

DRAFT

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| Braun Project FA-13-06700 Geotechnical Evaluation CHS - Calvin Facility Scales 401 Railroad Avenue Calvin, North Dakota | BORING: ST-1 LOCATION: See Sketch. |
|--|---|

| | | | |
|---------------------------|---------------------------------------|-----------------------|-----------------------|
| DRILLER: J. Brooks | METHOD: 3 1/4" HSA, Autohammer | DATE: 10/11/13 | SCALE: 1" = 4' |
|---------------------------|---------------------------------------|-----------------------|-----------------------|

(See Descriptive Terminology sheet for explanation of abbreviations)

| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | qp tsf | Tests or Notes |
|---|------------|--------|--|-----|----|--------|----------------|
| 149.3 | 0.0 | FILL | FILL: Poorly Graded Sand, medium-grained, a little Gravel, brown, moist. -Clayey and trace shale fragments at 1 foot. | 15 | | | |
| 144.3 | 5.0 | | | 5 | | | |
| 143.8 | 5.5 | CL | LEAN CLAY, with Roots and Organics, trace construction debris, black, moist. (Buried Topsoil) | 5 | | 1 3/4 | |
| | | CL | LEAN CLAY with SAND, brown with ironstaining, wet, rather soft. (Glacial Till) | 4 | | | |
| 140.3 | 9.0 | | -Gravel and Cobbles at 8 1/2 feet. END OF BORING | | | | |
| <p>Auger met refusal at the 9 foot depth. A sister boring was advance at about 5 feet away from ST-1 and also encountered refusal at the same depth.</p> <p>Water not observed with 9 feet of hollow stem auger in the ground.</p> <p>Boring then backfilled.</p> | | | | | | | |

LOG OF BORING N:\GINT\PROJECTS\FARGO\2013\06700.GPJ BRAUN_V8_CURRENT.GDT 10/12/13 06:46

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LOG OF BORING N:\GINT\PROJECTS\FARGO\2013\06700.GPJ BRAUN_v8_CURRENT.GDT 10/12/13 06:46
(See Descriptive Terminology sheet for explanation of abbreviations)

| Braun Project FA-13-06700 Geotechnical Evaluation CHS - Calvin Facility Scales 401 Railroad Avenue Calvin, North Dakota | | | | BORING: ST-2 | | | |
|--|------------|--------------------------------|--|---------------------|----|--------|----------------|
| DRILLER: J. Brooks | | METHOD: 3 1/4" HSA, Autohammer | | DATE: 10/11/13 | | | |
| Elev. feet | | Depth feet | | SCALE: 1" = 4' | | | |
| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | qp tsf | Tests or Notes |
| 149.3 | 0.0 | FILL | FILL: Poorly Graded Sand, medium-grained, a little Gravel, brown, moist. | | | | |
| 146.3 | 3.0 | CL | LEAN CLAY, with Roots and Organics, black, moist. (Buried Topsoil) | 4 | | | |
| 145.3 | 4.0 | CH | FAT CLAY with SAND, light brown, wet, rather soft. (Glacial Till) | 4 | | | |
| 141.3 | 8.0 | | | 24 | | | |
| 140.8 | 8.5 | SP CL | POORLY GRADED SAND, coarse grained, trace Gravel, brown, moist, medium dense. (Glacial Outwash) | | | | |
| | | | SANDY LEAN CLAY, a little Gravel, brown with ironstaining, moist, stiff to hard. (Glacial Till) | 14 | | 3 1/2 | |
| | | | | 21 | ▽ | 4 1/2 | |
| | | | | 24 | | 4.5+ | |
| | | | -gray below 20 feet. | 50 | | 4 1/2 | |
| 123.3 | 26.0 | | END OF BORING | 24 | | 4 1/2 | |
| <p>Water not observed with 24 1/2 feet of hollow stem auger in the ground.</p> <p>Water observed at a depth of 14 feet to a cave-in depth of 16 feet immediately after withdrawal of the auger.</p> <p>Boring then backfilled.</p> | | | | | | | |

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| Braun Project FA-13-06700 Geotechnical Evaluation CHS - Calvin Facility Scales 401 Railroad Avenue Calvin, North Dakota | | | | | | BORING: ST-3 LOCATION: See Sketch. | |
|---|------------|--------|--|-----|-------|--|----------------|
| DRILLER: J. Brooks | | | METHOD: 3 1/4" HSA, Autohammer | | | DATE: 10/11/13 | SCALE: 1" = 4' |
| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | qp tsf | Tests or Notes |
| 150.9 | 0.0 | FILL | FILL: Poorly Graded Sand, medium-grained, a little Gravel, brown, moist. | | | | |
| 148.9 | 2.0 | FILL | FILL: Clayey Sand, fine-grained, brown, moist. | 36 | | | |
| 144.9 | 6.0 | CL | LEAN CLAY with SAND, brown, wet, rather soft to medium. (Glacial Till) | 9 | | | |
| | | | | 4 | 1 1/2 | | |
| | | | | 6 | 1 1/2 | | |
| 139.4 | 11.5 | CL | SANDY LEAN CLAY, a little Gravel, brown with ironstaining, moist, stiff to very stiff. (Glacial Till) | 23 | | 4 1/2 | |
| | | | | 24 | | 4.5+ | |
| | | | -gray below 20 feet. | 16 | | 4 1/2 | |
| 124.9 | 26.0 | | END OF BORING | 18 | | 4 1/2 | |
| Water not observed with 24 1/2 feet of hollow stem auger in the ground. Water observed at a depth of 14 feet to a cave-in depth of 16 feet immediately after withdrawal of the auger. Boring then backfilled. | | | | | | | |

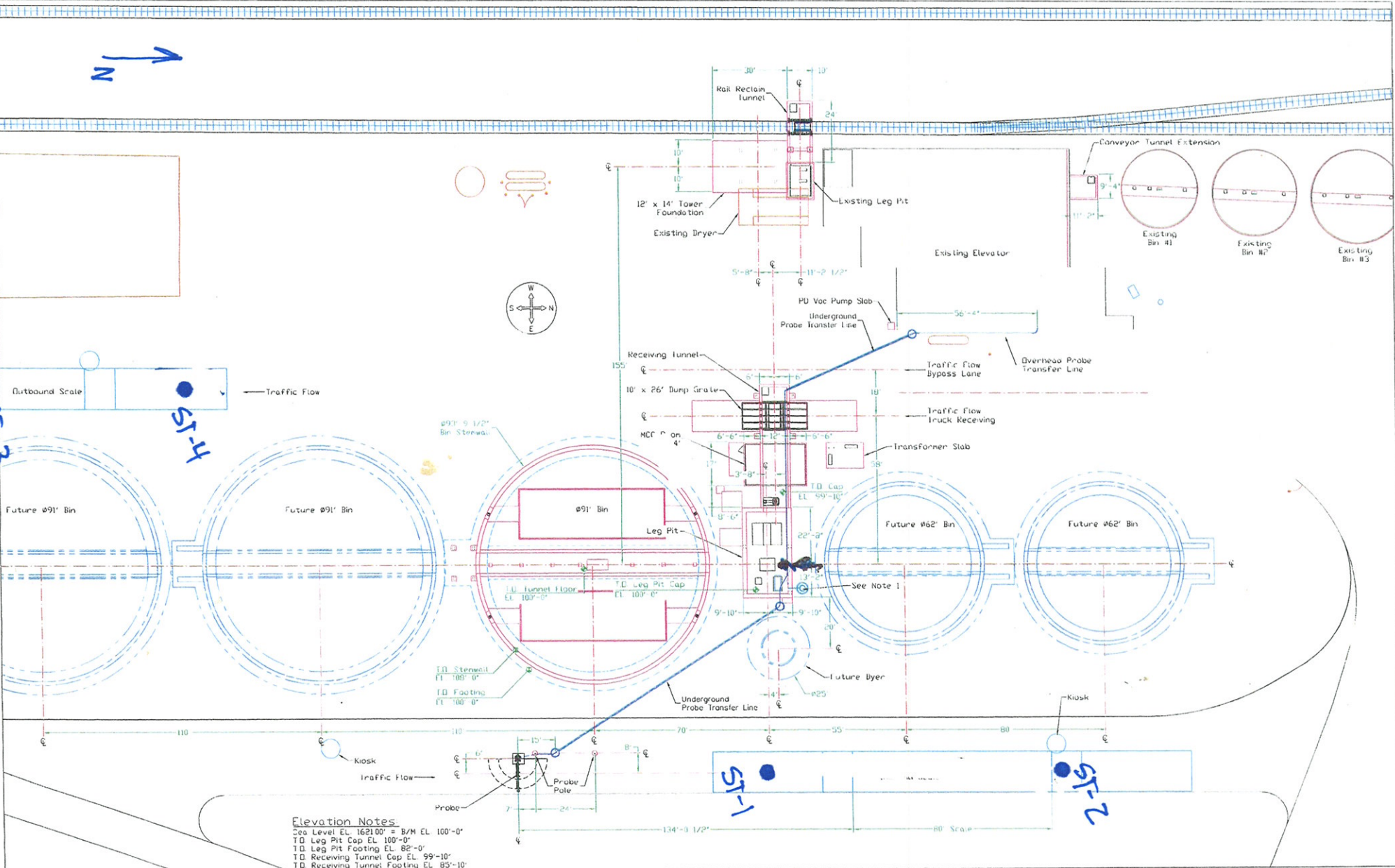
(See Descriptive Terminology sheet for explanation of abbreviations)

LOG OF BORING N:\GINTY\PROJECTS\FARGO\2013\06700.GPJ BRAUN_V8_CURRENT.GDT 10/12/13 06:46

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LOG OF BORING N:\GINT\PROJECTS\FARGO\2013\06700.GPJ BRAUN_V8_CURRENT.GDT 10/12/13 06:46 (See Descriptive Terminology sheet for explanation of abbreviations)

| Braun Project FA-13-06700 Geotechnical Evaluation CHS - Calvin Facility Scales 401 Railroad Avenue Calvin, North Dakota | | | | BORING: ST-4 LOCATION: See Sketch. | | | |
|--|------------|---------------------------------------|---|---|-----------------------|--------|-----------------------|
| DRILLER: J. Brooks | | METHOD: 3 1/4" HSA, Autohammer | | DATE: 10/11/13 | SCALE: 1" = 4' | | |
| Elev. feet | Depth feet | Symbol | Description of Materials (Soil-ASTM D2488 or D2487, Rock-USACE EM1110-1-2908) | BPF | WL | qp tsf | Tests or Notes |
| 150.9 | 0.0 | | | | | | |
| 148.9 | 2.0 | FILL | FILL: Poorly Graded Sand, medium-grained, a little Gravel, brown, moist. | | | | |
| 145.4 | 5.5 | FILL | FILL: Clayey Sand, fine- to medium-grained, brown, moist. | 9 | | | |
| 143.9 | 7.0 | CL | LEAN CLAY, with Roots and Organics, black, moist. (Buried Topsoil) | 6 | | | |
| 141.9 | 9.0 | SC | CLAYEY SAND, fine- to medium-grained, a little Gravel, brown, moist, loose. (Glacial Till) | 6 | | | |
| | | CL | SANDY LEAN CLAY, a little Gravel, brown, moist, rather stiff to hard. (Glacial Till) | 47 | | 1 3/4 | |
| | | | | 12 | | 2 1/2 | |
| | | | | 22 | | 3 | |
| 130.6 | 20.3 | | END OF BORING | * | | | *100/4" (No Recovery) |
| | | | Water not observed with 19 1/2 feet of hollow stem auger in the ground. | | | | |
| | | | Water not observed immediately after withdrawal of the auger. | | | | |
| | | | Boring then backfilled. | | | | |



Elevation Notes
 Sea Level EL. 1621.00' ± 8/M EL. 100'-0"
 TD Leg Pit Cap EL. 100'-0"
 TD Leg Pit Footing EL. 82'-0"
 TD Receiving Tunnel Cap EL. 99'-10"
 TD Receiving Tunnel Footing EL. 85'-10"
 TD Dump Grate EL. 99'-10 1/2"
 TD #91' Bin Tunnel Floor EL. 100'-0"
 TD #91' Bin Stenwall EL. 108'-0"
 TD #91' Bin Footing EL. 100'-0"
 TD MCC Building Slab EL. 99'-10"

Notes
 1 Dewatering Pump w/ Emergency Float Switch
 Wired to Customer PLC

| NO | REVISION | NAME | DATE | ALL RIGHTS ARE RESERVED |
|----|---------------------------|------|---------|---|
| 3 | Added Probe Transfer Line | KDM | 9/25/13 | This Drawing In Design And Detail Is The Property Of J & D CONSTRUCTION And Must Not Be Used Except In Connector With Our Work. |
| 2 | Added MCC Building Slab | KDM | 9/9/13 | |
| 1 | Added Probe Location | KDM | 8/26/13 | |
| 0 | Issue For Construction | KDM | 4/26/13 | |
| | | | | |

FILE Calvin_M
 CHS
 Calvin, ND

CONSTRUCTION

Site Plan

SCALE 1/16"=1'
 DATE 4/12/13

Page Size 24x36
 DRAWING NO. B 3015-1A