

PLAN VIEW COLOR LEGEND OF SOILS SHEETS

| LINEWORK | Design Color No. | |
|------------------|------------------|---|
| Green | (2) | Existing Topographic Features and Labels |
| Purple (Halo) | (15) | Backslope Drains |
| Blue | (1) | Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation |
| SHADING | | |
| Design Color No. | | |
| Brown, Light | (236) | Core Out |

PROFILE VIEW COLOR LEGEND OF SOILS SHEETS

| LINEWORK | Design Color No. | |
|--------------|------------------|--|
| Blue | (1) | Proposed Alignment, Stationing, and Alignment Annotation |
| Green | (2) | Existing Ground Line Profile |
| Green, Med | (227) | Topsoil |
| Green, Med | (227) | Slope Dressing Only |
| Orange | (6) | Loam |
| Brown, Dark | (238) | Class 10 |
| Brown, Med | (237) | Sand |
| Red | (3) | Unsuitable A |
| Pink, Dark | (13) | Unsuitable B |
| Pink | (11) | Unsuitable C |
| Red | (3) | Shale |
| Red | (3) | Waste |
| Gray, Light | (48) | Broken and Weathered Rock |
| Gray, Med | (80) | Rock |
| Gray, V.Dark | (128) | Boulders |

PATTERN AND SYMBOL LEGEND OF SOILS SHEETS

| | | |
|------------|---------------------------|--|
| Drill | Dig/Core | Date(s) Drilled <u>11/16/20 - 3/2/21</u> |
| Water | Subgrade Preparation | Sandstone |
| Dry | Sand Blanket | Unsuitable A |
| Sample | Soil Remediation Area | Unsuitable B |
| Plugged | Select Soil | Unsuitable C |
| Moisture | Select Sand | Sandy Soil |
| Shelby | Slope Dressing Only | Boulders |
| Blow Count | Broken and Weathered Rock | Shale |
| Dens. Core | Rock | |

| | |
|-----------------------|--------------------------|
| Reference Point | Survey Line |
| Station | Section Corner |
| Ground Line Intercept | Saw Cut |
| Guardrail | Clearing & Grubbing Area |
| Pavement Removal | |

| RIGHT-OF-WAY LEGEND | |
|---------------------|------------------------------------|
| | Proposed Right-of-Way |
| | Existing and Proposed Right-of-Way |
| | Easement and Existing Right-of-Way |
| | Borrow |
| | Easement (Temporary) |
| | Easement |
| | Excess |
| | Access Control |

NOTE: Sounding and test boring data shown in the plans were accumulated for designing and estimating purposes. Their appearance on the plans does not constitute a guarantee that conditions other than those indicated will be encountered. Details and notes shown elsewhere shall be used for roadway and structure construction.

SOILS LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES Q)

GEOTECHNICAL DESIGN



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature _____ Date _____

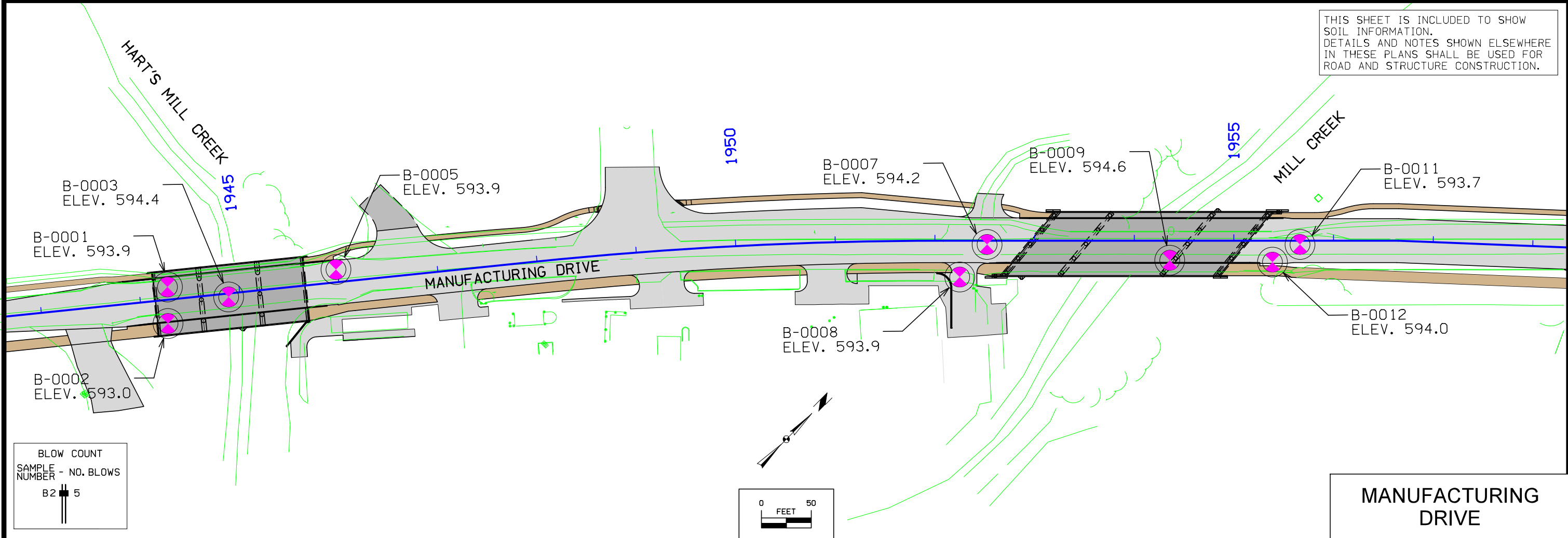
Bhooshan A. Karnik

Printed or Typed Name

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: 0.1-0.10, SPS.1-SPS.4

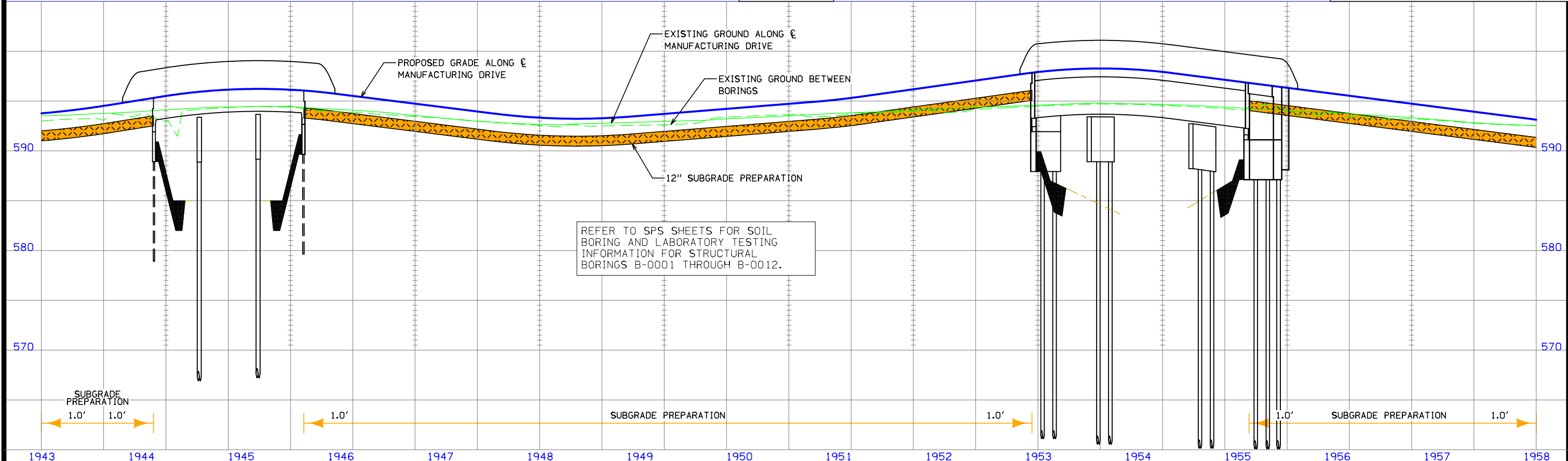
THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION. DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR ROAD AND STRUCTURE CONSTRUCTION.



BLOW COUNT
SAMPLE NO. - NO. BLOWS

| | |
|----|---|
| B2 | 5 |
|----|---|

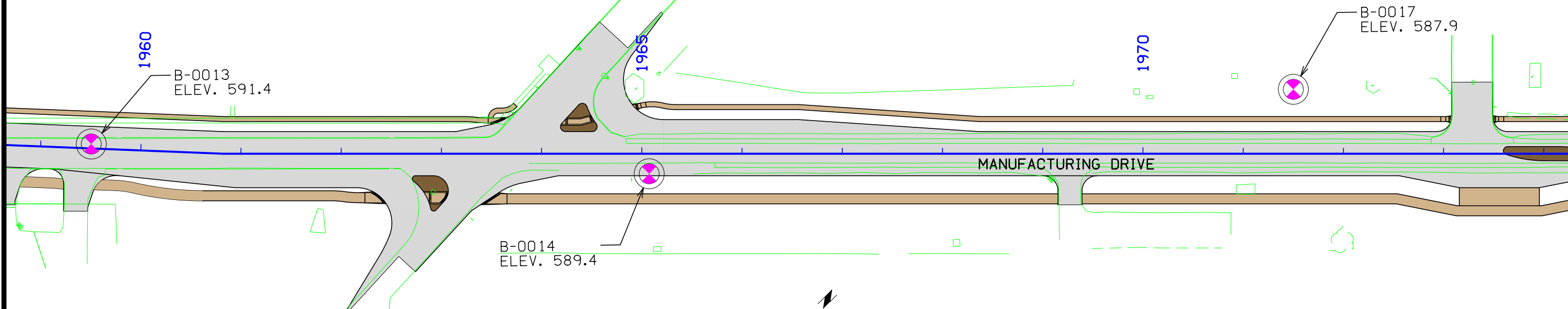
MANUFACTURING DRIVE



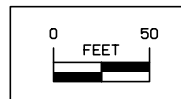
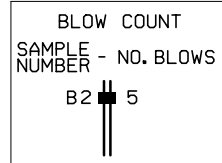
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FROM STATION 1970+00 TO STATION 1991+00, OVEREXCAVATE AND CONSTRUCT GEOTEXTILE SUBGRADE STABILIZATION. REFER TO DETAIL ON B SHEETS FOR DETAILS.

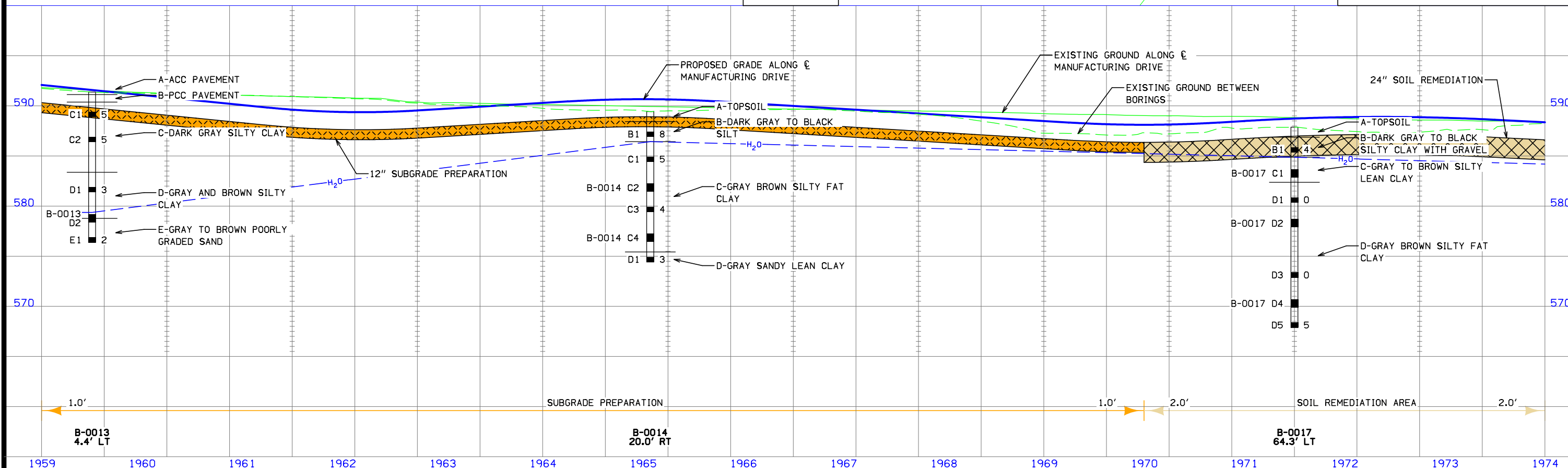
| Boring No. | Date Drilled | GroundWater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0013 | 11/16/2020 | 12 |
| B-0014 | 11/16/2020 | 3 |
| B-0017 | 11/18/2020 | 3 |



| CORE NO. | B-0013 D2 | B-0014 C2 | B-0014 C4 | B-0017 C1 | B-0017 D2 | B-0017 D4 |
|-------------------------------|-------------|-----------|-------------|-----------|------------|-------------|
| DEPTH | 11.0 - 13.0 | 6.0 - 8.0 | 11.0 - 13.0 | 3.0 - 5.0 | 8.0 - 10.0 | 16.0 - 18.0 |
| CLASSIFICATION (AASHTO) | -- | -- | -- | -- | -- | -- |
| COEFF. CONSOL. SG. FT. / DAY | -- | -- | -- | -- | -- | -- |
| TRIAxIAL COMPRESSION | -- | -- | -- | -- | -- | -- |
| COHESION - PSF | -- | -- | -- | -- | -- | -- |
| FRICTION COEFF. | -- | -- | -- | -- | -- | -- |
| MOISTURE CONTENT % | 27.9 | 42.8 | 44.0 | 28.3 | 43.2 | 38.3 |
| DRY DENSITY - PCF | -- | -- | -- | 94 | 72 | 84 |
| UU-UNCONSOLIDATED & UNDRAINED | | | | | | |
| CU-CONSOLIDATED & UNDRAINED | | | | | | |



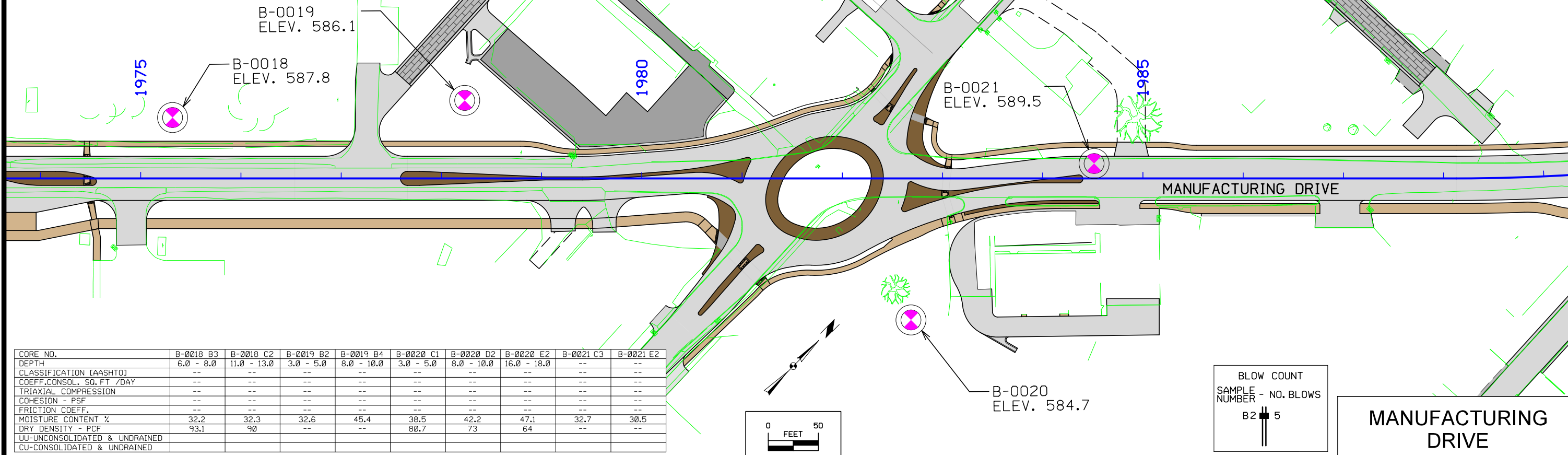
MANUFACTURING DRIVE



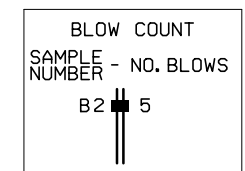
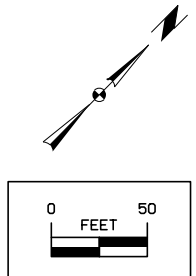
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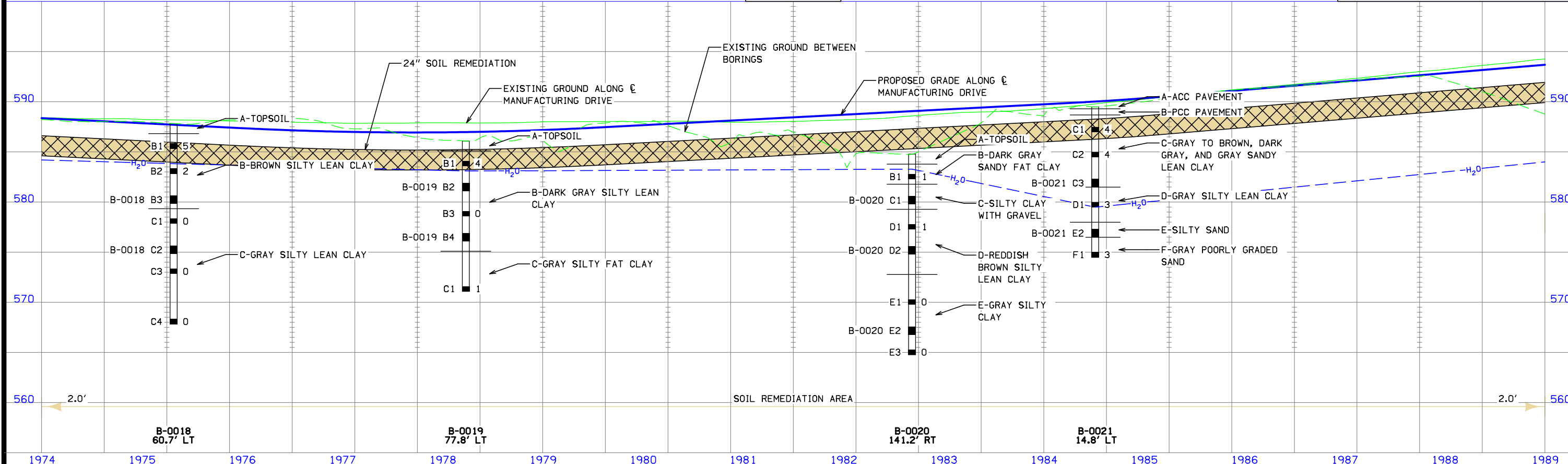
| Boring No. | Date Drilled | GroundWater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0018 | 11/17/2020 | 4 |
| B-0019 | 11/17/2020 | 3 |
| B-0020 | 11/17/2020 | 1.5 |
| B-0021 | 11/16/2020 | 10 |



| CORE NO. | B-0018 B3 | B-0018 C2 | B-0019 B2 | B-0019 B4 | B-0020 C1 | B-0020 D2 | B-0020 E2 | B-0021 C3 | B-0021 E2 |
|-------------------------------|-----------|-------------|-----------|------------|-----------|------------|-------------|-----------|-----------|
| DEPTH | 6.0 - 8.0 | 11.0 - 13.0 | 3.0 - 5.0 | 8.0 - 10.0 | 3.0 - 5.0 | 8.0 - 10.0 | 16.0 - 18.0 | -- | -- |
| CLASSIFICATION (AASHTO) | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| COEFF. CONSOL. SQ. FT / DAY | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TRIAxIAL COMPRESSION | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| COHESION - PSF | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FRICTION COEFF. | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MOISTURE CONTENT % | 32.2 | 32.3 | 32.6 | 45.4 | 38.5 | 42.2 | 47.1 | 32.7 | 30.5 |
| DRY DENSITY - PCF | 93.1 | 90 | -- | -- | 80.7 | 73 | 64 | -- | -- |
| UU-UNCONSOLIDATED & UNDRAINED | | | | | | | | | |
| CU-CONSOLIDATED & UNDRAINED | | | | | | | | | |



MANUFACTURING DRIVE

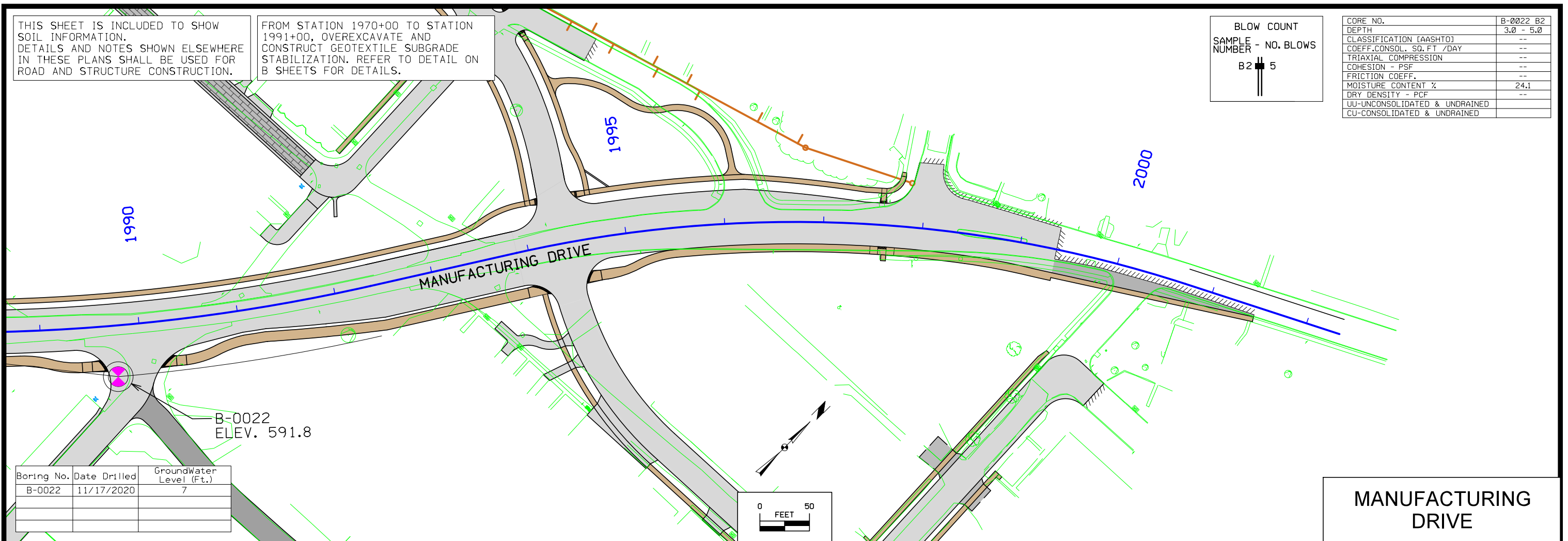


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BLOW COUNT
SAMPLE NUMBER - NO. BLOWS
B2 5

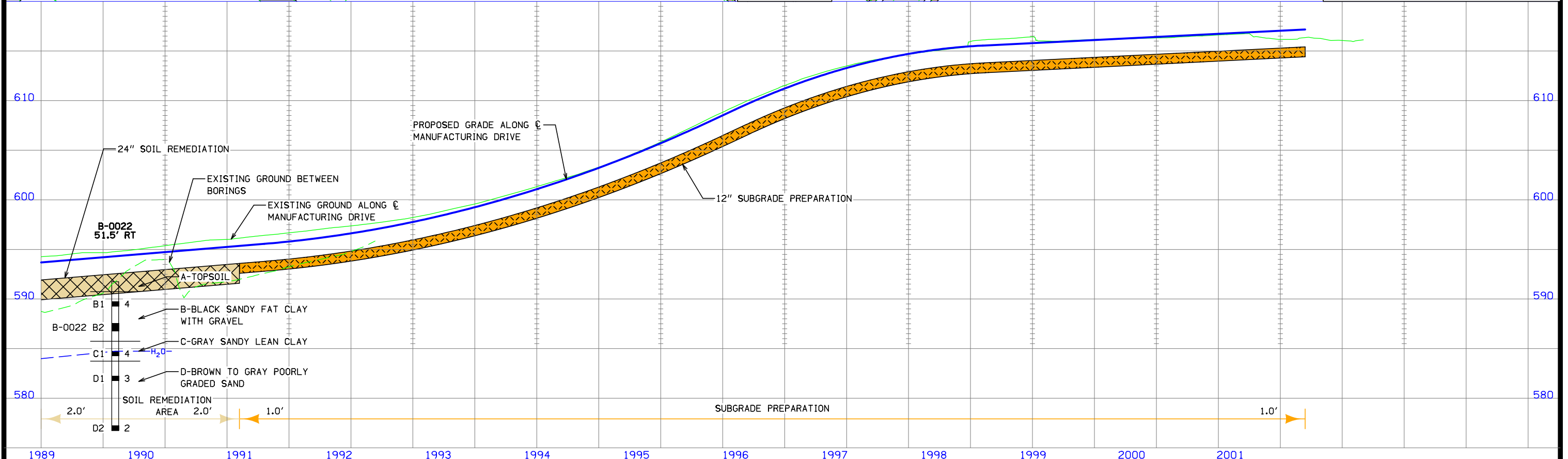
| | |
|-------------------------------|-----------|
| CORE NO. | B-0022 B2 |
| DEPTH | 3.0 - 5.0 |
| CLASSIFICATION (AASHTO) | -- |
| COEFF. CONSOL. SQ. FT / DAY | -- |
| TRIAxIAL COMPRESSION | -- |
| COHESION - PSF | -- |
| FRICTION COEFF. | -- |
| MOISTURE CONTENT % | 24.1 |
| DRY DENSITY - PCF | -- |
| UU-UNCONSOLIDATED & UNDRAINED | |
| CU-CONSOLIDATED & UNDRAINED | |



| Boring No. | Date Drilled | GroundWater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0022 | 11/17/2020 | 7 |
| | | |
| | | |

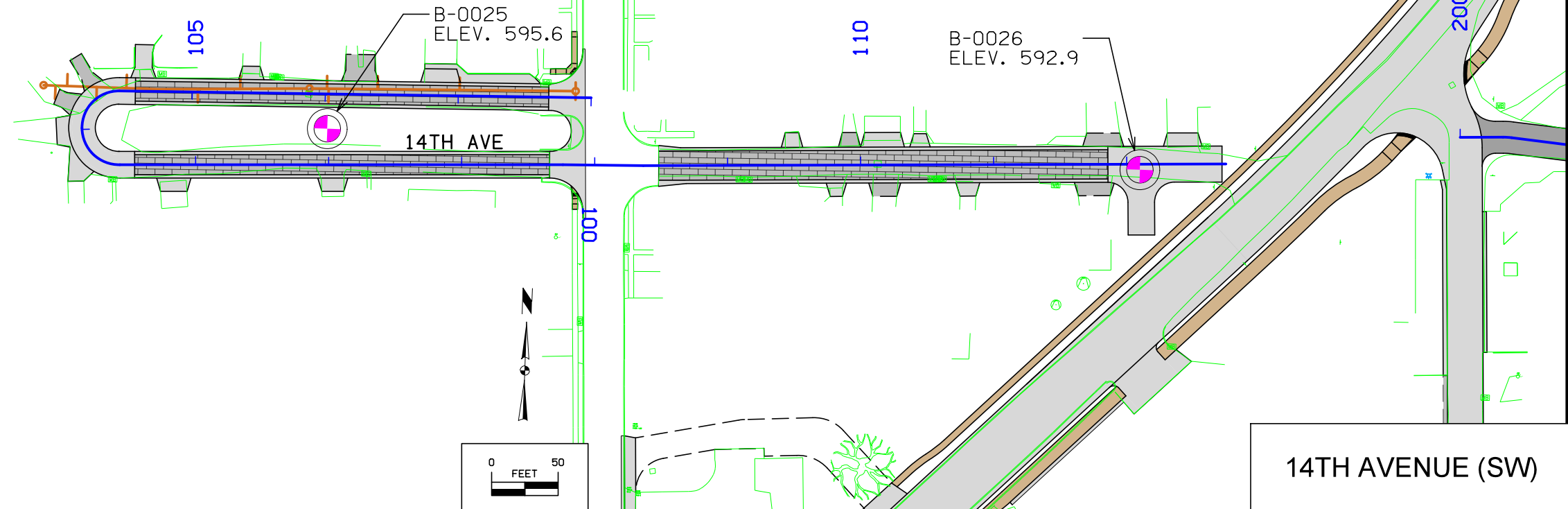
B-0022
ELEV. 591.8

MANUFACTURING DRIVE



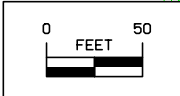
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| Boring No. | Date Drilled | Groundwater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0025 | 11/16/2020 | Not Encountered |
| B-0026 | 11/16/2020 | 7 |

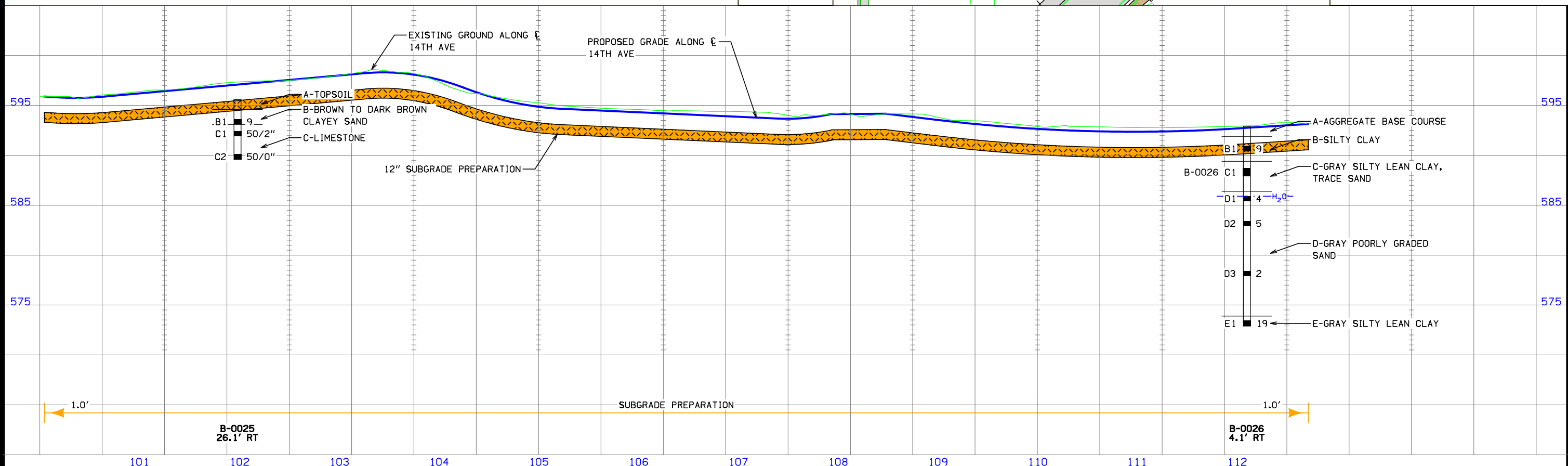


| CORE NO. | B-0026 C1 |
|-------------------------------|-----------|
| DEPTH | 3.0 - 5.0 |
| CLASSIFICATION (AASHTO) | -- |
| COEFF. CONSOL. SQ. FT / DAY | -- |
| TRIAxIAL COMPRESSION | -- |
| COHESION - PSF | -- |
| FRICTION COEFF. | -- |
| MOISTURE CONTENT % | 20.5 |
| DRY DENSITY - PCF | -- |
| UU-UNCONSOLIDATED & UNDRAINED | -- |
| CU-CONSOLIDATED & UNDRAINED | -- |

| BLOW COUNT | SAMPLE NUMBER | NO. BLOWS |
|------------|---------------|-----------|
| B2 | 5 | |

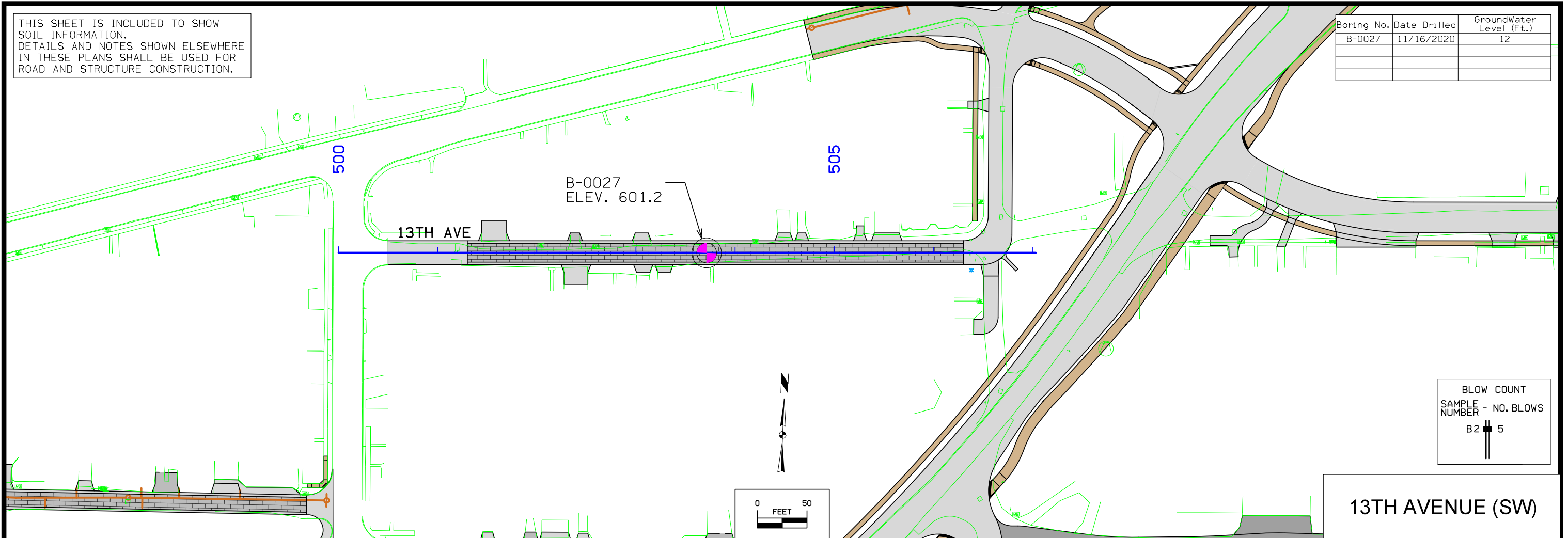


14TH AVENUE (SW)



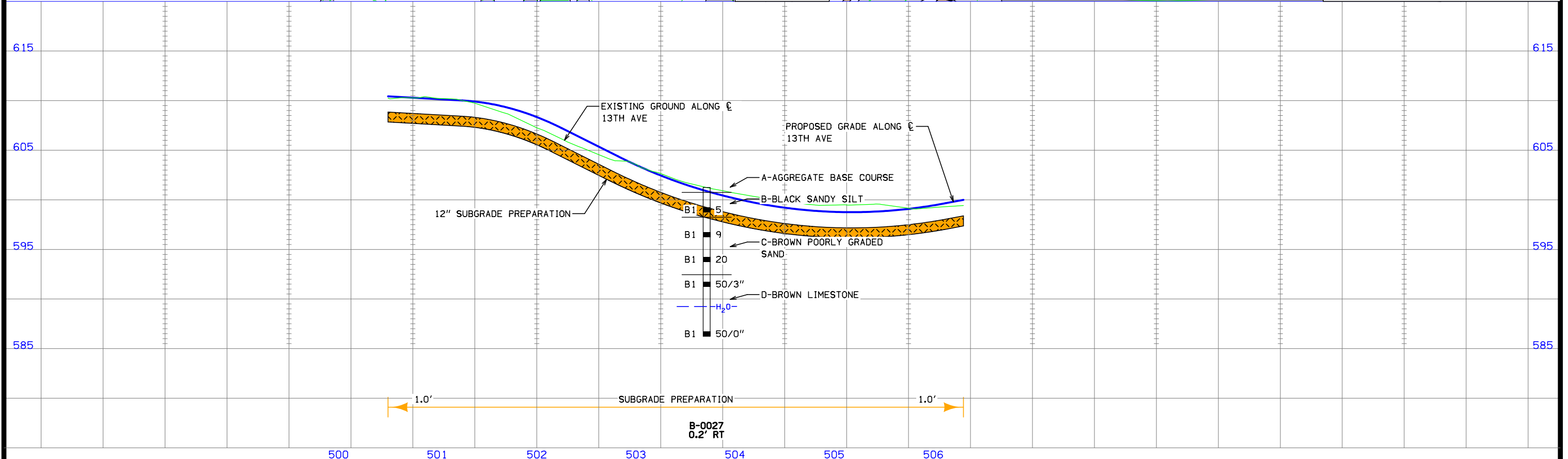
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| Boring No. | Date Drilled | GroundWater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0027 | 11/16/2020 | 12 |
| | | |
| | | |



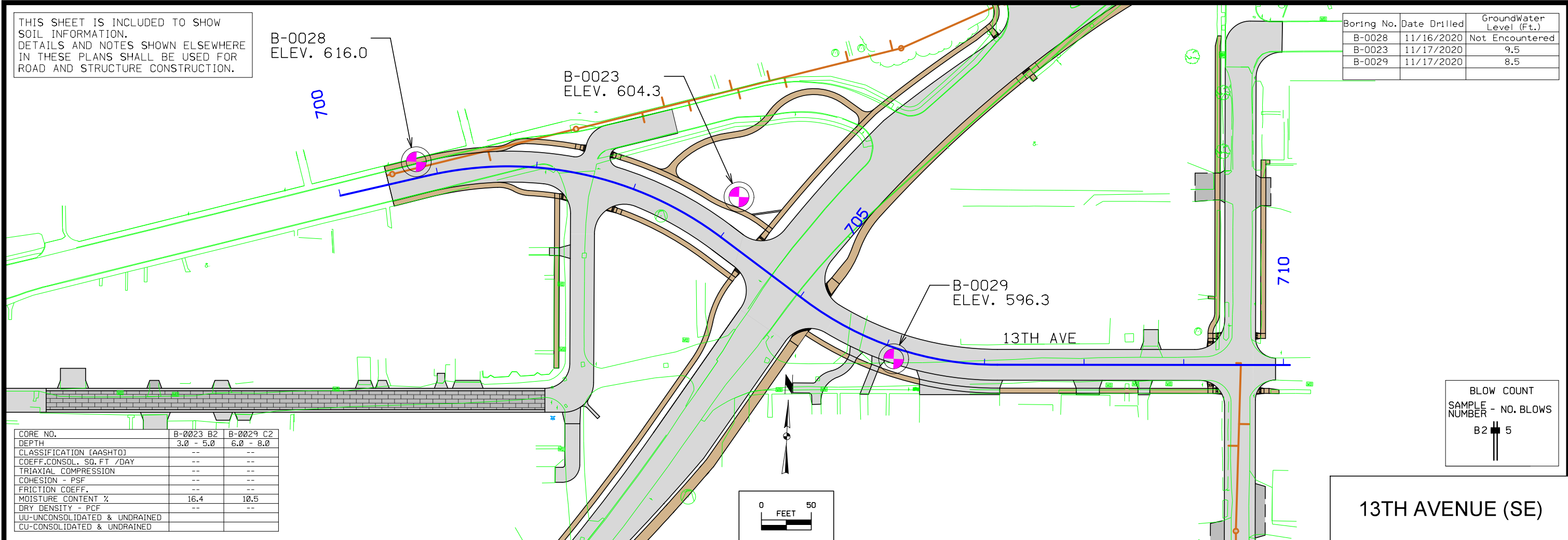
| BLOW COUNT |
|---------------------------|
| SAMPLE NUMBER - NO. BLOWS |
| B2 5 |

13TH AVENUE (SW)

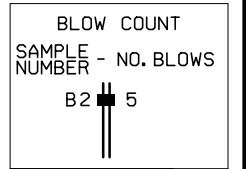


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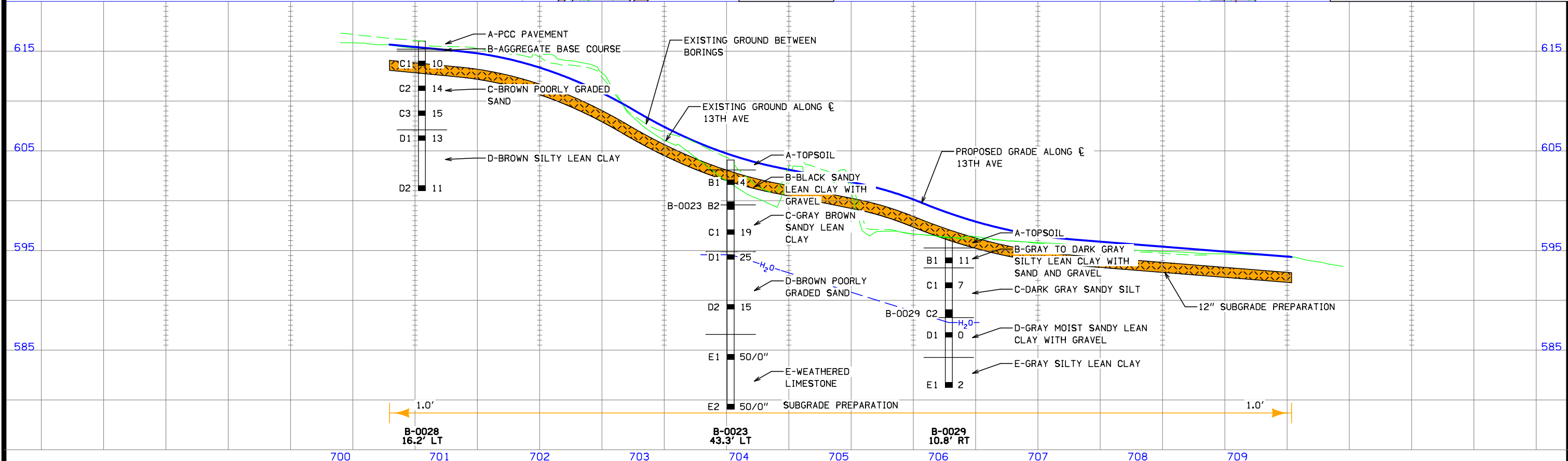
| Boring No. | Date Drilled | Groundwater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0028 | 11/16/2020 | Not Encountered |
| B-0023 | 11/17/2020 | 9.5 |
| B-0029 | 11/17/2020 | 8.5 |



| CORE NO. | B-0023 B2 | B-0029 C2 |
|-------------------------------|-----------|-----------|
| DEPTH | 3.0 - 5.0 | 6.0 - 8.0 |
| CLASSIFICATION (AASHTO) | -- | -- |
| COEFF. CONSOL. SQ. FT / DAY | -- | -- |
| TRIAxIAL COMPRESSION | -- | -- |
| COHESION - PSF | -- | -- |
| FRICTION COEFF. | -- | -- |
| MOISTURE CONTENT % | 16.4 | 10.5 |
| DRY DENSITY - PCF | -- | -- |
| UU-UNCONSOLIDATED & UNDRAINED | -- | -- |
| CU-CONSOLIDATED & UNDRAINED | -- | -- |

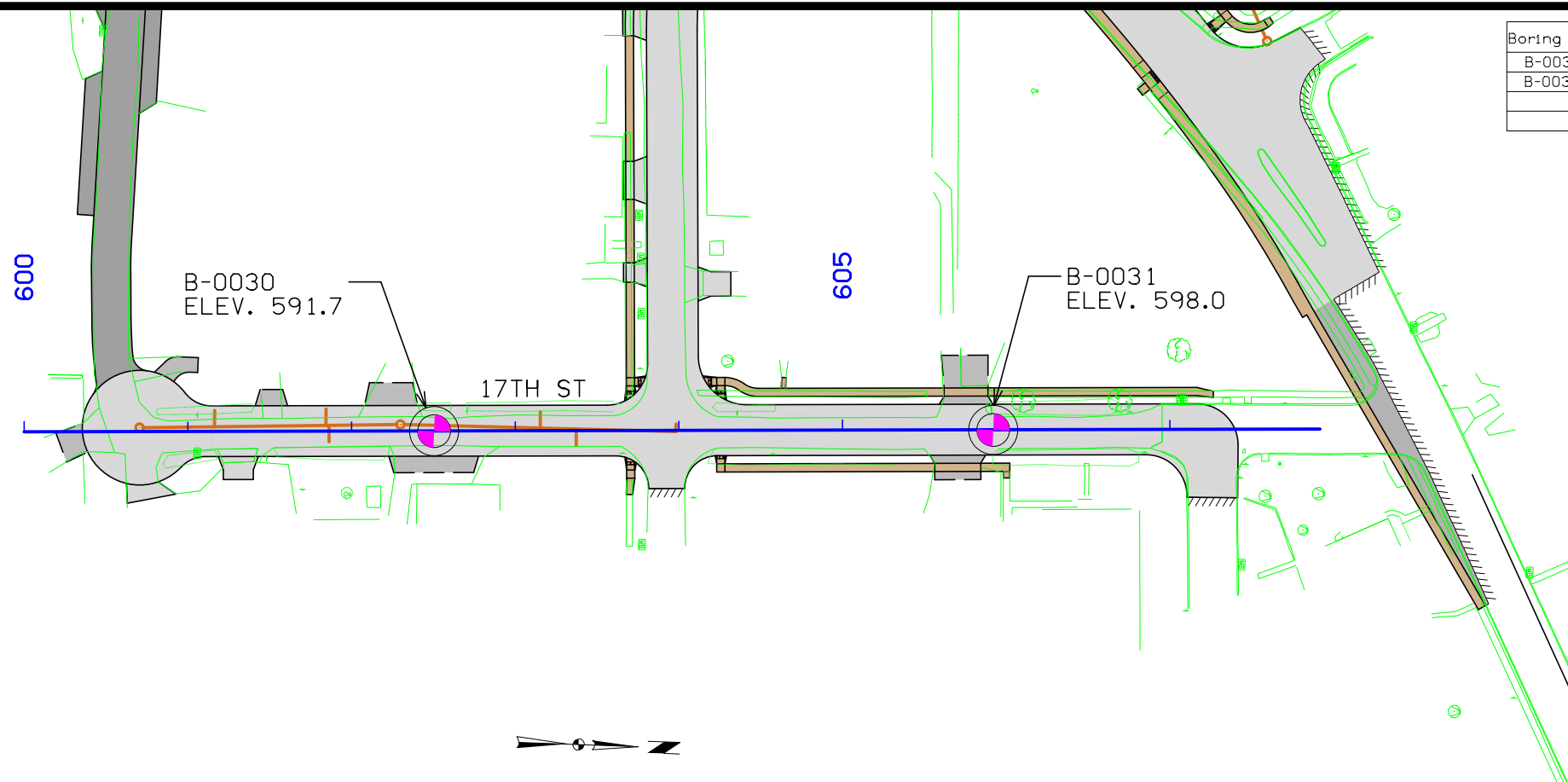


13TH AVENUE (SE)

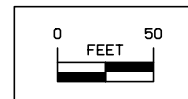
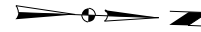
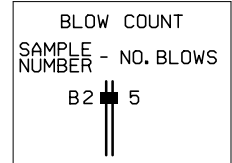


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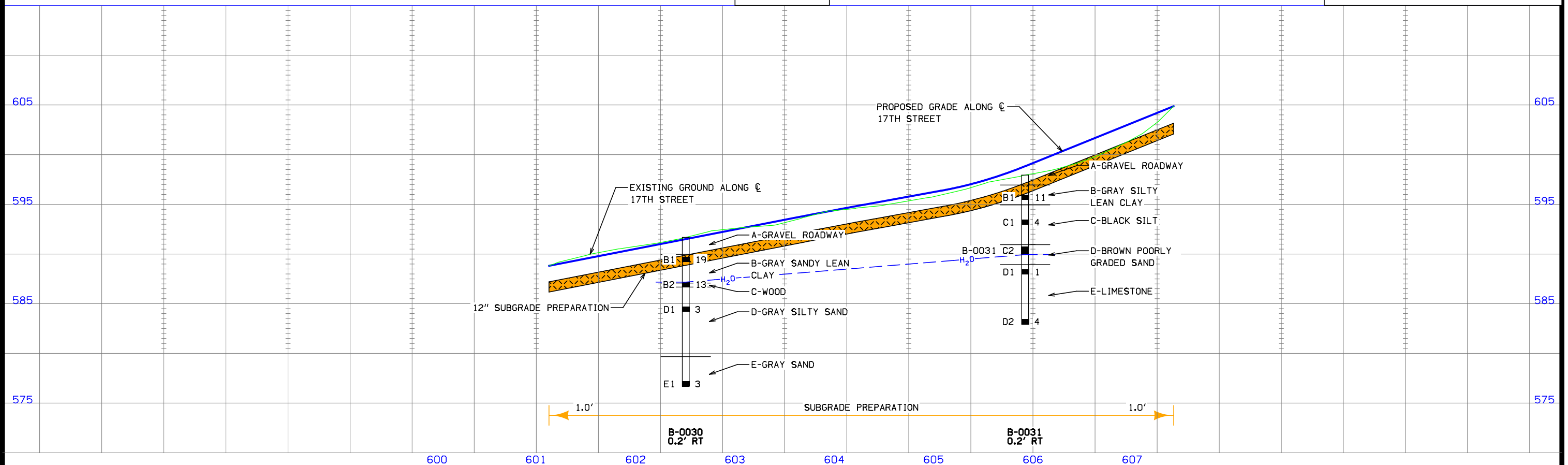
| Boring No. | Date Drilled | Groundwater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0030 | 11/17/2020 | 4.5 |
| B-0031 | 11/17/2020 | 8 |
| | | |



| | |
|-------------------------------|-----------|
| CORE NO. | B-0031 C2 |
| DEPTH | 6.0 - 8.0 |
| CLASSIFICATION (AASHTO) | -- |
| COEFF. CONSOL. SQ. FT / DAY | -- |
| TRIAxIAL COMPRESSION | -- |
| COHESION - PSF | -- |
| FRICTION COEFF. | -- |
| MOISTURE CONTENT % | 30.7 |
| DRY DENSITY - PCF | -- |
| UU-UNCONSOLIDATED & UNDRAINED | -- |
| CU-CONSOLIDATED & UNDRAINED | -- |



17TH STREET



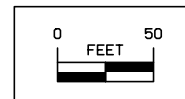
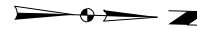
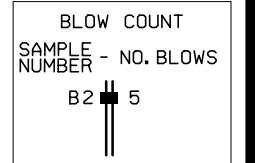
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| Boring No. | Date Drilled | GroundWater Level (Ft.) |
|------------|--------------|-------------------------|
| B-0015 | 11/18/2020 | 2 |
| B-0016 | 11/18/2020 | 7 |
| | | |

B-0016
ELEV. 585.5

B-0015
ELEV. 584.1

| CORE NO. | B-0015 B2 | B-0015 D1 | B-0015 E2 | B-0016 B2 |
|-------------------------------|-----------|-------------|-------------|-----------|
| DEPTH | 3.0 - 5.0 | 11.0 - 13.0 | 16.0 - 18.0 | 3.0 - 5.0 |
| CLASSIFICATION (AASHTO) | -- | -- | -- | -- |
| COEFF. CONSOL. SQ. FT / DAY | -- | -- | -- | -- |
| TRIAxIAL COMPRESSION | -- | -- | -- | -- |
| COHESION - PSF | -- | -- | -- | -- |
| FRICTION COEFF. | -- | -- | -- | -- |
| MOISTURE CONTENT % | 34.2 | 22.9 | 43.6 | 32.1 |
| DRY DENSITY - PCF | 89 | 91 | 68 | 91 |
| UU-UNCONSOLIDATED & UNDRAINED | | | | |
| CU-CONSOLIDATED & UNDRAINED | | | | |



STORM OUTLET

