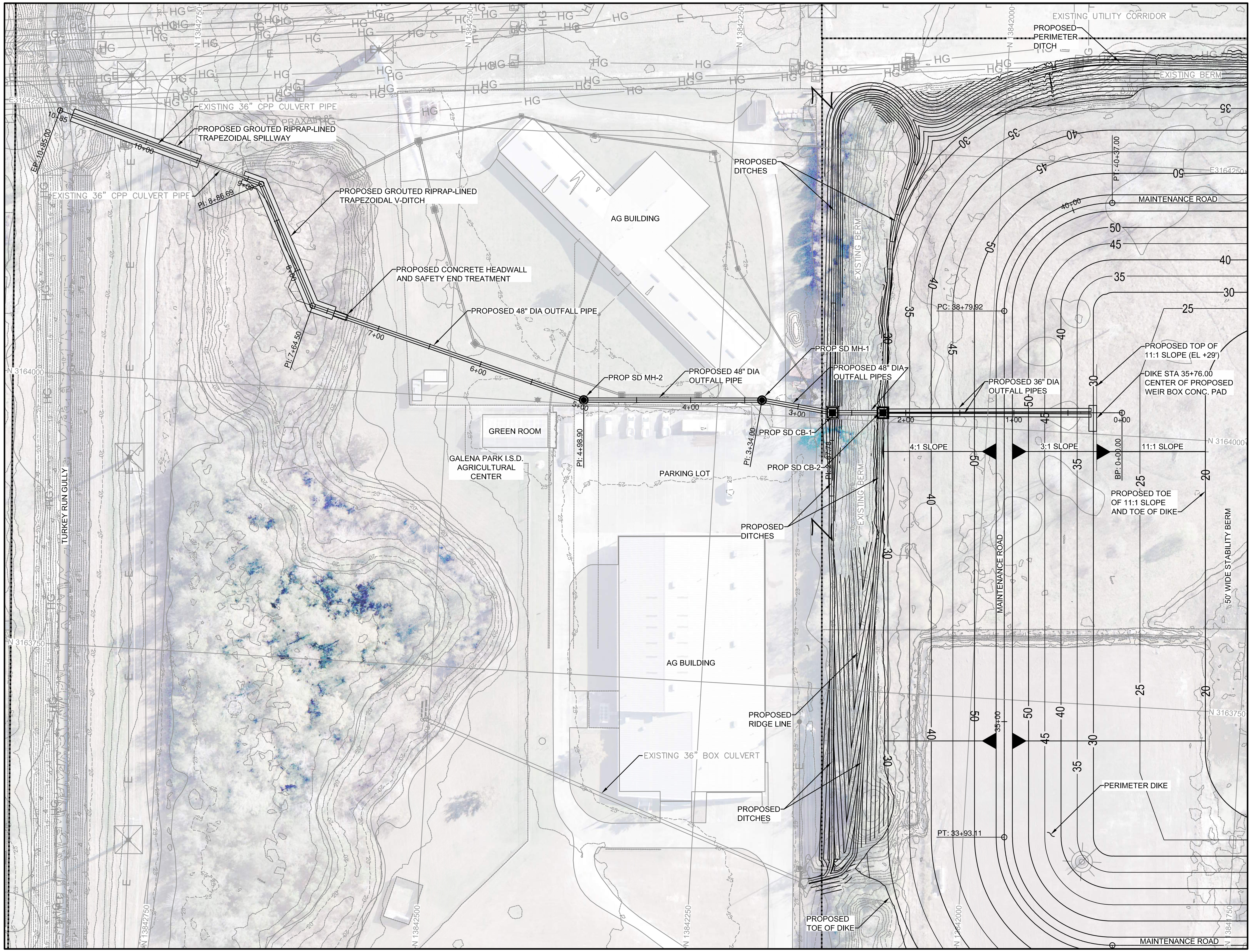
DESIGNER:	G.PENNISON
CADD:	J.DELEON
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

DRAWING NO. C90-D13-P11-002
SHEET NO. C-005
REV. NO. B

E2 CLINTON DMPA

95% REVIEW

TIME: 12-07-20 – 5:31pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-005.dwg



6 ENLARGED WEIR TO WETLANDS SITE PLAN

SCALE: 1" = 50'

0 50' 100'

NOTE:

1. ALL PROPOSED EMBANKMENT ON THIS PROJECT TO BE FROM ON-SITE BORROW.
2. TEMPORARY CONSTRUCTION DEWATERING TO BE PROVIDED BY CONTRACTOR UNTIL FINISHED GRADING IS COMPLETED. PUMP FROM SUMP ON NORTH END OF +12' EXCAVATION INTO WEIR BOX OUTFALL PIPES AT +29' INVERT.
3. FOR THE RIPRAP DITCHES, CONTRACTOR IS LIMITED TO WORKING WITHIN 5 FEET OF RIPRAP EACH SIDE OF DITCH.

E2 CLINTON DMPA

PORT OF HOUSTON AUTHORITY

CONSULTANT:
DESIGN PREPARED BY:
HDR
HDR Engineering, INC
TBPELS FIRM
Registration No. F-754

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PORT CONTRACT REPRESENTATIVE MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:
HOUSTON SHIP CHANNEL (HSC)
EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)
PROJECT 11: PACKAGE # 8

SHEET TITLE:
SEGMENT 4 BOGGY BAYOU TO SIMS BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA
ENLARGED WEIR TO WETLANDS SITE PLAN

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	G.PENNISON
CADD:	J.DELEON
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

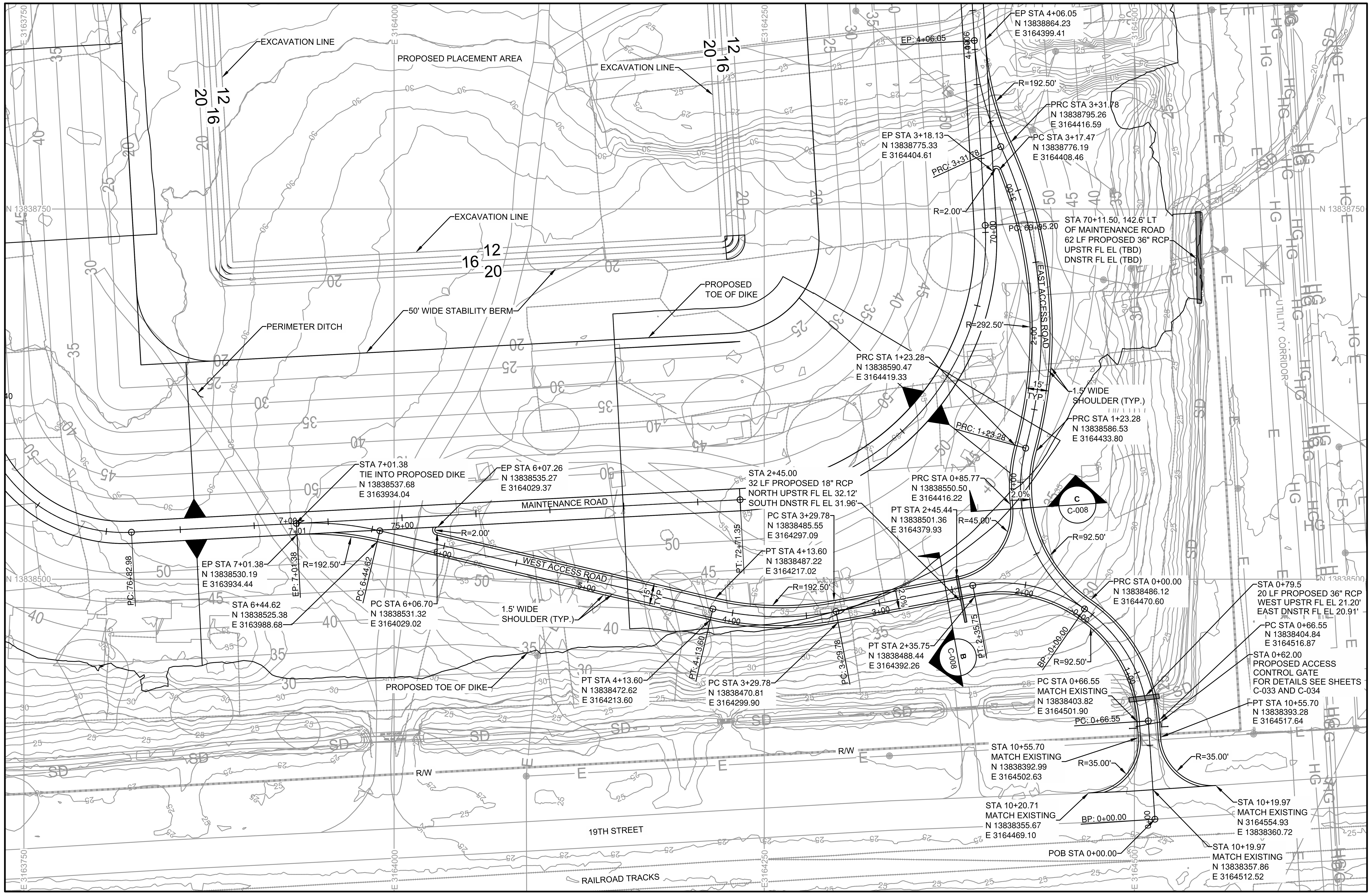
DRAWING NO. C90-D13-P11-002

SHEET NO. C-006 REV. NO. B

95% REVIEW

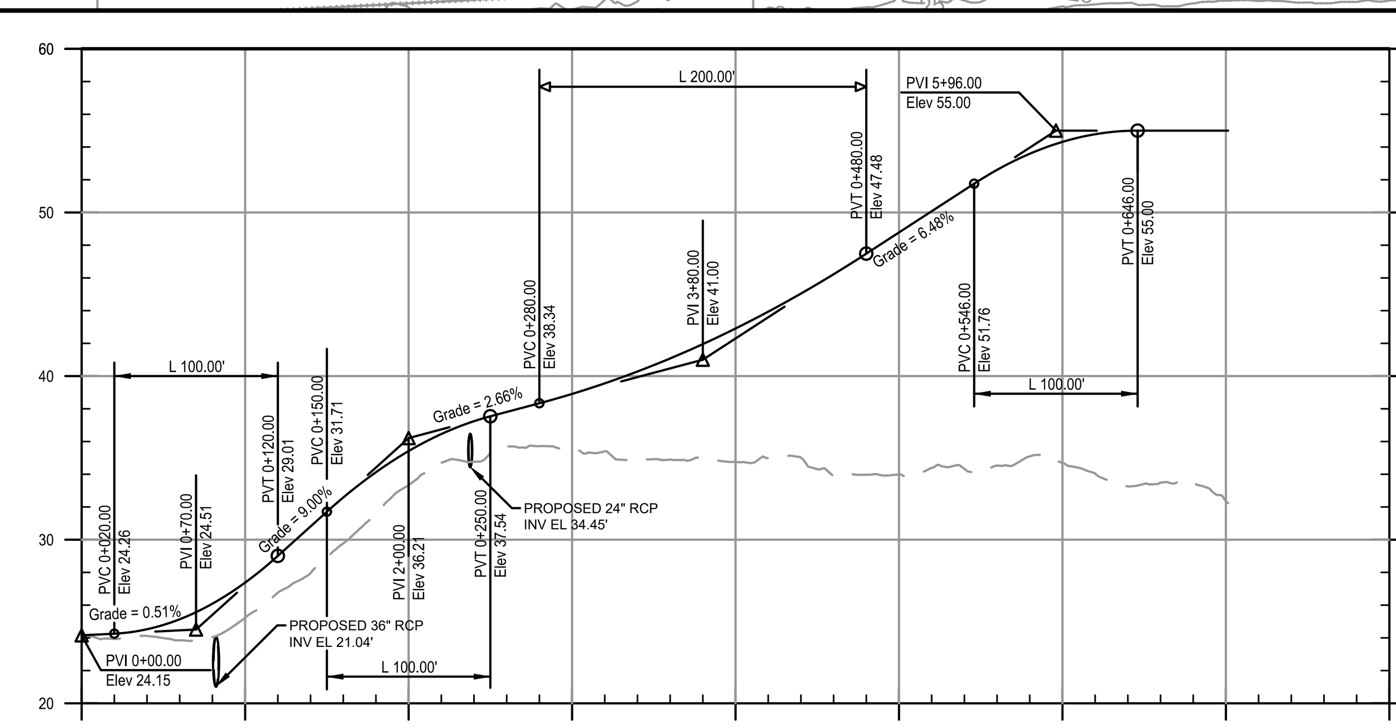
NOTE:

1. ALL PROPOSED EMBANKMENT ON THIS PRO□ECT TO BE FROM ON-SITE BORROW.
2. KEYWAYS RE□UIRE REMOVAL, MIXING, PROCESSING AND RECOMPACTION OF INSITU MATERIAL.
3. FOR WEST AND EAST ACCESS ROAD PROFILES, SEE BELOW.
4. FENCE ON EITHER SIDE OF ACCESS GATE DOES NOT CONTINUE PAST 4 FEET.



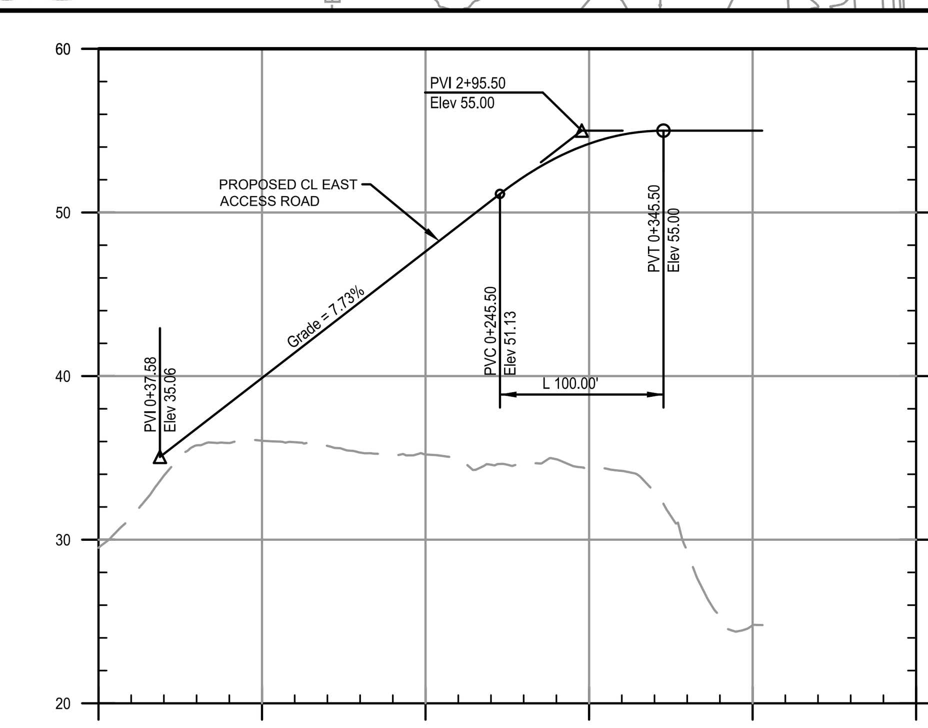
7 DRIVEWAY ENTRANCE PLAN

SCALE: 1" = 40'



WEST ACCESS ROAD PROFILE

SCALE: 1" = 100' HORIZ. SCALE: 1" = 10' VERT.



EAST ACCESS ROAD PROFILE

SCALE: 1" = 100' HORIZ. SCALE: 1" = 10' VERT.

0 100' 200' HORIZONTAL
0 10' 20' VERTICAL

PORT OF HOUSTON AUTHORITY

CONSULTANT: DESIGN PREPARED BY: HDR Engineering, INC TBPELS FIRM Registration No. F-754

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95% REVIEW

APPROVED: DATE

PORT CONTRACT REPRESENTATIVE MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE: HOUSTON SHIP CHANNEL (HSC) EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)

PROJECT 11: PACKAGE # 8

SHEET TITLE: SEGMENT 4 BOGGY BAYOU TO SIMS BAYOU TURNING BASIN E2 CLINTON DMPA & BELTWAY 8 DMPA

DRIVEWAY ENTRANCE PLAN

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	G.PENNISON
CADD:	QL/JDL
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

DRAWING NO. C90-D13-P11-002

SHEET NO. C-007 REV. NO. B

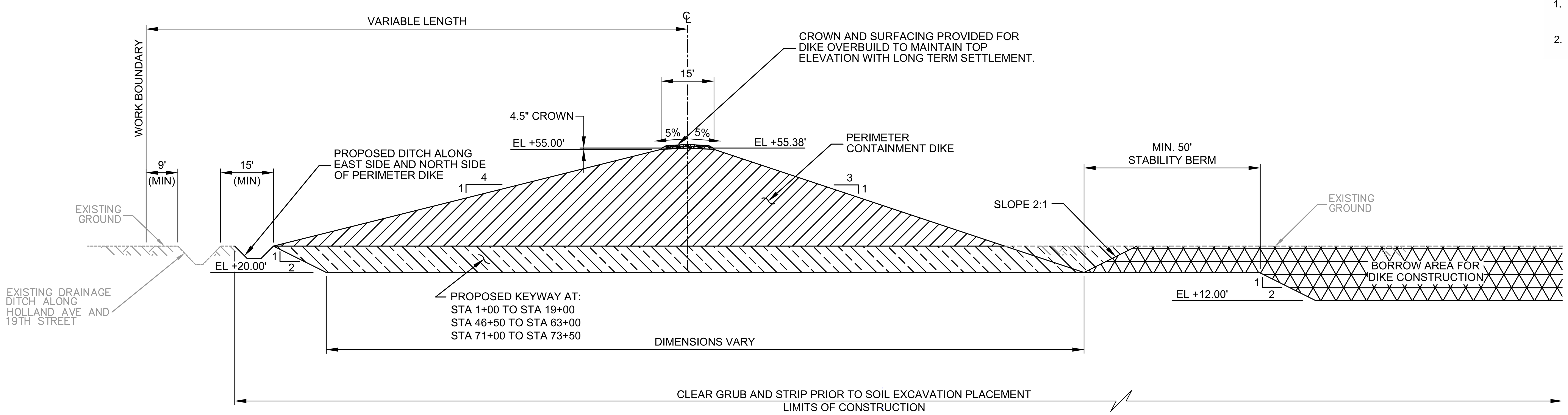
E2 CLINTON DMPA

95% REVIEW

TIME: 12-07-20 – 6:02pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-007.dwg

NOTE:

1. ALL PROPOSED EMBANKMENT ON THIS PROJECT TO BE FROM ON-SITE BORROW.
2. KEYWAYS REQUIRE REMOVAL, MIXING, PROCESSING AND RECOMPACTION OF INSITU MATERIAL.

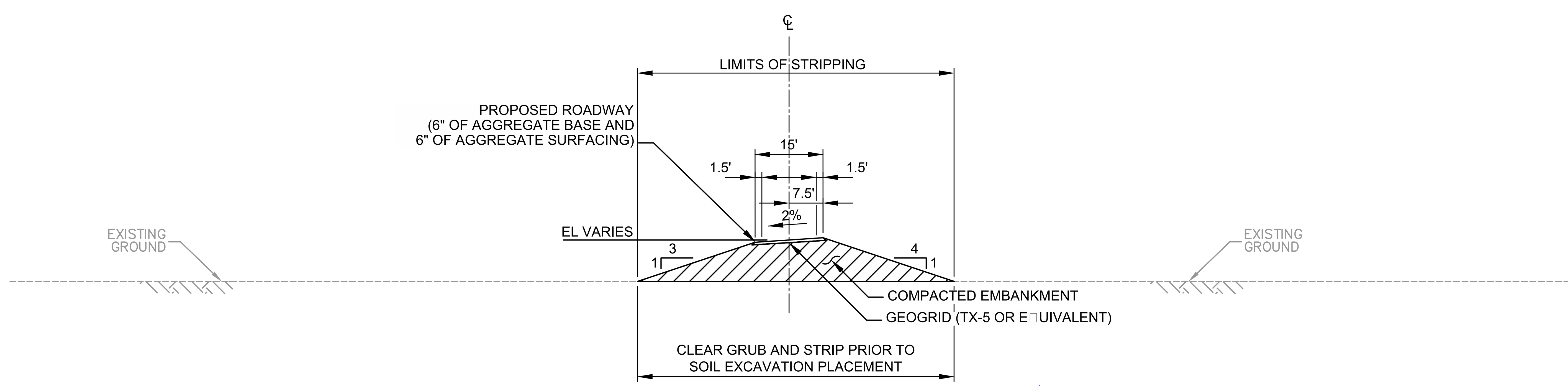


A
C-004

TYPICAL SECTION - PERIMETER DIKE

SCALE: 1" = 20'

0 20' 40'

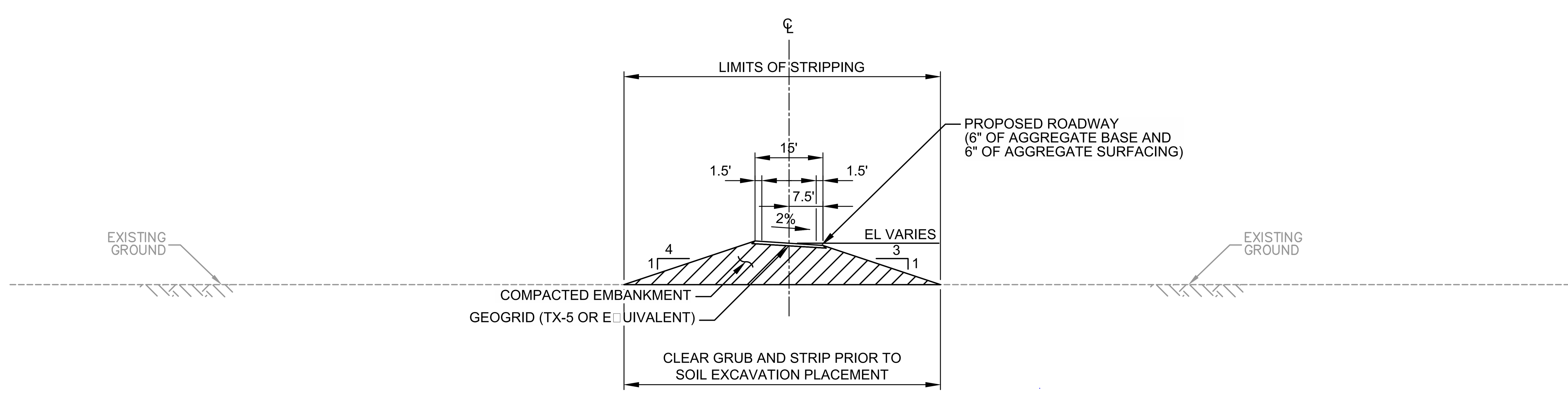


B
C-007

TYPICAL SECTION - WEST ACCESS ROAD STA 0+00 TO 7+01.38

SCALE: 1" = 20'

0 20' 40'



C
C-007

TYPICAL SECTION - EAST ACCESS ROAD STA 0+00.00 TO 4+06.05

SCALE: 1" = 20'

0 20' 40'

TIME: 12-07-20 - 6:11pm User: JDELEON DWG: C:\pwworking\central01\d1713444\C90-D13-P11-008-C-008.dwg

PORT OF HOUSTON AUTHORITY

CONSULTANT:

DESIGN PREPARED BY:

HDR Engineering, INC
TBPELS FIRM
Registration No. F-754

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MANAGING DIRECTOR – ENGINEERING DESIGN & SUPPORT

PROJECT TITLE:

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EXPANSION CHANNEL IMPROVEMENT PROJECT (ECIP)

PROJECT 11: PACKAGE # 8

SHEET TITLE:

SEGMENT 4
BOGGY BAYOU TO SIMS BAYOU TURNING BASIN
E2 CLINTON DMPA & BELTWAY 8 DMPA

TYPICAL SECTIONS

REV	DATE	DESCRIPTION
A	8/15/20	65% SUBMITTAL
B	12/08/20	95% SUBMITTAL

DESIGNER:	G.PENNISON
CADD:	JDL/QL
CHECKER:	N.McLELLAN
DATE:	12/08/2020
SCALE:	AS NOTED

DRAWING NO. C90-D13-P11-002

SHEET NO. C-008 REV. NO. B

E2 CLINTON DMPA

95% REVIEW