

LEGEND - ROADWAY

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	15	14
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	86	129
GRAVEL AND/OR STONE FRAGMENTS W/SAND AND SILT	A-2-4	6	3
FINE SAND	A-3	13	21
COARSE AND FINE SAND	A-3a	28	35
SANDY SILT	A-4a	41	34
SILT	A-4b	4	4
SILT AND CLAY	A-6a	29	24
SILTY CLAY	A-6b	10	16
CLAY	A-7-6	4	2
TOTAL		236	282

LEGEND - STRUCTURE

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	36	58
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	145	244
GRAVEL AND/OR STONE FRAGMENTS W/SAND AND SILT	A-2-4	13	14
FINE SAND	A-3	8	14
COARSE AND FINE SAND	A-3a	23	29
SANDY SILT	A-4a	102	105
SILT	A-4b	5	6
SILT AND CLAY	A-6a	24	19
SILTY CLAY	A-6b	3	1
CLAY	A-7-6	1	0
TOTAL		236	282

XXXXXX PAVEMENT OR BASE =X= APPROXIMATE THICKNESS

BORING LOCATION - PLAN VIEW

HISTORIC BORING LOCATION - PLAN VIEW

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

N₆₀ INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO

N INDICATES STANDARD PENETRATION RESISTANCE

INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25% OR GREATER THAN 19% WITH A WET APPEARANCE.

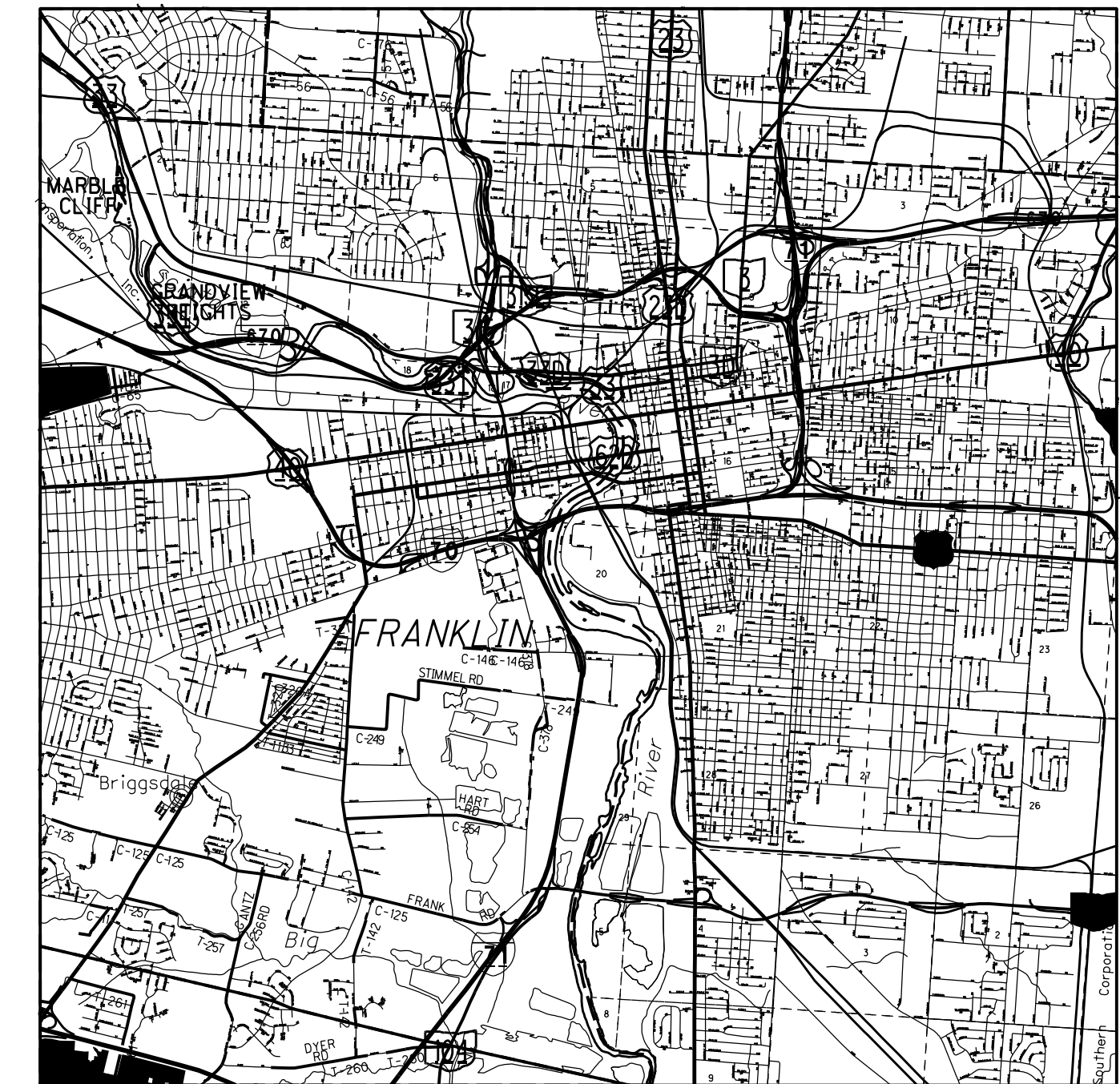
INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

WC INDICATES WATER CONTENT IN PERCENT.

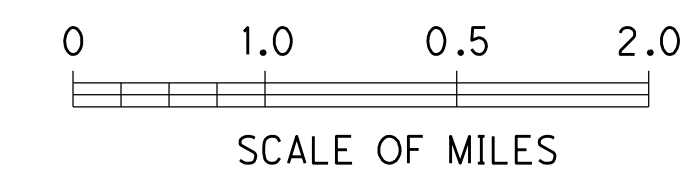
W— INDICATES FREE WATER ELEVATION.

NP INDICATES A NON-PLASTIC SAMPLE.

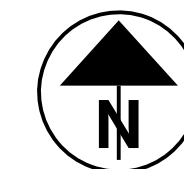
SS INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.



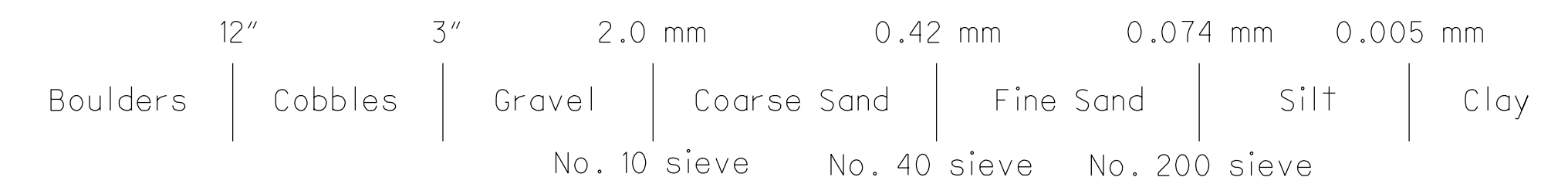
LOCATION MAP



SCALE: 1 inch = 1.0 miles



PARTICLE SIZE DEFINITIONS



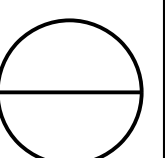
RECON. - JG
 DRILLING - CTL ENGINEERING INC.
 DRAWN - N.T.
 REVIEWED - JG

PID NO.
77371

STRUCTURE FOUNDATION EXPLORATION

FRA-71-17.14

1 / 145



CTL ENGINEERING, INC.
 2860 FISHER ROAD
 COLUMBUS, OHIO 43204
 PHONE: (614) 276-8123 FAX: (614) 276-6377

ROADWAY

PROJECT DESCRIPTION

THIS PROJECT, FRA-71-17.14, IS THE THIRD PHASE OF THE GROUP OF PROJECTS THAT MAKE UP THE IMPROVEMENTS TO THE I-70 / I-71 SPLIT CORRIDOR. THE PROJECT RECONSTRUCTS I-71 BETWEEN THE 71/670 AND THE 71/70 INTERCHANGES AS WELL AS RAMPS ASSOCIATED WITH I-70, I-670 AND MAIN STREET. IT ALSO CONSTRUCTS THE NB AND SB URBAN STREETS, AS WELL AS THE TOWN, OAK, BROAD AND LONG STREET BRIDGES.

HISTORIC RECORDS

HISTORIC RECORD INFORMATION FOR THE EXISTING PROJECT WAS REQUESTED FROM ODOT OFFICE OF GEOTECHNICAL ENGINEERING. SUBSURFACE INFORMATION OF BORINGS PERFORMED IN 1959 WAS PROVIDED TO US. PROFILES FOR BORINGS WERE CREATED, AND ARE SHOWN IN SHEET --- OF ---.

GEOLOGY

THE OVERALL PROJECT AREA LIES WITHIN THE COLUMBUS LOWLAND AND CENTRAL LOWLAND TILL PLAINS. THE AREA WAS GLACIATED BY BOTH ILLINOIAN AND WISCONSINAN ICE SHEET THE SOILS ARE COMPRISED OF GRANULAR OUTWASH AND ALLUVIUM DEPOSITS. COBBLES AND BOULDERS ARE ENCOUNTERED IN SEVERAL OF THE BORINGS.

BASED ON OHIO DIVISION OF GEOLOGICAL SURVEYS (2006), THE UNDERLYING BEDROCK IS COMPRISED OF OHIO AND OLENTANGY SHALE OF UPPER AND MIDDLE DEVONIAN FORMATION. DEPTH TO BEDROCK RANGES APPROXIMATELY BETWEEN 180 TO 200 FEET FROM THE GROUND SURFACE.

RECONNAISSANCE

SEVERAL SITE RECONNAISSANCE VISITS WERE PERFORMED IN 2010. THE EXISTING GRADE OF IR 71 IS LOWER THAN THE SURROUNDING AREAS. GRASS COVERED SLOPES ARE PRESENT IN MOST AREAS BETWEEN IR 71 AND THE SIDE STREETS WHICH RUN PARALLEL TO IR 71. SOME OF THE SLOPES CONTAIN TREES AND BRUSH. NO MAJOR SIGNS OF SLOPE INSTABILITY WERE NOTED.

RETAINING WALLS ARE PRESENT IN THE VICINITY OF THE EXISTING BRIDGES AND IN OTHER AREAS ALONG THE CORRIDOR.

THE IR 71 PAVEMENT EXHIBITED LONGITUDINAL CRACKING IN MANY AREAS, AND ALLIGATOR OR TRANSVERSE CRACKING IN ISOLATED LOCATIONS.

THE SURROUNDING AREA IS URBAN, CONTAINING A COMBINATION OF RETAIL BUILDINGS, OFFICE BUILDINGS AND RESIDENTIAL STRUCTURES.

SUBSURFACE EXPLORATION

WITHIN THE PROJECT LIMITS, SEVERAL BORINGS WERE PERFORMED BY DLZ AND RII INTERNATIONAL INC. THESE BORINGS ARE CONSIDERED AS PROJECT BORINGS AND ARE INCLUDED AS PART OF CURRENT SUBSURFACE INVESTIGATION.

THE TEST BORINGS WERE EXTENDED TO DEPTHS RANGING FROM 7 TO 53 FEET BELOW GRADE. THE TEST BORINGS WERE DRILLED WITH TRUCK AND TRACK-MOUNTED DRILL RIGS USING 3-1/4 INCH I.D. HOLLOW-STEM AUGERS. THE HAMMER SYSTEMS ASSOCIATED WITH THESE DRILL RIGS WERE CALIBRATED BETWEEN ON JANUARY 26, 2009 AND NOVEMBER 3, 2009, AND THE ENERGY TRANSFER RATIO ASSOCIATED WITH THIS RIG RANGED FROM 61.0 TO 79.3 PERCENT. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 1.5 FOOT, 2.5-FOOT AND 5.0-FOOT INTERVALS THROUGH THE SOIL USING AN AUTOMATIC HAMMER SYSTEM.

EXPLORATION FINDINGS

IN GENERAL DRILLED BORINGS EXHIBITED MAN MADE FILLS OVER GRANULAR DEPOSITS. SOILS ENCOUNTERED IN THE BORING WERE CLASSIFIED AS A-1-a, A-1-b, A-2-4, A-3, A-3a, A-4a, A-6a, A-6b AND A-7-6 SOILS. GRANULAR SOILS ARE PREDOMINANT COHESIVE SOILS WERE LESS PREVALENT, BUT PRESENT THROUGHOUT THE SITE. NO BEDROCK WAS ENCOUNTERED WITHIN THE DRILLED DEPTHS.

GROUNDWATER WAS OBSERVED AND MEASURED IN A NUMBER OF BORINGS. PLEASE REFER TO BORING LOGS FOR GROUND WATER DEPTHS

STRUCTURE

PROJECT DESCRIPTION

THIS PROJECT, FRA-71-17.14, IS THE THIRD PHASE OF THE GROUP OF PROJECTS THAT MAKE UP THE IMPROVEMENTS TO THE I-70 / I-71 SPLIT CORRIDOR. THE PROJECT RECONSTRUCTS I-71 BETWEEN THE 71/670 AND THE 71/70 INTERCHANGES AS WELL AS RAMPS ASSOCIATED WITH I-70, I-670 AND MAIN STREET. IT ALSO CONSTRUCTS THE NB AND SB URBAN STREETS, AS WELL AS THE TOWN, OAK, BROAD AND LONG STREET BRIDGES.

HISTORIC RECORDS

HISTORIC RECORD INFORMATION FOR THE EXISTING PROJECT WAS REQUESTED FROM ODOT OFFICE OF GEOTECHNICAL ENGINEERING. SUBSURFACE INFORMATION OF BORINGS PERFORMED IN 1959 WAS PROVIDED TO US. PROFILES FOR BORINGS WERE CREATED, AND ARE SHOWN IN SHEET --- OF ---.

GEOLOGY

THE OVERALL PROJECT AREA LIES WITHIN THE COLUMBUS LOWLAND AND CENTRAL LOWLAND TILL PLAINS. THE AREA WAS GLACIATED BY BOTH ILLINOIAN AND WISCONSINAN ICE SHEETS. THE SOILS ARE COMPRISED OF GRANULAR OUTWASH AND ALLUVIUM DEPOSITS. COBBLES AND BOULDERS ARE ENCOUNTERED IN SEVERAL OF THE BORINGS.

BASED ON OHIO DIVISION OF GEOLOGICAL SURVEYS (2006), THE UNDERLYING BEDROCK IS COMPRISED OF OHIO SHALE AND OLENTANGY SHALE OF UPPER AND MIDDLE DEVONIAN FORMATION. DEPTH TO BEDROCK RANGES APPROXIMATELY BETWEEN 180 TO 200 FEET FROM THE GROUND SURFACE.

RECONNAISSANCE

SEVERAL SITE RECONNAISSANCE VISITS WERE PERFORMED IN 2010. THE EXISTING GRADE OF IR 71 IS LOWER THAN THE SURROUNDING AREAS. GRASS COVERED SLOPES ARE PRESENT IN MOST AREAS BETWEEN IR 71 AND THE SIDE STREETS WHICH RUN PARALLEL TO IR 71. SOME OF THE SLOPES CONTAIN TREES AND BRUSH. NO MAJOR SIGNS OF SLOPE INSTABILITY WERE NOTED.

RETAINING WALLS ARE PRESENT IN THE VICINITY OF THE EXISTING BRIDGES AND IN OTHER AREAS ALONG THE CORRIDOR.

THE IR 71 PAVEMENT EXHIBITED LONGITUDINAL CRACKING IN MANY AREAS, AND ALLIGATOR OR TRANSVERSE CRACKING IN ISOLATED LOCATIONS.

THE SURROUNDING AREA IS URBAN, CONTAINING A COMBINATION OF RETAIL BUILDINGS, OFFICE BUILDINGS AND RESIDENTIAL STRUCTURES.

SUBSURFACE EXPLORATION

TWENTY FOUR (24) TEST BORINGS WERE PERFORMED BY CTL ENGINEERING AS PART OF THIRD PHASE SUBSURFACE EXPLORATION. WITHIN THE PROJECT LIMITS, SEVERAL BORINGS WERE PERFORMED BY DLZ AND RII INTERNATIONAL INC. THESE BORINGS ARE CONSIDERED AS PROJECT BORINGS AND ARE INCLUDED AS PART OF CURRENT SUBSURFACE INVESTIGATION.

THE TEST BORINGS WERE EXTENDED TO DEPTHS RANGING FROM 7 TO 85 FEET BELOW GRADE. THE TEST BORINGS WERE DRILLED WITH TRUCK AND TRACK-MOUNTED DRILL RIGS USING 3-1/4 INCH I.D. HOLLOW-STEM AUGERS. THE HAMMER SYSTEMS ASSOCIATED WITH THESE DRILL RIGS WERE CALIBRATED BETWEEN JANUARY 26, 2009 AND NOVEMBER 3, 2009, AND THE ENERGY TRANSFER RATIO ASSOCIATED WITH THESE RIGS RANGED FROM 61.0 TO 86 PERCENT. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 1.5 FOOT, 2.5-FOOT AND 5.0-FOOT INTERVALS THROUGH THE SOIL USING AN AUTOMATIC HAMMER SYSTEM.

EXPLORATION FINDINGS

IN GENERAL DRILLED BORINGS EXHIBITED MAN MADE FILLS OVER GRANULAR DEPOSITS. SOILS ENCOUNTERED IN THE BORINGS WERE CLASSIFIED AS A-1-a, A-1-b, A-2-4, A-3, A-3a, A-4a, A-6a, A-6b AND A-7-6 SOILS. GRANULAR SOILS ARE PREDOMINANT COHESIVE SOILS WERE LESS PREVALENT, BUT ARE PRESENT THROUGHOUT THE SITE. NO BEDROCK WAS ENCOUNTERED WITHIN THE DRILLED DEPTHS.

GROUNDWATER WAS OBSERVED AND MEASURED IN A NUMBER OF BORINGS. PLEASE REFER TO BORING LOGS FOR GROUND WATER DEPTHS.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2011.

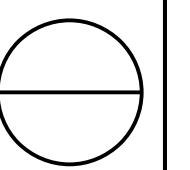
AVAILABLE INFORMATION

ALL AVAILABLE SOIL INFORMATION THAT CAN BE SHOWN ON THE SOIL PROFILE SHEETS HAS BEEN REPORTED. ADDITIONAL SUBSURFACE EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIFIC ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING 1980 WEST BROAD STREET.

SOIL PROFILE /
STRUCTURE FOUNDATION EXPLORATION

FRA-71-17.14
PID NO. 77371

2 / 145



DRAWN
B.R.U.
CHECKED
NT

SUMMARY OF SOIL TEST DATA- I.R.71 NB

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

Table with columns: EXPLORATION NO., STATION & OFFSET, DEPTH FROM-TO, Sample ID, % Agg, % C.S., % F.S., % Silt, % Clay, L.L., P.L., P.I., W.C., ODOT Class. Rows include data for B-201-5-09, B-204-2-09, B-204-3-09, and B-205-3-09.

SUMMARY OF SOIL TEST DATA- I.R.71 NB

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

Table with columns: EXPLORATION NO., STATION & OFFSET, DEPTH FROM-TO, Sample ID, % Agg, % C.S., % F.S., % Silt, % Clay, L.L., P.L., P.I., W.C., ODOT Class. Rows include data for B-205-3-09, B-205-4-09, and B-172.

SUMMARY OF SOIL TEST DATA- I.R.71 SB

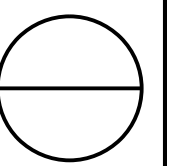
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

Table with columns: EXPLORATION NO., STATION & OFFSET, DEPTH FROM-TO, Sample ID, % Agg, % C.S., % F.S., % Silt, % Clay, L.L., P.L., P.I., W.C., ODOT Class. Rows include data for B-172, B-174, and B-181.

DRAWN B.R.U. CHECKED NT

SUMMARY OF SOIL TEST DATA

FRA-71-17.14 PID NO. 77371



SUMMARY OF SOIL TEST DATA- ELIJAH PIERCE AVE

NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

EXPLORATION NO. STATION & OFFSET	DEPTH FROM-TO	Sample ID	% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.	P.I.	W.C.	ODOT Class	
B-205		SS-1	2	4	12	33	49	43	17	26	22	A-7-6 (15)	
		SS-2	5	12	18	37	28	26	17	9	16	A-4a (6)	
		SS-3	8	10	16	36	30	29	17	12	11	A-6a (7)	
		SS-4	2	10	19	39	30	27	17	10	11	A-4a (7)	
		SS-5	SAME AS 4										A-4a (VISUAL)
		SS-6	SAME AS 4										A-4a (VISUAL)
B-205-1-09 716836.570 N 1833176.820 E		SS-1	6	7	14	32	41	36	18	18	27	A-6b (11)	
		SS-2	SAME AS 1										A-6b (VISUAL)
		SS-3	3	51	21	-	-	NP	NP	NP	11	A-1-b (0)	
		SS-4	8	12	24	37	19	21	13	8	8	A-4a (4)	
		SS-5	SAME AS 4										A-1-b (VISUAL)
		SS-6	17	36	34	-	-	NP	NP	NP	13	A-1-b (0)	
		SS-7	SAME AS 4										A-1-b (VISUAL)
		SS-8	SAME AS 4										A-1-b (VISUAL)
		SS-9	SAME AS 4										A-1-b (VISUAL)
		SS-10	10	26	59	-	-	NP	NP	NP	17	A-3 (0)	
		SS-11	SAME AS 10										A-3 (VISUAL)
		SS-12	SAME AS 10										A-3 (VISUAL)
		SS-13	SAME AS 10										A-3 (VISUAL)
		SS-14	0	3	87	-	-	NP	NP	NP	18	A-3 (0)	
		SS-15	GRAY, GRAVEL WITH SAND										A-1-b (VISUAL)

SUMMARY OF SOIL TEST DATA- CAPITAL STREET

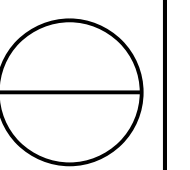
NOTE: NP SHOWN IN LIQUID LIMIT AND PLASTICITY INDEX COLUMNS INDICATES THAT THE MATERIAL IS NON-PLASTIC.

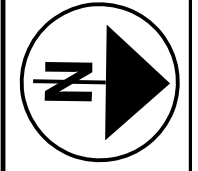
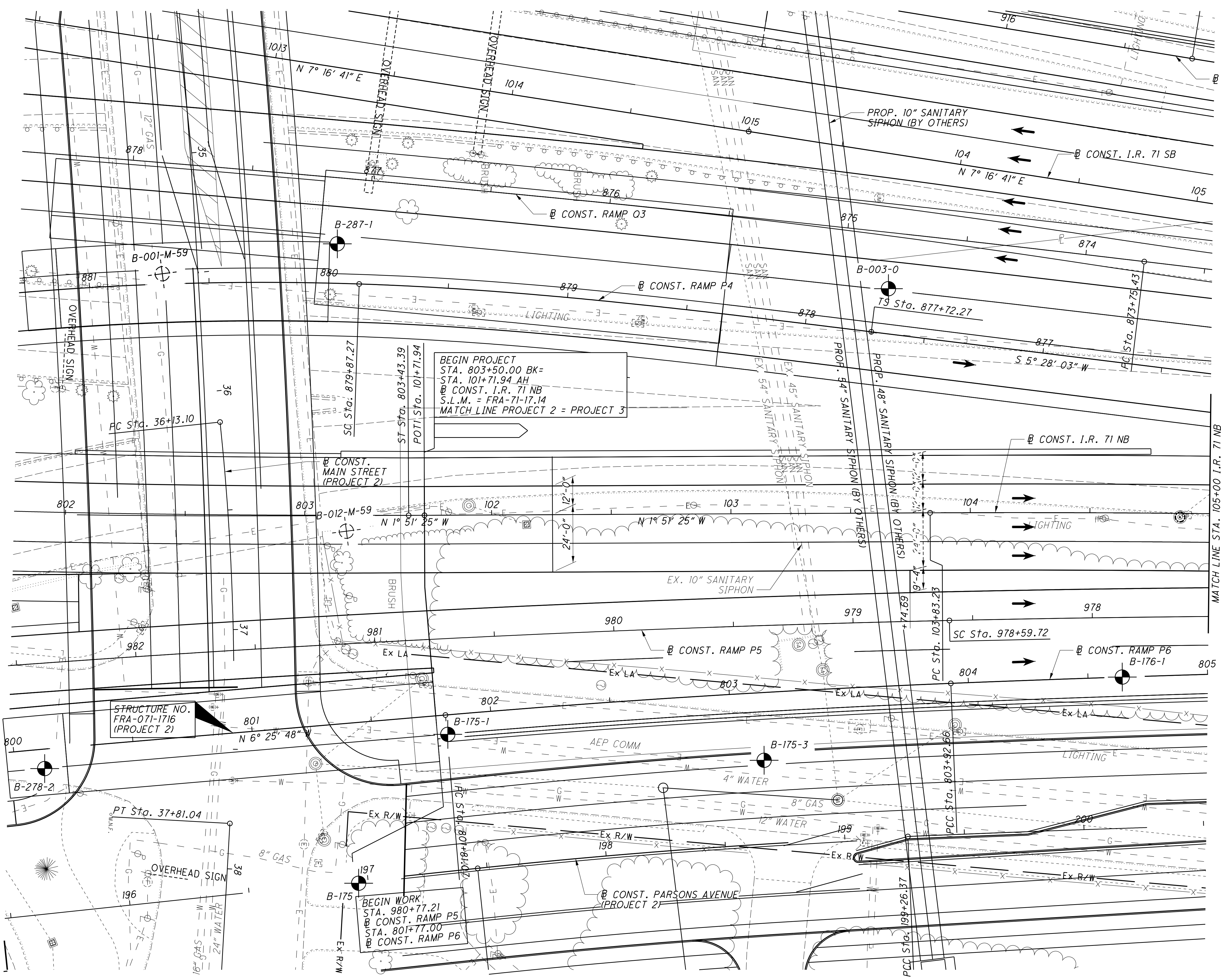
B-193		SS-1	5	9	22	43	21	21	15	6	12.5	A-4a (6)	
		SS-2	7	10	24	40	19	20	14	6	11	A-4a (5)	
		SS-3	11	10	25	38	16	20	14	6	9.9	A-4a (4)	
		SS-4	32	20	23	--25--		NP	NP	NP	8.9	A-1-b (0)	
		SS-5	SAME AS SS-4										5.4 A-1-b (VISUAL)
		SS-6	SAME AS SS-4										6 A-1-b (VISUAL)

DRAWN
B.R.U.
CHECKED
NT

SUMMARY OF SOIL TEST DATA

**FRA-71-17.14
PID NO. 77371**

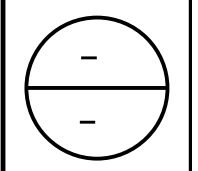


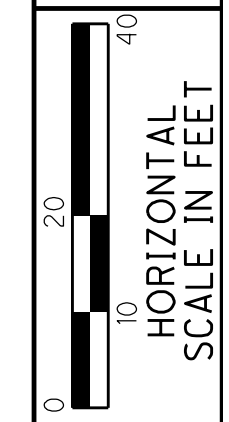
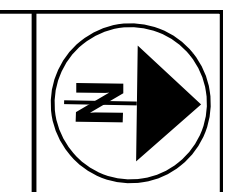


DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
BEGIN PROJECT STA. 101+71.94 TO STA. 105+00.00

FRA-71-17.14
PID NO. 77371



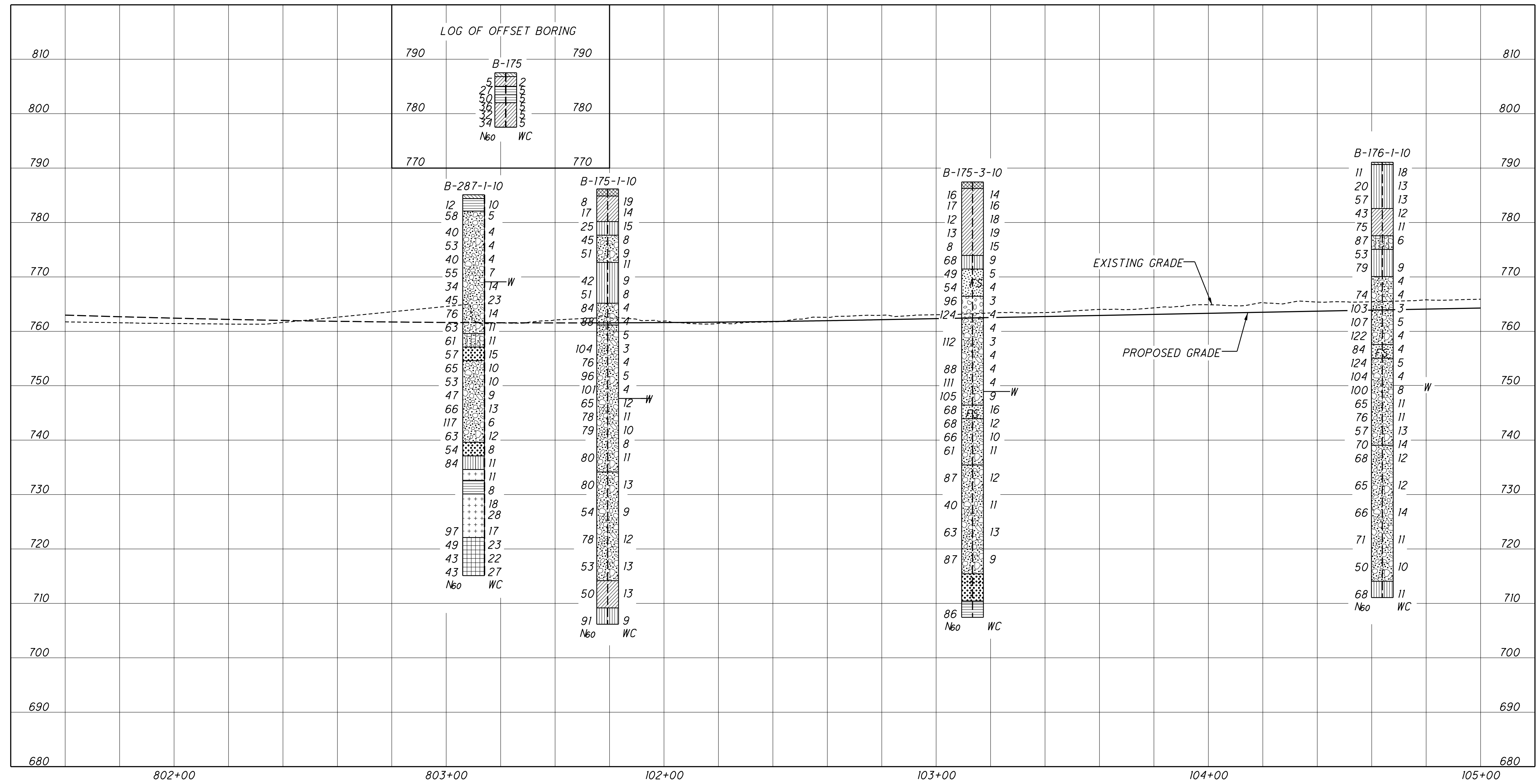
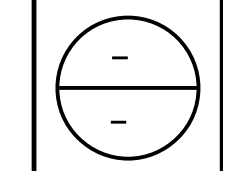


DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
BEGIN PROJECT STA. 101+71.94 TO STA. 105+00.00

FRA-71-17.14
PID NO. 77371

10 / 145



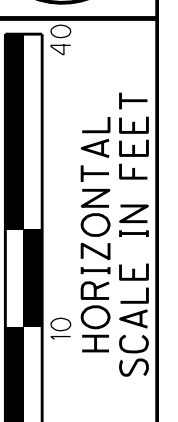
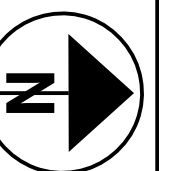


DRAWN N.K.S.
 CHECKED NT
 HORIZONTAL SCALE IN FEET
 0 10 20

PLAN - I.R. 71 NB
STA. 105+00.00 TO STA. 110+00.00

FRA-71-17.14
PID NO. 77371
 11 / 45

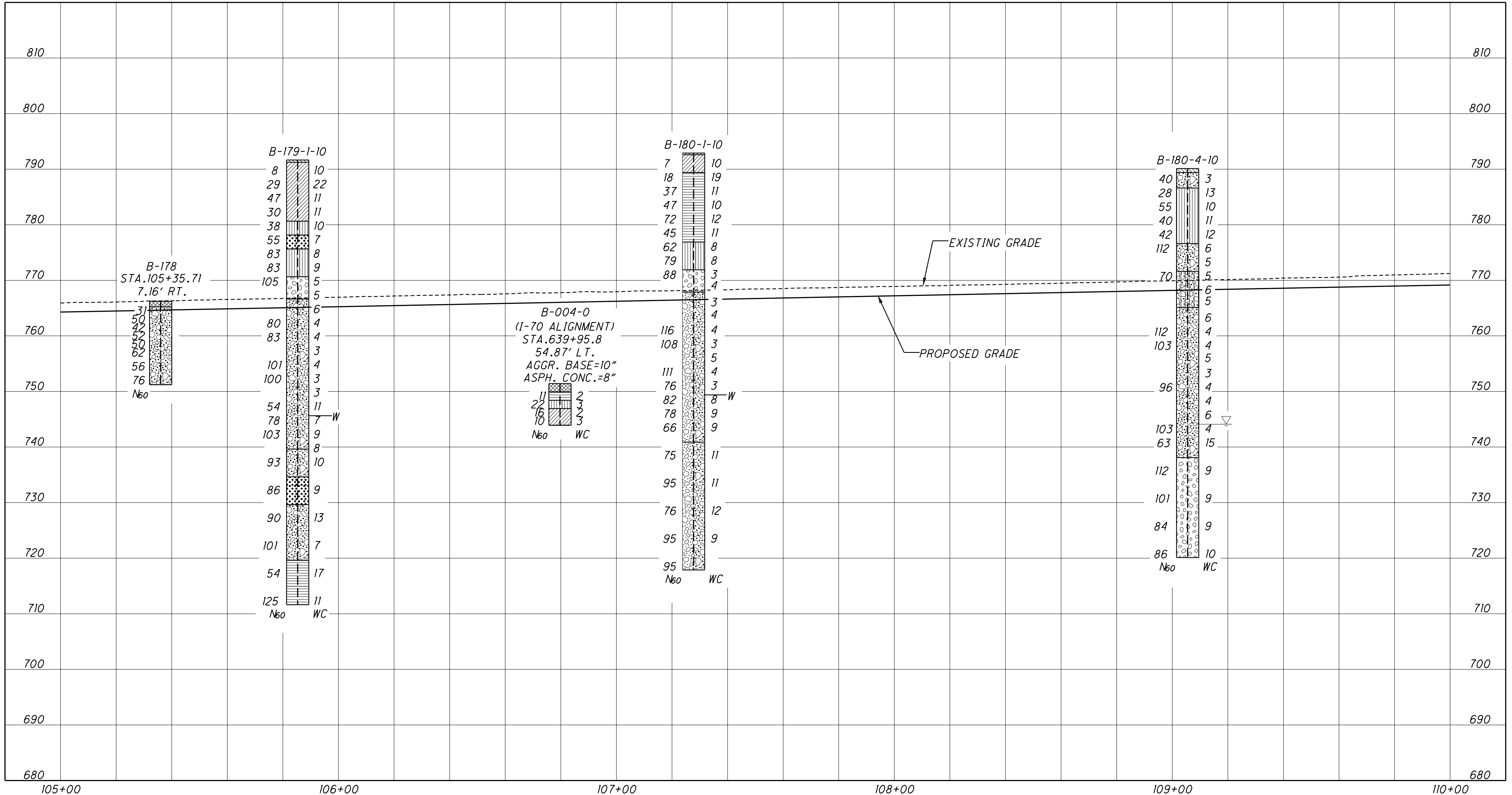
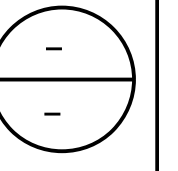
NOTE:
 SEE SHEET - OF - FOR BORINGS B-179 AND B-182 SOIL PROFILES
 SEE SHEET - OF - FOR BORING B-181 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-177 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-180-2 SOIL PROFILE



DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 105+00.00 TO STA. 110+00.00

FRA-71-17.14
PID NO. 77371



105+00

106+00

107+00

108+00

109+00

110+00

810

800

790

780

770

760

750

740

730

720

710

700

690

680

810

800

790

780

770

760

750

740

730

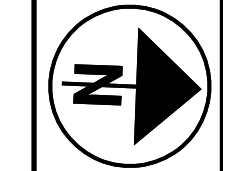
720

710

700

690

680



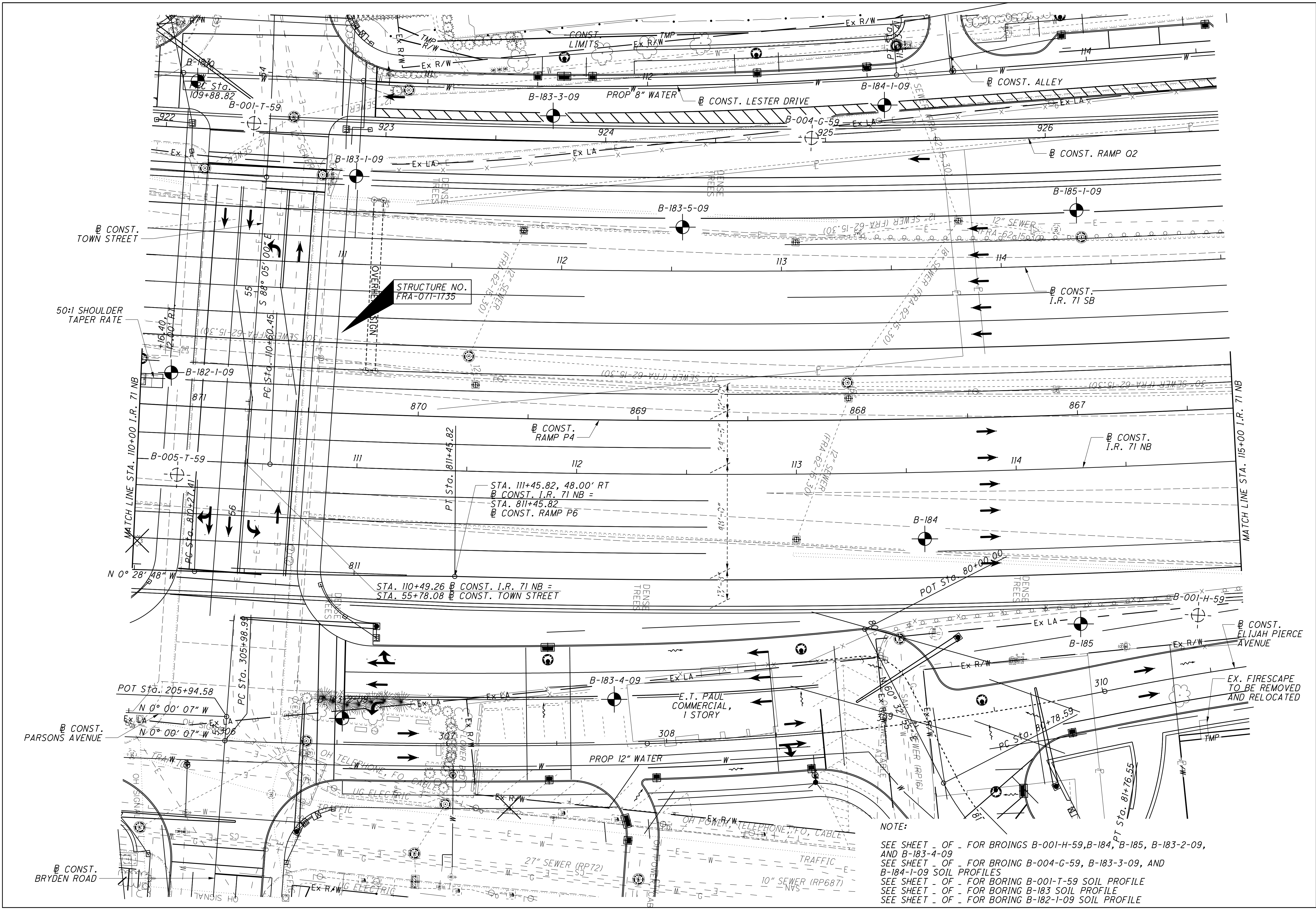
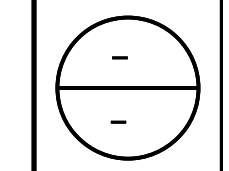
0 10 20
HORIZONTAL
SCALE IN FEET

DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 110+00.00 TO STA. 115+00.00

FRA-71-17.14
PID NO. 77371

13 145

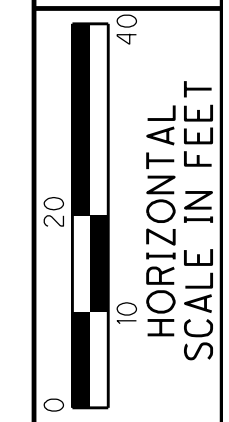
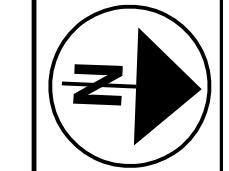


STRUCTURE NO.
FRA-071-1735

STA. 111+45.82, 48.00' RT
CONST. I.R. 71 NB =
STA. 811+45.82
CONST. RAMP P6

STA. 110+49.26 CONST. I.R. 71 NB =
STA. 55+78.08 CONST. TOWN STREET

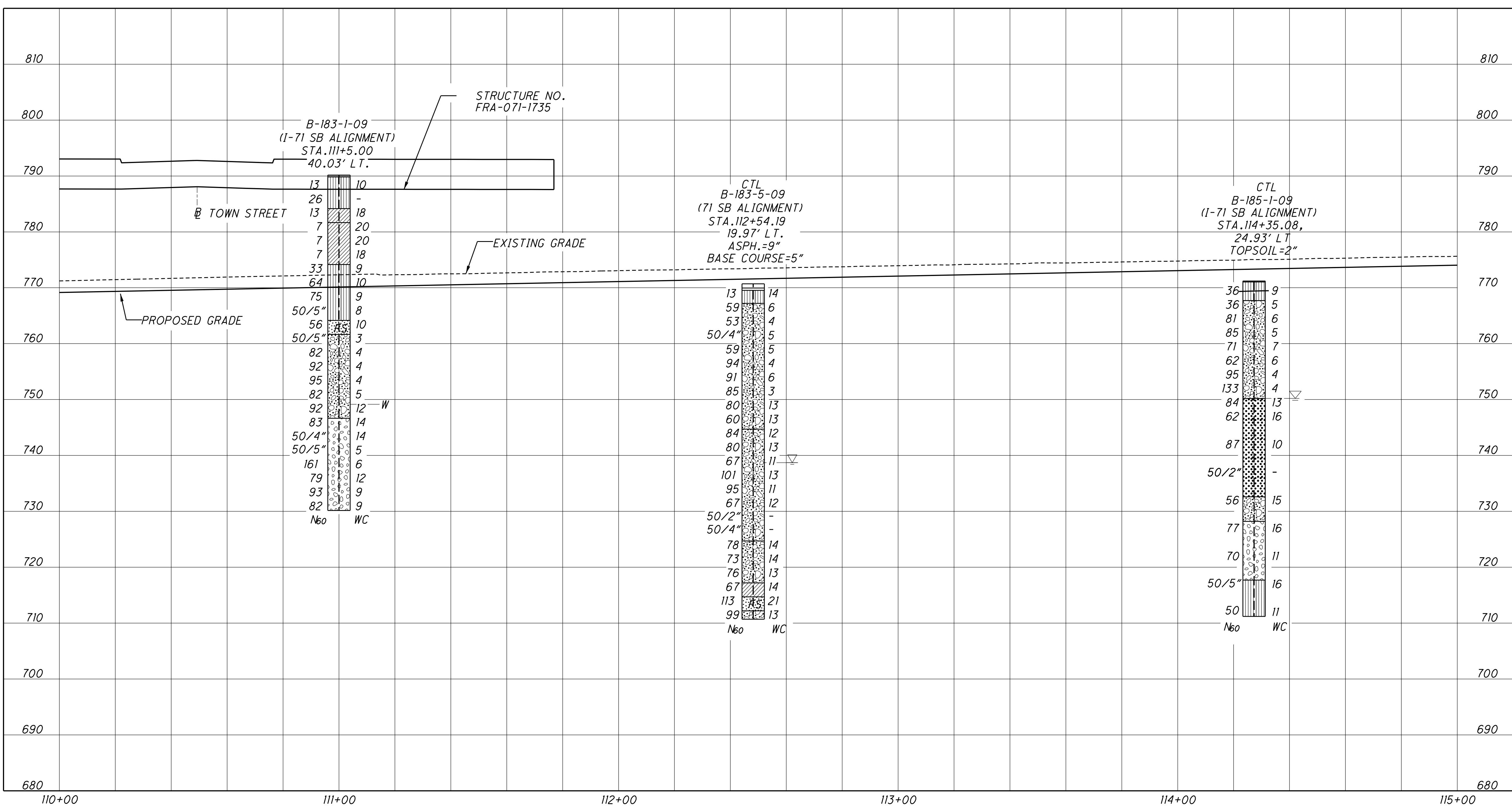
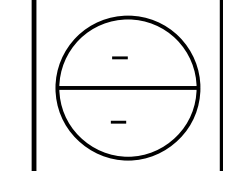
NOTE:
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 AND B-183-4-09
 SEE SHEET - OF - FOR BROING B-004-G-59, B-183-3-09, AND
 B-184-1-09 SOIL PROFILES
 SEE SHEET - OF - FOR BORING B-001-T-59 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-183 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-182-1-09 SOIL PROFILE

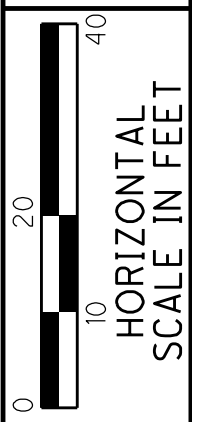
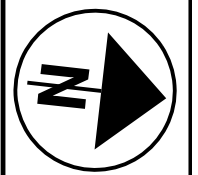
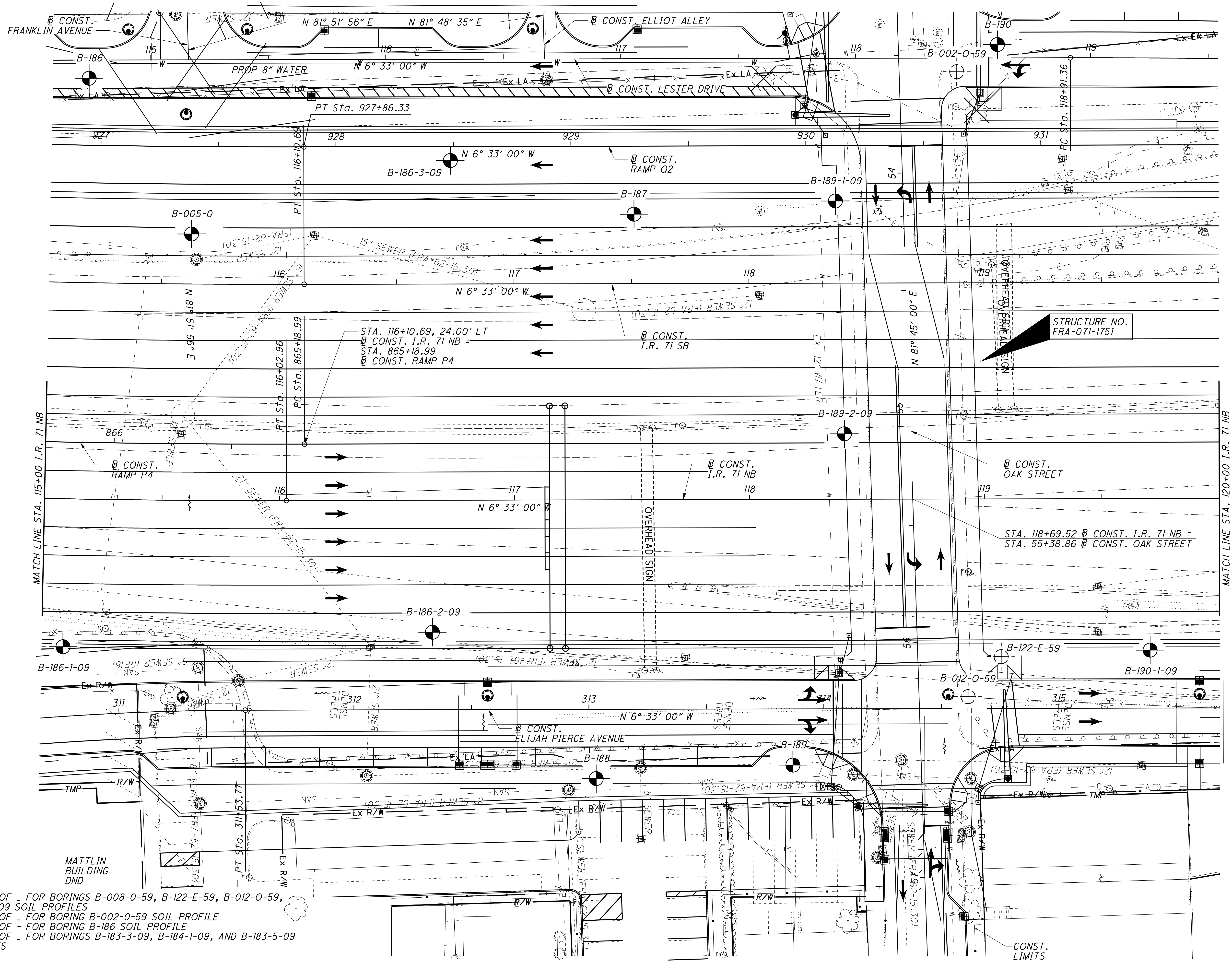


DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 110+00.00 TO STA. 115+00.00

FRA-71-17.14
PID NO. 77371



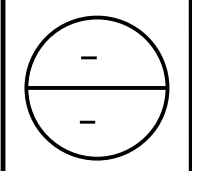


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N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 115+00.00 TO STA. 120+00.00

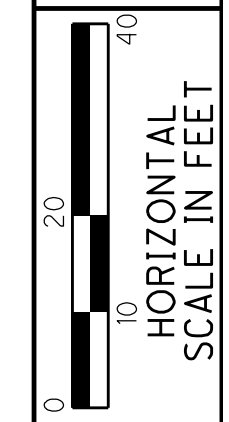
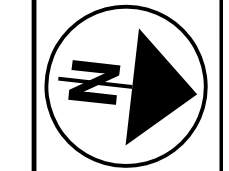
FRA-71-17.14
PID NO. 77371

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NOTE:

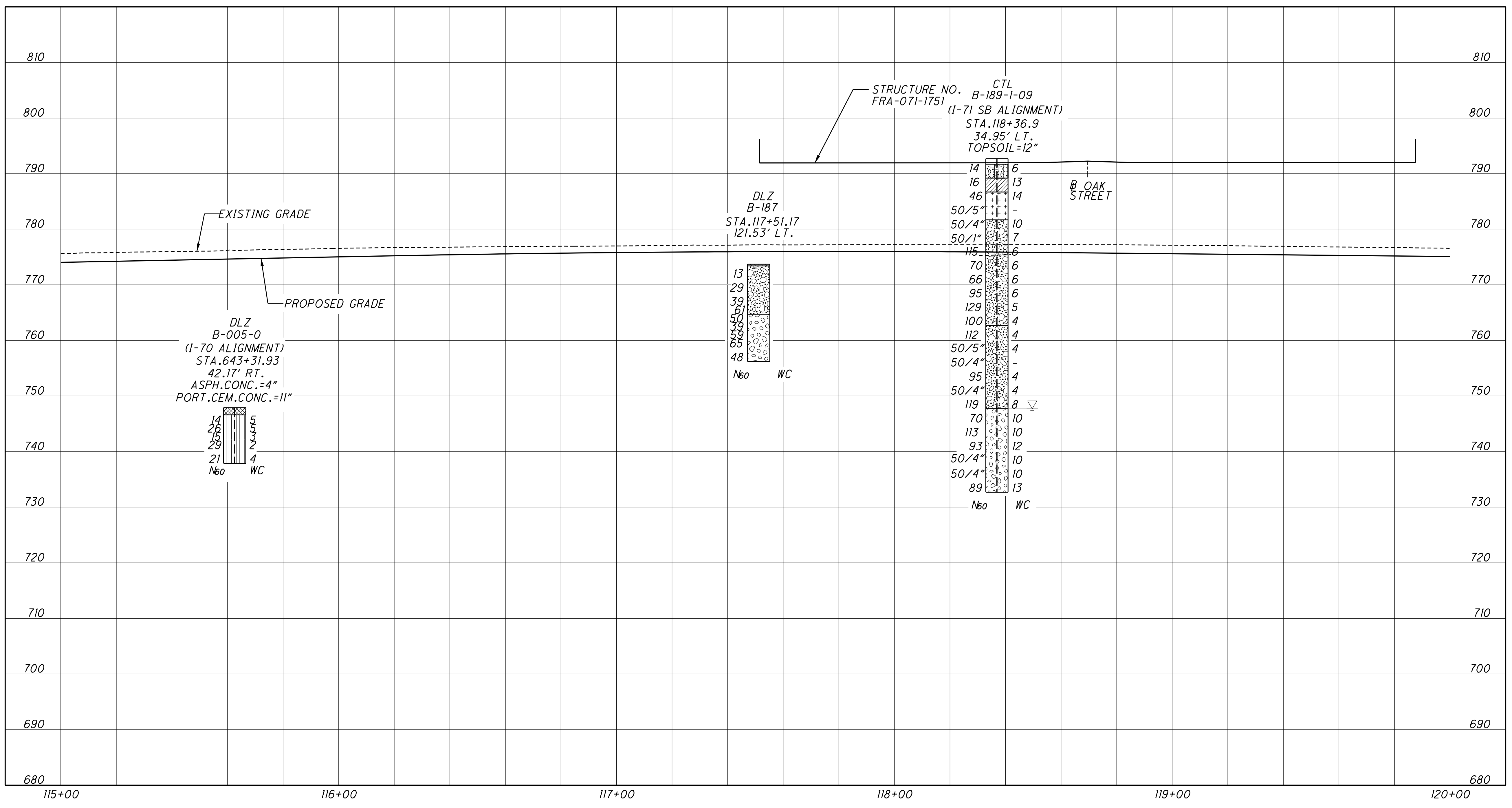
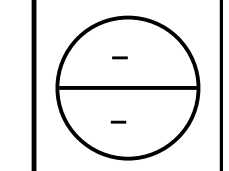
- SEE SHEET - OF - FOR BORINGS B-008-0-59, B-122-E-59, B-012-0-59, AND B-189-2-09 SOIL PROFILES
- SEE SHEET - OF - FOR BORING B-002-0-59 SOIL PROFILE
- SEE SHEET - OF - FOR BORING B-186 SOIL PROFILE
- SEE SHEET - OF - FOR BORINGS B-183-3-09, B-184-1-09, AND B-183-5-09 SOIL PROFILES

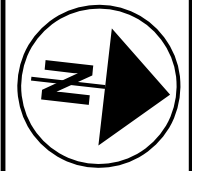
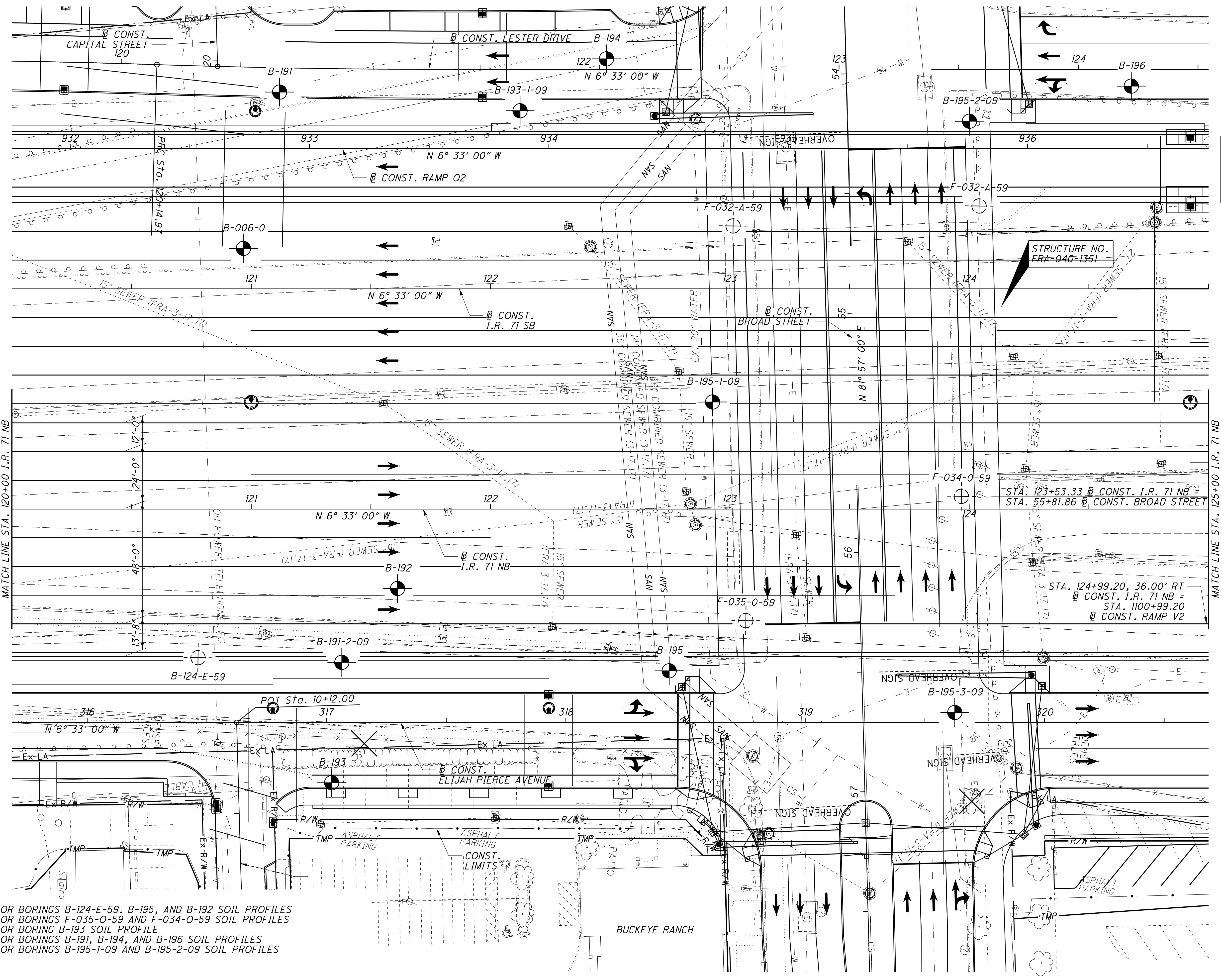


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N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 115+00.00 TO STA. 120+00.00

FRA-71-17.14
PID NO. 77371





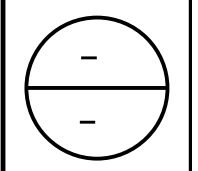
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HORIZONTAL
SCALE IN FEET

DRAWN
N.K.S.
CHECKED
NT

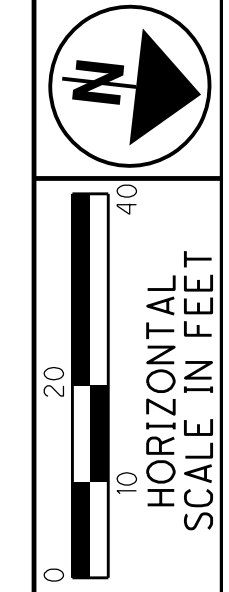
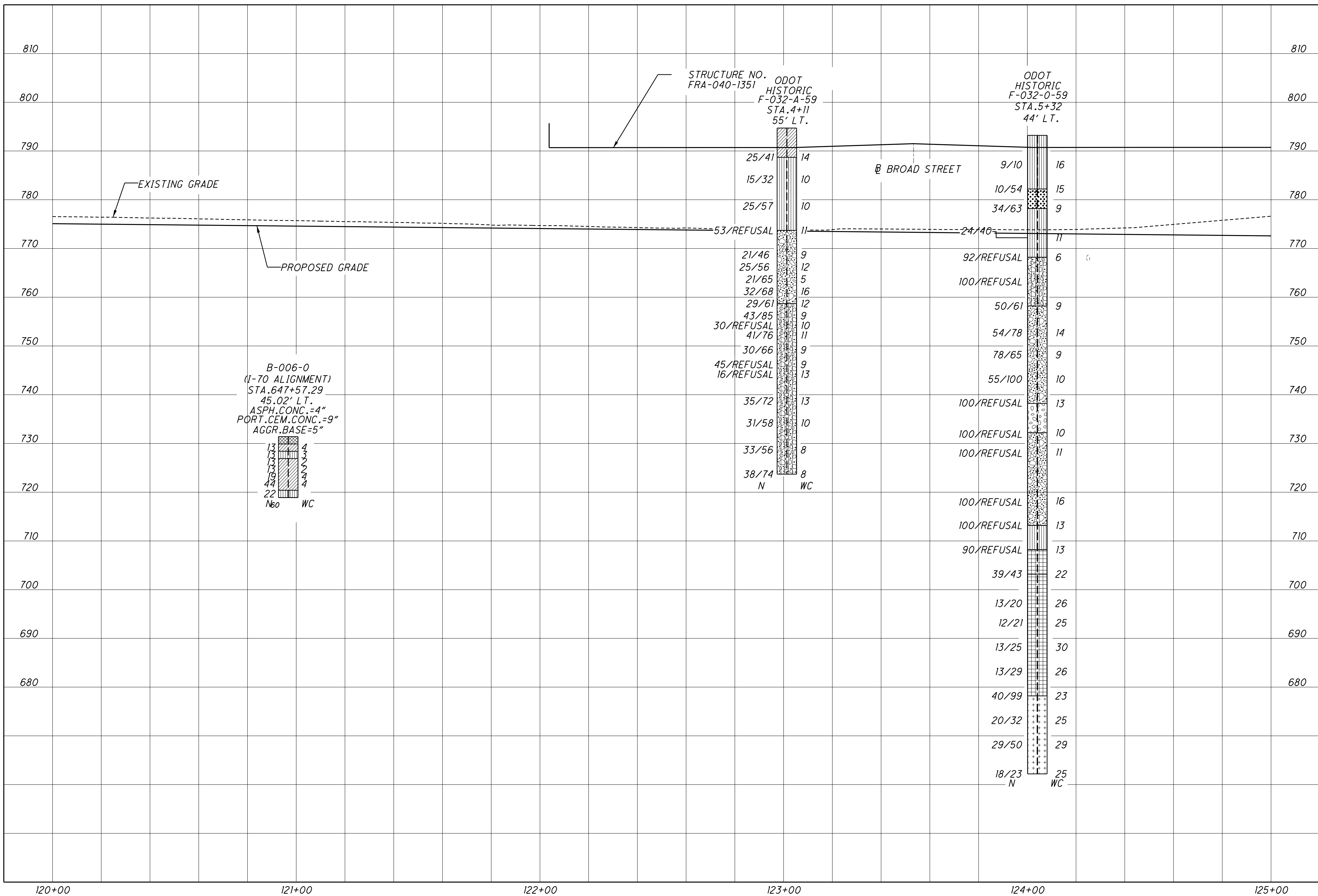
PLAN - I.R. 71 NB
STA. 120+00.00 TO STA. 125+00.00

FRA-71-17.14
PID NO. 77371

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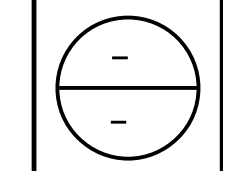
NOTE:
SEE SHEET - OF - FOR BORINGS B-124-E-59, B-195, AND B-192 SOIL PROFILES
SEE SHEET - OF - FOR BORINGS F-035-0-59 AND F-034-0-59 SOIL PROFILES
SEE SHEET - OF - FOR BORING B-193 SOIL PROFILE
SEE SHEET - OF - FOR BORINGS B-191, B-194, AND B-196 SOIL PROFILES
SEE SHEET - OF - FOR BORINGS B-195-1-09 AND B-195-2-09 SOIL PROFILES

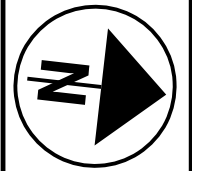
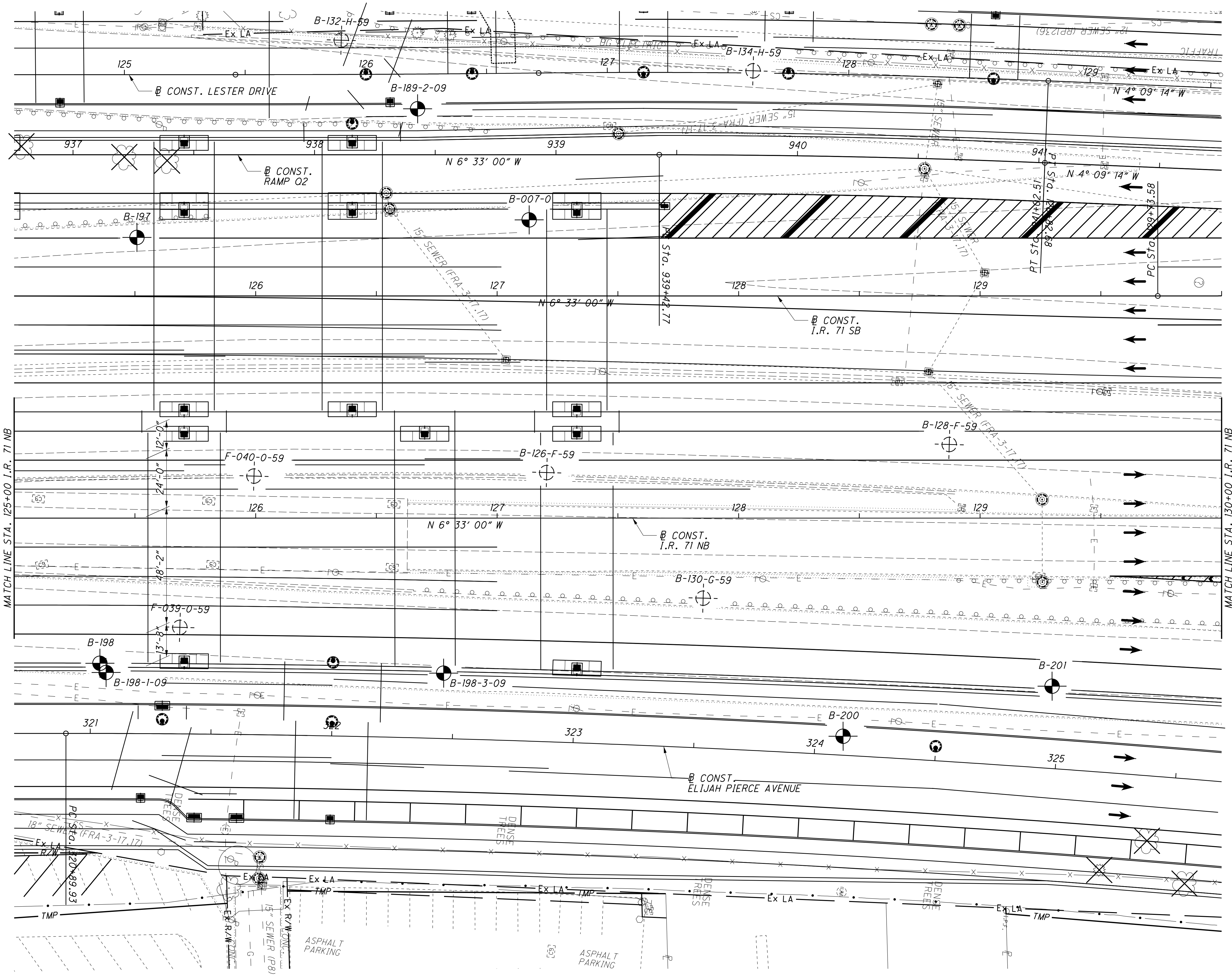


DRAWN: N.K.S.
 CHECKED: NT

PLAN - I.R. 71 NB
STA. 120+00.00 TO STA. 125+00.00

FRA-71-17.14
PID NO. 77371





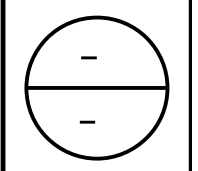
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HORIZONTAL
SCALE IN FEET

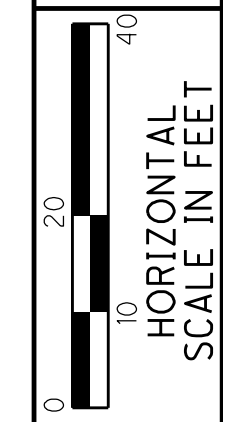
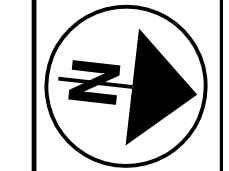
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N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 120+00.00 TO STA. 125+00.00

FRA-71-17.14
PID NO. 77371

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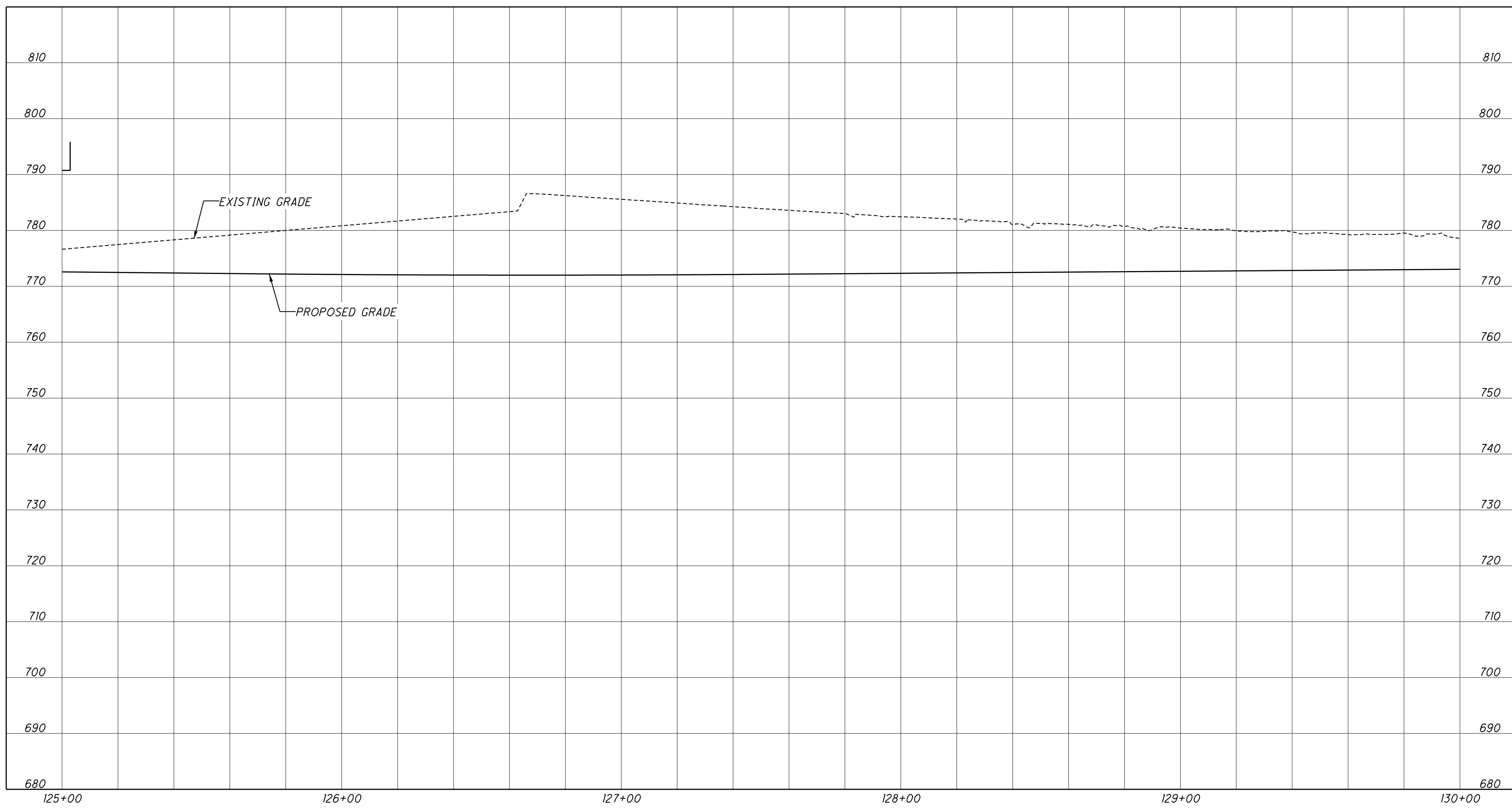
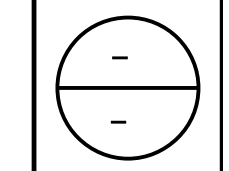


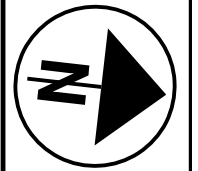
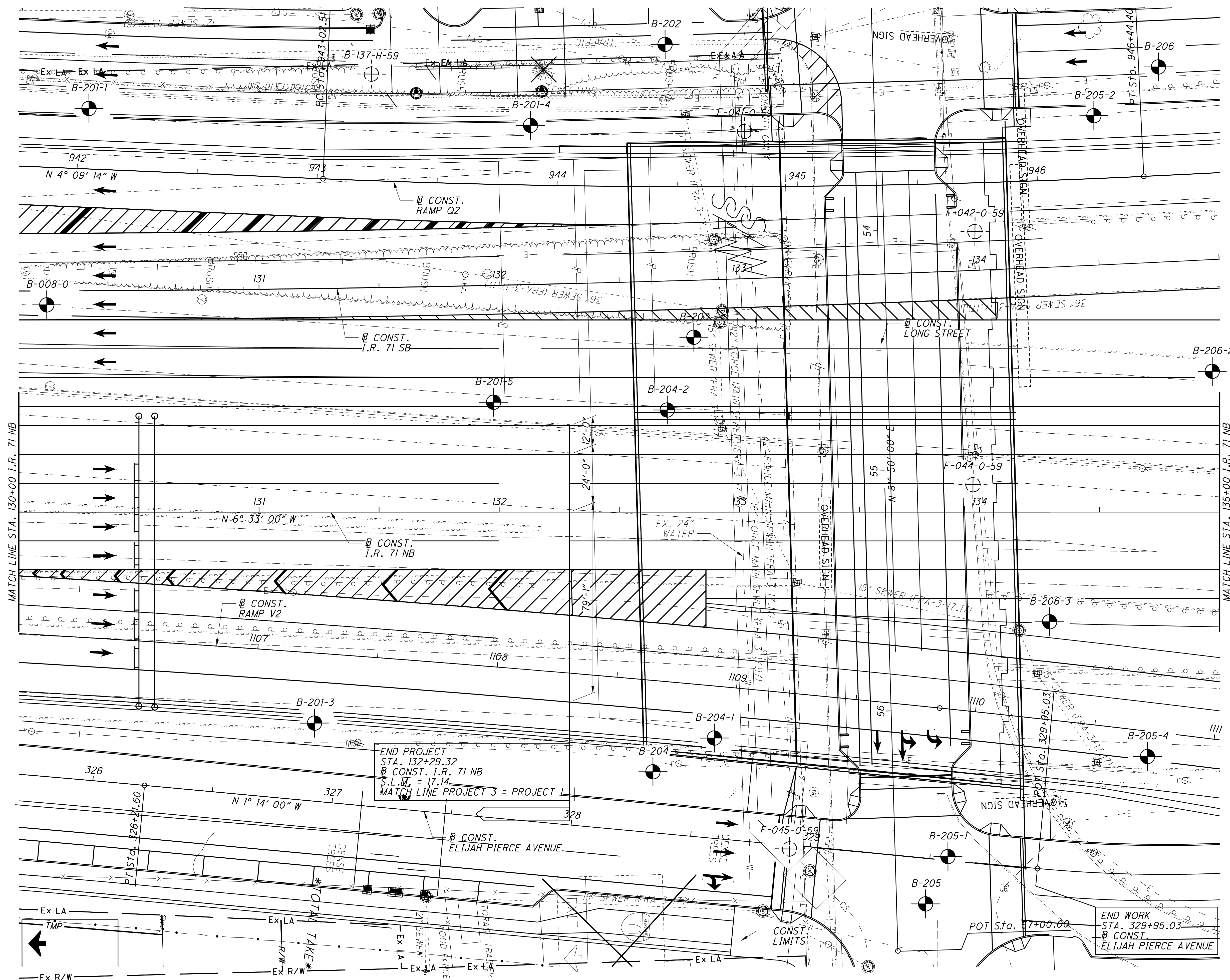
DRAWN
N.K.S.
CHECKED
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PLAN - I.R. 71 NB
STA. 120+00.00 TO STA. 125+00.00

FRA-71-17.14
PID NO. 77371

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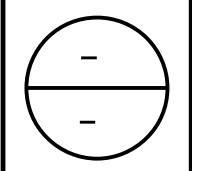
0 10 20
HORIZONTAL
SCALE IN FEET

DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 130+00.00 TO STA. 135+00.00

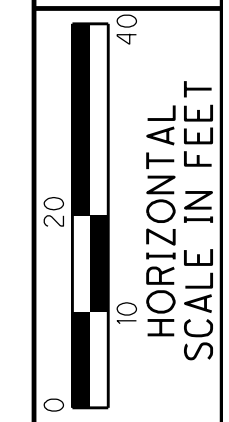
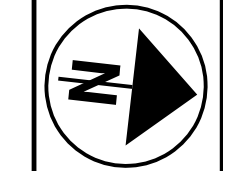
FRA-71-17.14
PID NO. 77371

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END PROJECT
STA. 132+29.32
B CONST. I.R. 71 NB
S.L.M. = 17.14
MATCH LINE PROJECT 3 = PROJECT 1

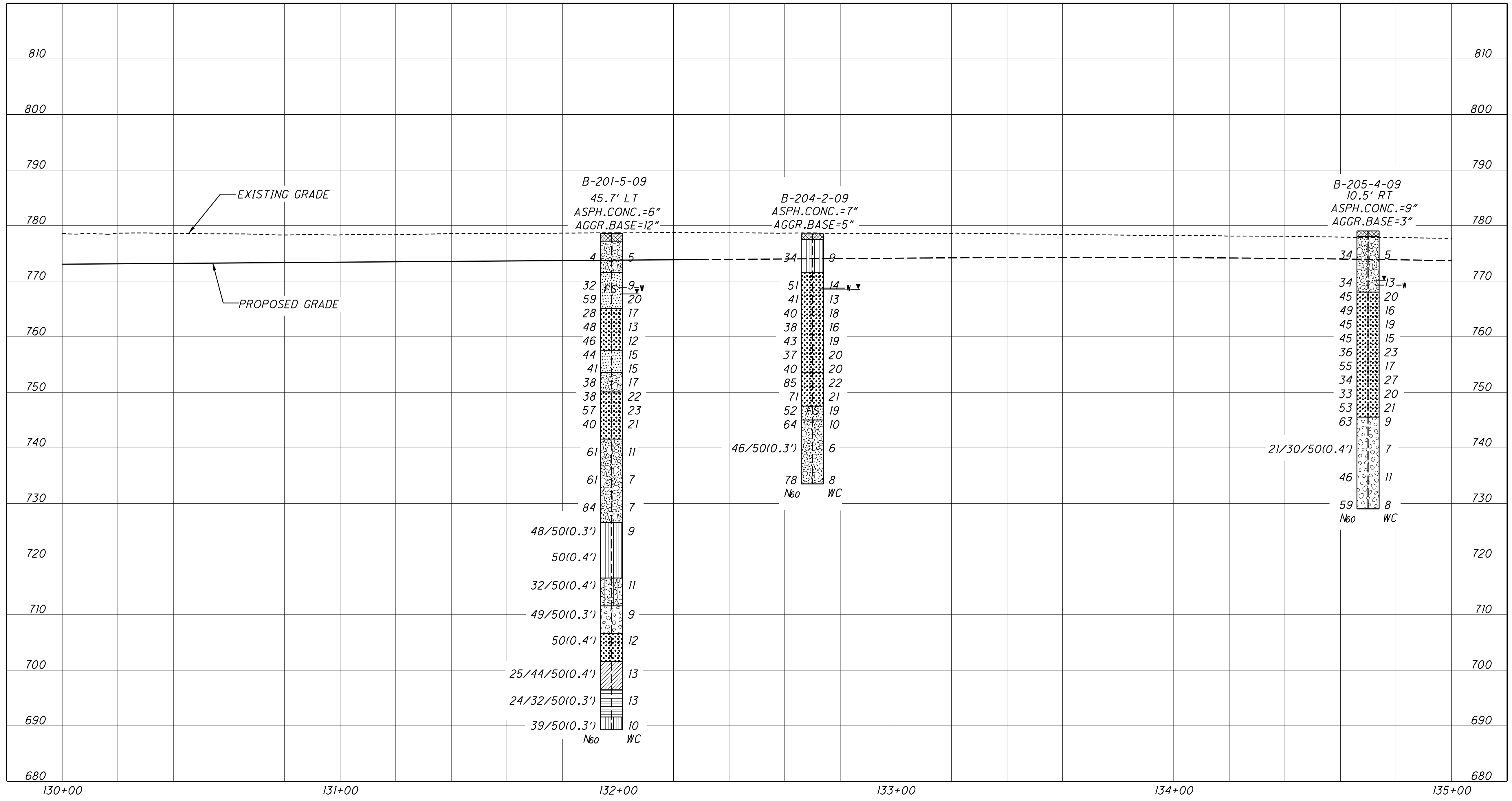
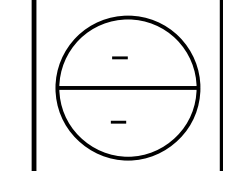
END WORK
STA. 329+95.03
B CONST.
ELIJAH PIERCE AVENUE

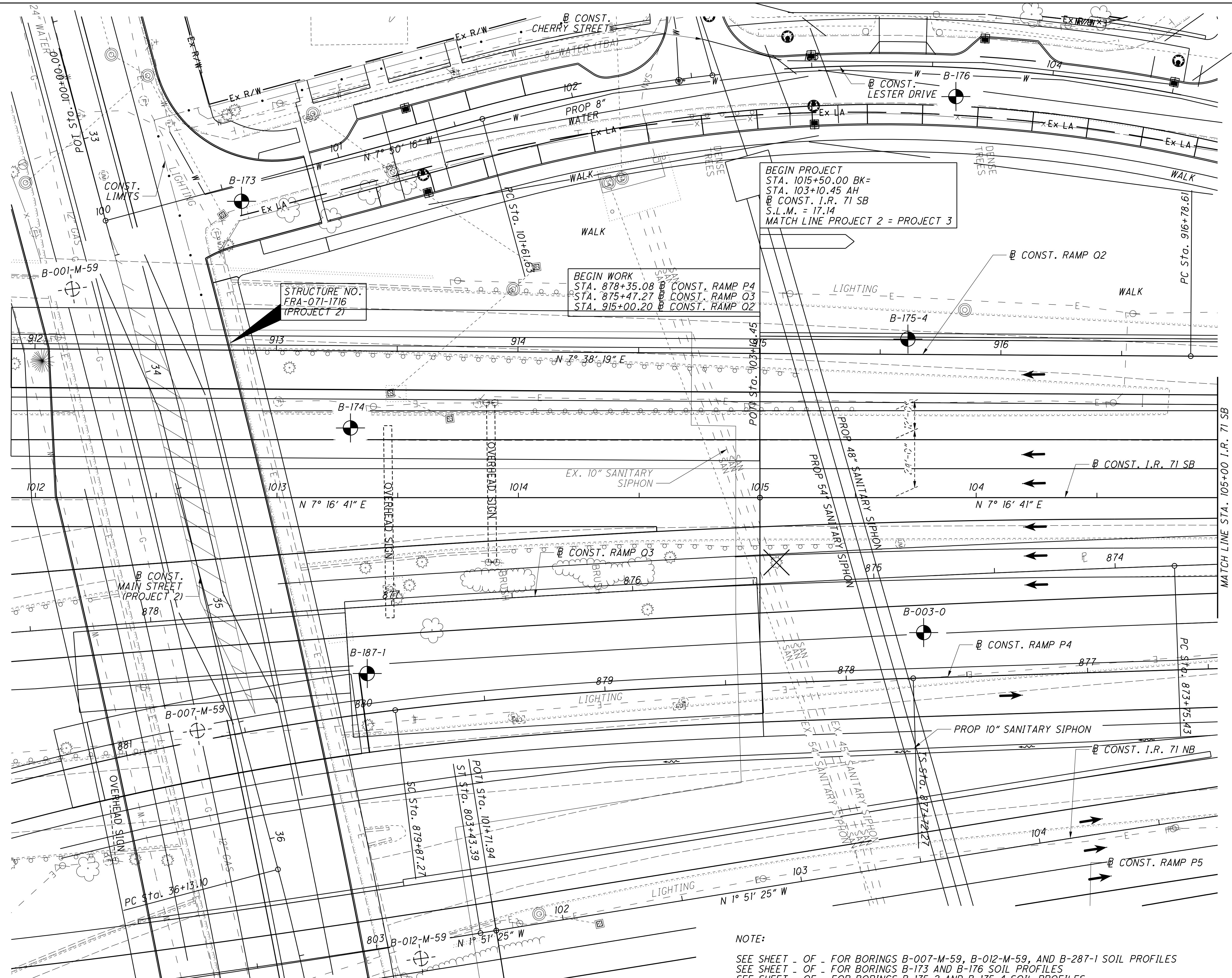


DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 NB
STA. 130+00.00 TO STA. 135+00.00

FRA-71-17.14
PID NO. 77371



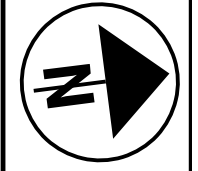


BEGIN PROJECT
 STA. 1015+50.00 BK=
 STA. 103+10.45 AH
 B CONST. I.R. 71 SB
 S.L.M. = 17.14
 MATCH LINE PROJECT 2 = PROJECT 3

BEGIN WORK
 STA. 878+35.08 B CONST. RAMP P4
 STA. 875+47.27 B CONST. RAMP Q3
 STA. 915+00.20 B CONST. RAMP Q2

STRUCTURE NO.
 FRA-071-1716
 (PROJECT 2)

NOTE:
 SEE SHEET - OF - FOR BORINGS B-007-M-59, B-012-M-59, AND B-287-1 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS B-173 AND B-176 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS B-175-2 AND B-175-4 SOIL PROFILES



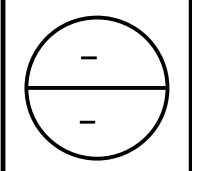
0 10 20
 HORIZONTAL
 SCALE IN FEET

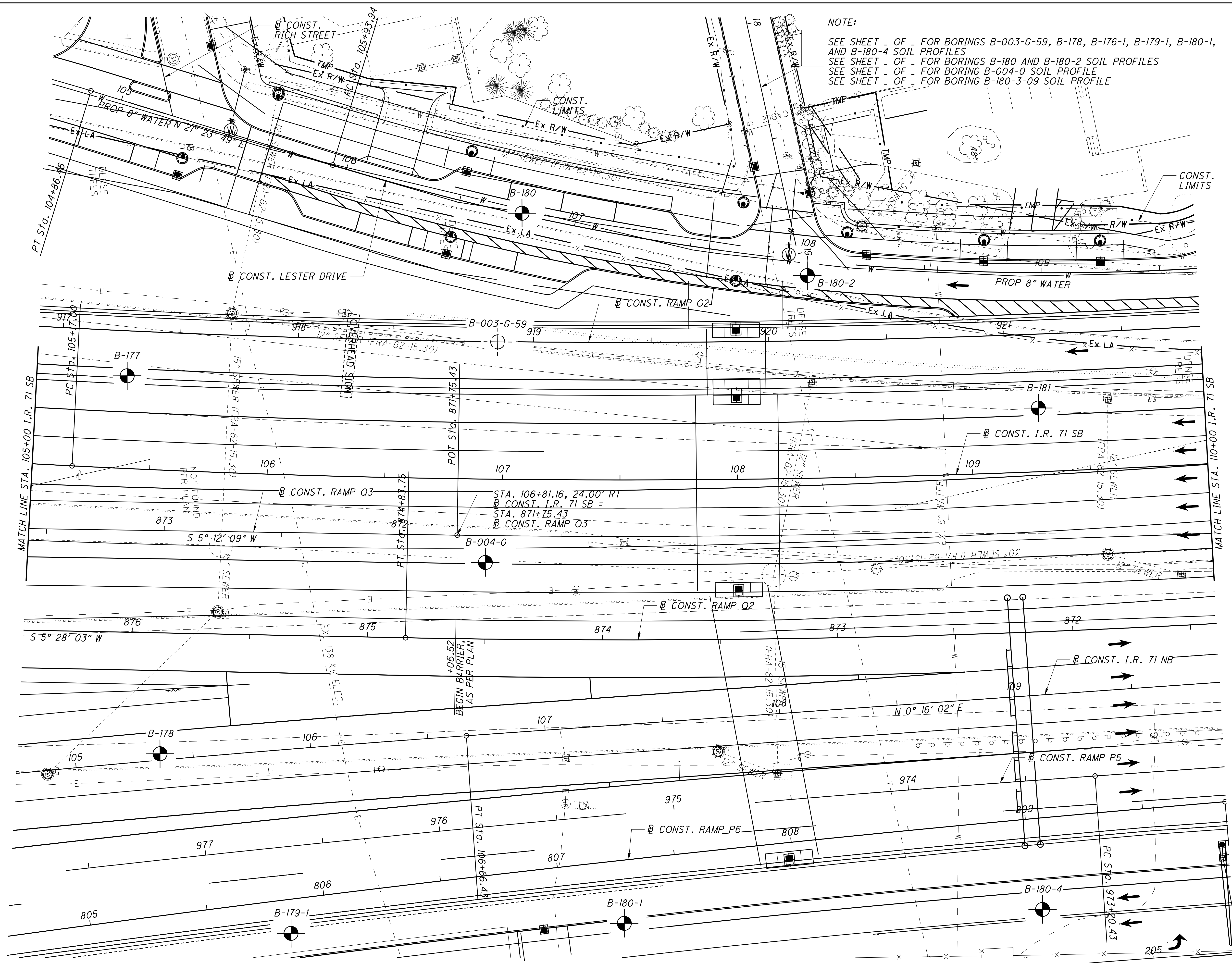
DRAWN
 N.K.S.
 CHECKED
 NT

PLAN - I.R. 71 SB
 BEGIN PROJECT STA. 103+10.45 TO STA. 105+00.00

FRA-71-17.14
 PID NO. 77371

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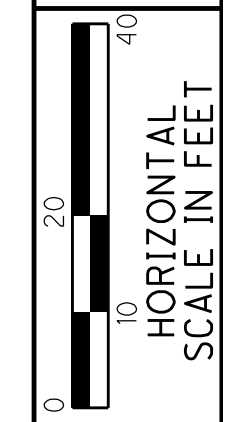
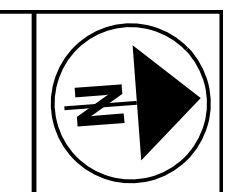
NOTE:
 SEE SHEET - OF - FOR BORINGS B-003-G-59, B-178, B-176-1, B-179-1, B-180-1,
 AND B-180-4 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS B-180 AND B-180-2 SOIL PROFILES
 SEE SHEET - OF - FOR BORING B-004-0 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-180-3-09 SOIL PROFILE

DRAWN N.K.S.
 CHECKED NT

0 10 20 40
 HORIZONTAL SCALE IN FEET

PLAN - I.R. 71 SB
 STA. 105+00.00 TO STA. 110+00.00

FRA-71-17.14
 PID NO. 77371

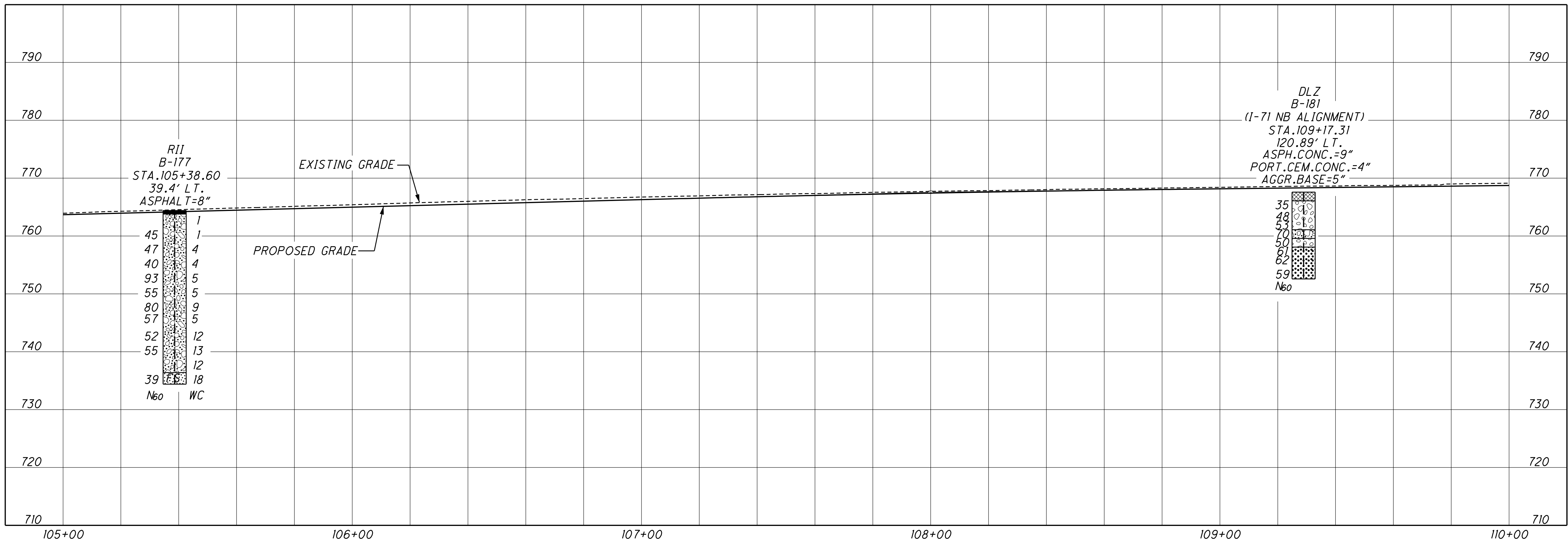
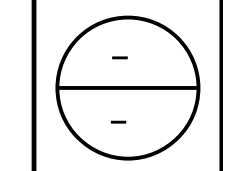


DRAWN	N.K.S.
CHECKED	NT

PLAN - I.R. 71 SB
STA. 105+00.00 TO STA. 110+00.00

FRA-71-17.14
PID NO. 77371

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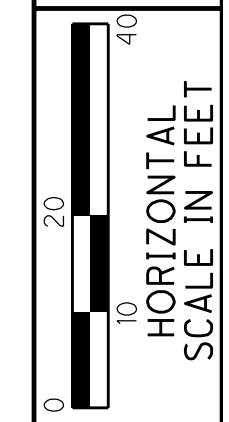
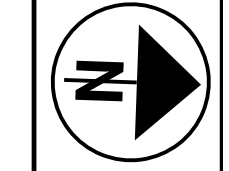


RII
 B-177
 STA. 105+38.60
 39.4' LT.
 ASPHALT=8"

EXISTING GRADE
 PROPOSED GRADE

DLZ
 B-181
 (I-71 NB ALIGNMENT)
 STA. 109+17.31
 120.89' LT.
 ASPH. CONC. = 9"
 PORT. CEM. CONC. = 4"
 AGGR. BASE = 5"

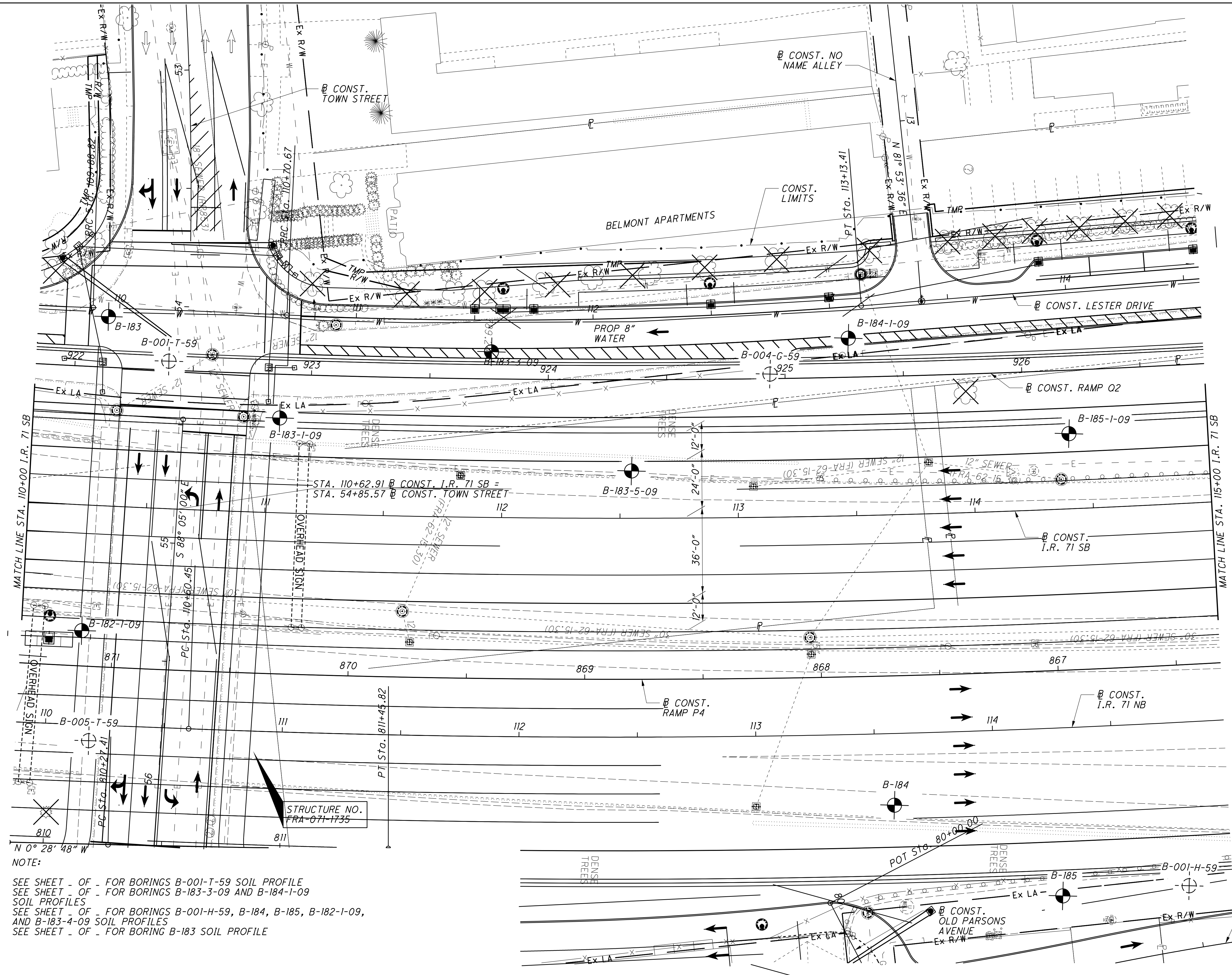
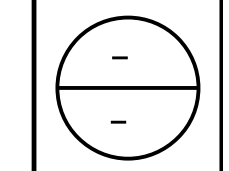
35
 48
 52
 50
 61
 62
 59
 N60



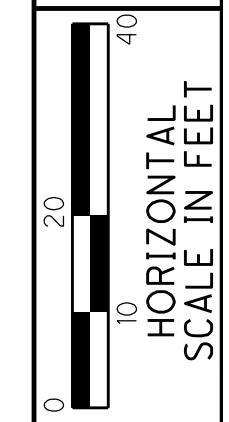
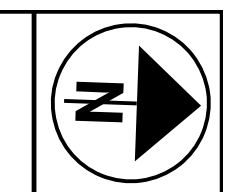
DRAWN N.K.S.
CHECKED NT

PLAN - I.R. 71 SB
STA. 110+00.00 TO STA. 115+00.00

FRA-71-17.14
PID NO. 77371



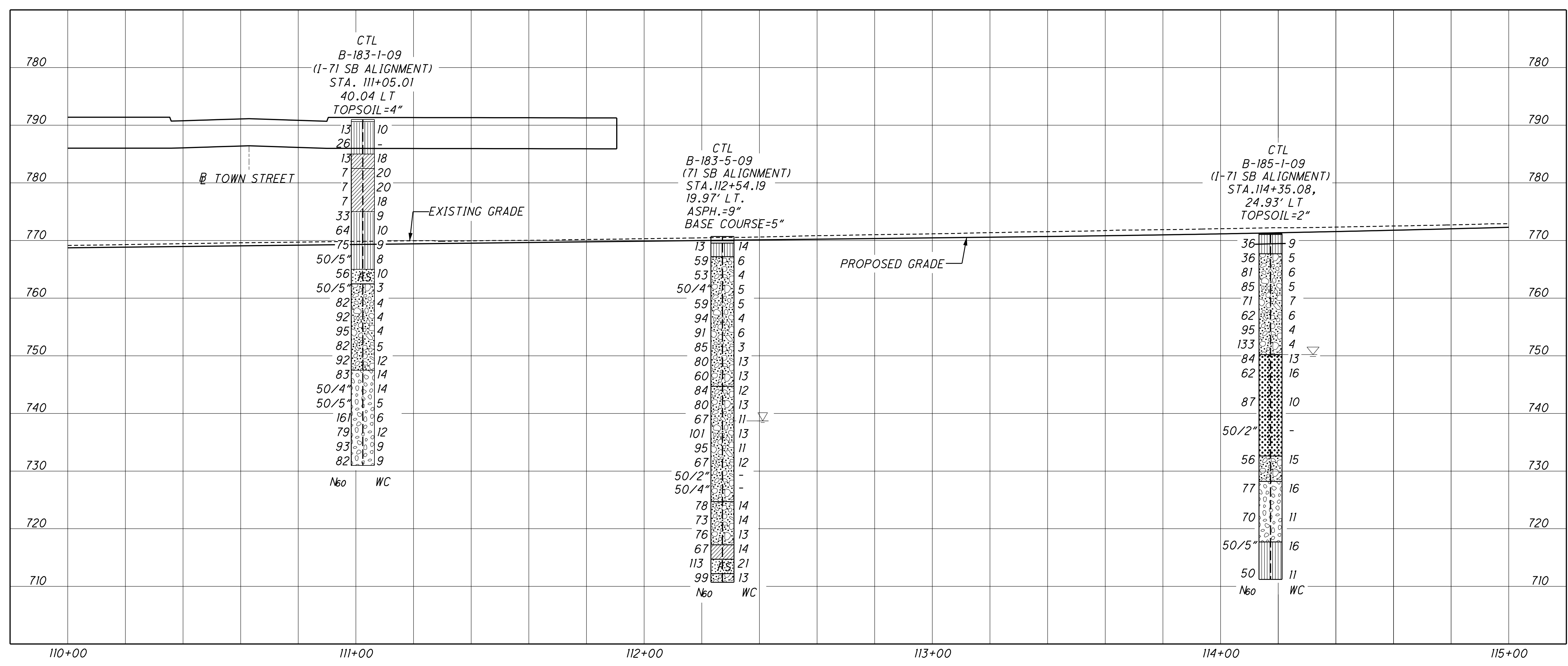
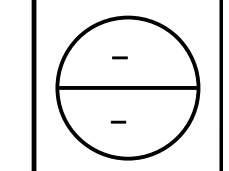
NOTE:
 SEE SHEET - OF - FOR BORINGS B-001-T-59 SOIL PROFILE
 SEE SHEET - OF - FOR BORINGS B-183-3-09 AND B-184-1-09 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS B-001-H-59, B-184, B-185, B-182-1-09, AND B-183-4-09 SOIL PROFILES
 SEE SHEET - OF - FOR BORING B-183 SOIL PROFILE

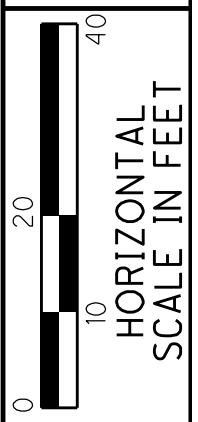
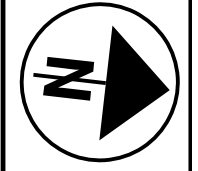
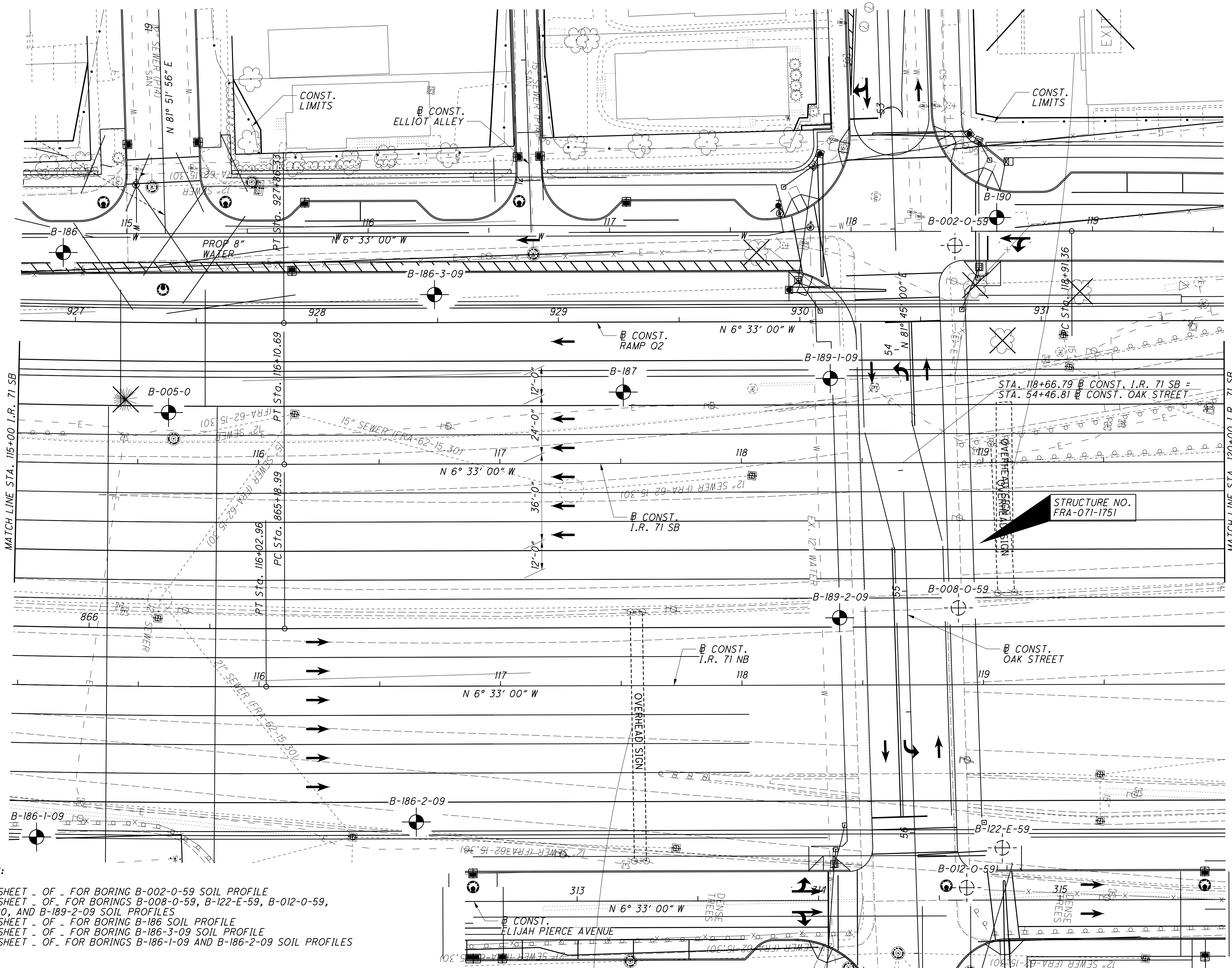


DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 SB
STA. 110+00.00 TO STA. 115+00.00

FRA-71-17.14
PID NO. 77371



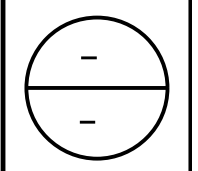


DRAWN N.K.S.
CHECKED NT

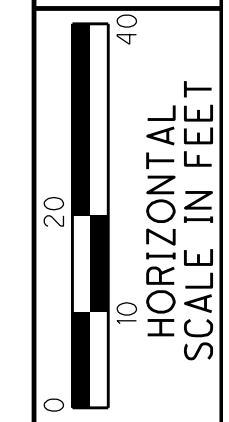
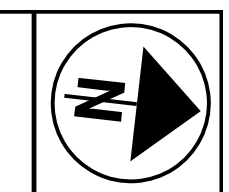
PLAN - I.R. 71 SB
STA. 115+00.00 TO STA. 120+00.00

FRA-71-17.14
PID NO. 77371

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NOTE:
SEE SHEET - OF - FOR BORING B-002-0-59 SOIL PROFILE
SEE SHEET - OF - FOR BORINGS B-008-0-59, B-122-E-59, B-012-0-59, B-190, AND B-189-2-09 SOIL PROFILES
SEE SHEET - OF - FOR BORING B-186 SOIL PROFILE
SEE SHEET - OF - FOR BORING B-186-3-09 SOIL PROFILE
SEE SHEET - OF - FOR BORINGS B-186-1-09 AND B-186-2-09 SOIL PROFILES

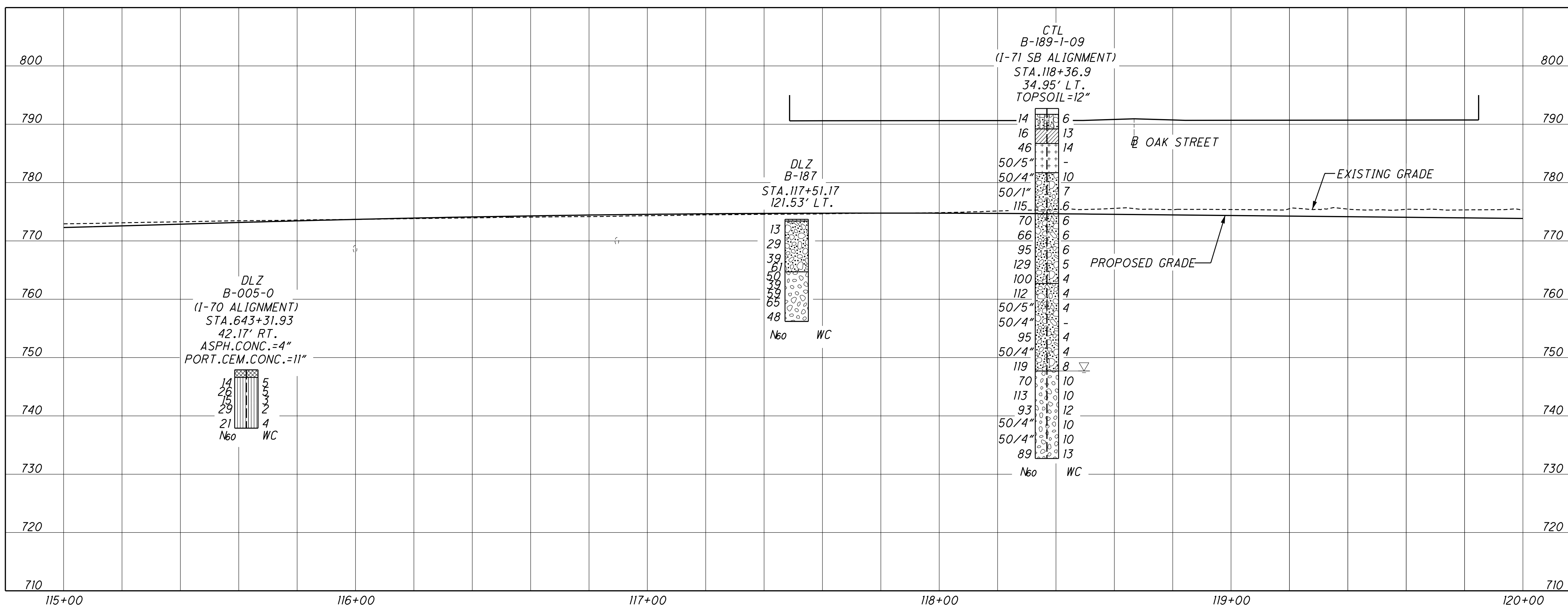
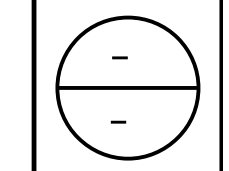


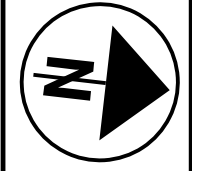
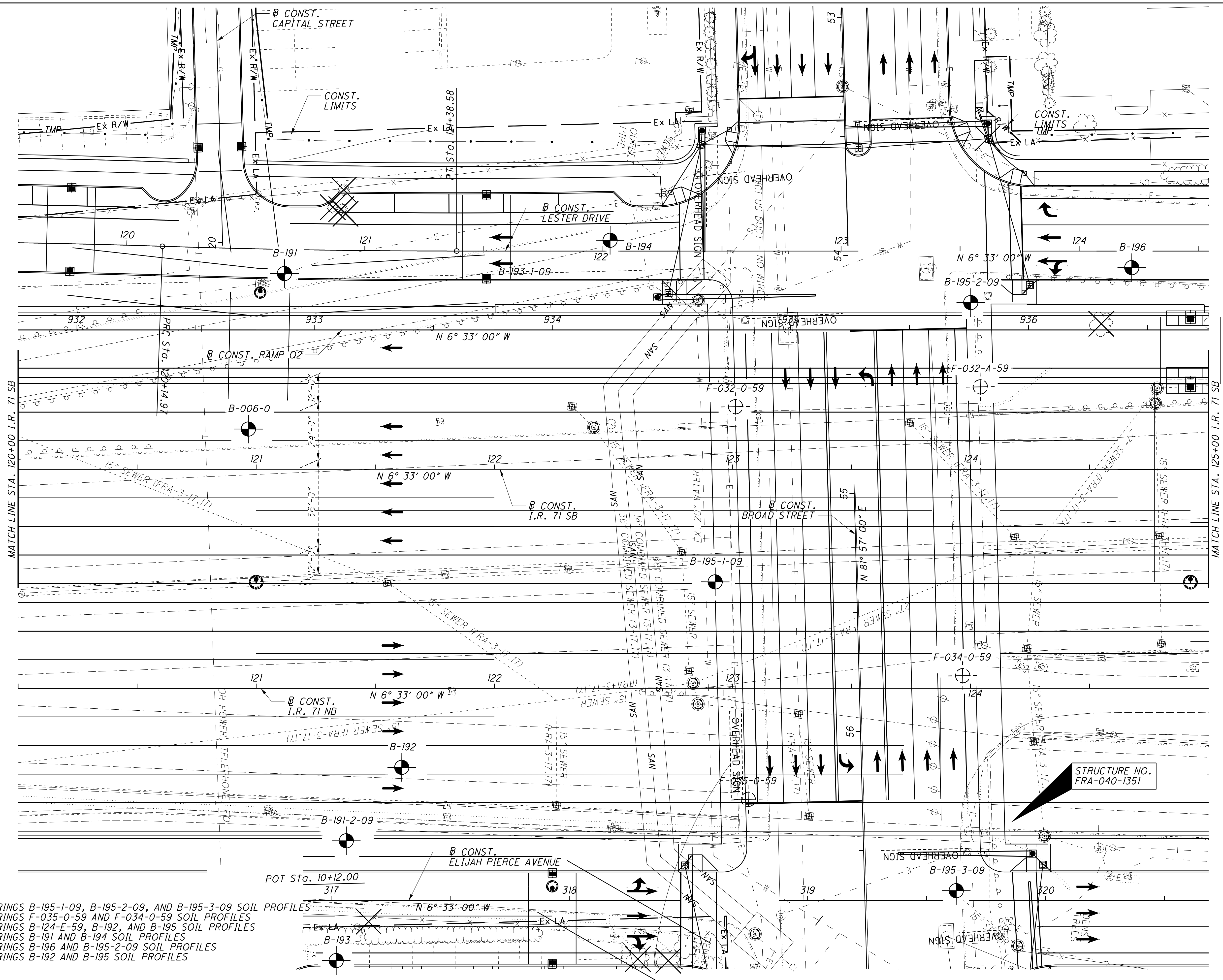
DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 SB
STA. 115+00.00 TO STA. 120+00.00

FRA-71-17.14
PID NO. 77371

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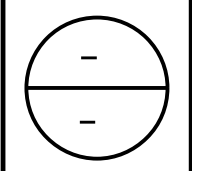
0 20 40
HORIZONTAL
SCALE IN FEET

DRAWN
N.K.S.
CHECKED
NT

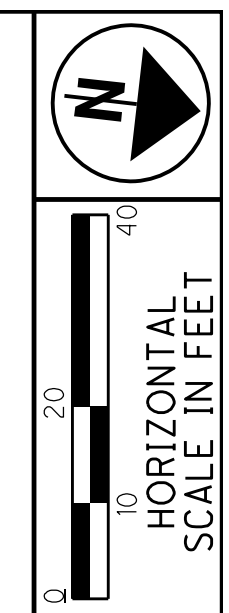
PLAN - I.R. 71 SB
STA. 120+00.00 TO STA. 125+00.00

FRA-71-17.14
PID NO. 77371

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NOTE:
 SEE SHEET OF FOR BORINGS B-195-1-09, B-195-2-09, AND B-195-3-09 SOIL PROFILES
 SEE SHEET OF FOR BORINGS F-035-0-59 AND F-034-0-59 SOIL PROFILES
 SEE SHEET OF FOR BORINGS B-124-E-59, B-192, AND B-195 SOIL PROFILES
 SEE SHEET OF FOR BORINGS B-191 AND B-194 SOIL PROFILES
 SEE SHEET OF FOR BORINGS B-196 AND B-195-2-09 SOIL PROFILES
 SEE SHEET OF FOR BORINGS B-192 AND B-195 SOIL PROFILES

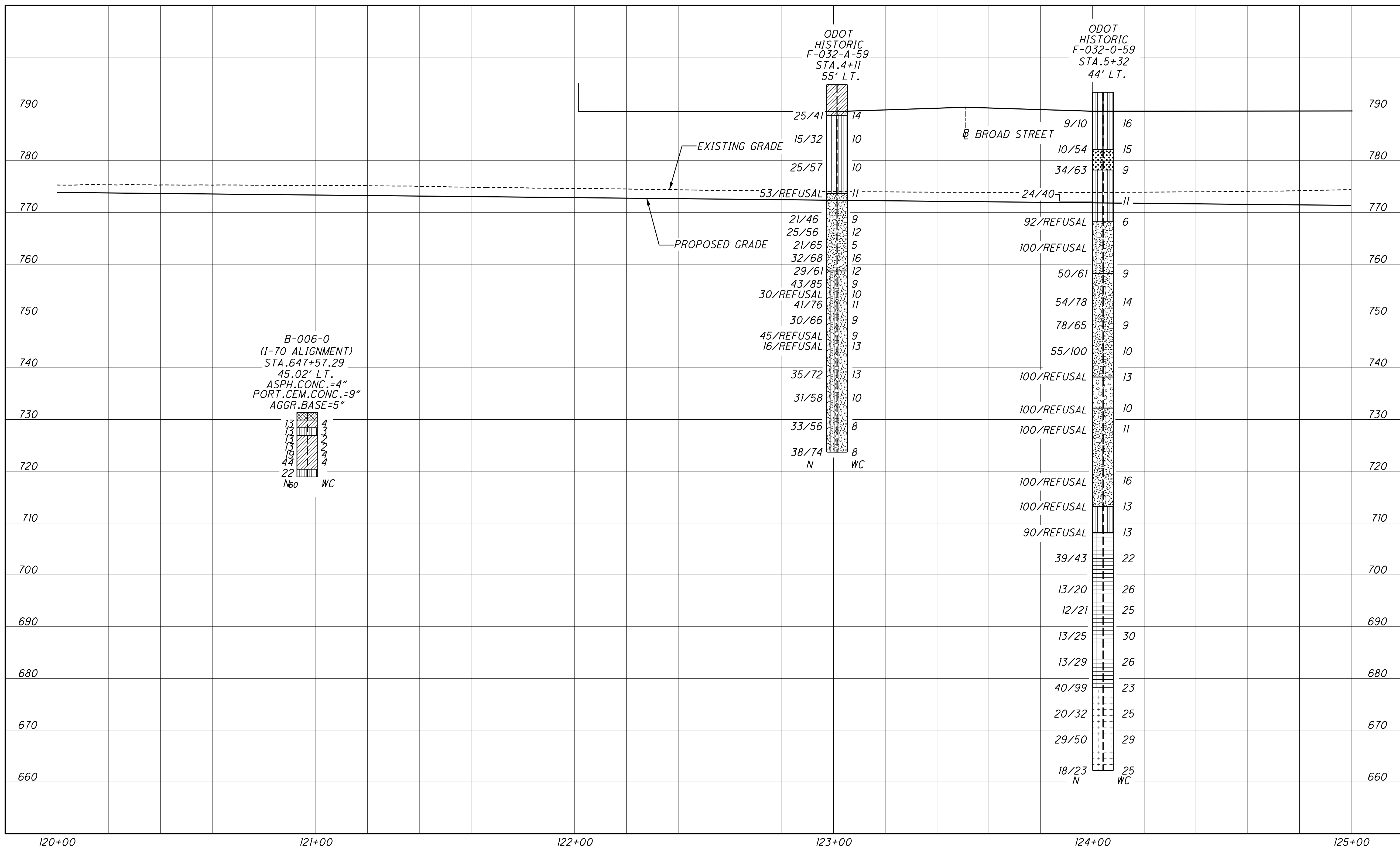
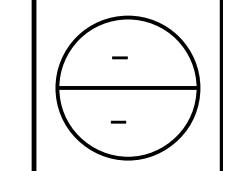


DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 SB
STA. 120+00.00 TO STA. 125+00.00

FRA-71-17.14
PID NO. 77371

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B-006-0
(I-70 ALIGNMENT)
STA. 647+57.29
45.02' LT.
ASPH. CONC. = 4"
PORT. CEM. CONC. = 9"
AGGR. BASE = 5"

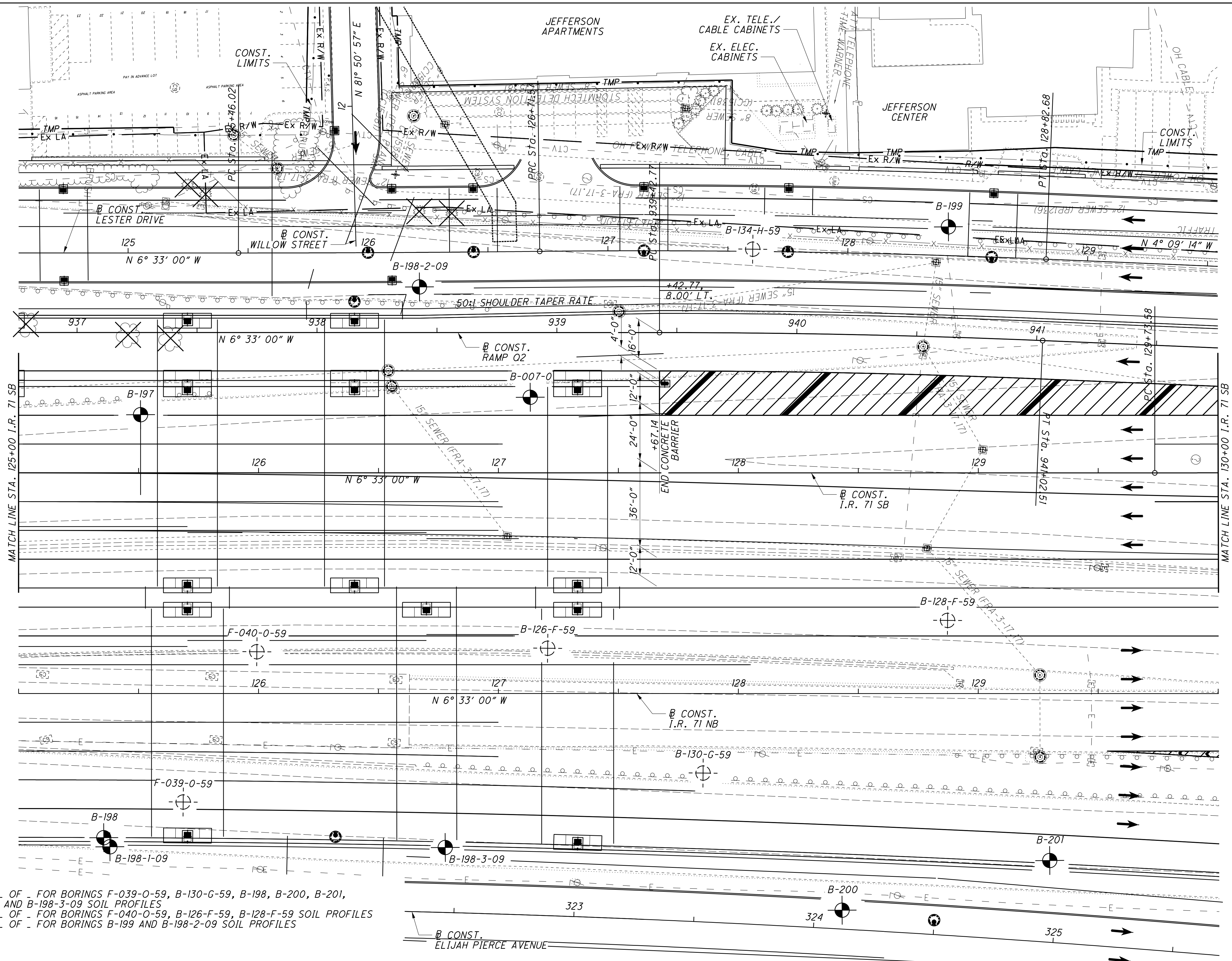
N60 WC

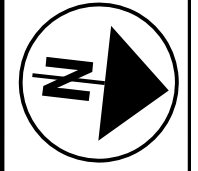
ODOT HISTORIC
F-032-A-59
STA. 4+11
55' LT.

ODOT HISTORIC
F-032-0-59
STA. 5+32
44' LT.

BROAD STREET

EXISTING GRADE
PROPOSED GRADE







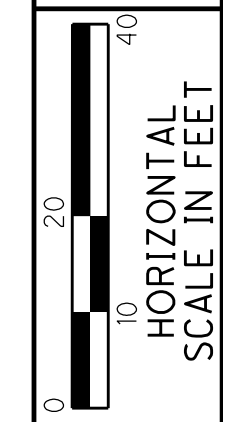
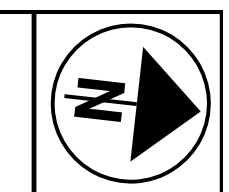
 HORIZONTAL SCALE IN FEET

DRAWN: N.K.S.
 CHECKED: NT

PLAN - I.R. 71 SB
STA. 125+00.00 TO STA. 130+00.00

FRA-71-17.14
PID NO. 77371

NOTE:
 SEE SHEET - OF - FOR BORINGS F-039-0-59, B-130-G-59, B-198, B-200, B-201,
 B-198-1-09, AND B-198-3-09 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS F-040-0-59, B-126-F-59, B-128-F-59 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS B-199 AND B-198-2-09 SOIL PROFILES

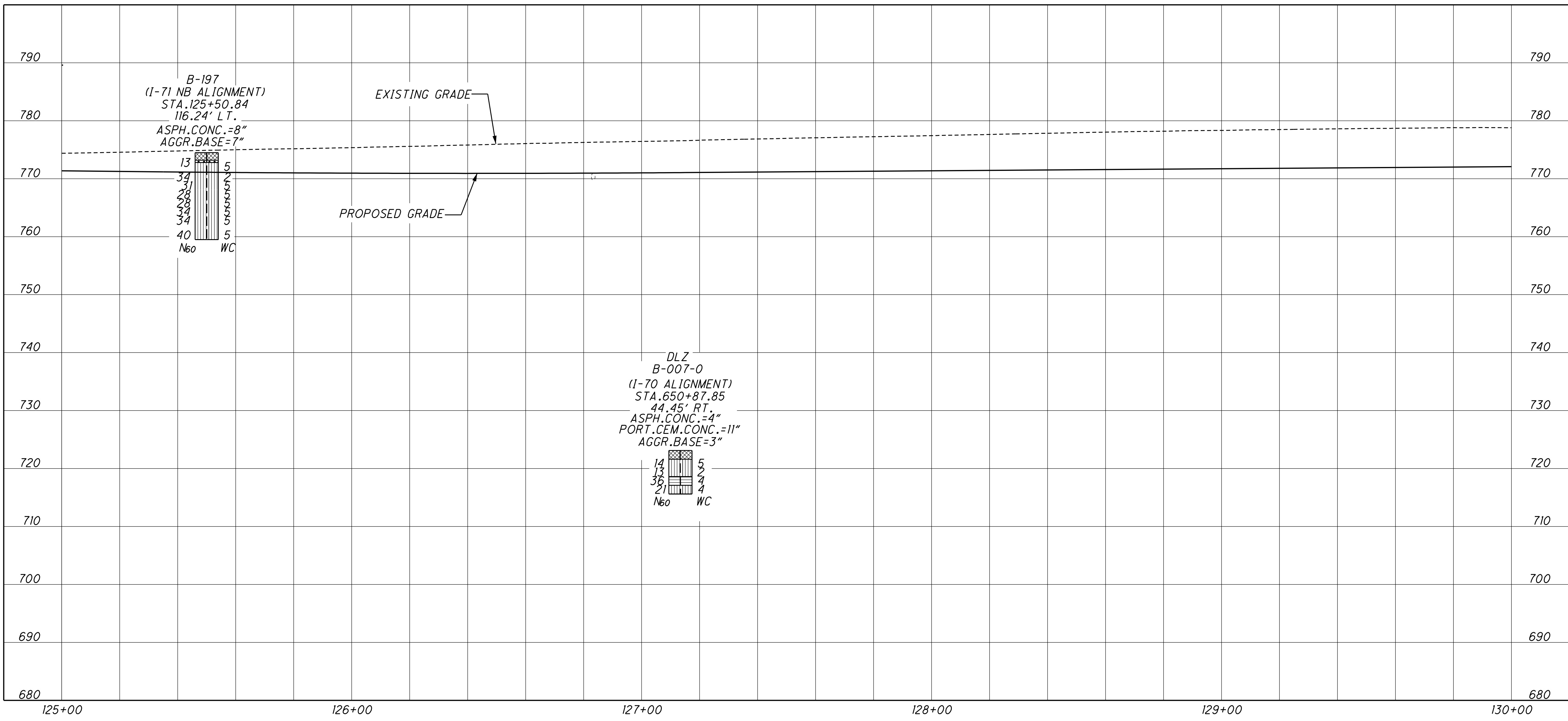
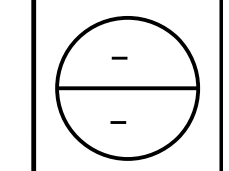


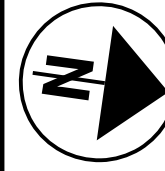
DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 SB
STA. 125+00.00 TO STA. 130+00.00

FRA-71-17.14
PID NO. 77371

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 0 10 20 40

 HORIZONTAL

 SCALE IN FEET

DRAWN: N.K.S.

 CHECKED: NT

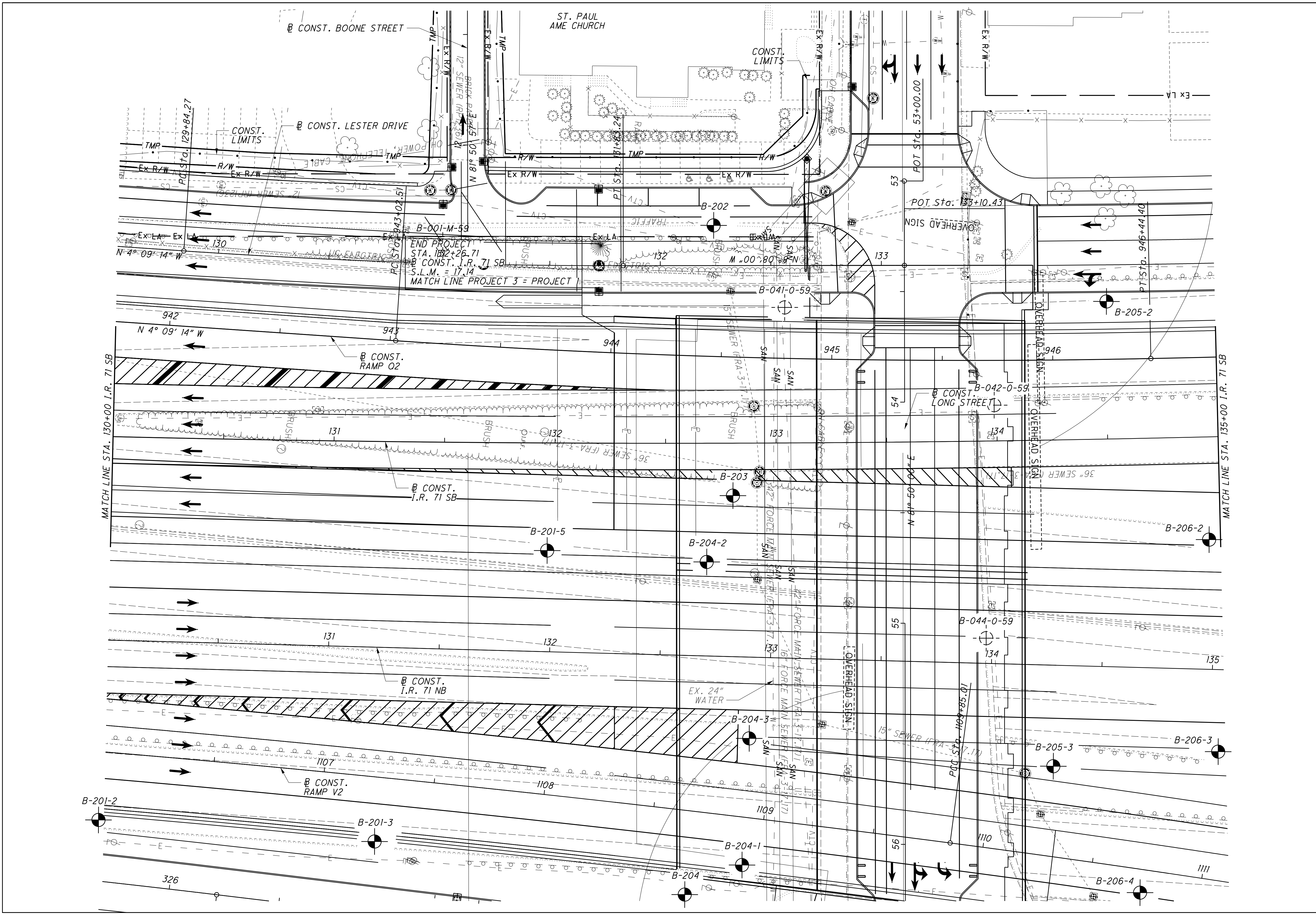
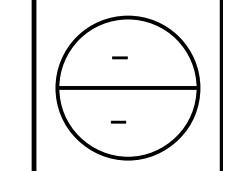
PLAN - I.R. 71 SB

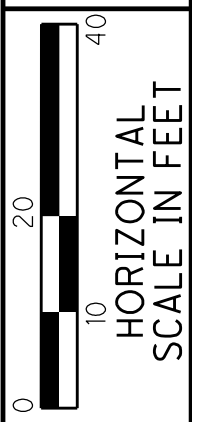
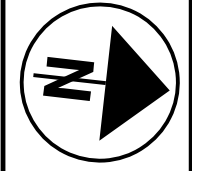
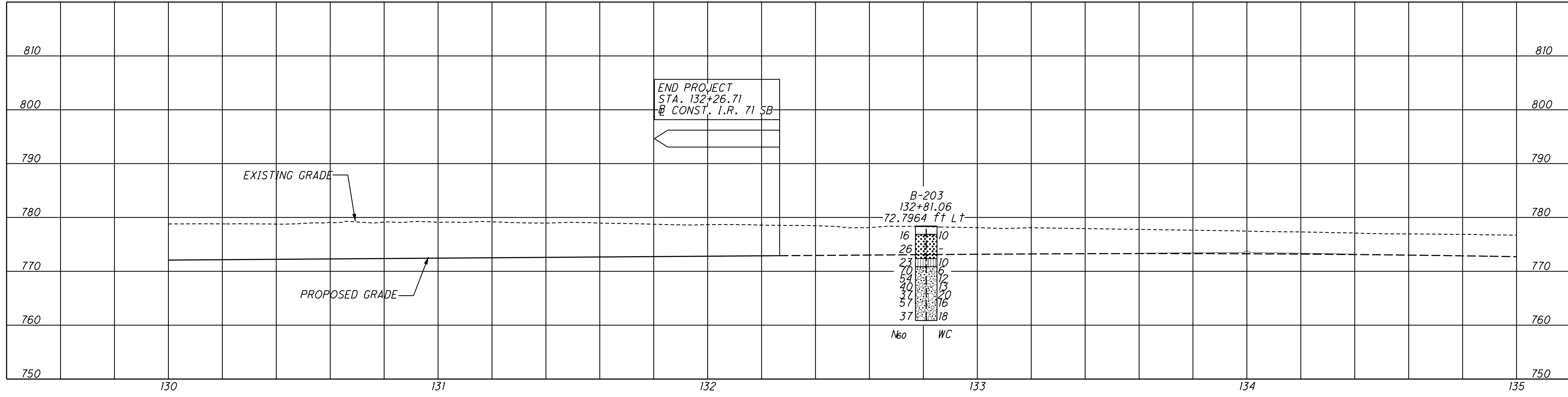
STA. 130+00.00 TO STA. 135+00.00

FRA-71-17.14

PID NO. 77371

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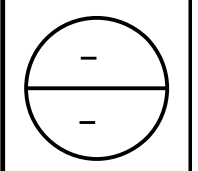


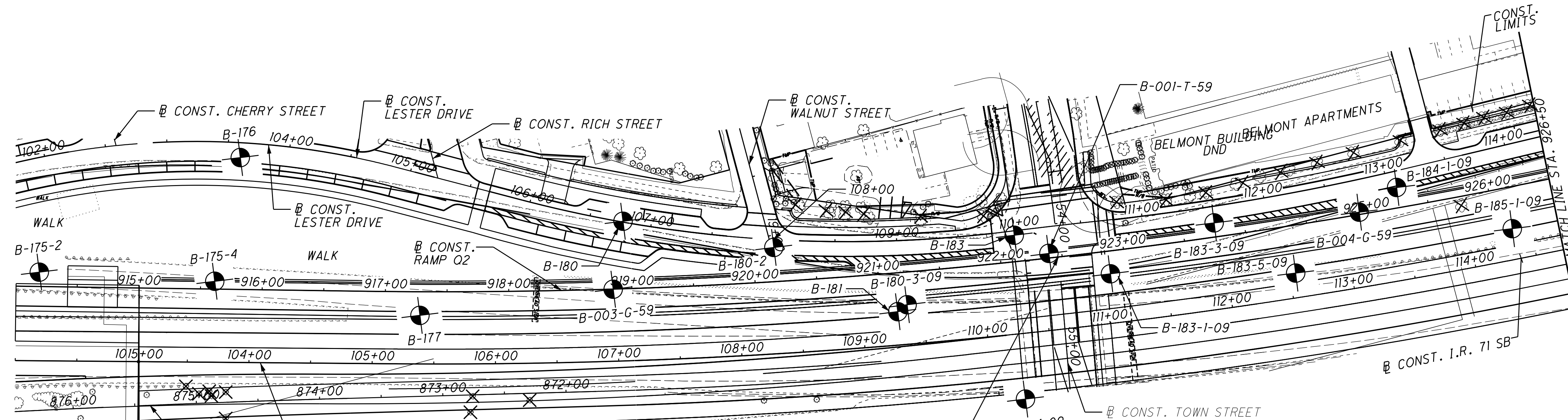
DRAWN
N.K.S.
CHECKED
NT

PLAN - I.R. 71 SB
STA. 130+00.00 TO STA. 135+00.00

FRA-71-17.14
PID NO. 77371

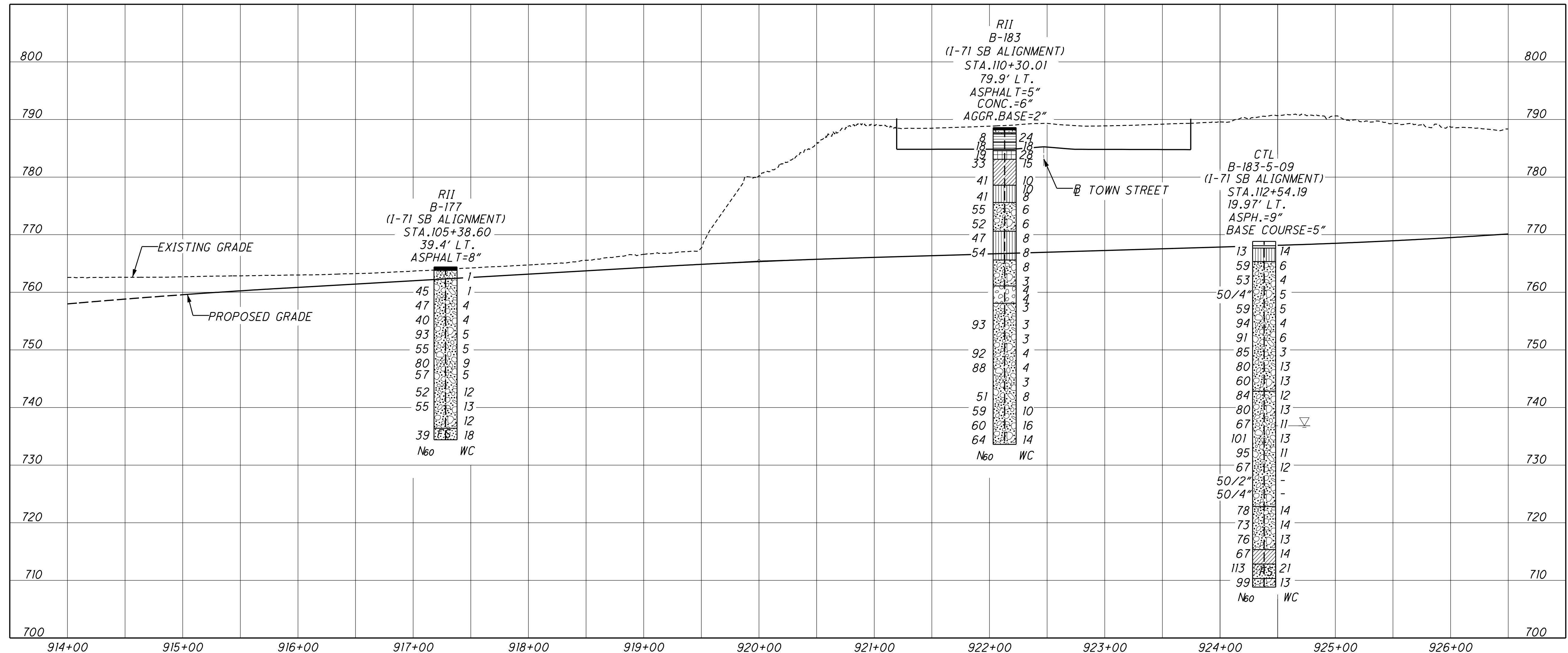
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BEGIN WORK
 STA. 915+00.20 =
 B CONST. RAMP Q2
 MATCH LINE PROJECT 2
 = PROJECT 3

NOTE:
 SEE SHEET OF FOR BORING B-176, B-180 AND B-177 SOILPROFILES
 SEE SHEET OF FOR BORING B-175-2 AND B-175-4 SOILPROFILES
 SEE SHEET OF FOR BORING B-181 SOILPROFILE
 SEE SHEET OF FOR BORING B-182-1-09, B-183-1-09, B-180-3-09 AND B-183-3-09 SOILPROFILES
 SEE SHEET OF FOR BORING B-180-2 SOILPROFILE
 SEE SHEET OF FOR BORING B-004-G-59 SOILPROFILE
 SEE SHEET OF FOR BORINGS B-184-1-09 AND B-185-1-09 SOILPROFILES

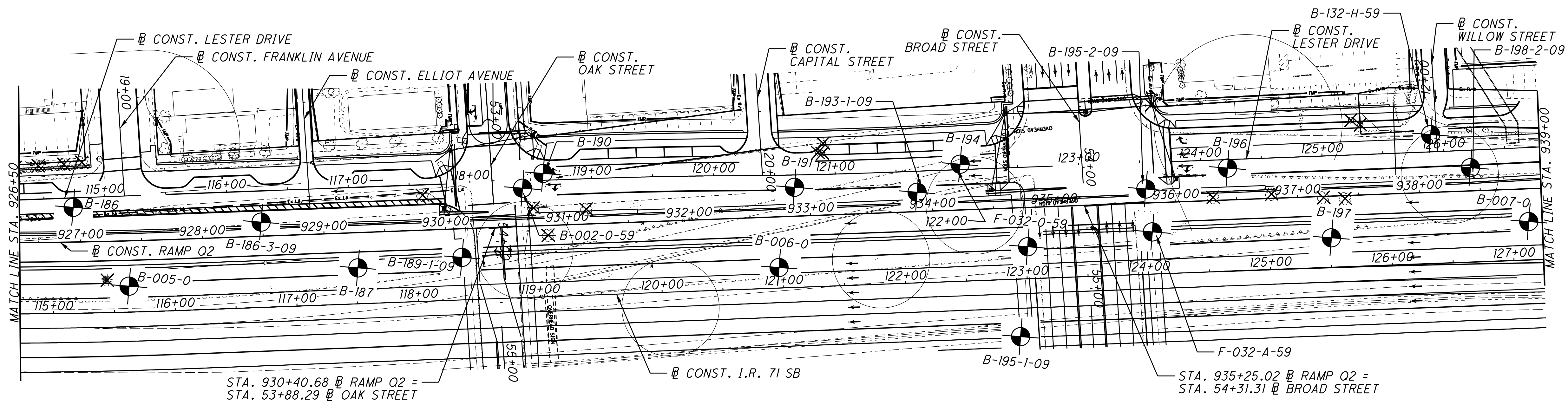


PLAN AND PROFILE - RAMP Q2
 BEGIN WORK STA. 915+00.20 TO STA. 925+50.00

FRA-71-17.14
PID NO. 77371

DRAWN: N.K.S.
 CHECKED: NT

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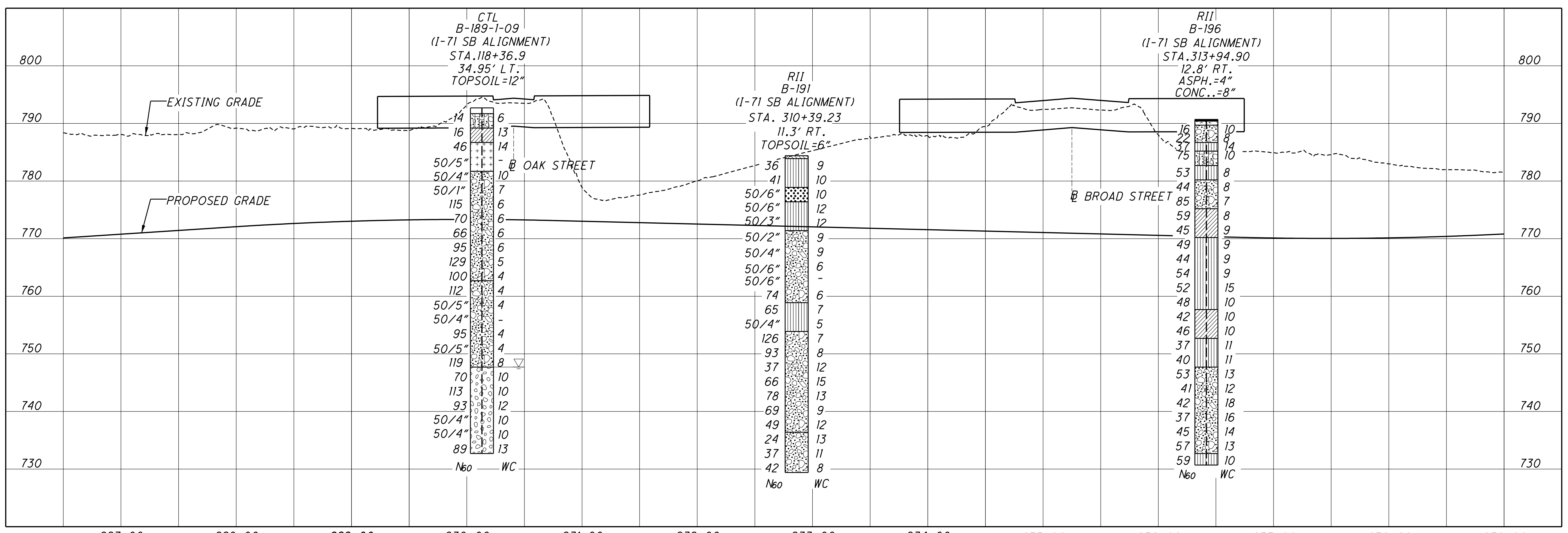
N

0 25 50 100
HORIZONTAL
SCALE IN FEET

DRAWN
N.K.S.
CHECKED
NT

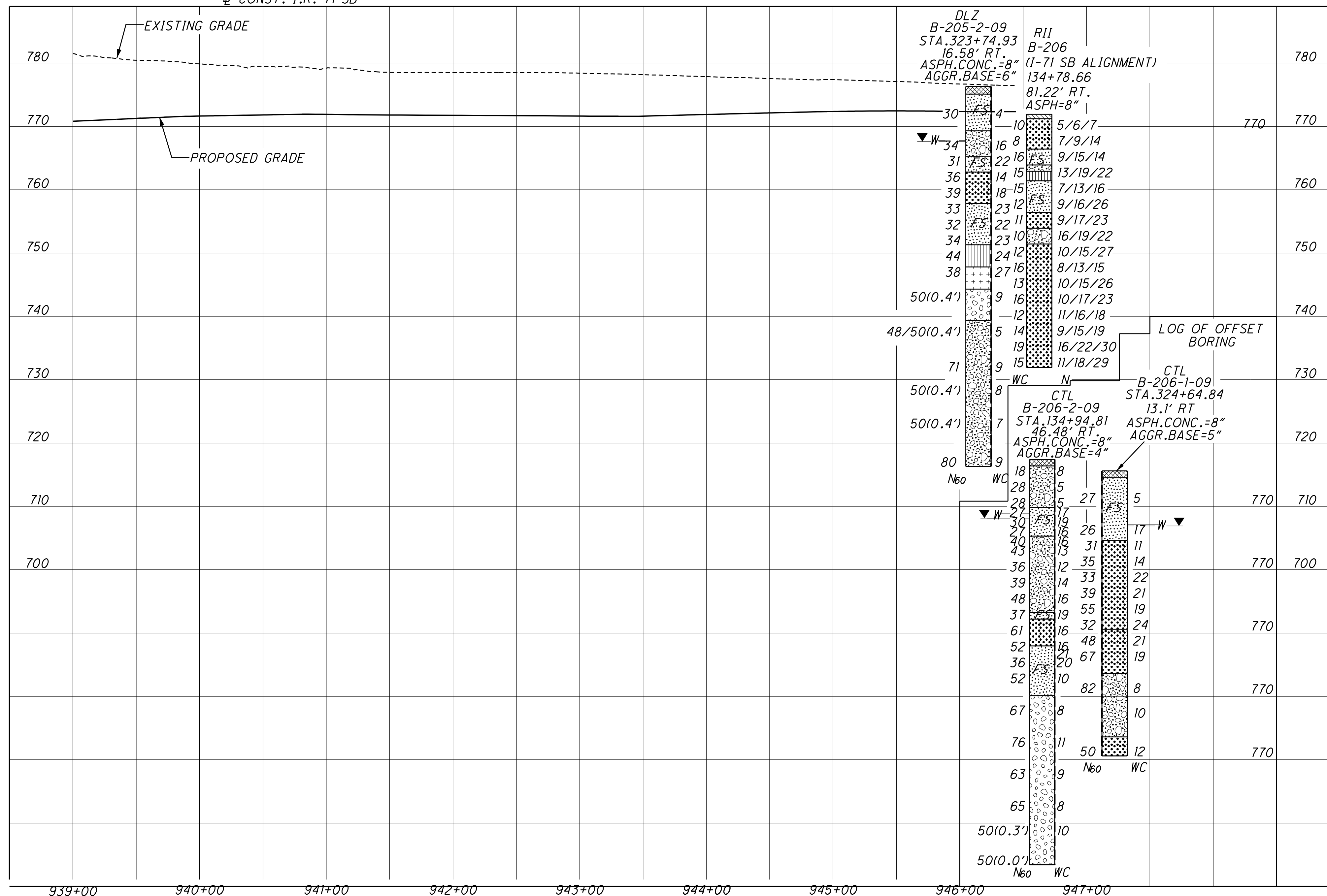
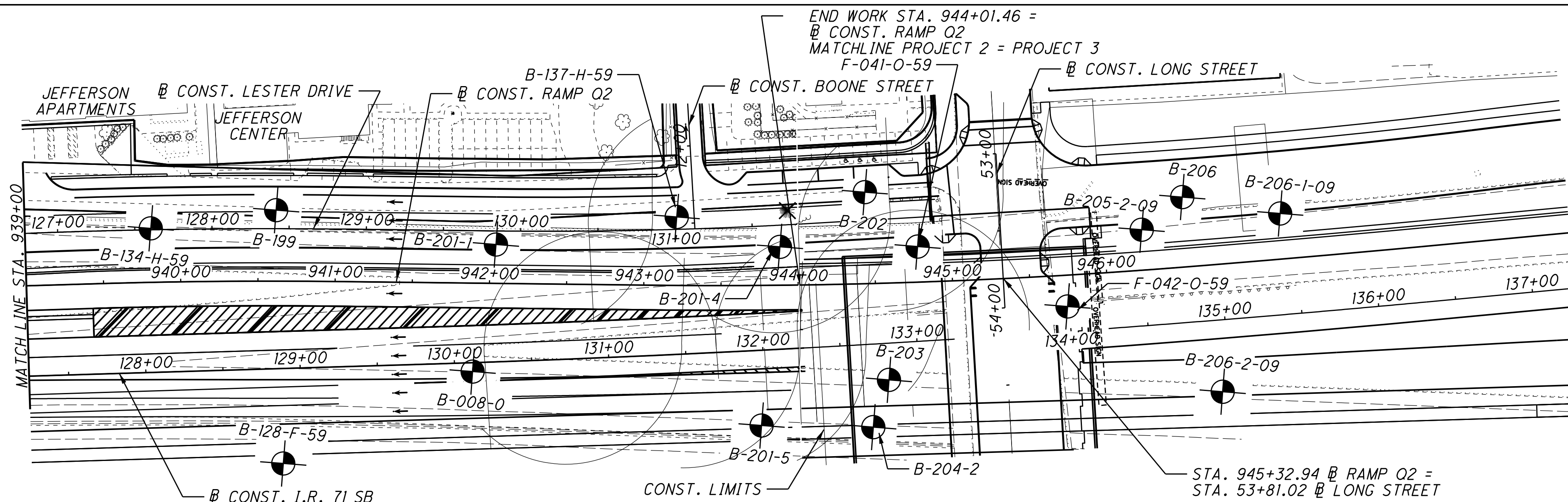
PLAN AND PROFILE - RAMP Q2
BEGIN WORK STA. 926+50 TO STA. 939+00.00

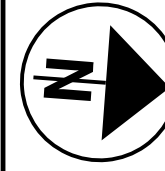
- NOTE:**
- SEE SHEET OF FOR BORING B-186 SOIL PROFILE
 - SEE SHEET OF FOR BORING B-006-0 SOIL PROFILES
 - SEE SHEET OF FOR BORING B-186-3-09 SOIL PROFILE
 - SEE SHEET OF FOR BORING B-002-0-59 AND B-187 SOIL PROFILES
 - SEE SHEET OF FOR BORING B-190 SOIL PROFILE
 - SEE SHEET OF FOR BORING B-193-1-09 AND B-189-1-09 SOIL PROFILES
 - SEE SHEET OF FOR BORING F-032-0-59, F-032-A-59, B-132-H-59 SOIL PROFILES
 - SEE SHEET OF FOR BORING B-194 SOIL PROFILE
 - SEE SHEET OF FOR BORING B-195-1-09, B-195-2-09 AND B-007-0 SOIL PROFILES
 - SEE SHEET OF FOR BORING B-198-2-09 SOIL PROFILE




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PID NO. 77371

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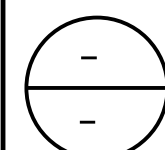


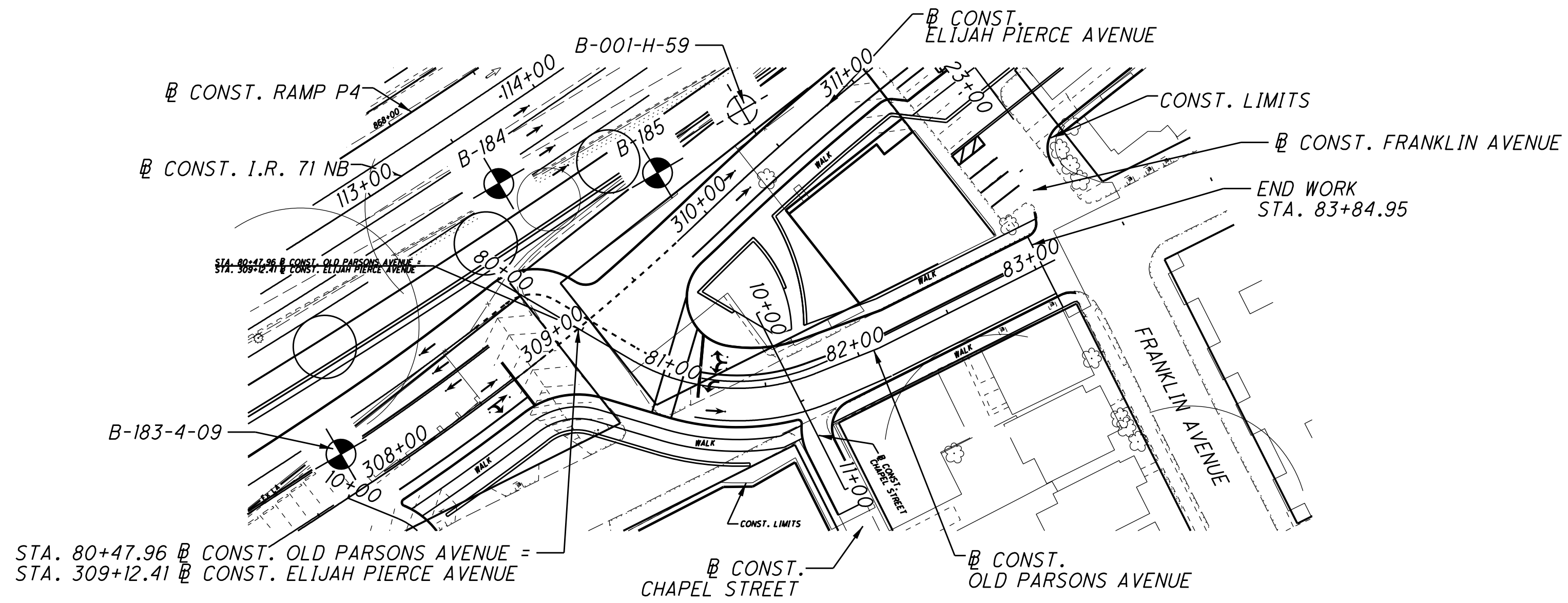
 DRAWN: N.K.S.

 CHECKED: NT

PLAN AND PROFILE - RAMP Q2
 STA. 939+00 TO STA. 946+44.40

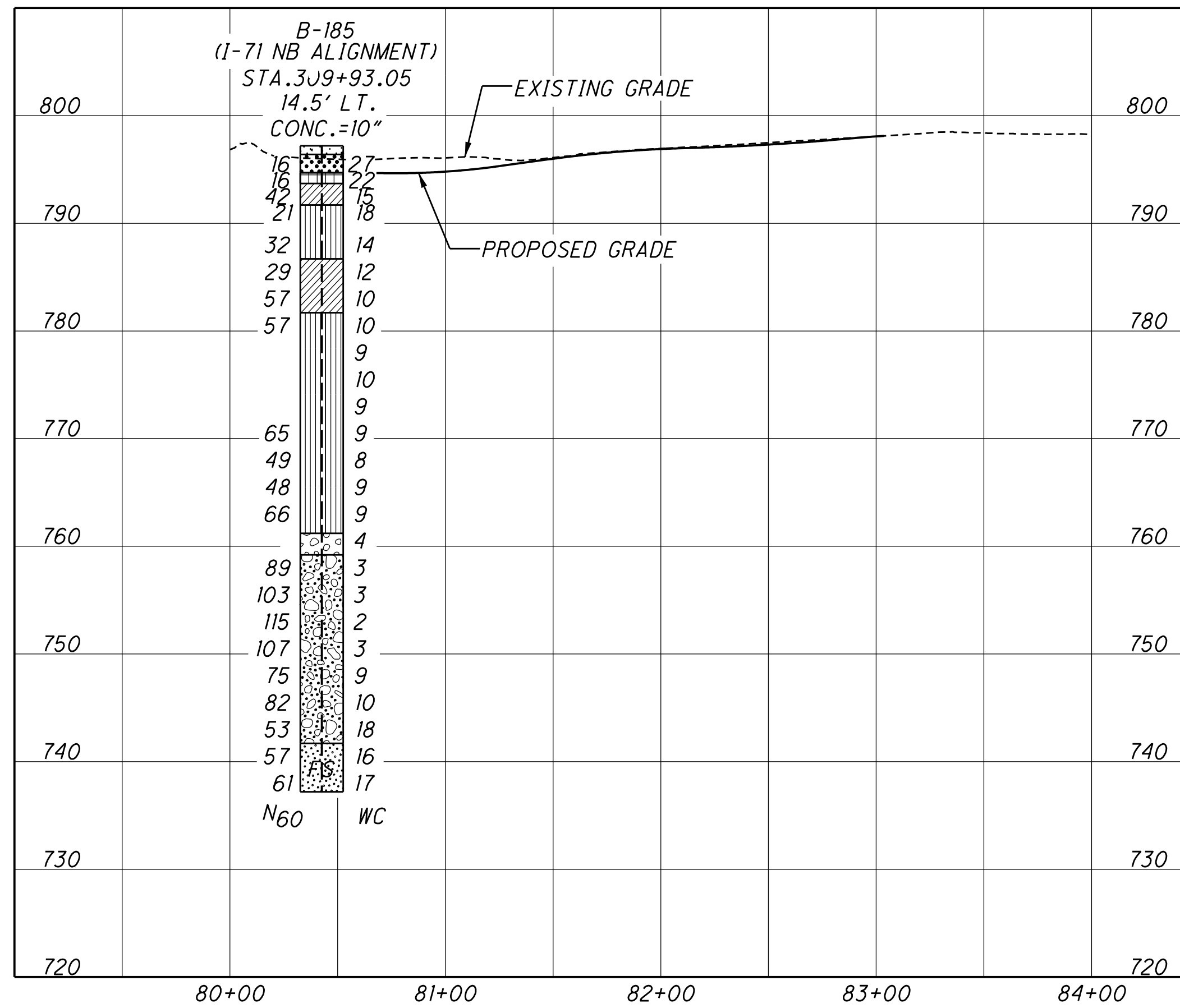
FRA-71-17.14
PID NO. 77371

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STA. 80+47.96 @ CONST. OLD PARSONS AVENUE =
 STA. 309+12.41 @ CONST. ELIJAH PIERCE AVENUE

NOTE:
 SEE SHEET OF FOR BORINGS B-001-H-59, B-184 AND B-185 SOILPROFILE
 SEE SHEET OF FOR BORING B-183-4-09 SOILPROFILE



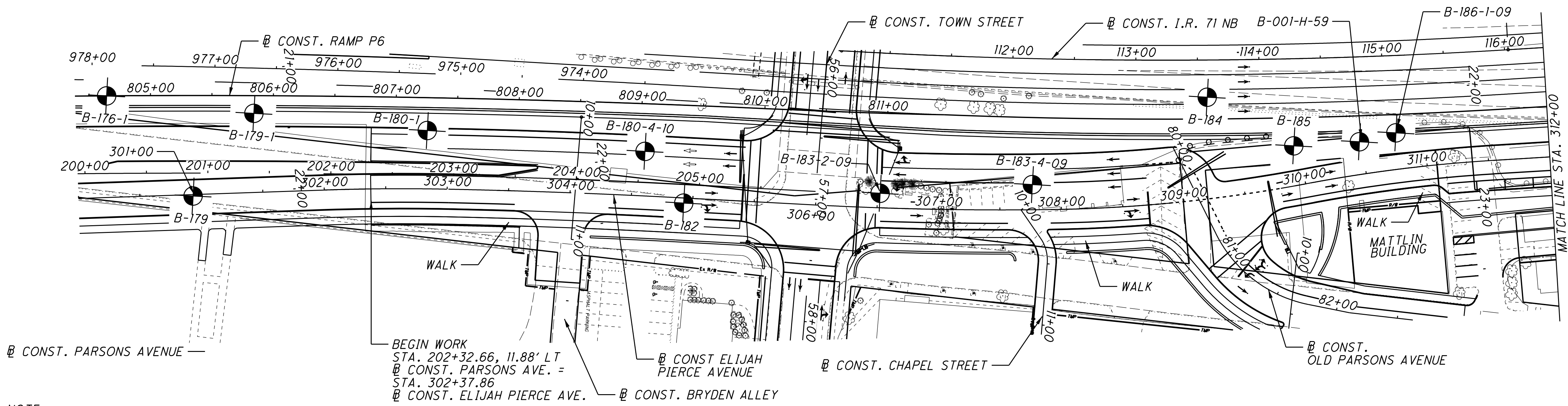
HORIZONTAL SCALE IN FEET

DRAWN	N.K.S.
CHECKED	NT

PLAN AND PROFILE
OLD PARSONS AVENUE
STA. 80+47.96 TO STA. 83+84.95

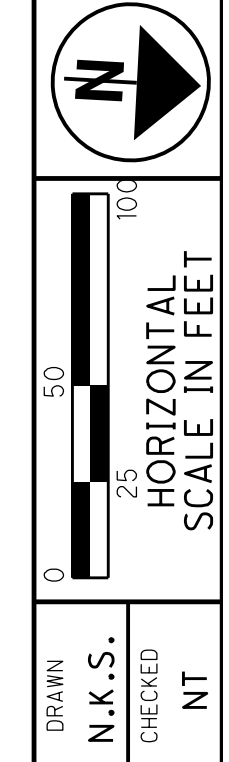
FRA-71-17.14
PID NO. 77371

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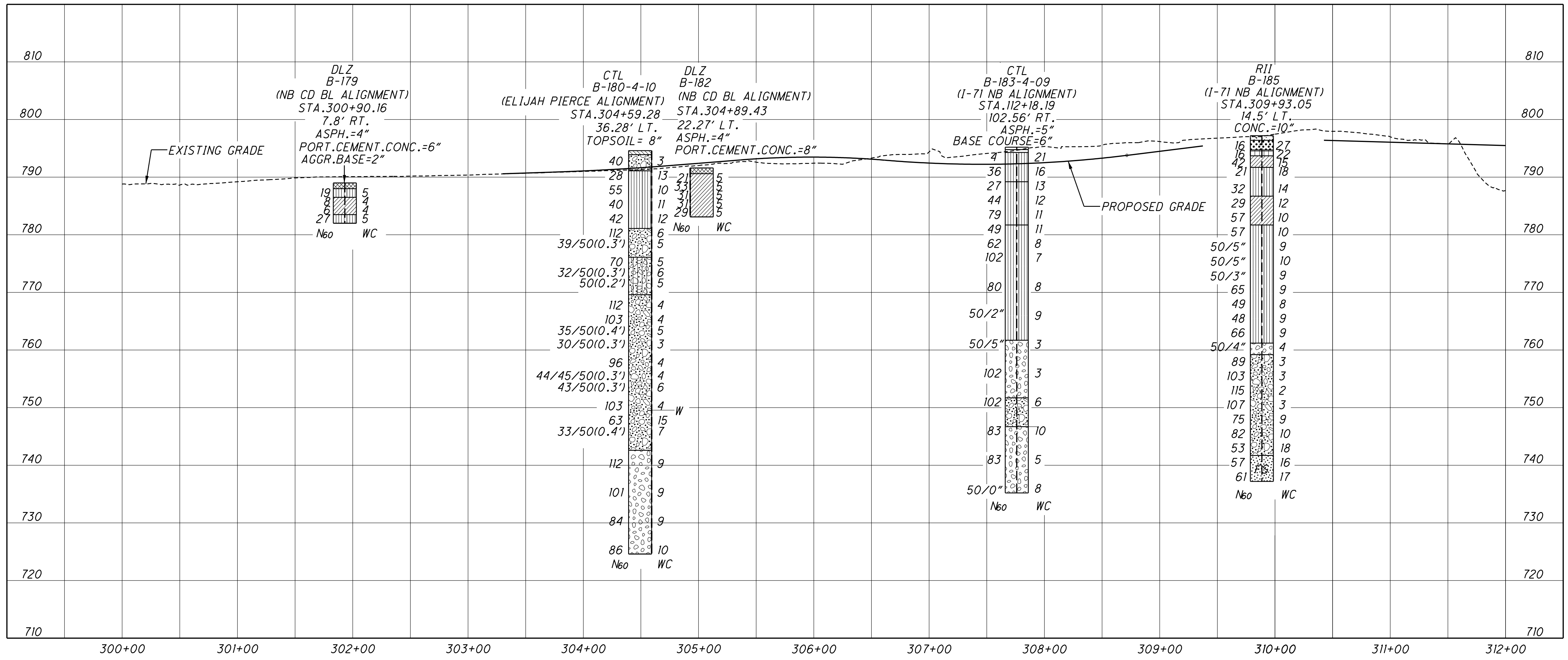


NOTE:
 SEE SHEET OF FOR BORING B-176-1, B-179-1 AND B-180-1 SOIL PROFILES
 SEE SHEET OF FOR BORING B-184 SOIL PROFILE
 SEE SHEET OF FOR BORING B-183-2-09 SOIL PROFILE
 SEE SHEET OF FOR BORING B-001-H-59 SOIL PROFILE
 SEE SHEET OF FOR BORING B-186-1-09 SOIL PROFILE

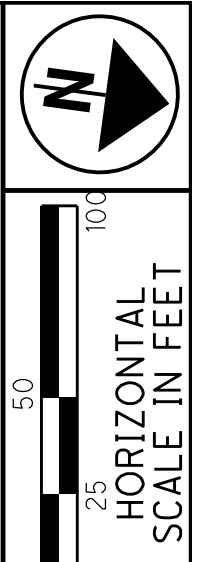
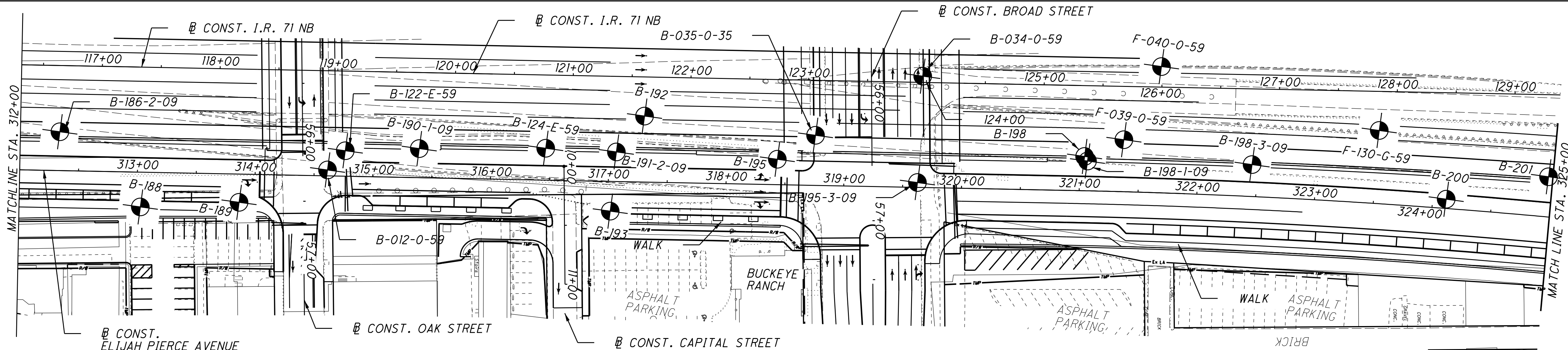
BEGIN WORK
 STA. 202+32.66, 11.88' LT
 CONST. PARSONS AVE. =
 STA. 302+37.86
 CONST. ELIJAH PIERCE AVE.



PLAN AND PROFILE
 ELIJAH PIERCE AVENUE
 STA. 302+37.86 TO STA. 312+00.00

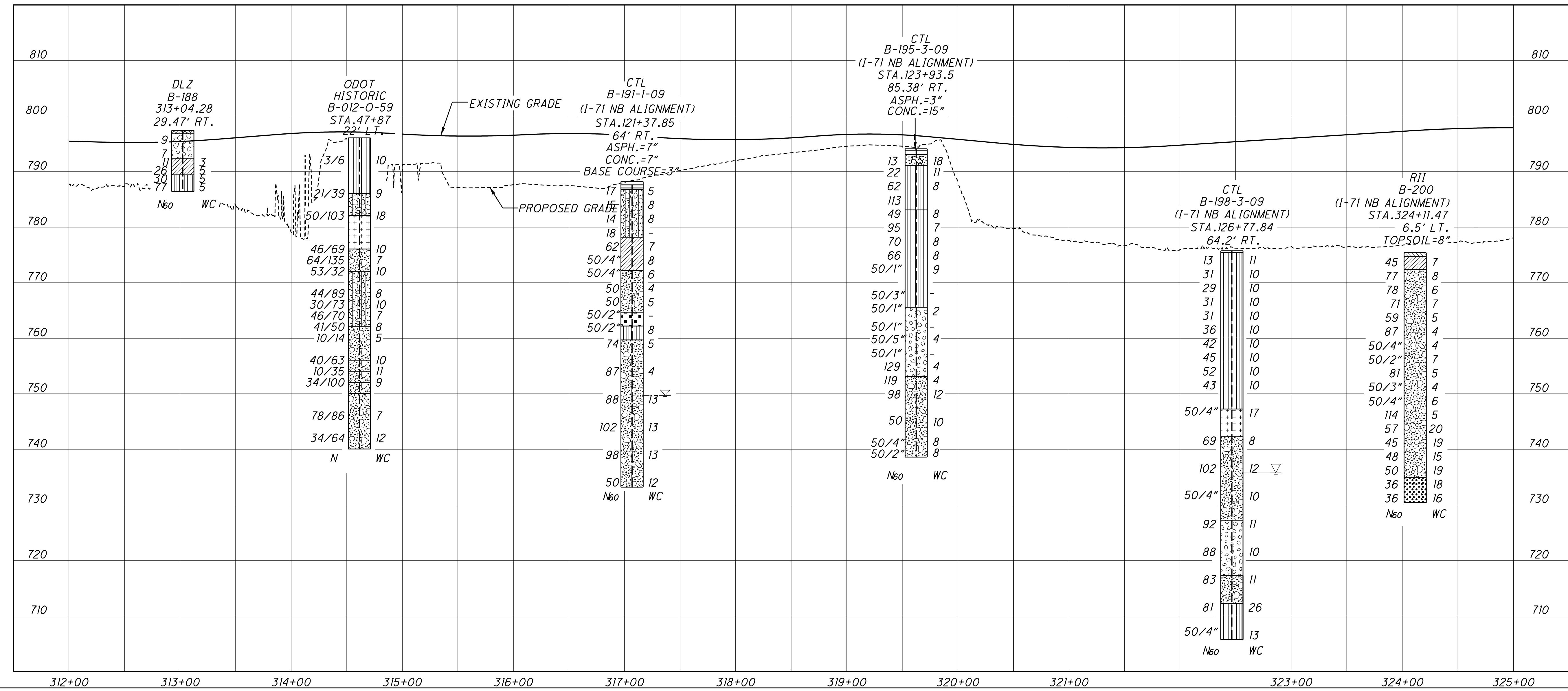


FRA-71-17.14
 PID NO. 77371



DRAWN BY N.K.S.
CHECKED BY NT

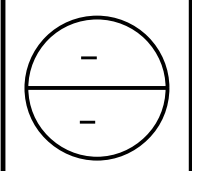
NOTE:
 SEE SHEET OF FOR BORING B-189 SOIL PROFILE
 SEE SHEET OF FOR BORING B-122-E-59 SOIL PROFILE
 SEE SHEET OF FOR BORING B-186-2-09 SOIL PROFILE
 SEE SHEET OF FOR BORING B-124-E-59, B-195 AND B-192 SOIL PROFILE
 SEE SHEET OF FOR BORING B-193 SOIL PROFILE
 SEE SHEET OF FOR BORING F-035-059 AND F-035-059 SOIL PROFILES
 SEE SHEET OF FOR BORING B-130-G-59, B-198, AND B-201 SOIL PROFILES
 SEE SHEET OF FOR BORING B-126-F-59 SOIL PROFILE
 SEE SHEET OF FOR BORING B-198-1-09 SOIL PROFILE

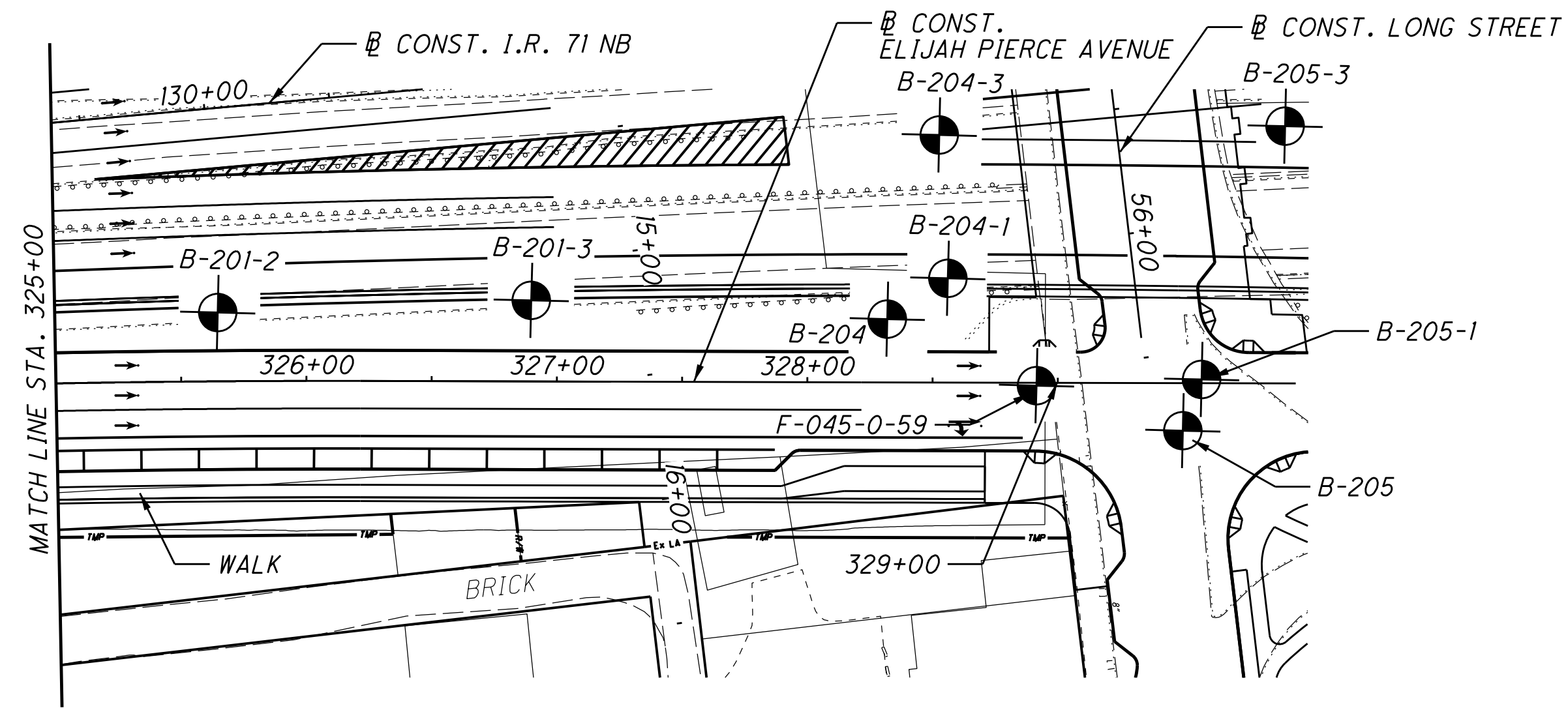


PLAN AND PROFILE
 ELIJAH PIERCE AVENUE
 STA. 312+00.00 TO STA. 325+00.00

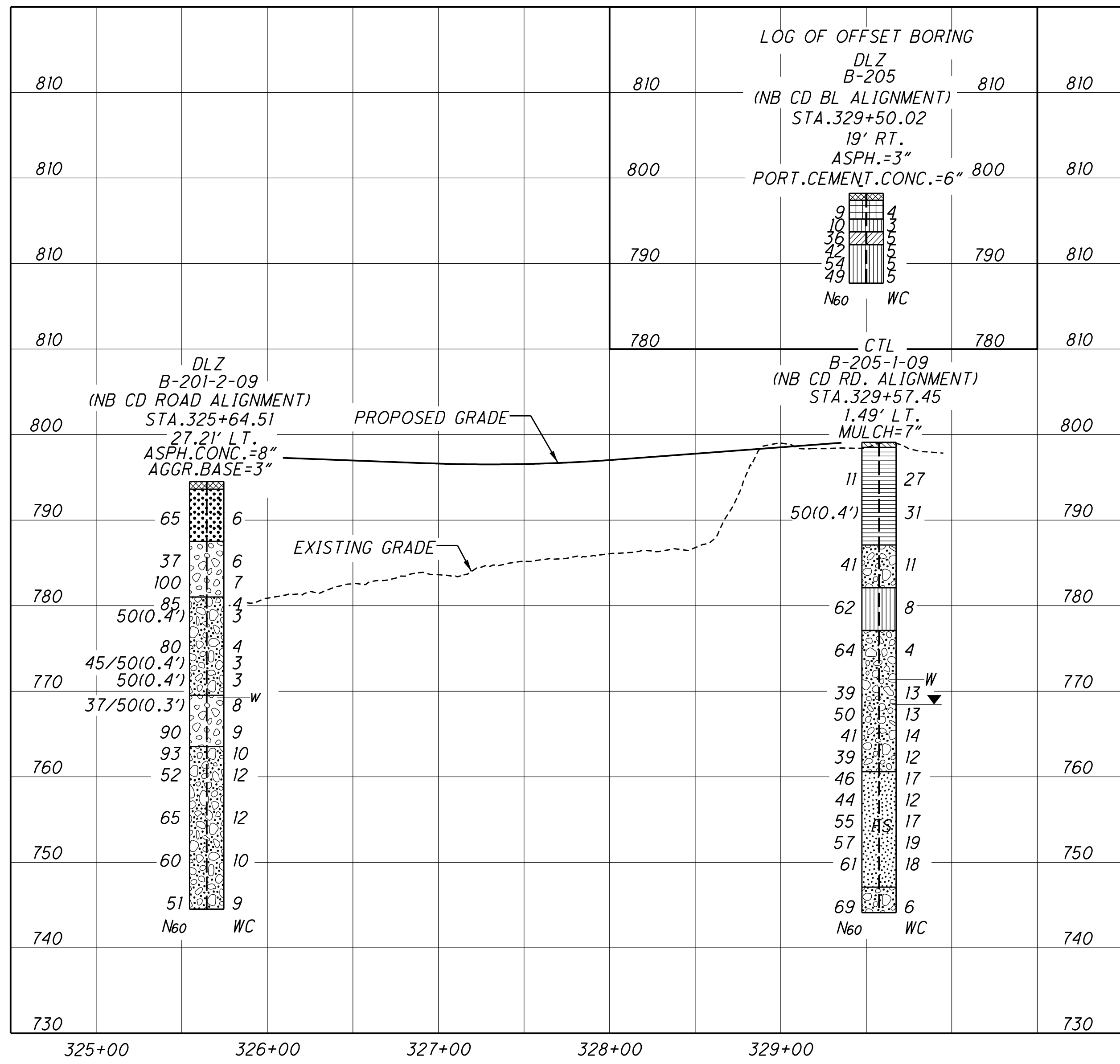
FRA-71-17.14
 PID NO. 77371

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NOTE:
 SEE SHEET OF FOR BORING F-045-0-59 SOIL PROFILE
 SEE SHEET OF FOR BORING B-204 SOIL PROFILE
 SEE SHEET OF FOR BORING B-201-3, B-204-1, B-204-3 AND B-205-3 SOIL PROFILES



DRAWN

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N.K.S.

CHECKED

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NT

FRA-71-17.14

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PID NO. 77371

PLAN AND PROFILE

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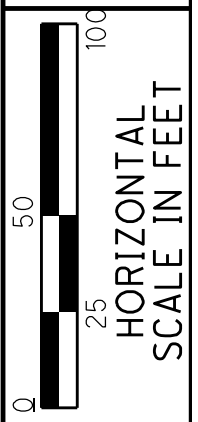
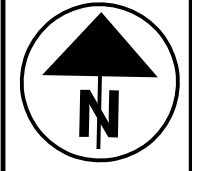
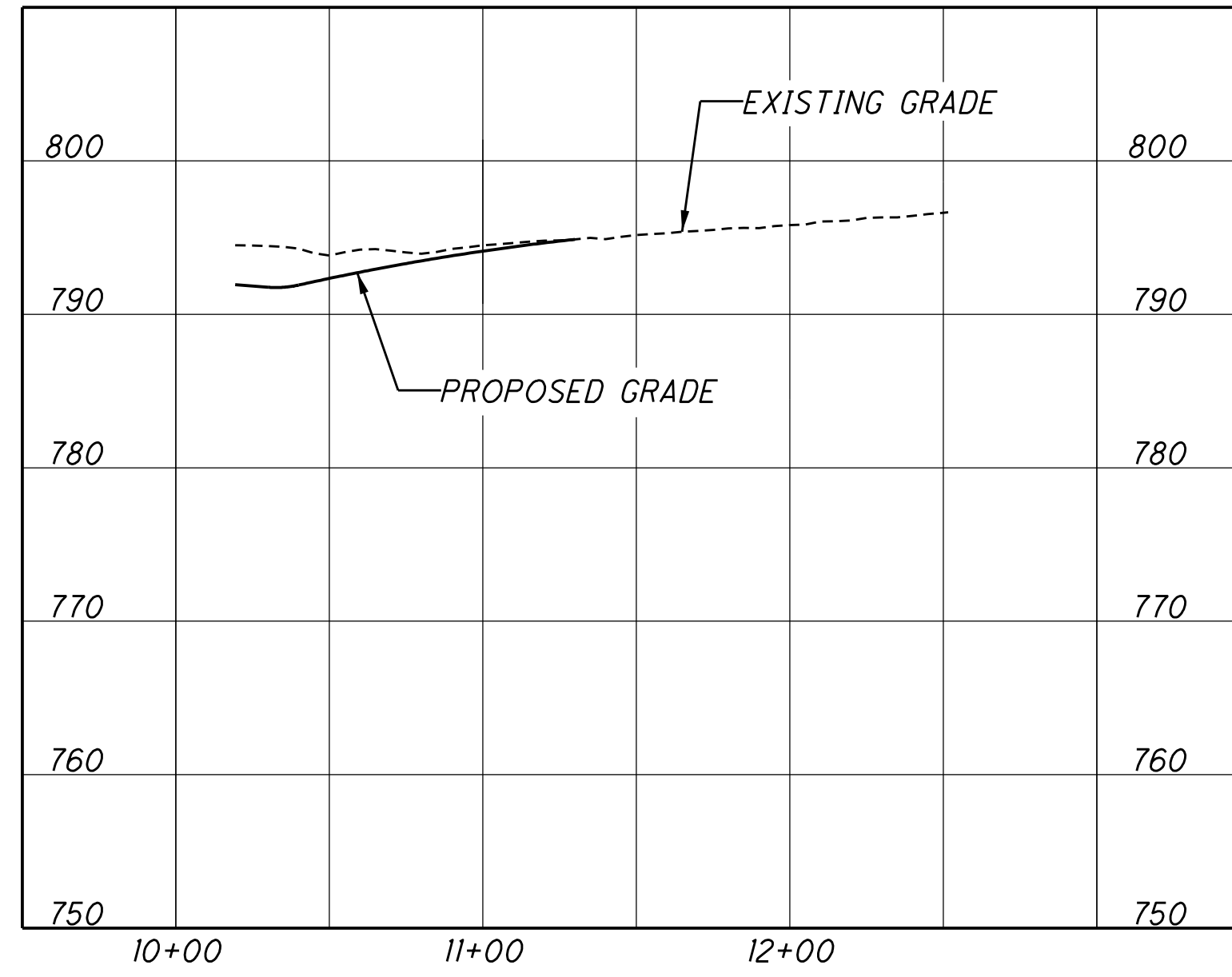
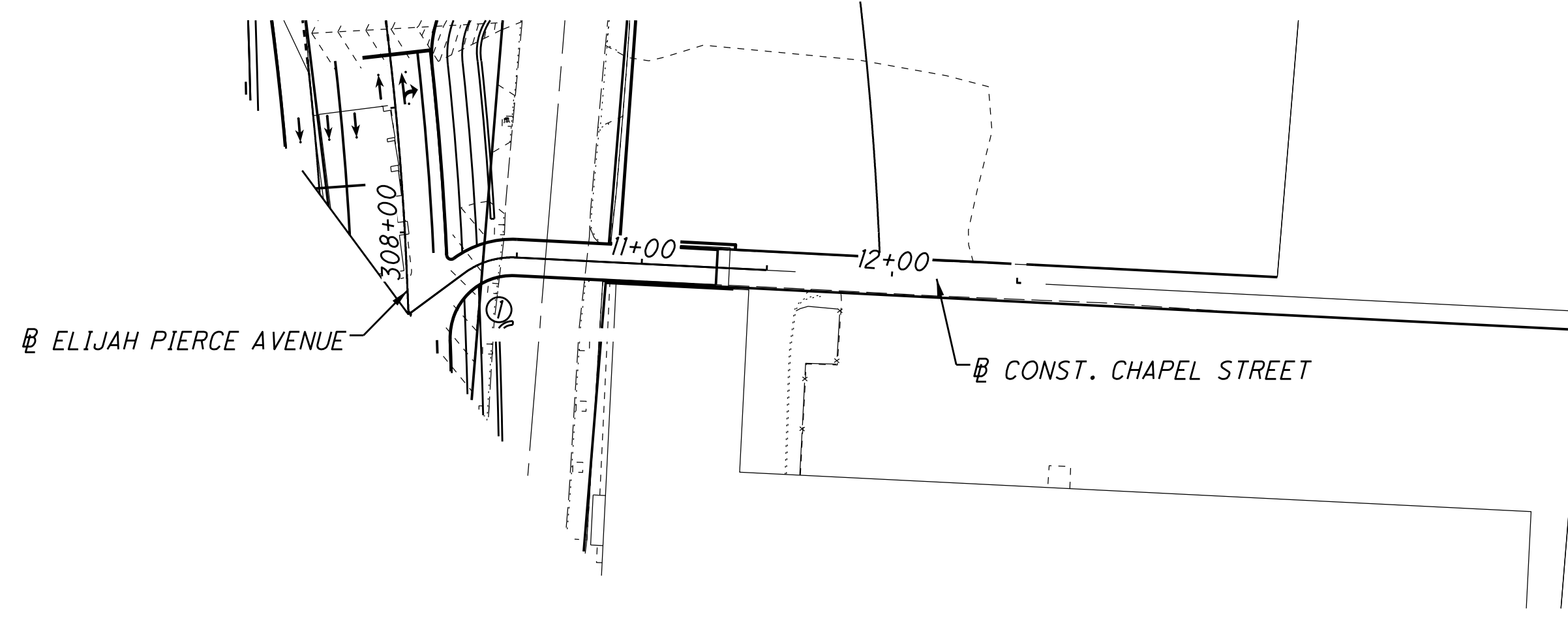
ELIJAH PIERCE AVENUE

STA. 325+00.00 TO STA. 329+95.03

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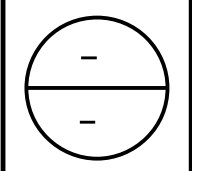


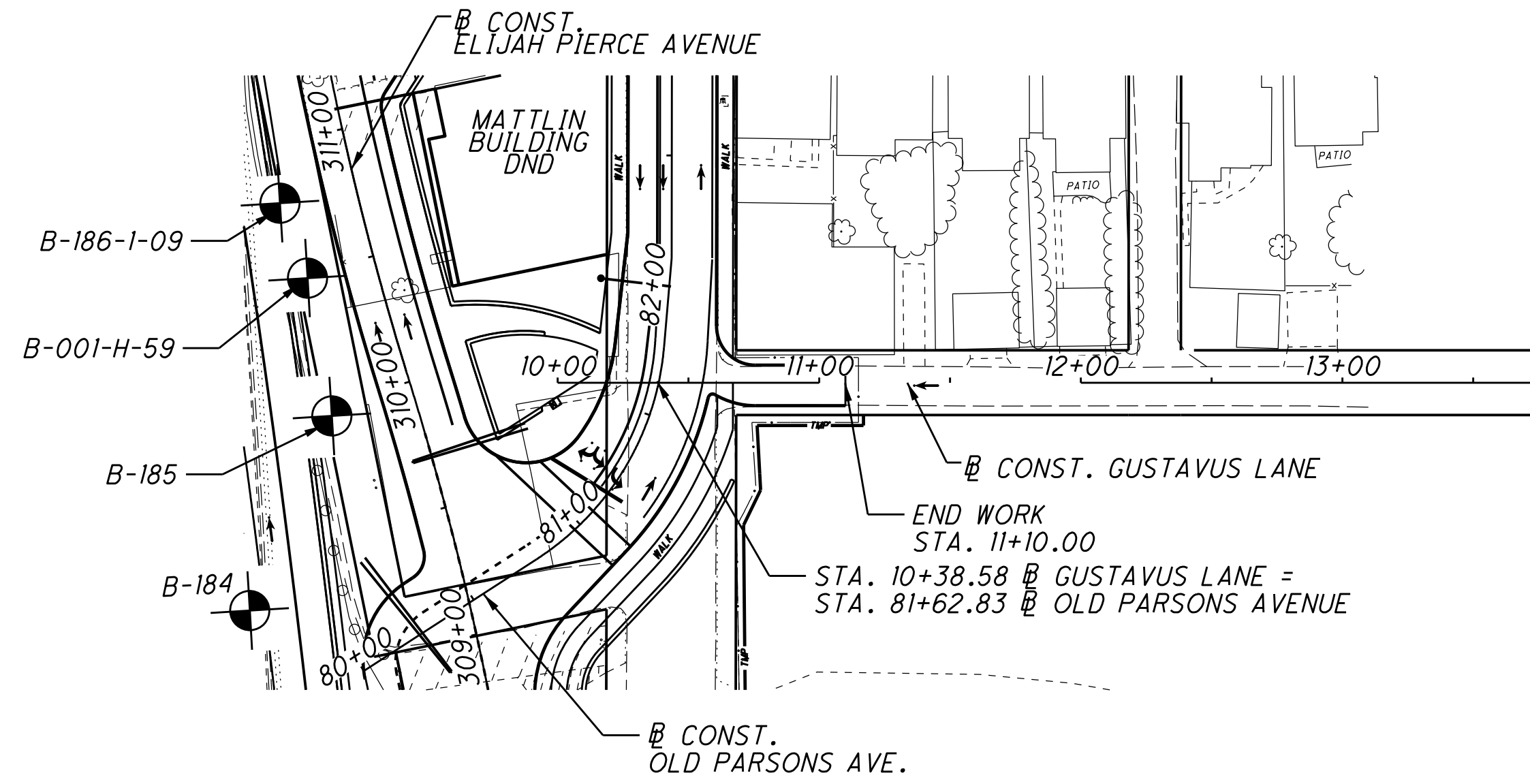
DRAWN
N.K.S.
CHECKED
NT

PLAN AND PROFILE - CHAPEL STREET
STA. 10+00.00 TO STA. 11+30.00

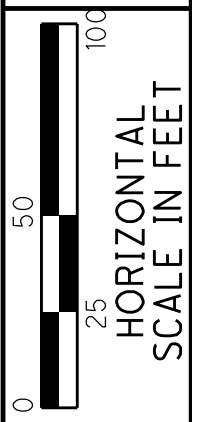
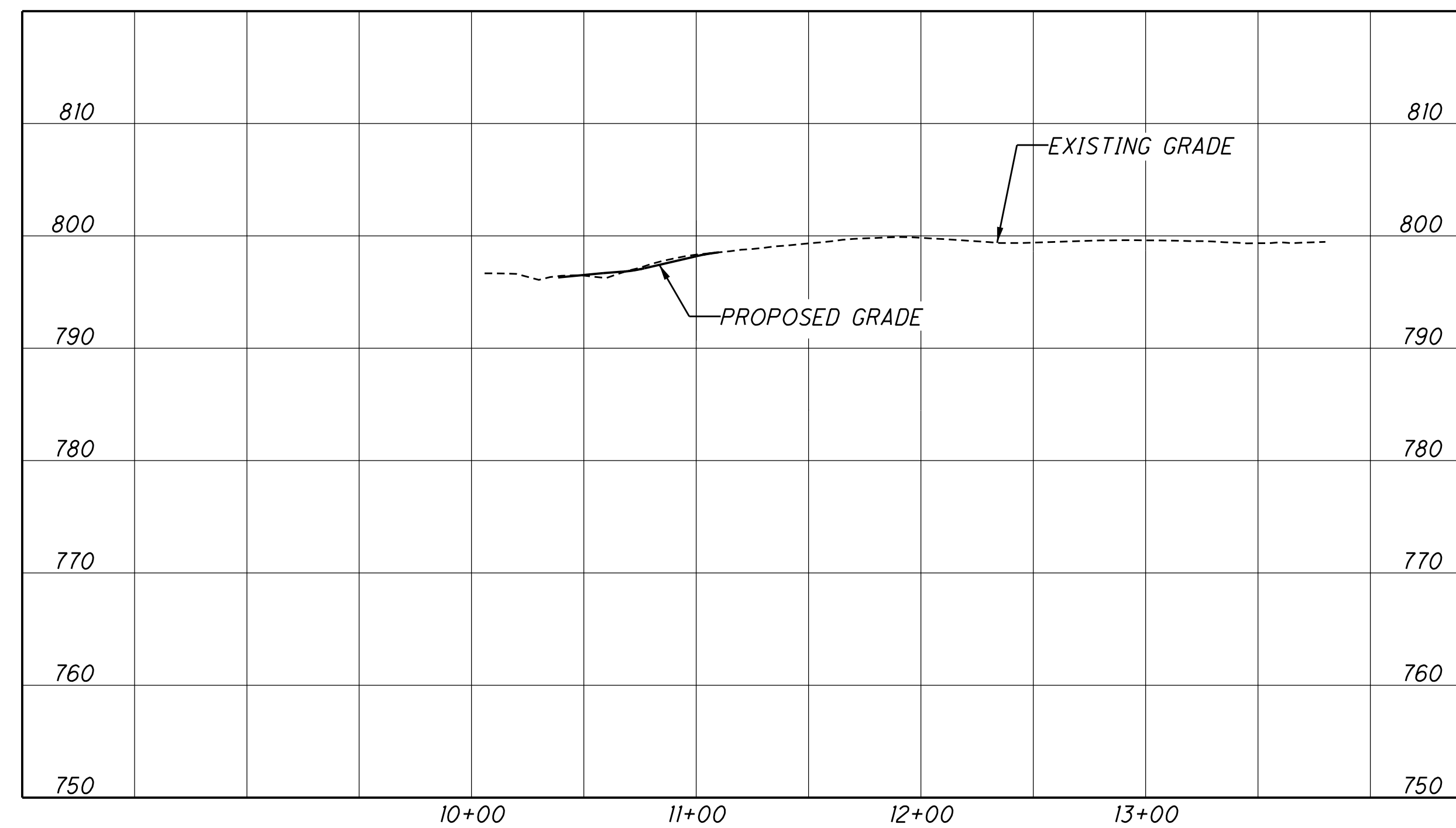
FRA-71-17.14
PID NO. 77371

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NOTE:
 SEE SHEET OF FOR BORINGS B-001-H-59, B-185 AND B-184 SOILPROFILE
 SEE SHEET OF FOR BORINGS B-186-1-09 SOILPROFILE

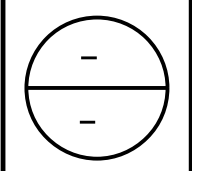


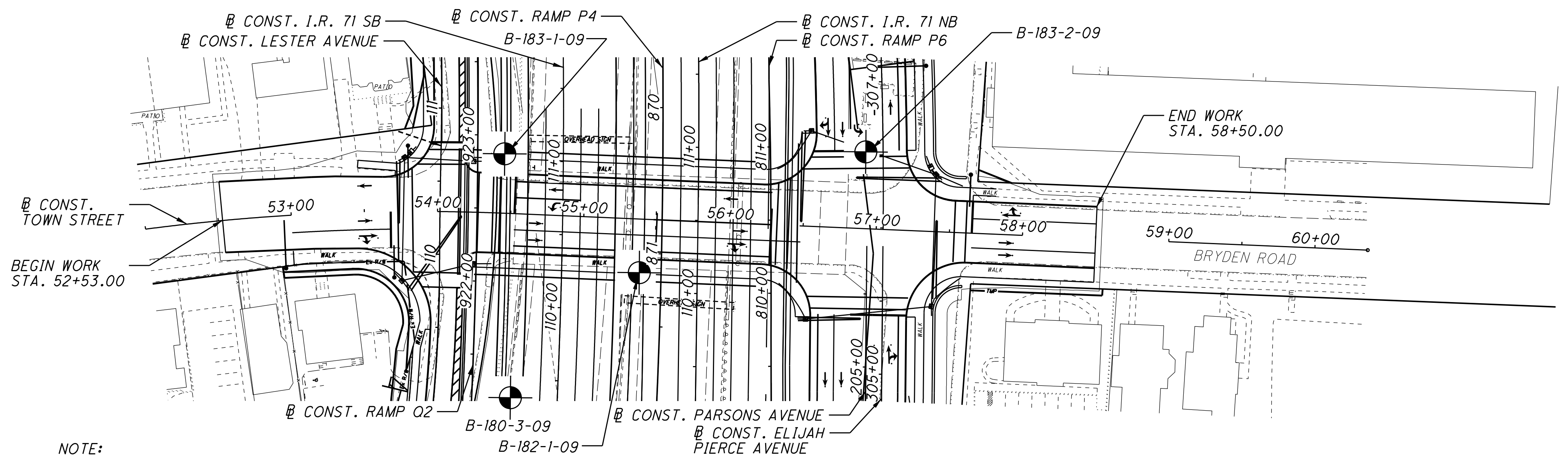
DRAWN
N.K.S.
CHECKED
NT

PLAN AND PROFILE - GUSTAVUS LANE
 STA. 10+00.00 TO STA. 11+10.00

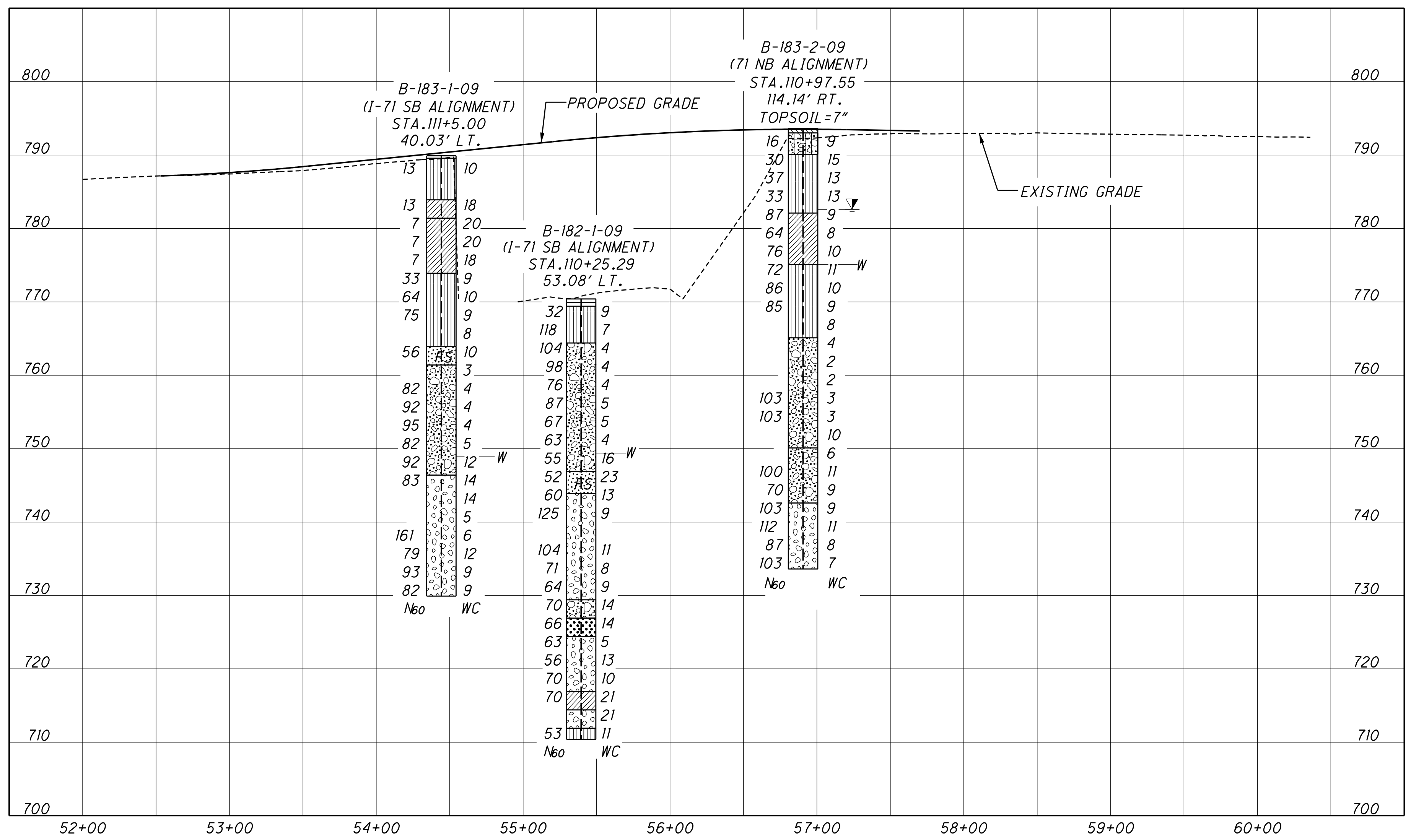
FRA-71-17.14
PID NO. 77371

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NOTE:
SEE SHEET - OF - FOR BORING B-180-3-09 SOIL PROFILE

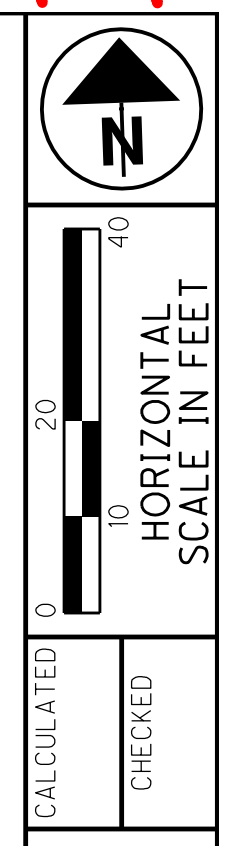
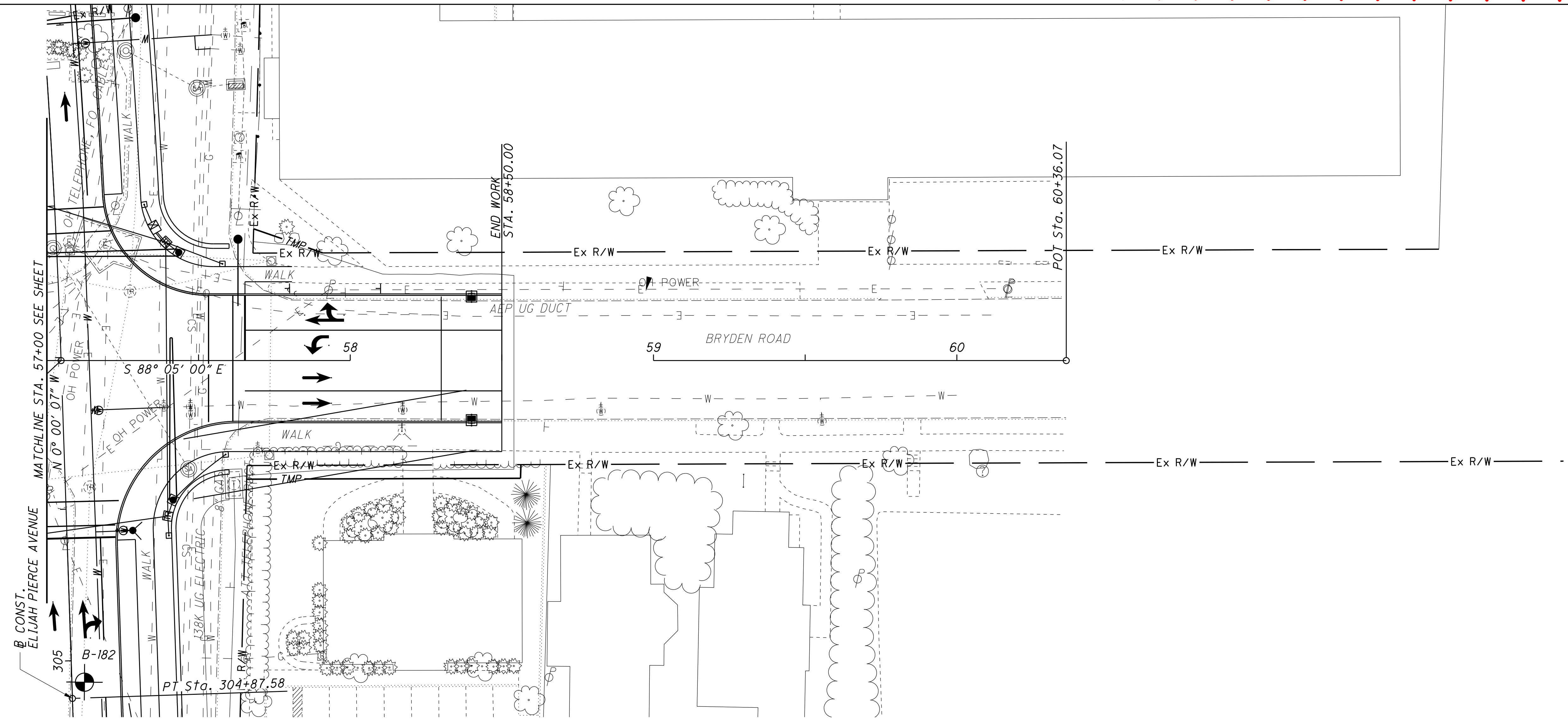


HORIZONTAL SCALE IN FEET

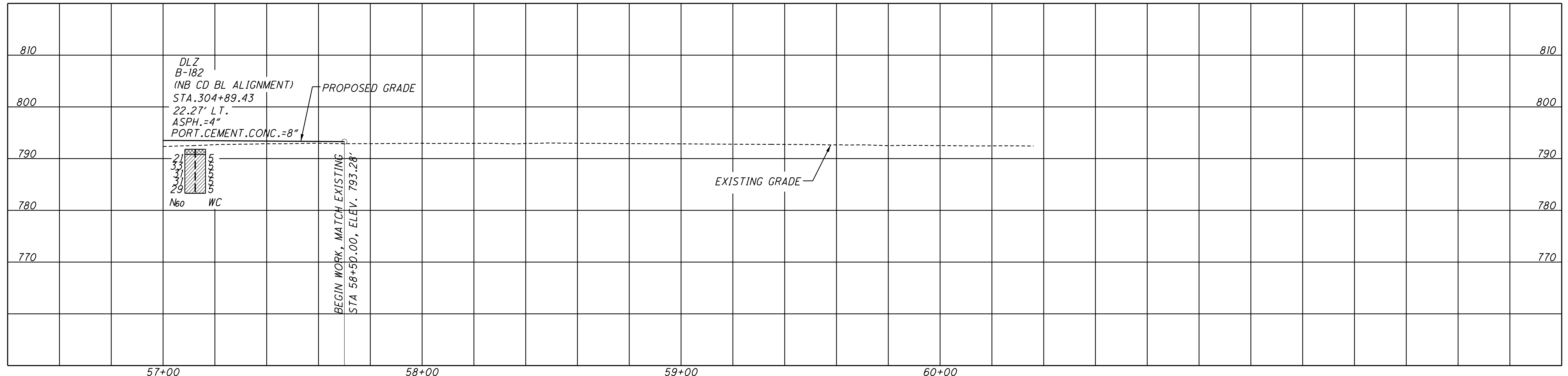
DRAWN: N.K.S.
CHECKED: NT

PLAN AND PROFILE - TOWN STREET
CAPITAL STREET EAST
STA. 52+53.00 TO STA. 58+50.00

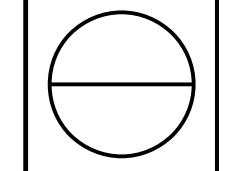
FRA-71-17.14
PID NO. 77371

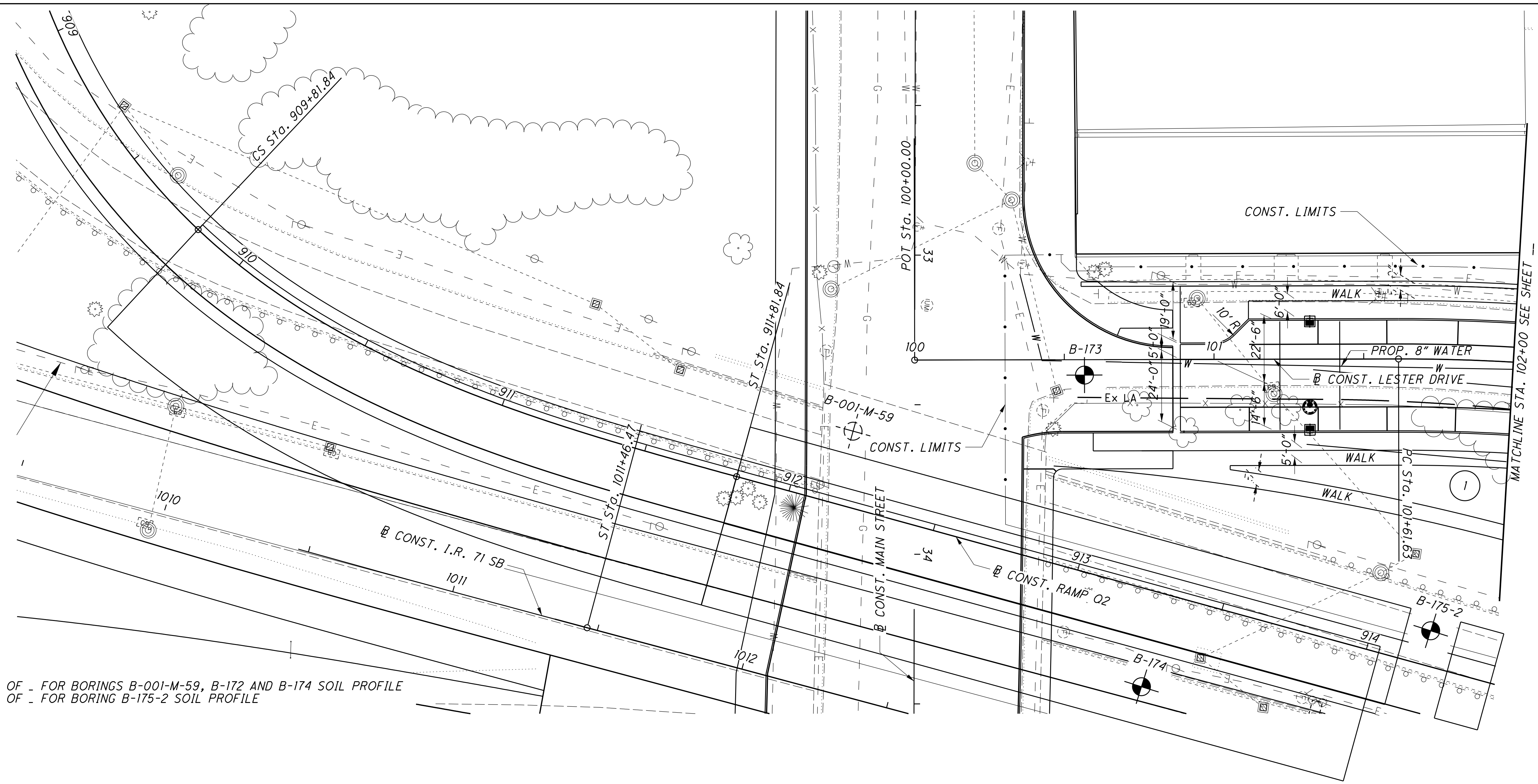


PLAN AND PROFILE - TOWN ST./BRYDEN RD.
 STA. 57+00.00 TO STA. 58+50.00

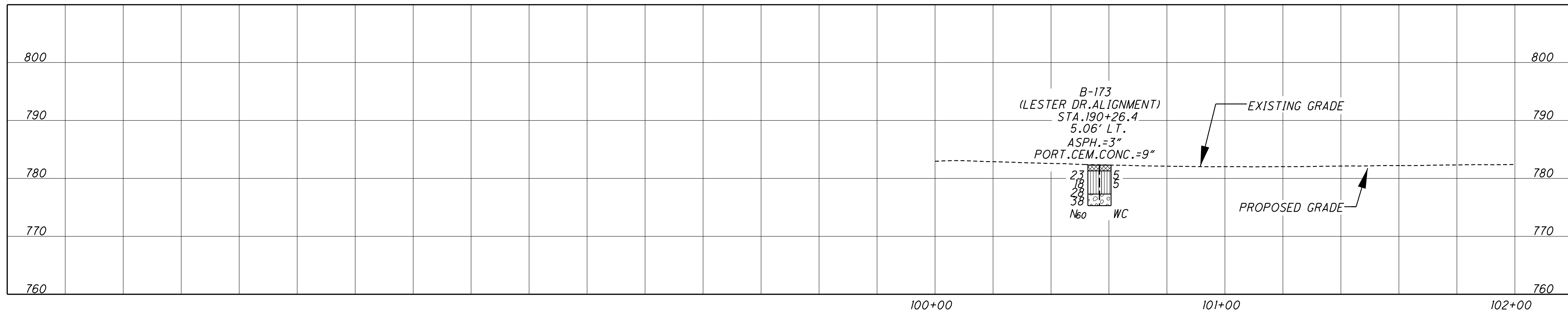


FRA-71-17.14





NOTE:
 SEE SHEET - OF - FOR BORINGS B-001-M-59, B-172 AND B-174 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-175-2 SOIL PROFILE

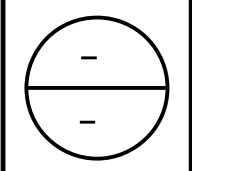


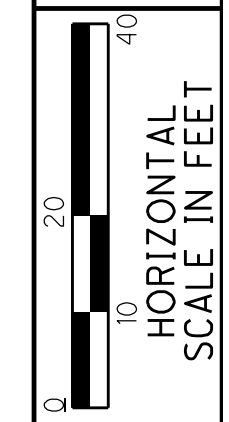
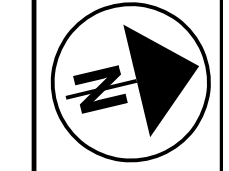
DRAWN
N.K.S.
CHECKED
NT

PLAN AND PROFILE - LESTER DRIVE
STA. 100+00.00 TO STA. 102+00.00

FRA-71-17.14
PID NO. 77371

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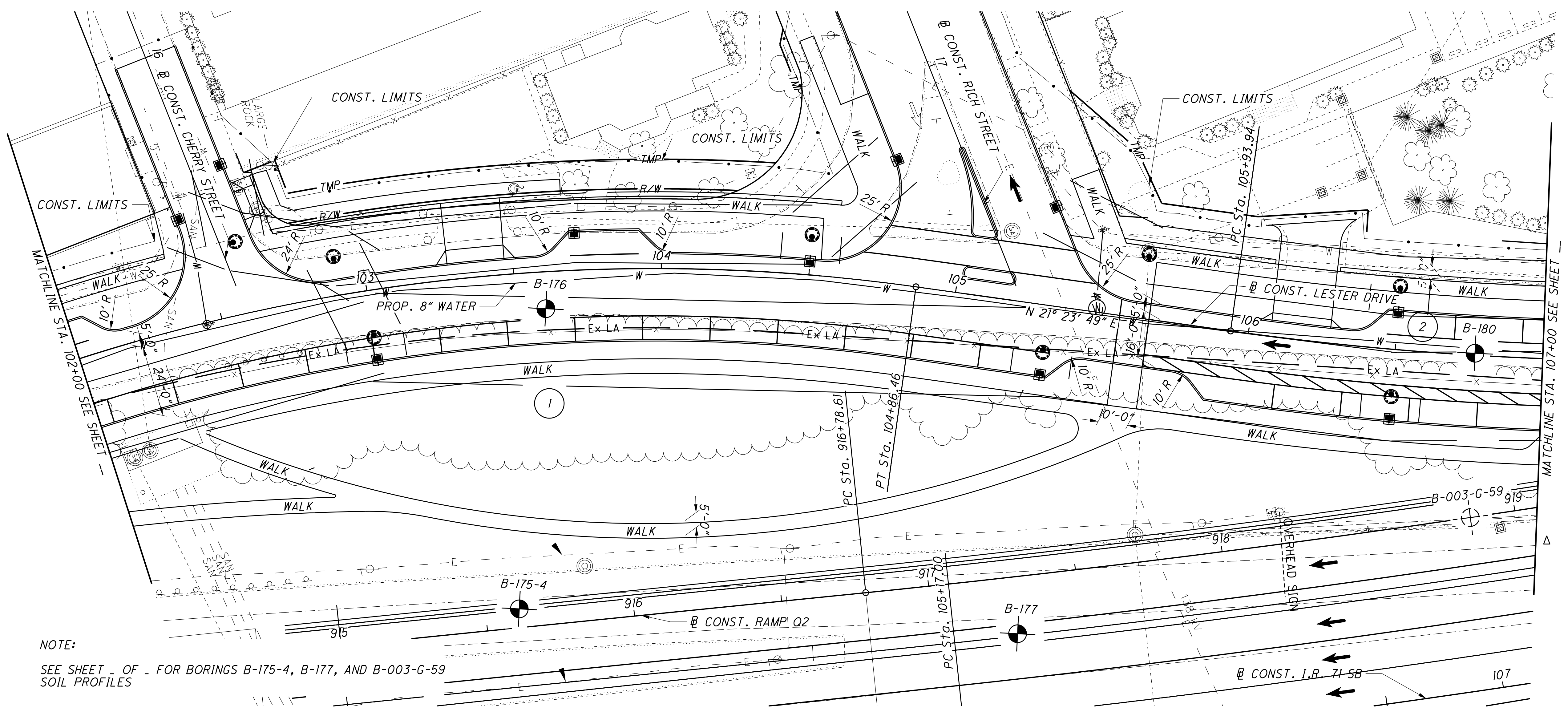
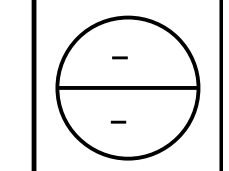


DRAWN N.K.S.
CHECKED NT

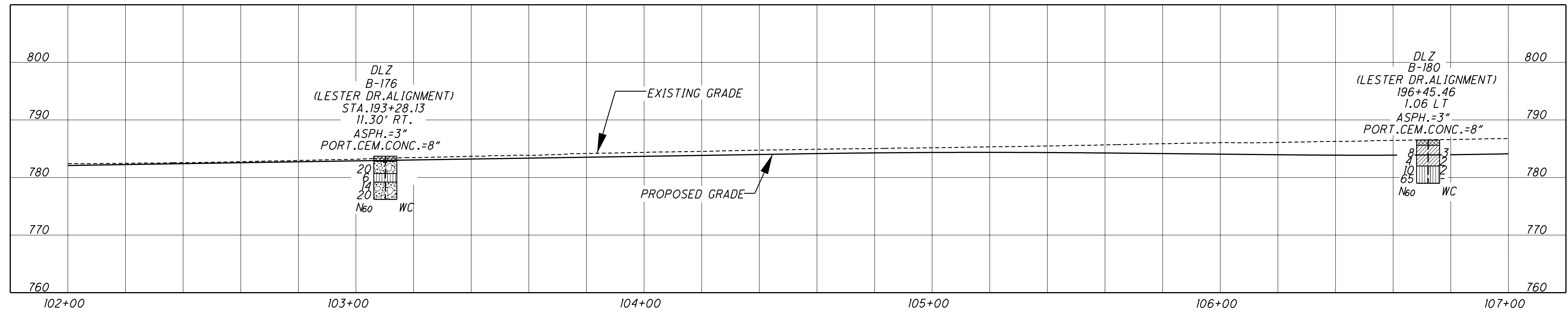
PLAN AND PROFILE - LESTER DRIVE
STA. 102+00.00 TO STA. 107+00.00

FRA-71-17.14
PID NO. 77371

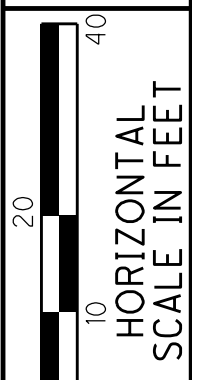
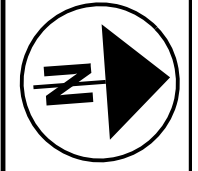
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NOTE:
SEE SHEET - OF - FOR BORINGS B-175-4, B-177, AND B-003-G-59
SOIL PROFILES



102+00 103+00 104+00 105+00 106+00 107+00

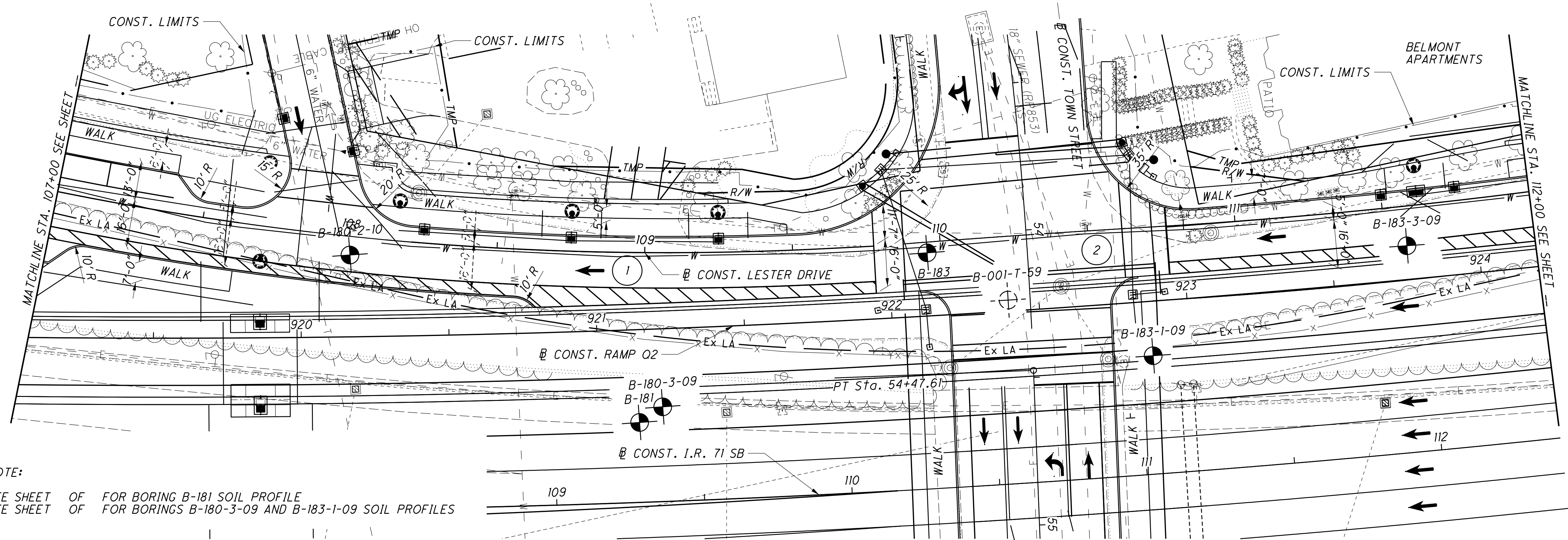
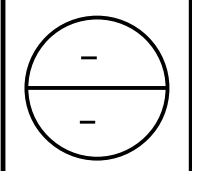


DRAWN BY N.K.S.
CHECKED BY NT

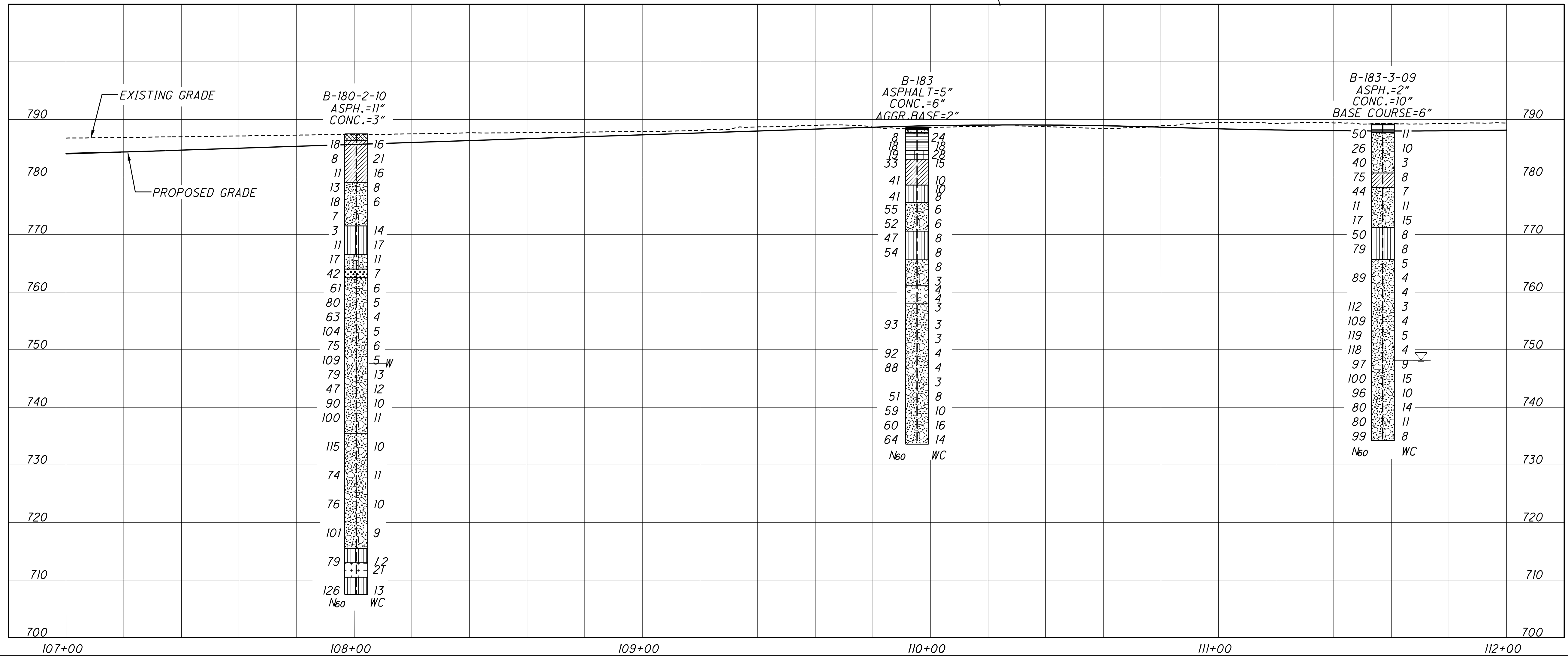
PLAN AND PROFILE - LESTER DRIVE
STA. 107+00.00 TO STA. 112+00.00

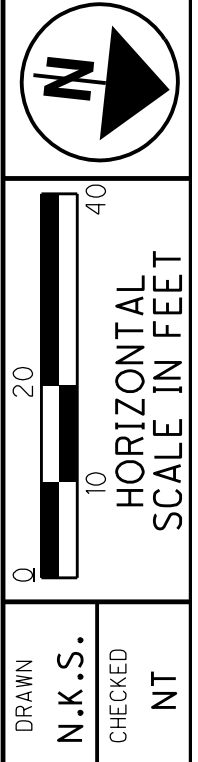
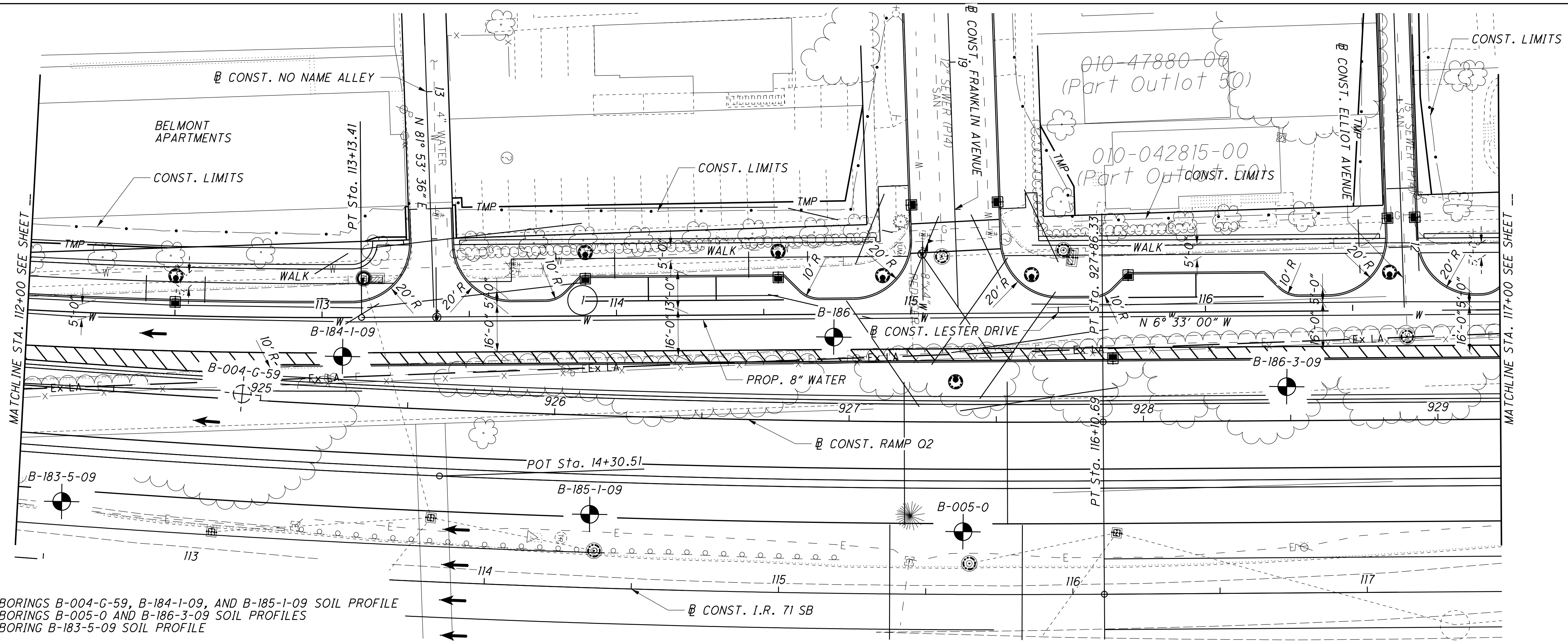
FRA-71-17.14
PID NO. 77371

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NOTE:
SEE SHEET OF FOR BORING B-181 SOIL PROFILE
SEE SHEET OF FOR BORINGS B-180-3-09 AND B-183-1-09 SOIL PROFILES

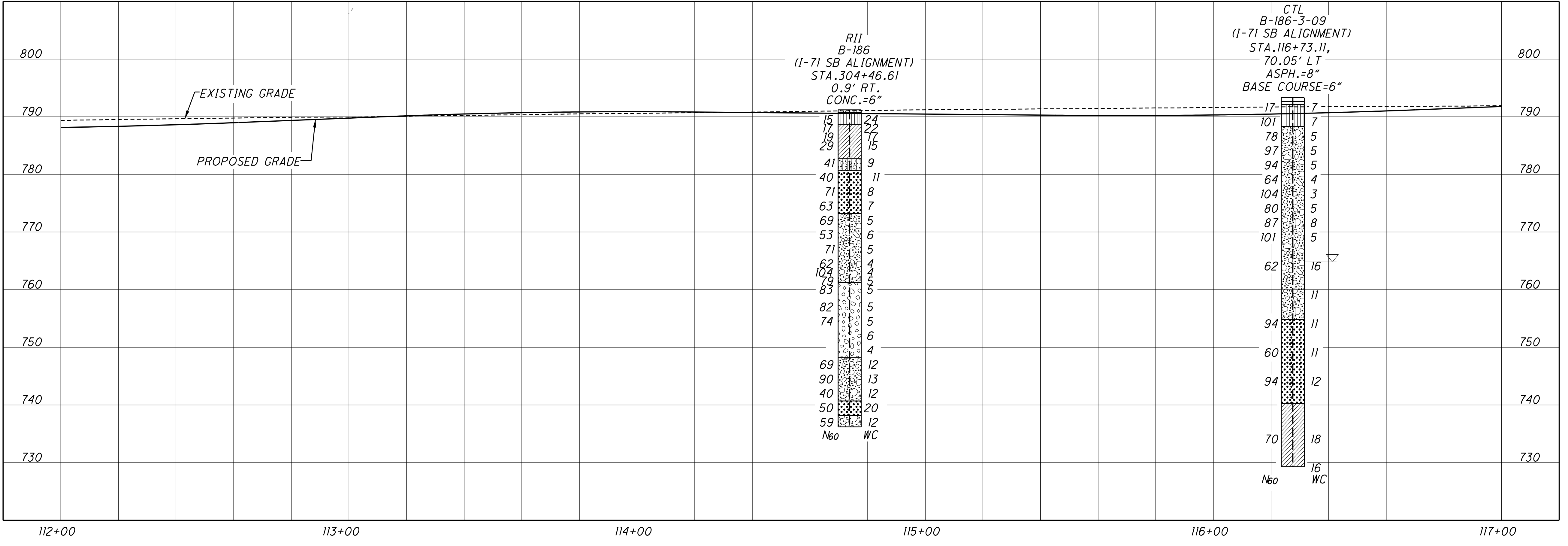




DRAWN BY N.K.S.
CHECKED BY NT

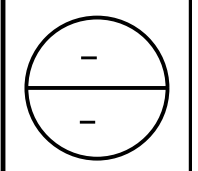
PLAN AND PROFILE - LESTER DRIVE
STA. 112+00.00 TO STA. 117+00.00

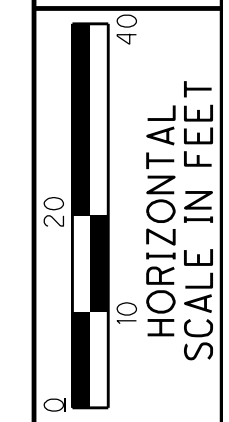
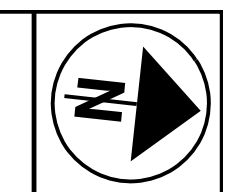
NOTE:
SEE SHEET - OF - FOR BORINGS B-004-G-59, B-184-1-09, AND B-185-1-09 SOIL PROFILE
SEE SHEET - OF - FOR BORINGS B-005-0 AND B-186-3-09 SOIL PROFILES
SEE SHEET - OF - FOR BORING B-183-5-09 SOIL PROFILE



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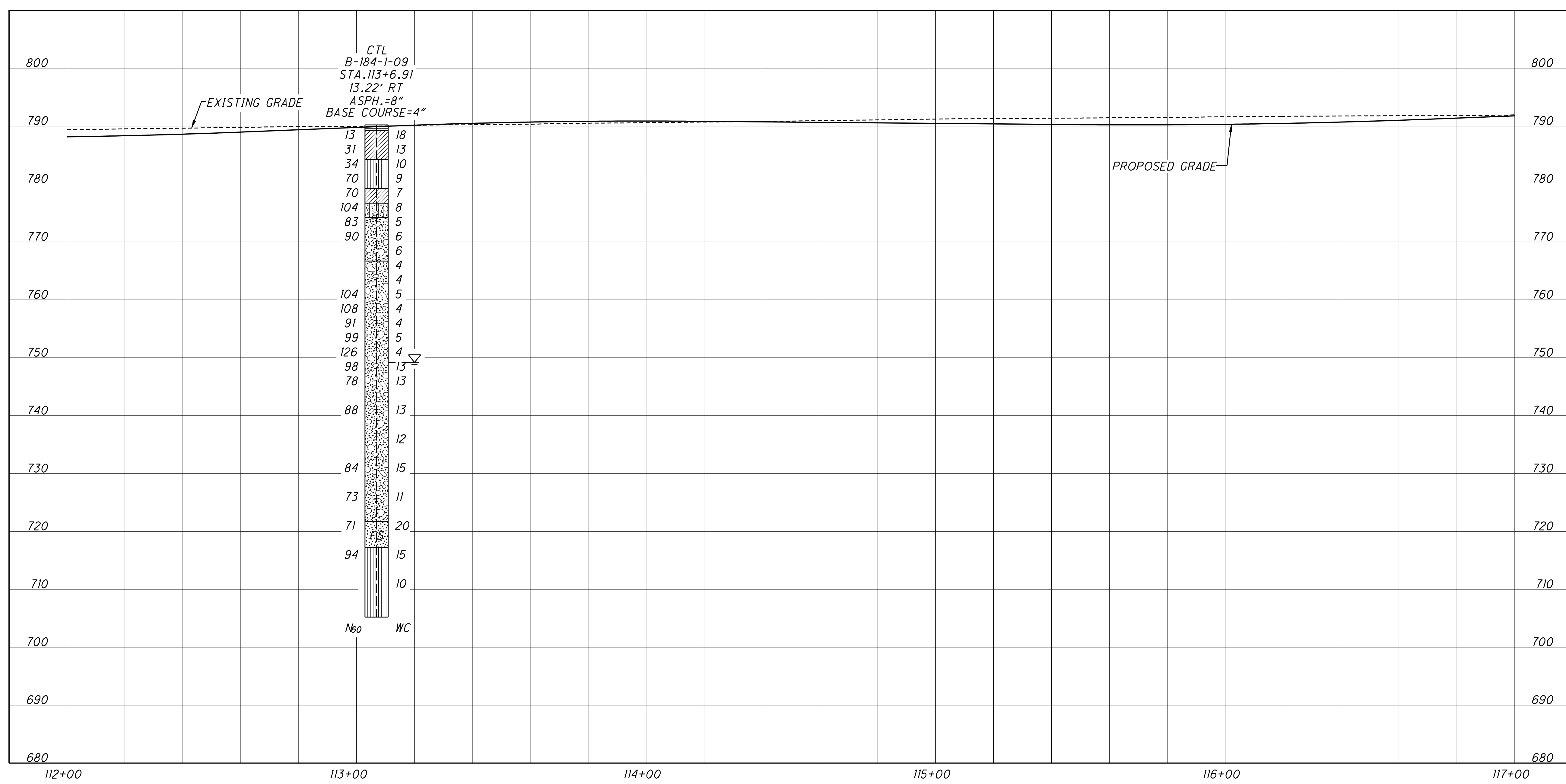
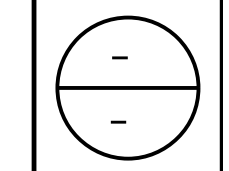


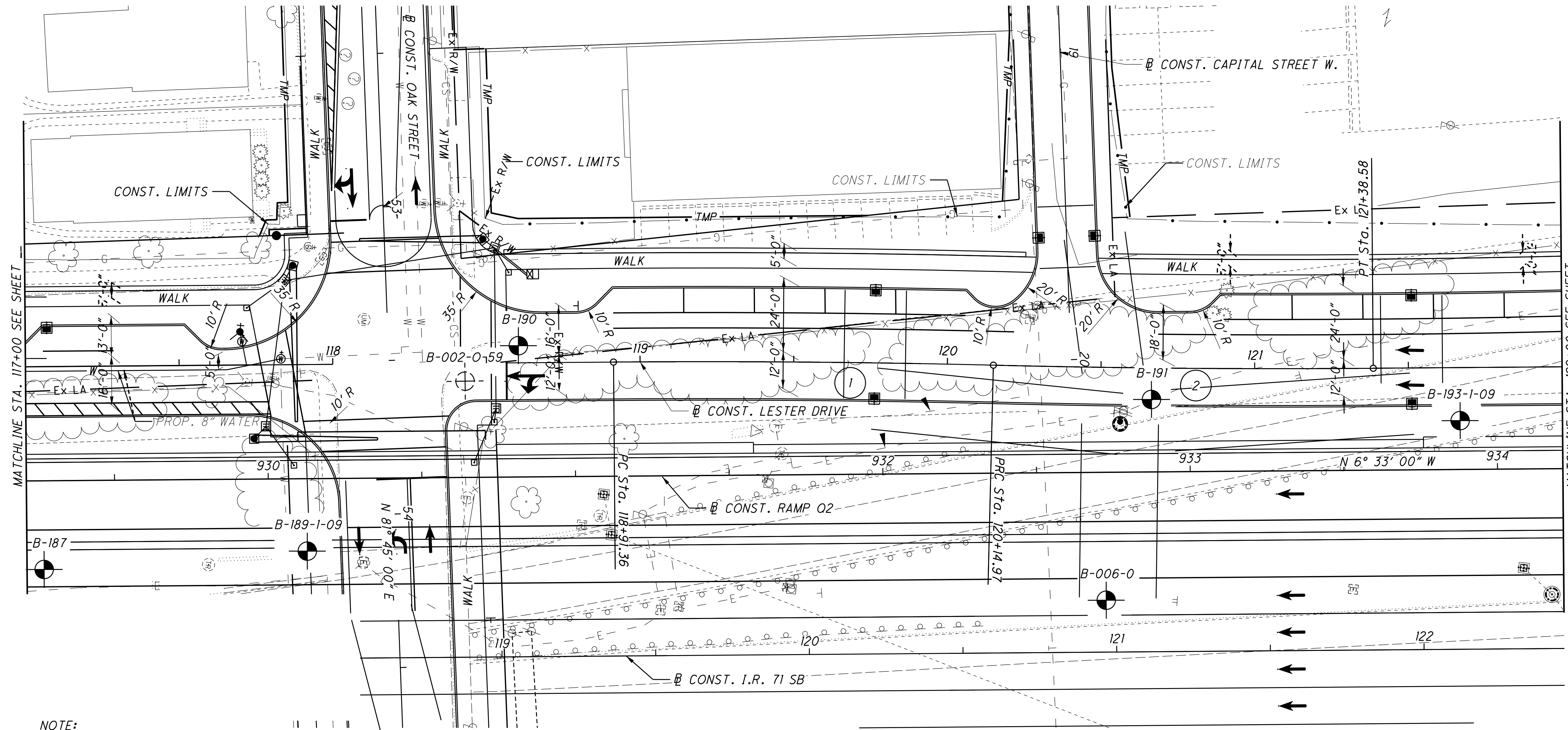
DRAWN
N.K.S.
CHECKED
NT

PLAN AND PROFILE - LESTER DRIVE
STA. 112+00.00 TO STA. 117+00.00

FRA-71-17.14
PID NO. 77371

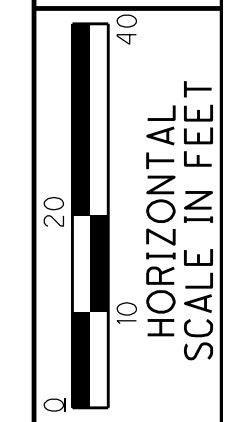
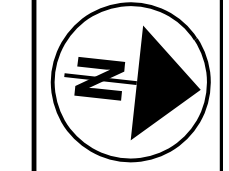
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NOTE:

SEE SHEET OF FOR BORING B-191 AND B-006-0 SOIL PROFILE
 SEE SHEET OF FOR BORINGS B-187, AND B-189-1-09 SOIL PROFILES
 SEE SHEET OF FOR BORINGS B-193-1-09 SOIL PROFILE

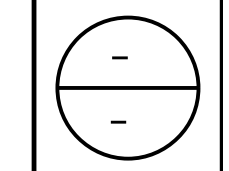


DRAWN
N.K.S.
CHECKED
NT

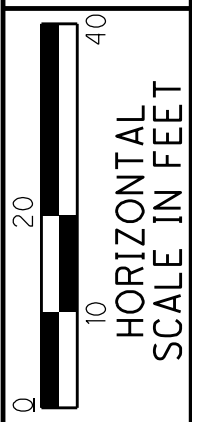
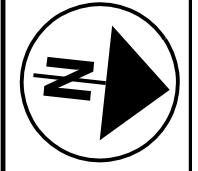
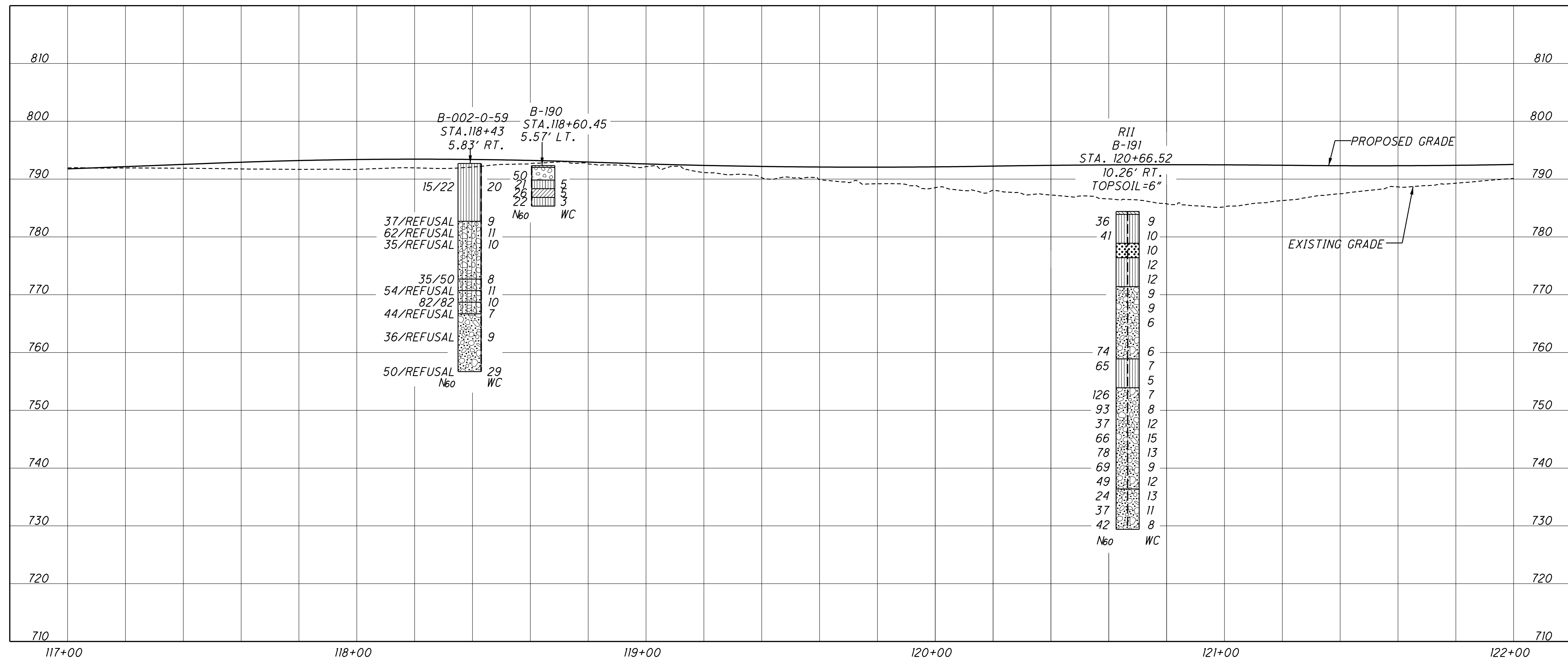
PLAN AND PROFILE - LESTER DRIVE
 STA. 117+00.00 TO STA. 122+00.00

FRA-71-17.14
PID NO. 77371

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NOTE:
SEE SHEET ___ OF ___ FOR PLAN VIEW

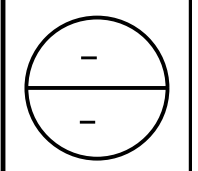


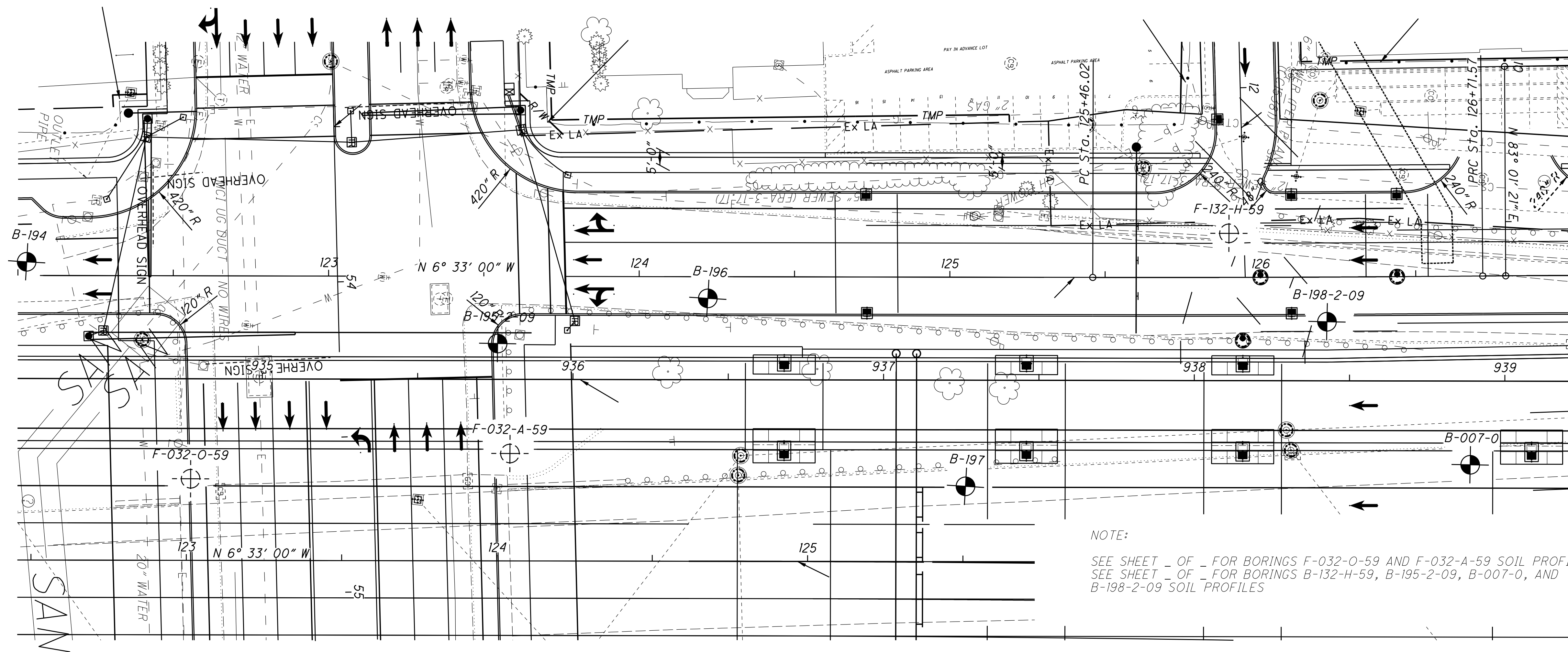
DRAWN
N.K.S.
CHECKED
NT

PLAN AND PROFILE - LESTER DRIVE
STA. 117+00.00 TO STA. 122+00.00

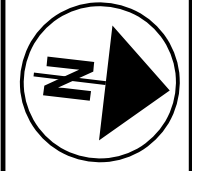
FRA-71-17.14
PID NO. 77371

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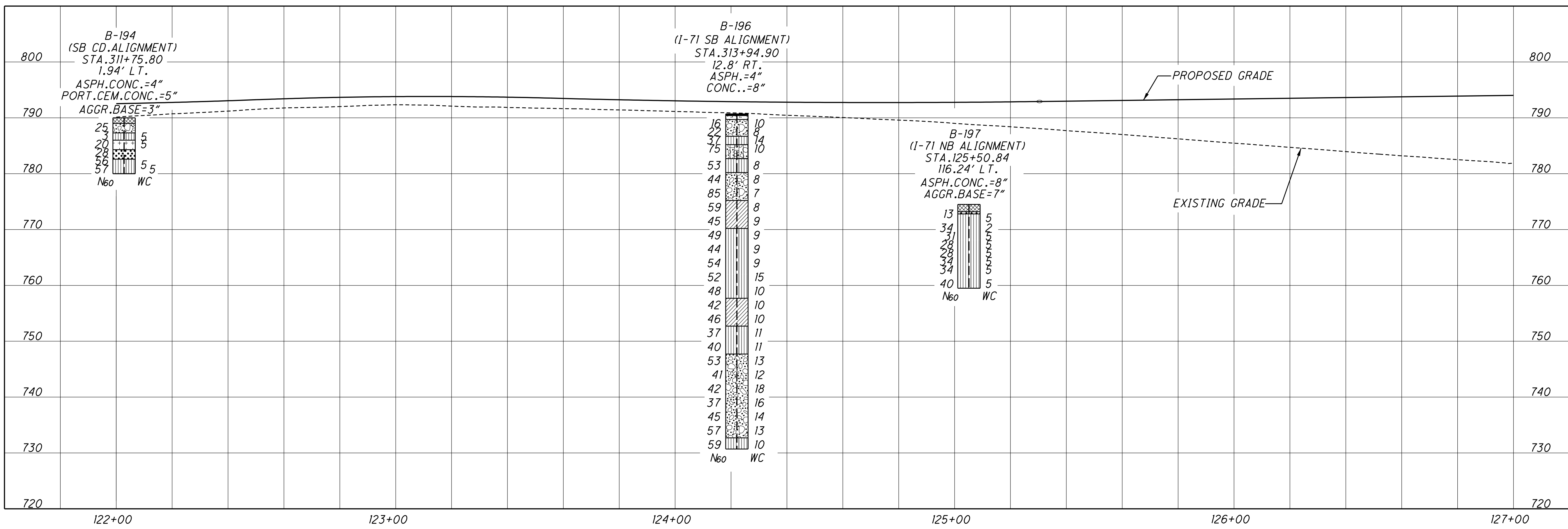
NOTE:
 SEE SHEET _ OF _ FOR BORINGS F-032-O-59 AND F-032-A-59 SOIL PROFILES
 SEE SHEET _ OF _ FOR BORINGS B-132-H-59, B-195-2-09, B-007-0, AND
 B-198-2-09 SOIL PROFILES



0 10 20 40
 HORIZONTAL
 SCALE IN FEET

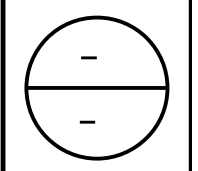
DRAWN
 N.K.S.
 CHECKED
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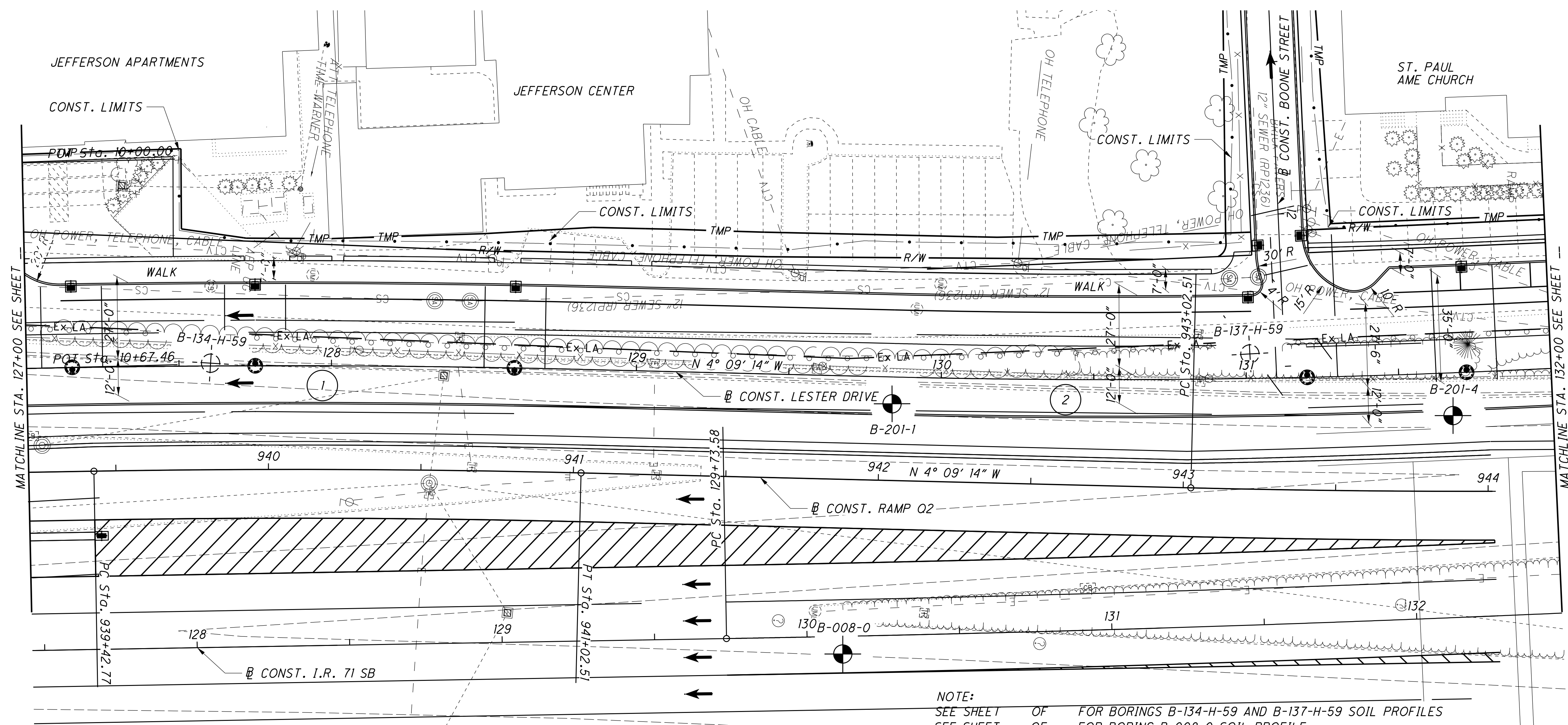
PLAN AND PROFILE - LESTER DRIVE
 STA. 122+00.00 TO STA. 127+00.00



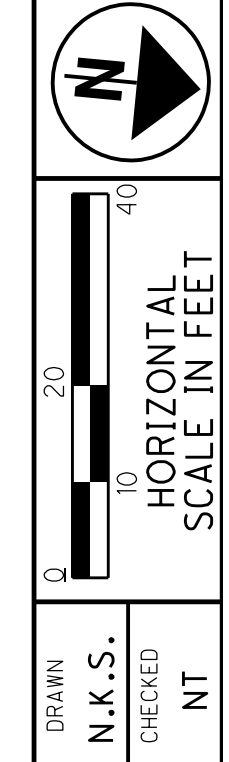
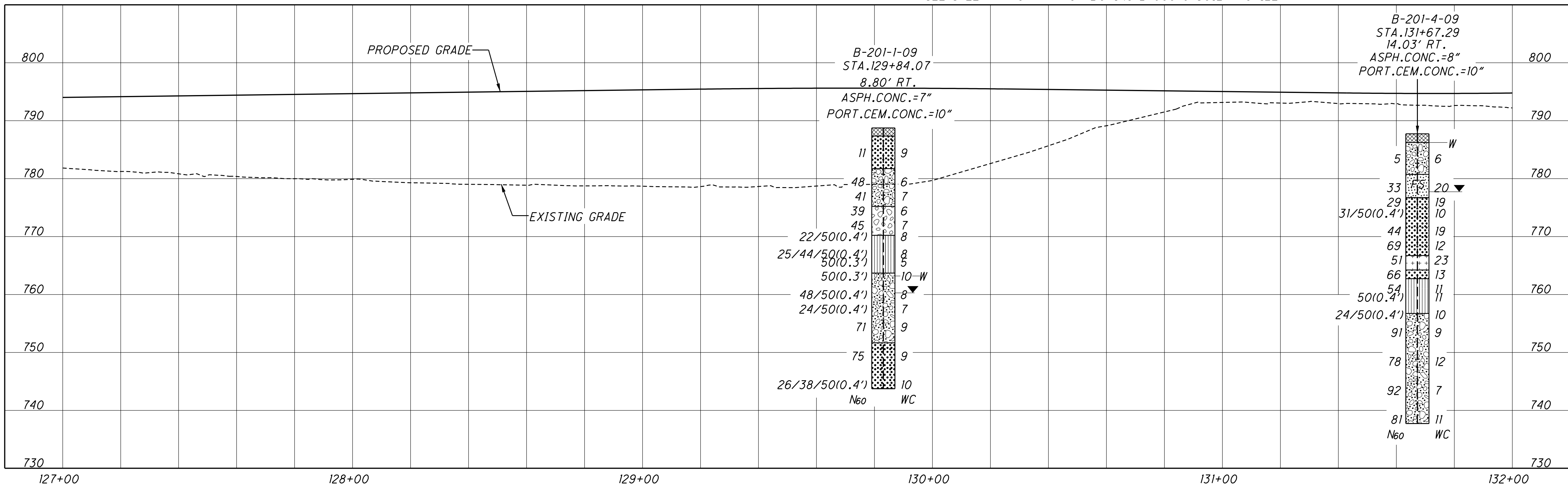
FRA-71-17.14
PID NO. 77371

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NOTE:
 SEE SHEET OF FOR BORINGS B-134-H-59 AND B-137-H-59 SOIL PROFILES
 SEE SHEET OF FOR BORING B-008-0 SOIL PROFILE

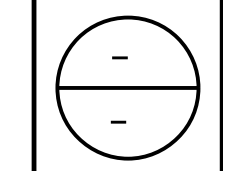


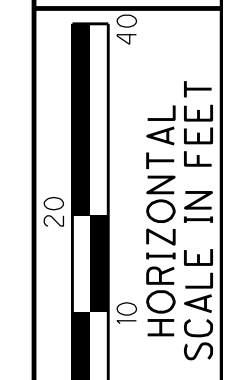
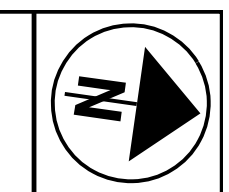
DRAWN N.K.S.
 CHECKED NT

PLAN AND PROFILE - LESTER DRIVE
 STA. 127+00.00 TO STA. 132+00.00

FRA-71-17.14
PID NO. 77371

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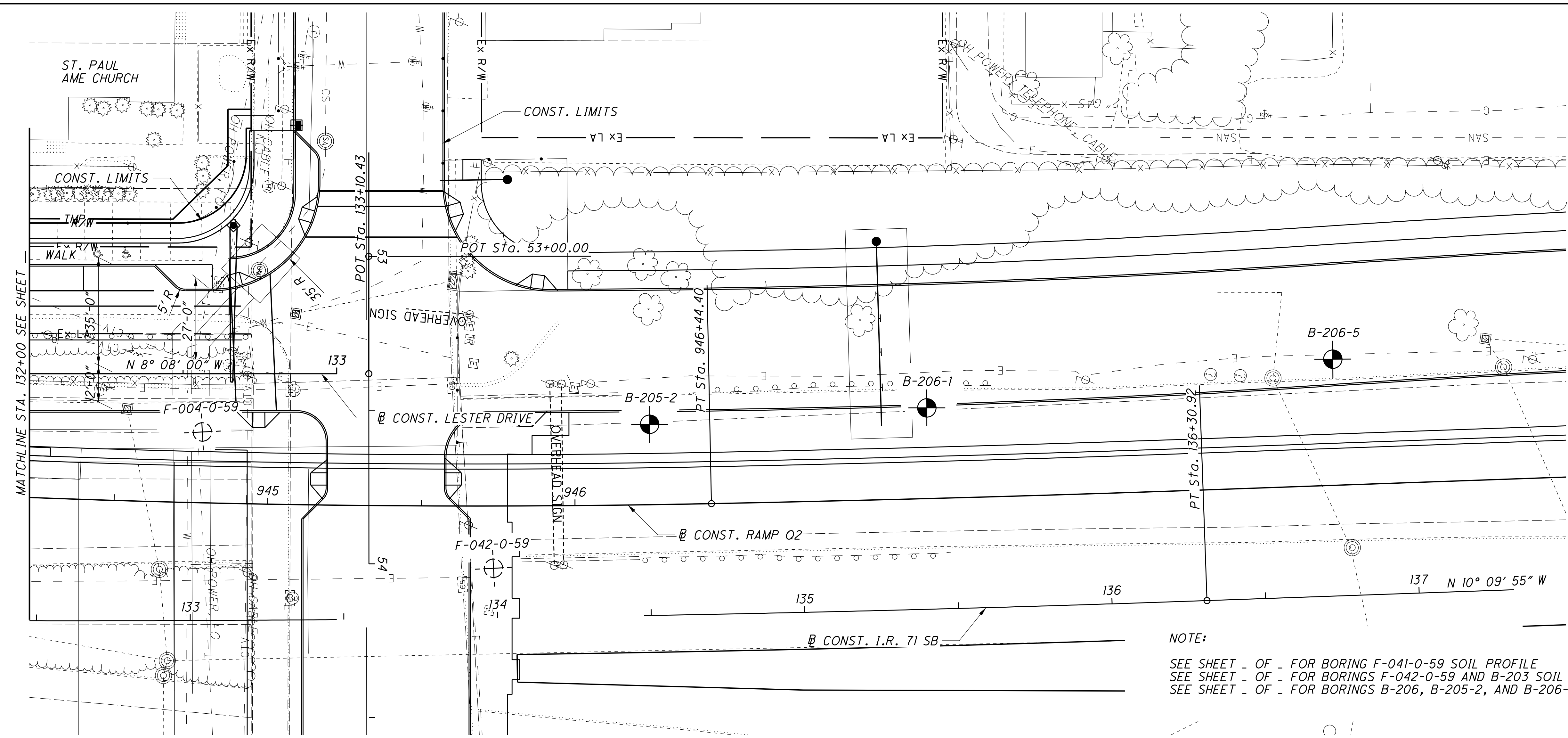
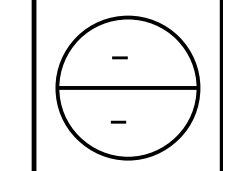


DRAWN N.K.S.
CHECKED NT

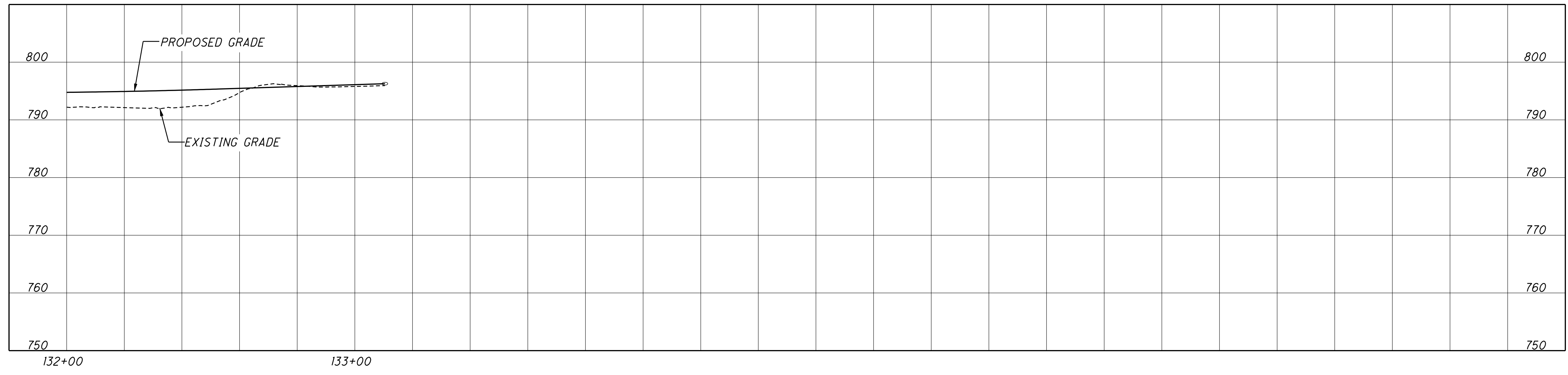
PLAN AND PROFILE - LESTER DRIVE
STA. 132+00.00 TO STA. 133+10.43

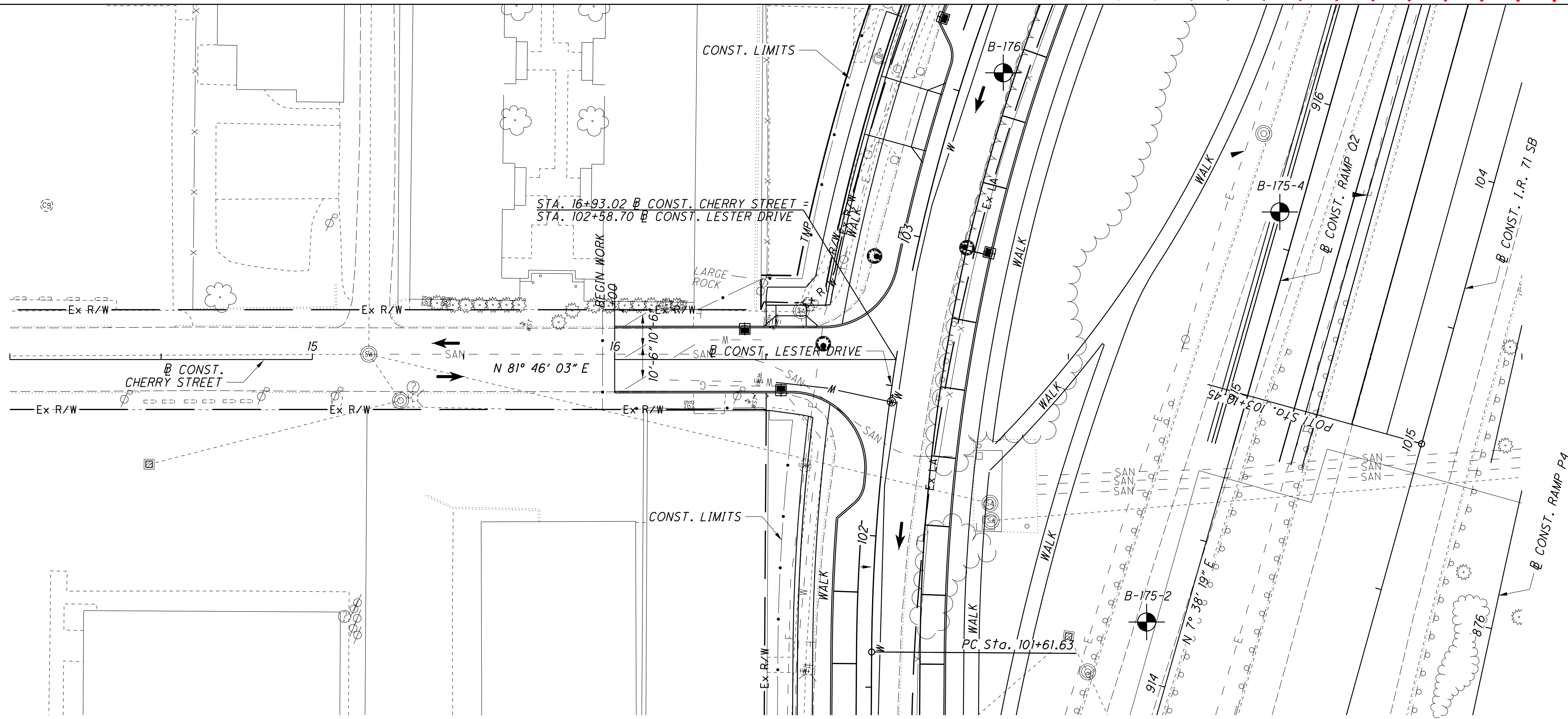
FRA-71-17.14
PID NO. 77371

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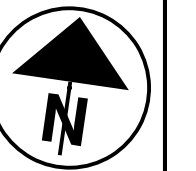
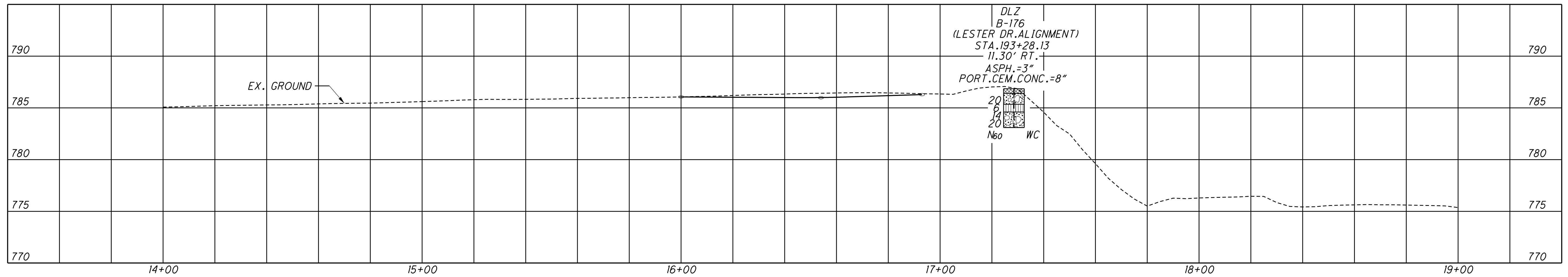


NOTE:
 SEE SHEET - OF - FOR BORING F-041-0-59 SOIL PROFILE
 SEE SHEET - OF - FOR BORINGS F-042-0-59 AND B-203 SOIL PROFILES
 SEE SHEET - OF - FOR BORINGS B-206, B-205-2, AND B-206-5 SOIL PROFILES





NOTE:
 SEE SHEET - OF - FOR BORING B-175-1 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-175-2 SOIL PROFILE

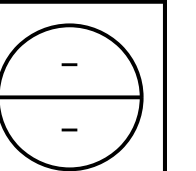


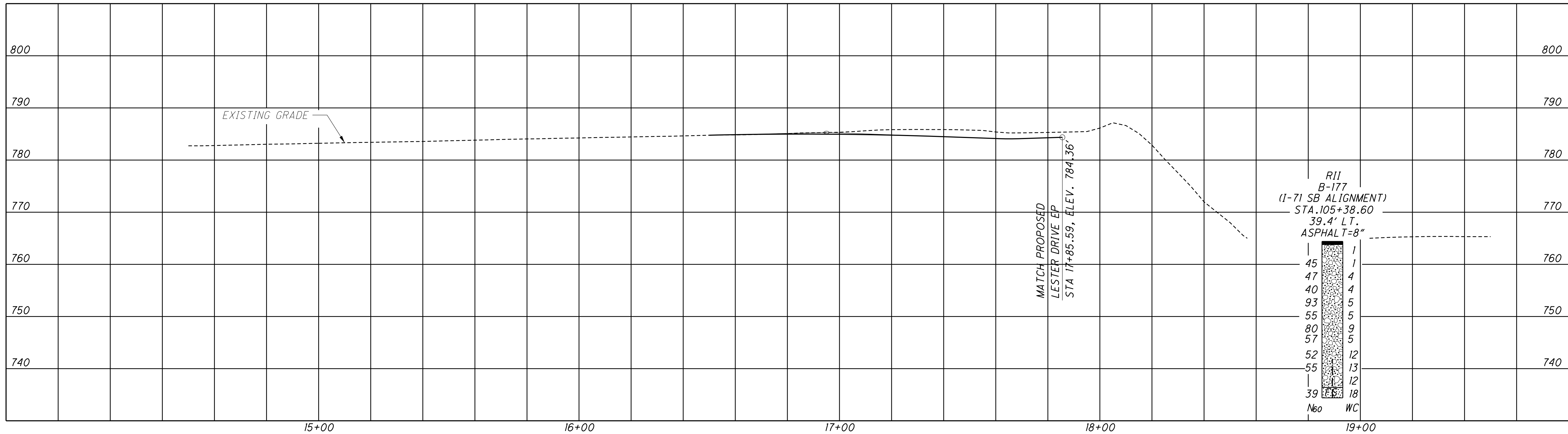
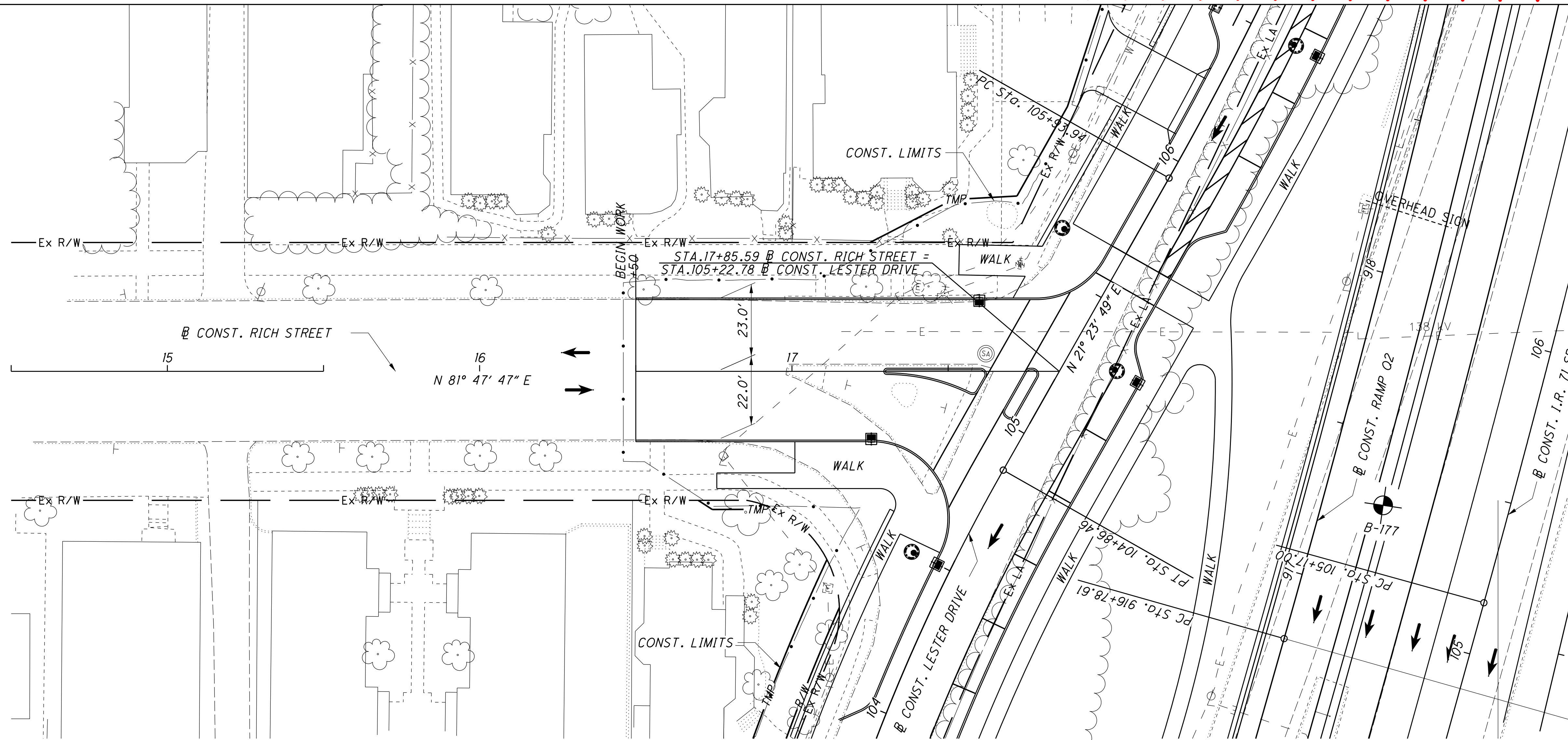
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 HORIZONTAL
 SCALE IN FEET

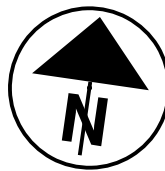
CALCULATED
 KBE
 CHECKED
 BAL

PLAN AND PROFILE - CHERRY STREET
 STA. 16+00.00 TO STA. 16+93.02

FRA-71-17.14
PID NO. 77371







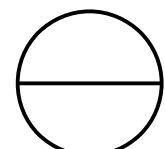
0 20 40
HORIZONTAL SCALE IN FEET

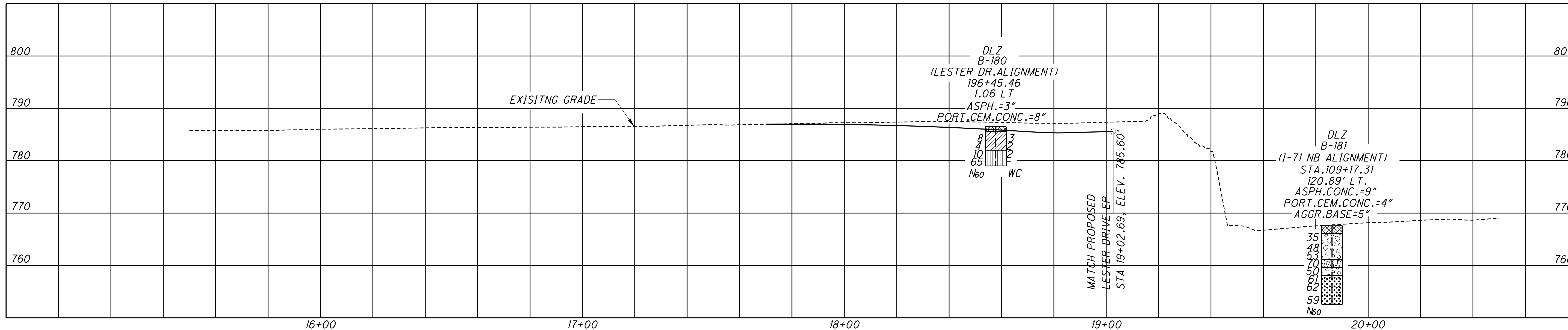
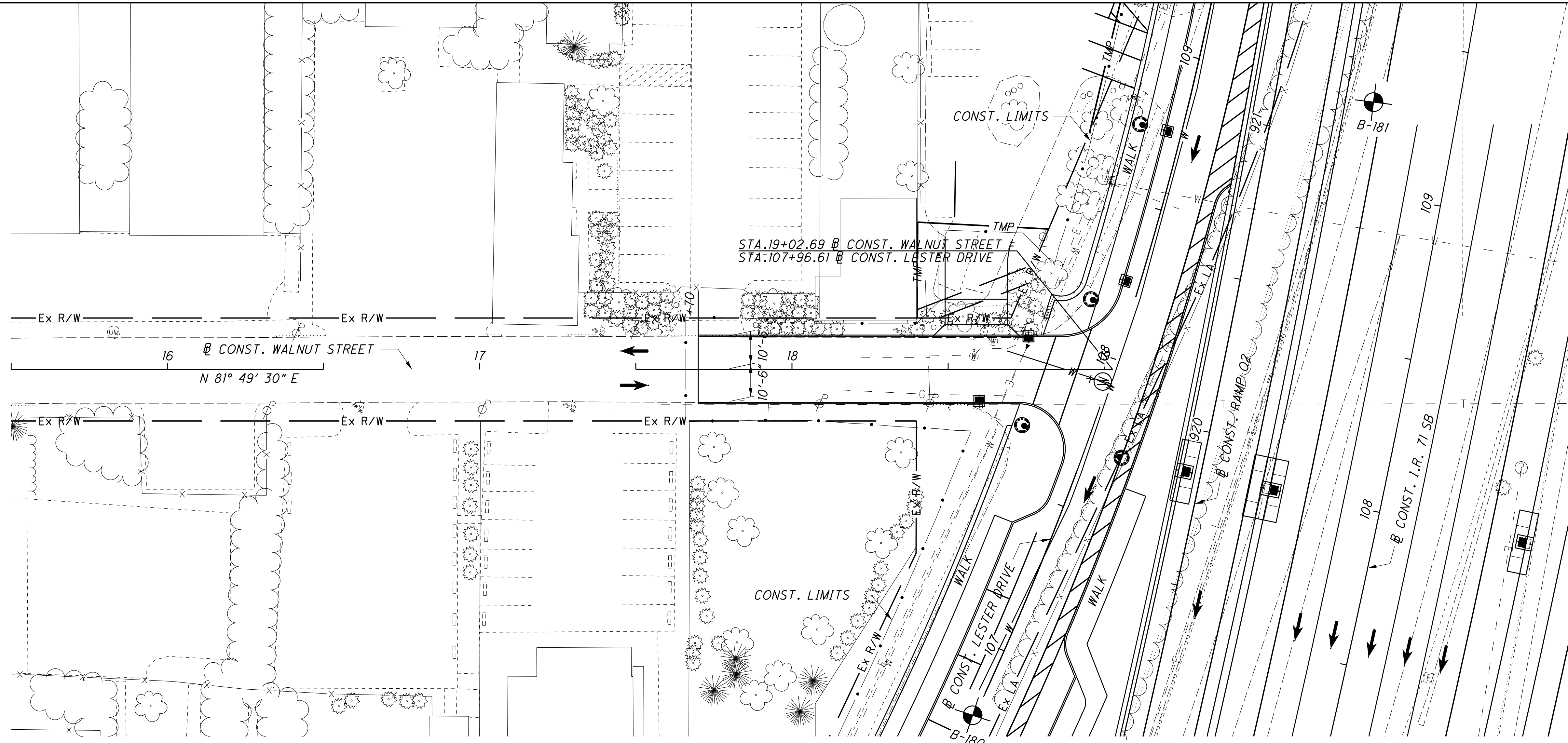
CALCULATED
CHECKED

PLAN AND PROFILE - RICH STREET
STA. 14+50.00 TO STA. 16+93.02

FRA-71-17.14
PID NO. 77371

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PLAN AND PROFILE - WALNUT STREET

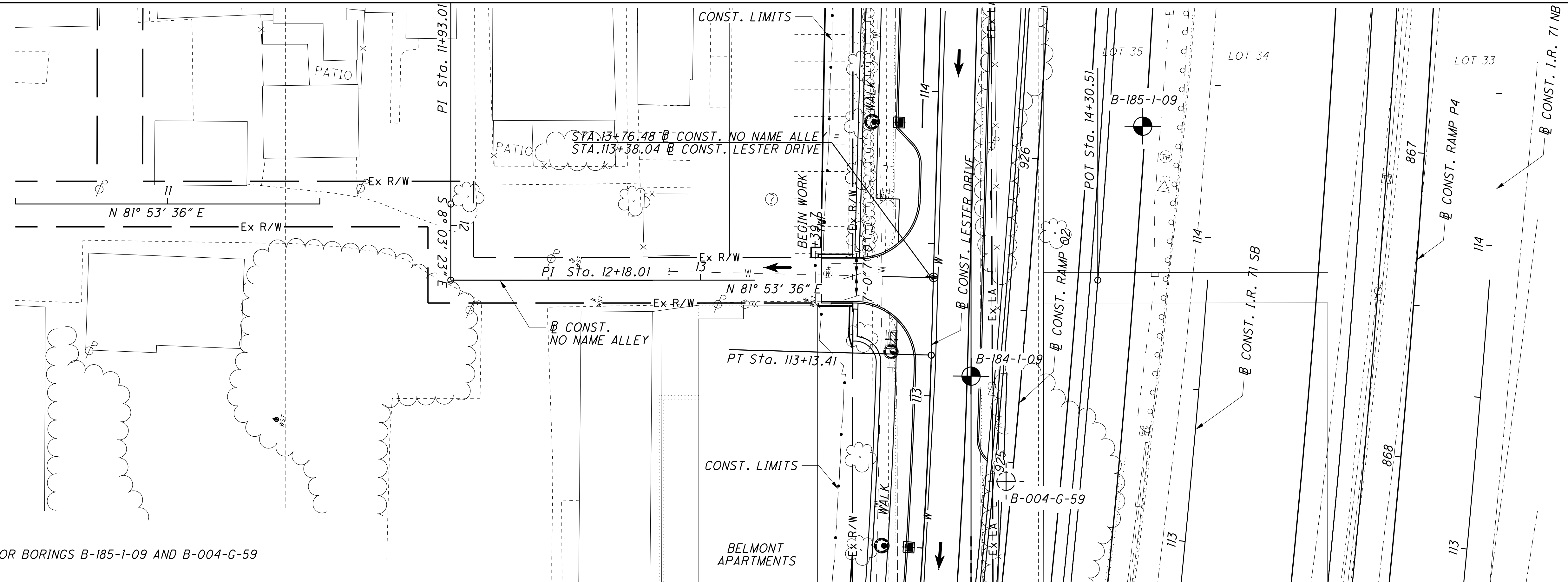
STA. 17+70.00 TO STA. 19+02.69

FRA-71-17.14

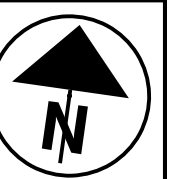
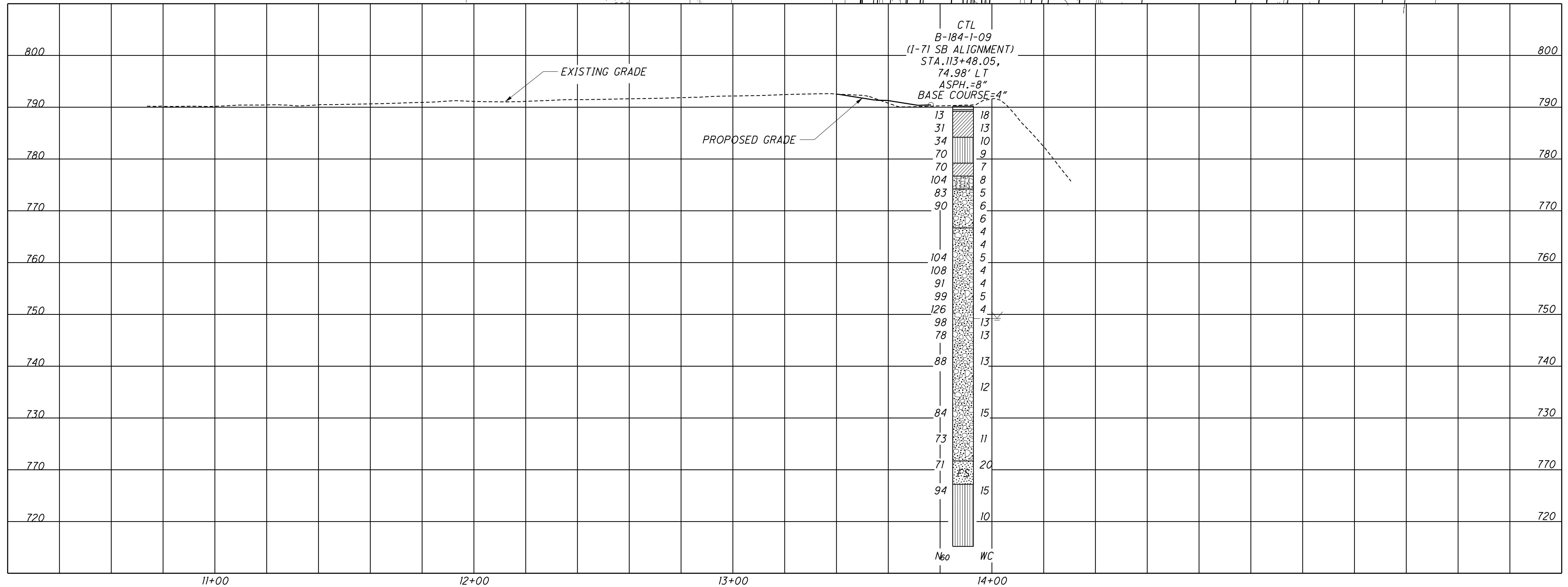
CALCULATED

CHECKED

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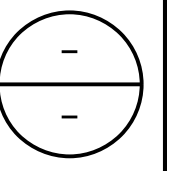
NOTE:
SEE SHEET _ OF _ FOR BORINGS B-185-1-09 AND B-004-G-59
SOIL PROFILES

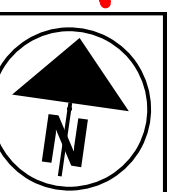
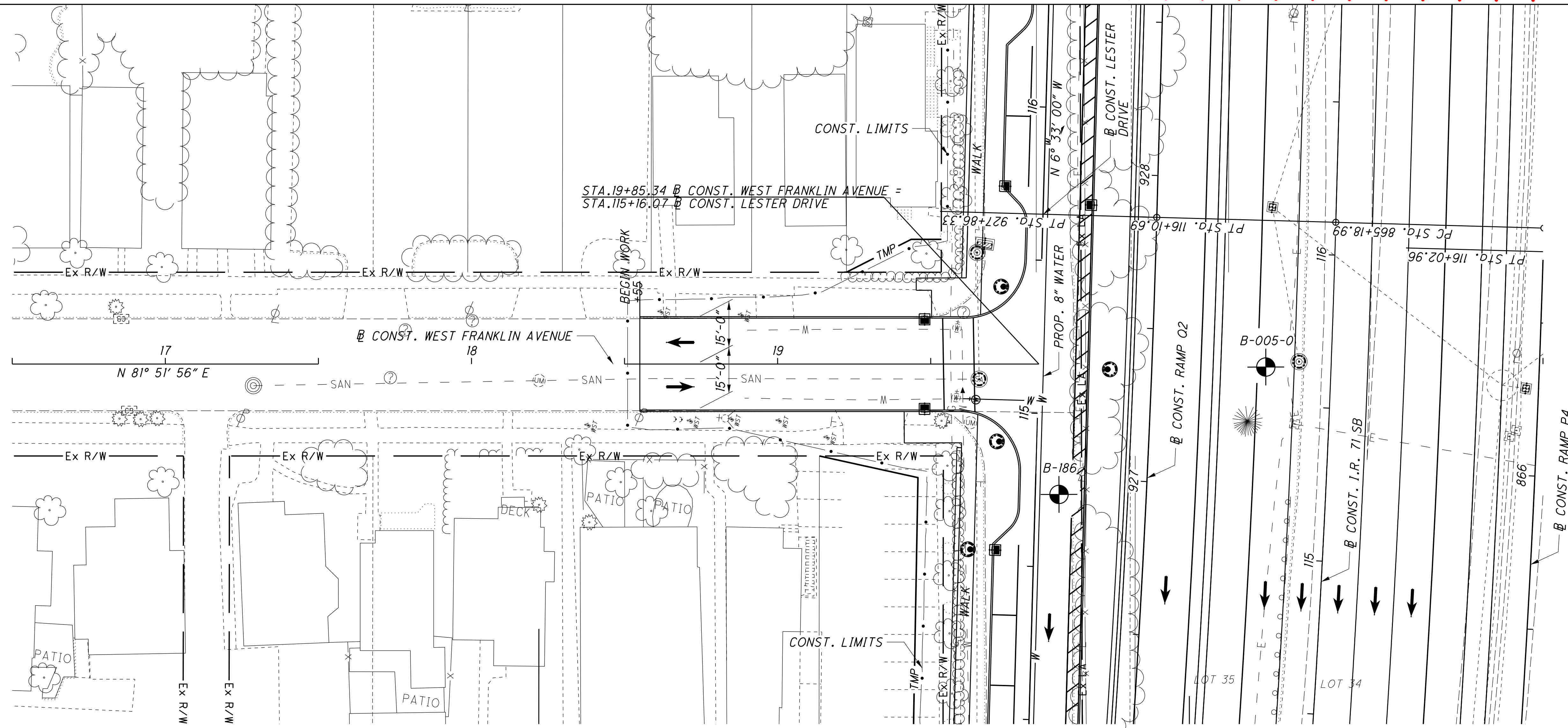


CALCULATED
CHECKED

PLAN AND PROFILE - NO NAME ALLEY
STA 13+39.70 TO STA 13+76.48

FRA-71-17.14



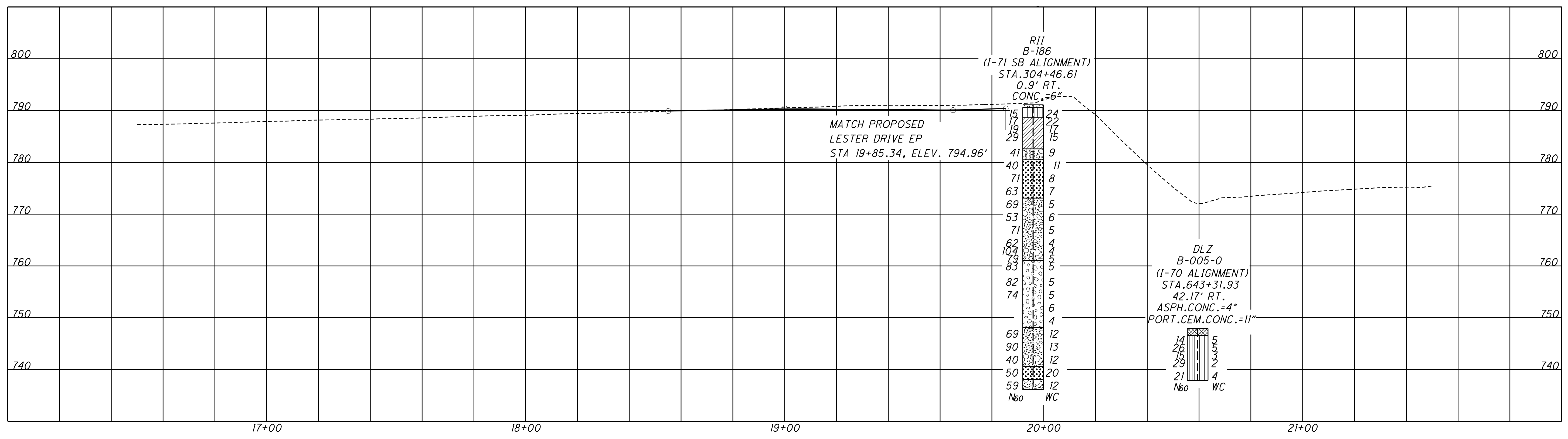
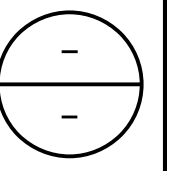


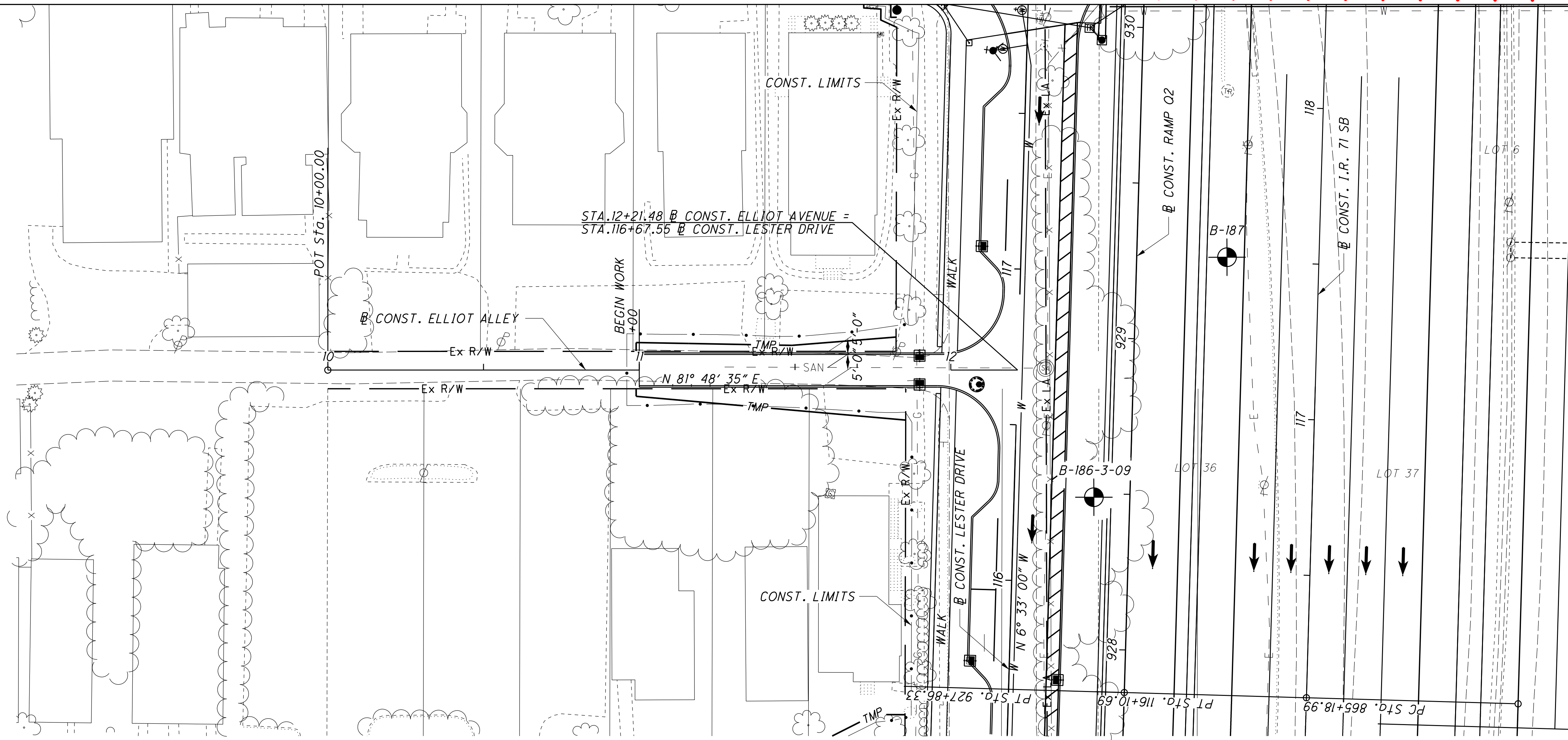
CALCULATED
 KBE
 CHECKED
 BAL

**PLAN AND PROFILE - WEST FRANKLIN AVENUE
 STA. 18+55.00 TO STA. 19+85.34**

FRA-71-17.14

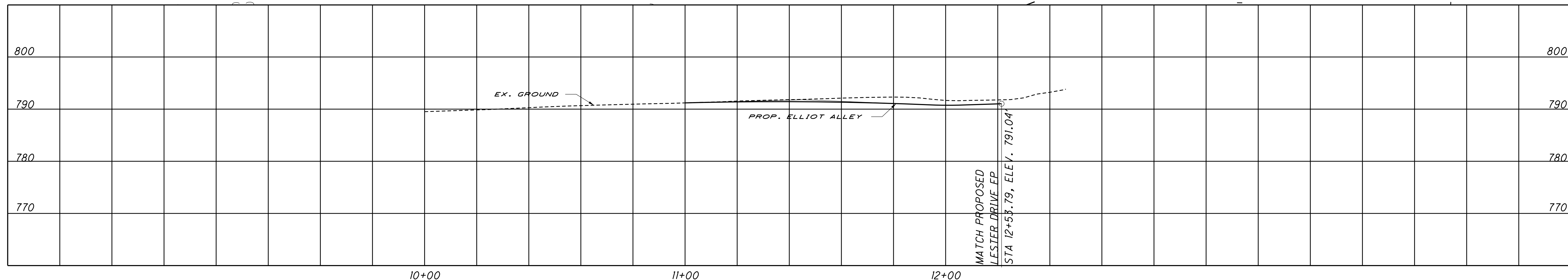
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NOTE:

SEE SHEET - OF - FOR BORING B-187 SOIL PROFILE
 SEE SHEET - OF - FOR BORINGS B-186-3-09 SOIL PROFILE

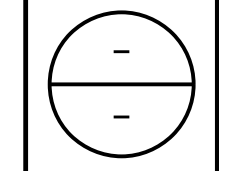


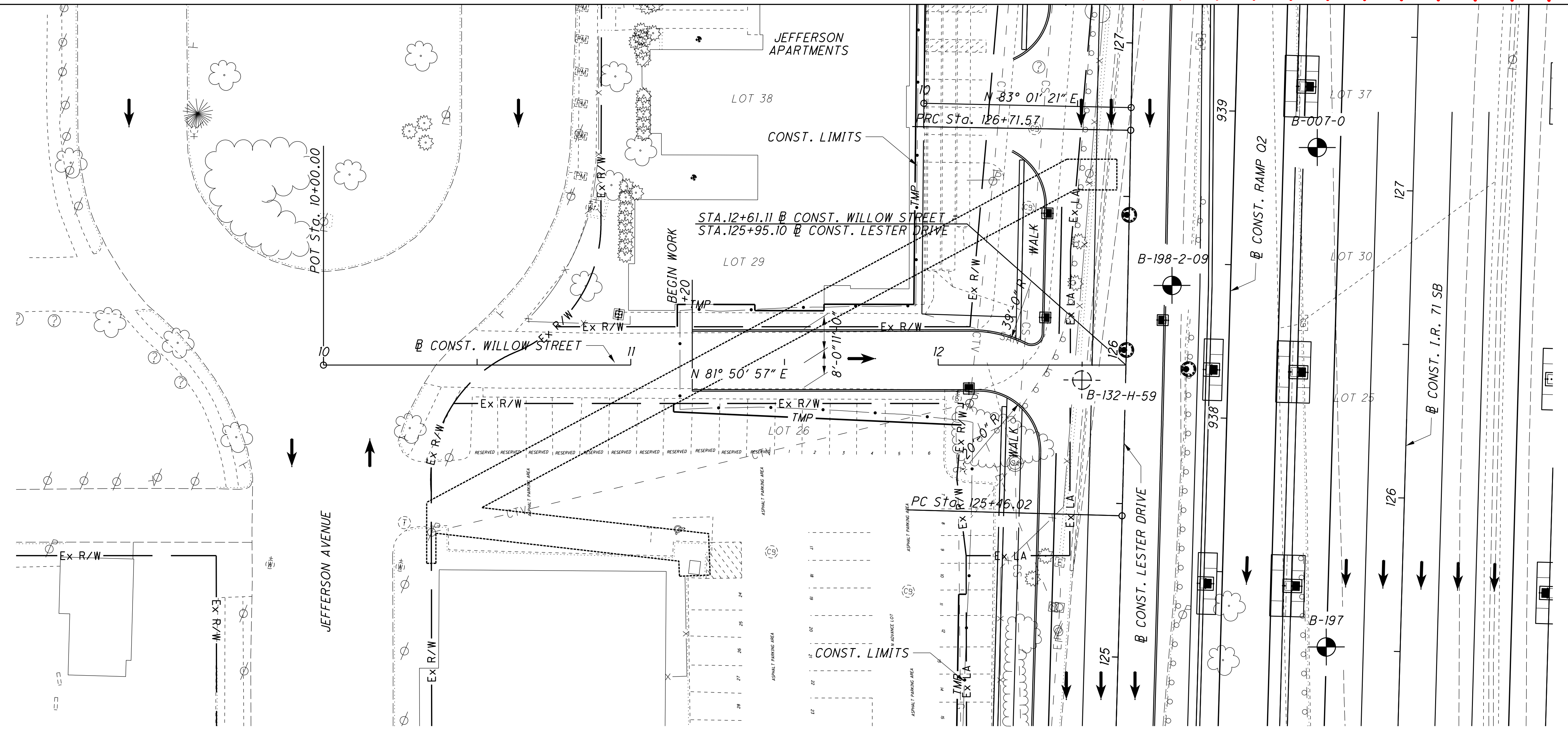
CALCULATED
 KBE
 CHECKED
 BAL

0 20 40
 HORIZONTAL
 SCALE IN FEET

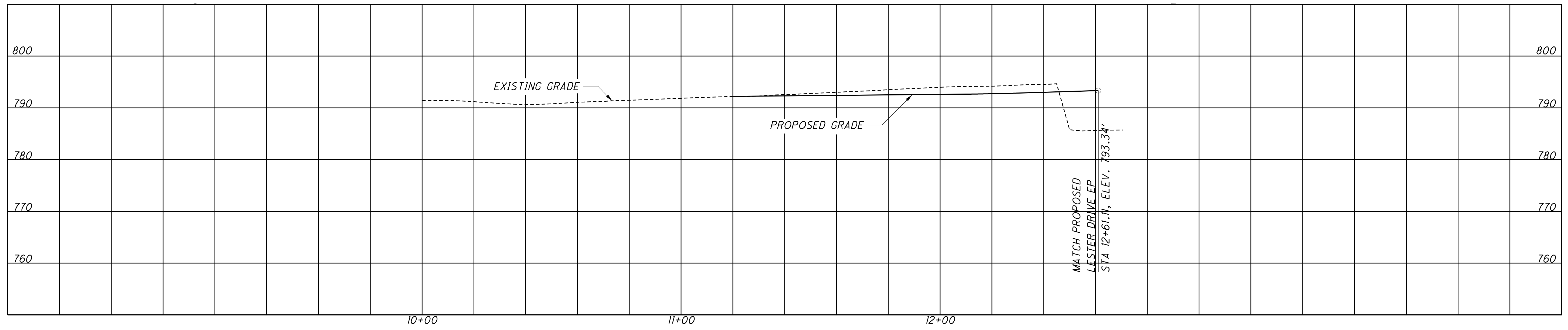
**PLAN AND PROFILE - ELLIOT AVE
 STA. 11+00.00 TO STA. 12+21.48**

FRA-71-17.14





NOTE:
 SEE SHEET - OF - FOR BORING B-198-2-09 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-197 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-007-0 SOIL PROFILE



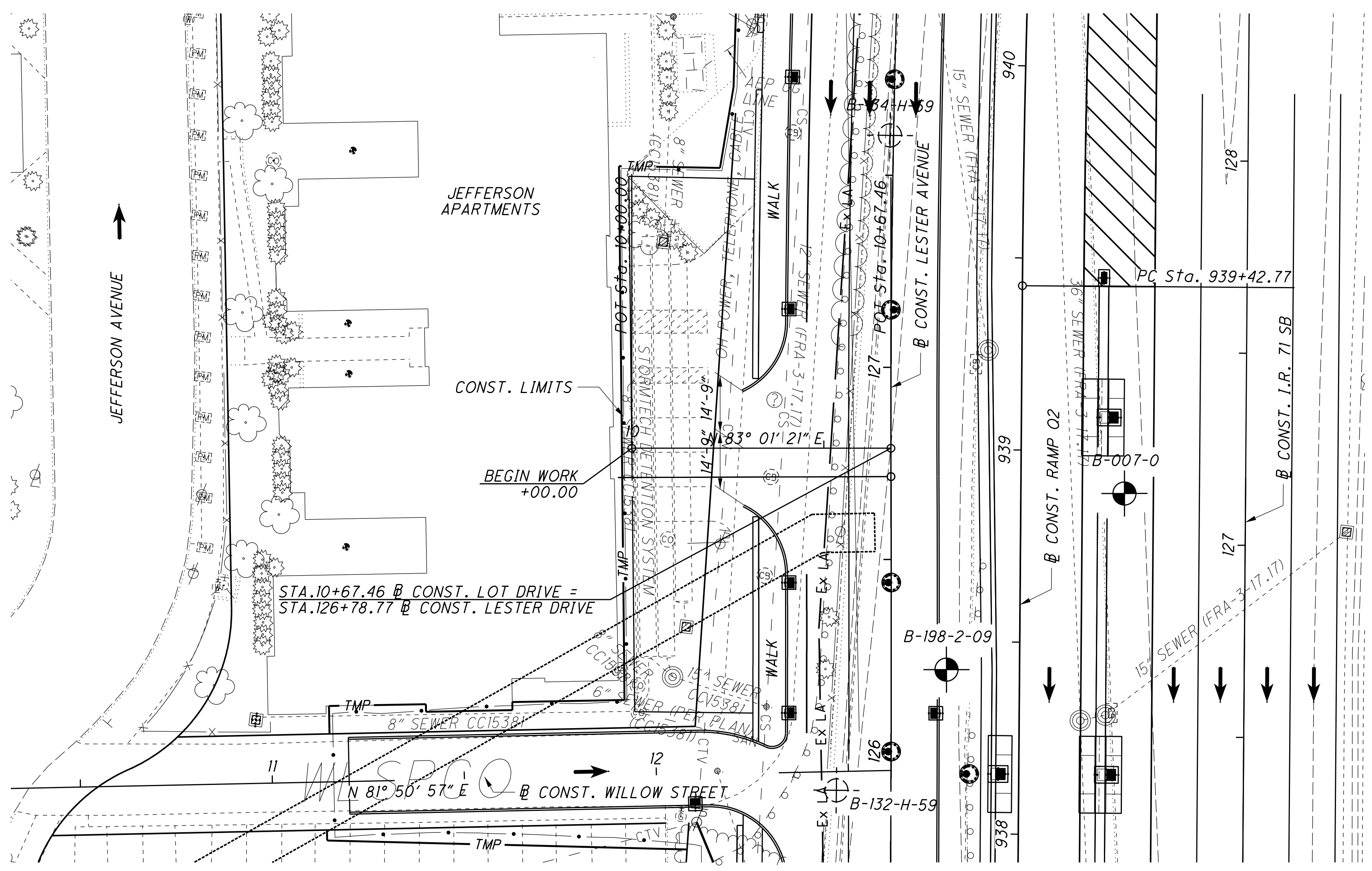
0 20 40
HORIZONTAL SCALE IN FEET

CALCULATED
KBE
CHECKED
BAL

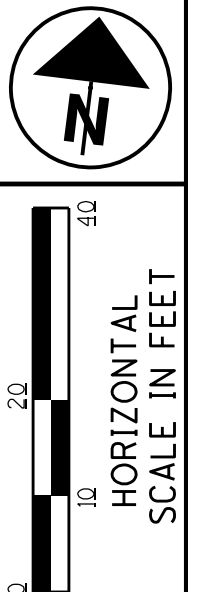
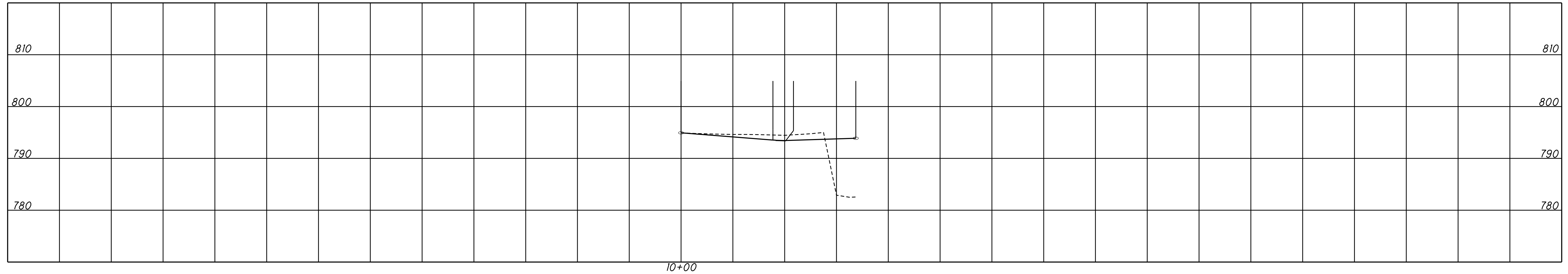
PLAN AND PROFILE - WILLOW STREET
STA. 11+20.00 TO STA. 12+61.11

FRA-71-17.14

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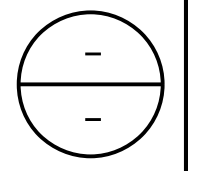
NOTE:
 SEE SHEET - OF - FOR BORINGS B-134-H-59 AND B-132-H-59 SOIL PROFILES
 SEE SHEET - OF - FOR BORING B-003-0 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-198-2-09 SOIL PROFILE

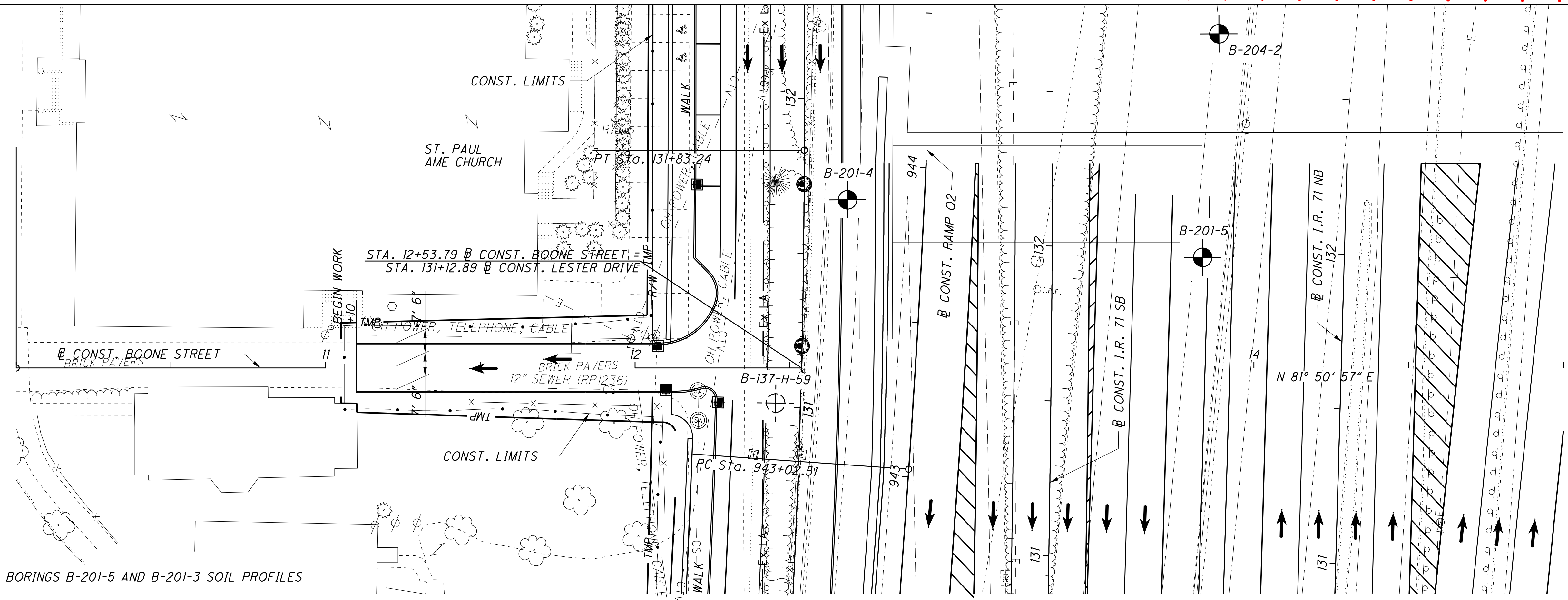


CALCULATED _____
 CHECKED _____

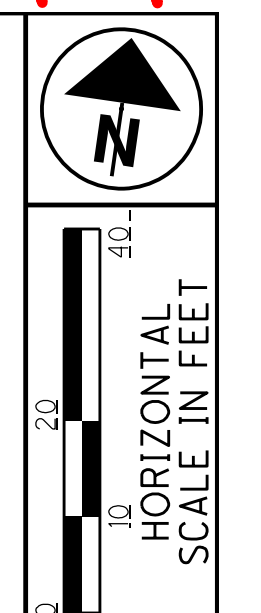
**PLAN AND PROFILE - LOT DRIVE
 STA. 10+00.00 TO STA. 10+67.46**

FRA-71-17.14



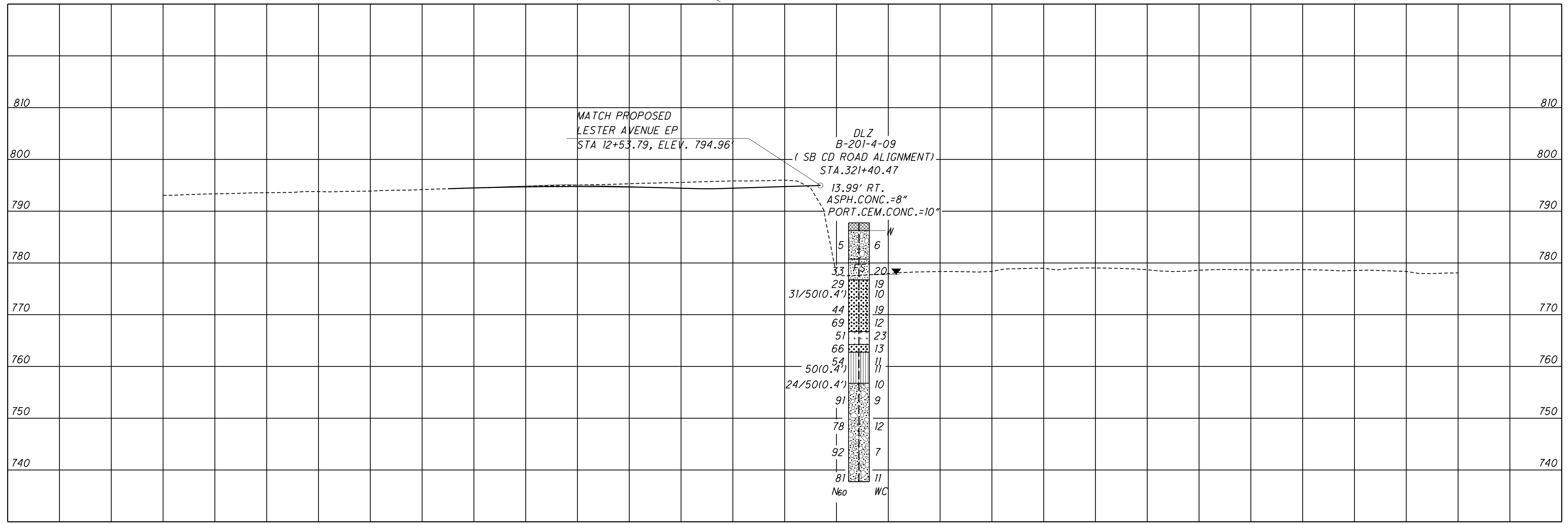


NOTE:
SEE SHEET _ OF _ FOR BORINGS B-201-5 AND B-201-3 SOIL PROFILES

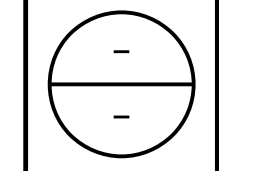


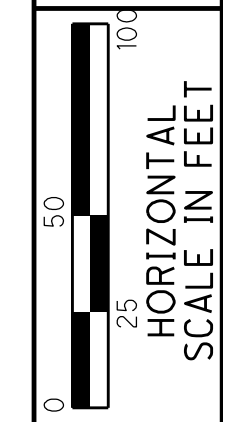
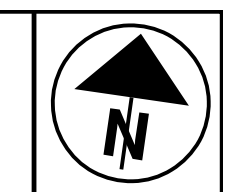
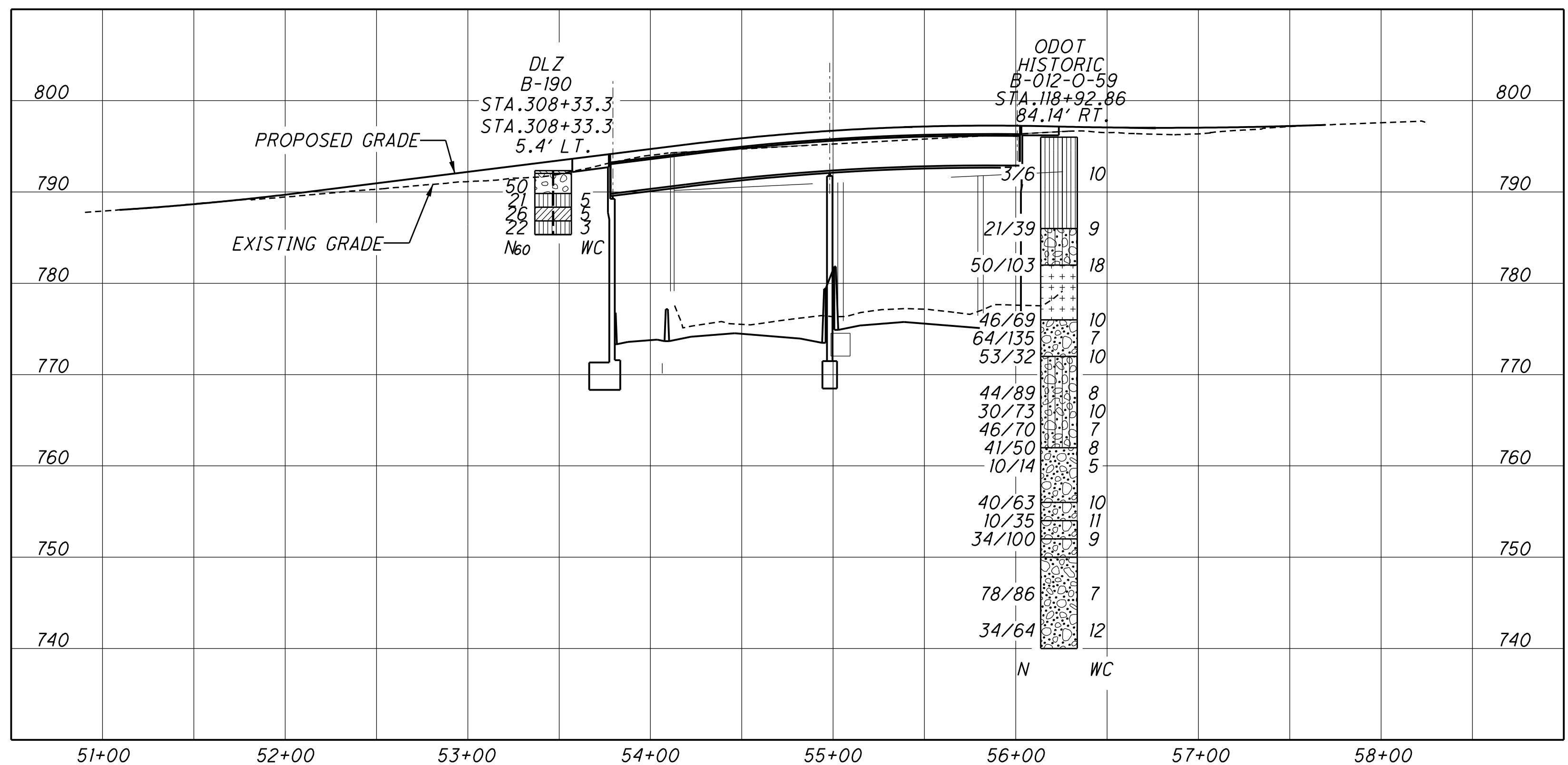
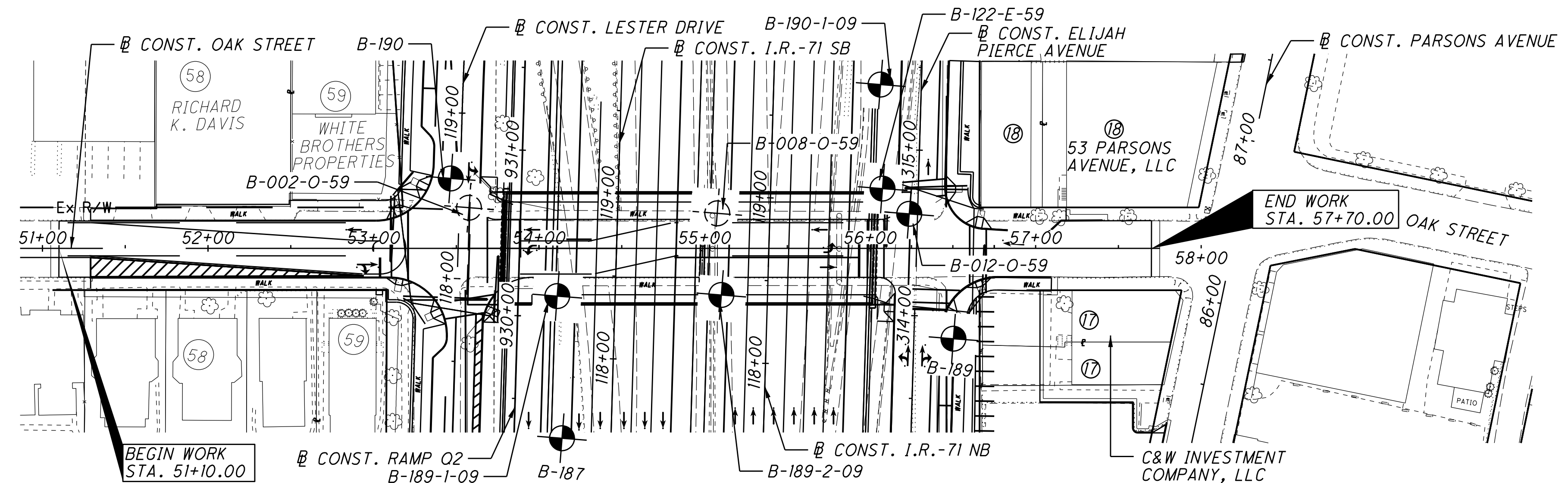
CALCULATED
CHECKED

PLAN AND PROFILE - BOONE STREET
STA. 11+10.00 TO STA. 12+53.79



FRA-71-17.14

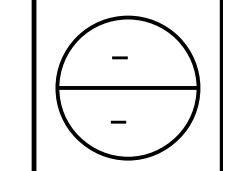


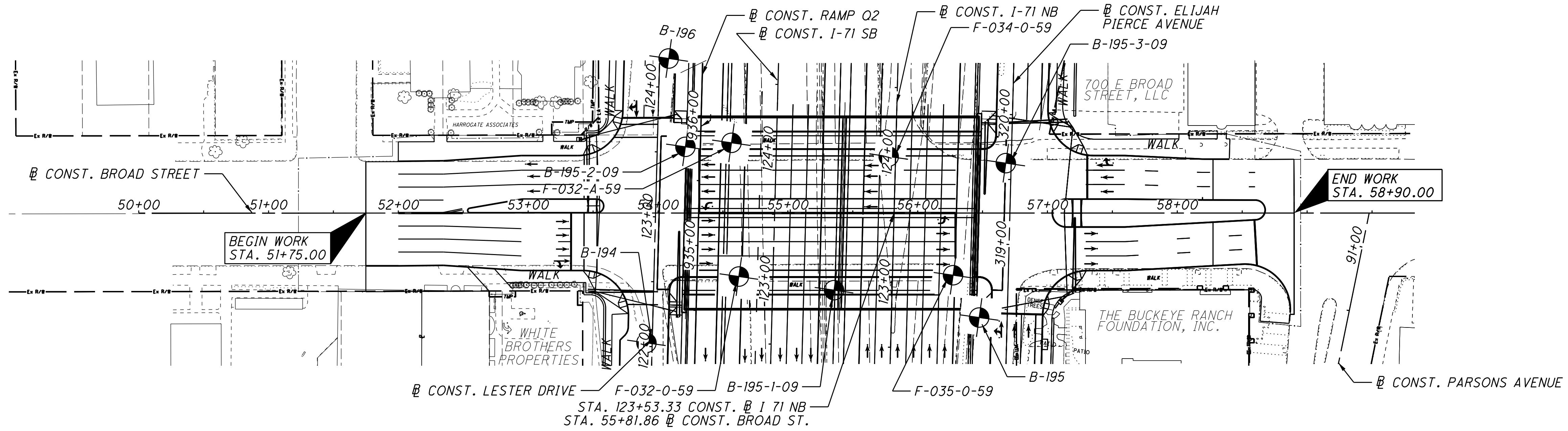


DRAWN BY: N.K.S.
CHECKED BY: NT

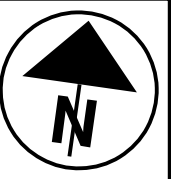
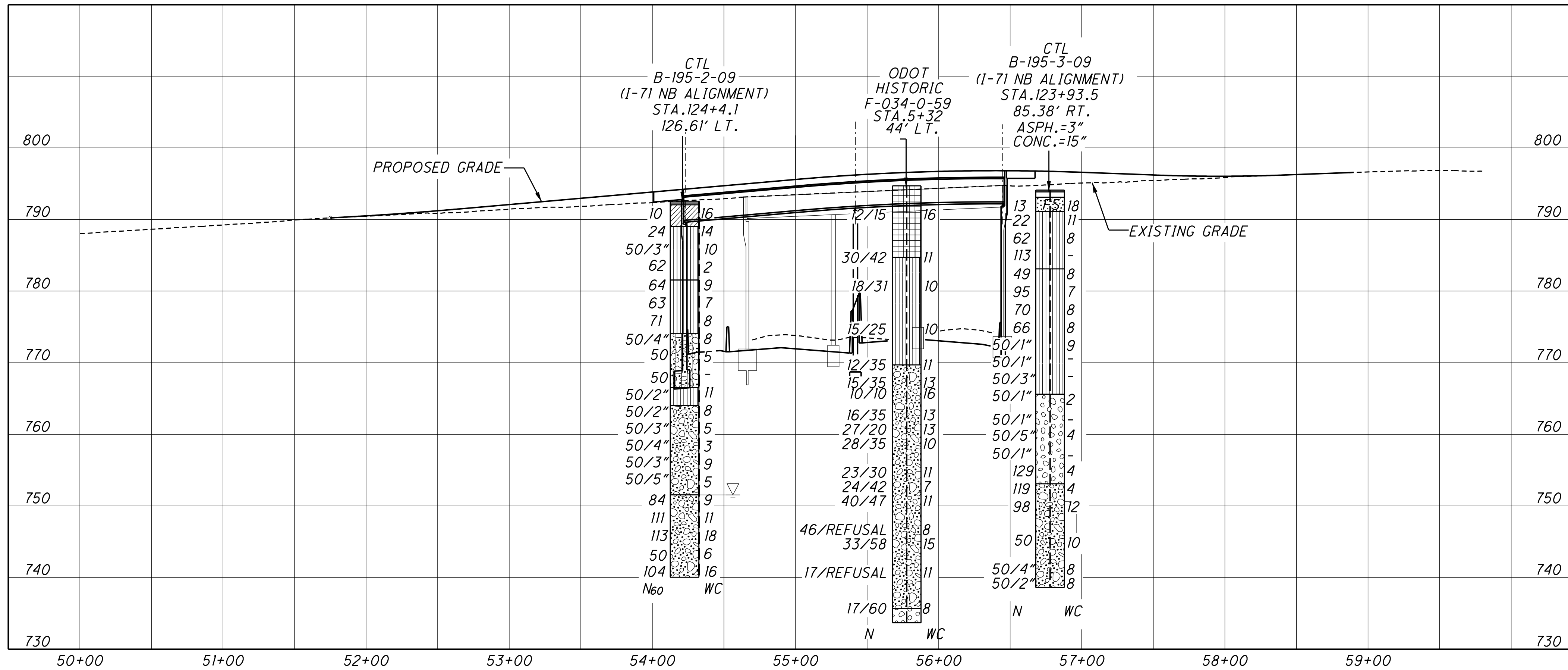
PLAN AND PROFILE - OAK STREET
STA. 51+10.00 TO END WORK STA. 57+70.00

FRA-71-17.14
PID NO. 77371





NOTE:
 SEE SHEET _ OF _ FOR BORING B-196 SOIL PROFILE
 SEE SHEET _ OF _ FOR BORINGS F-032-0-59, B-195-1-09, AND B-195 SOIL PROFILES

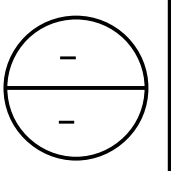


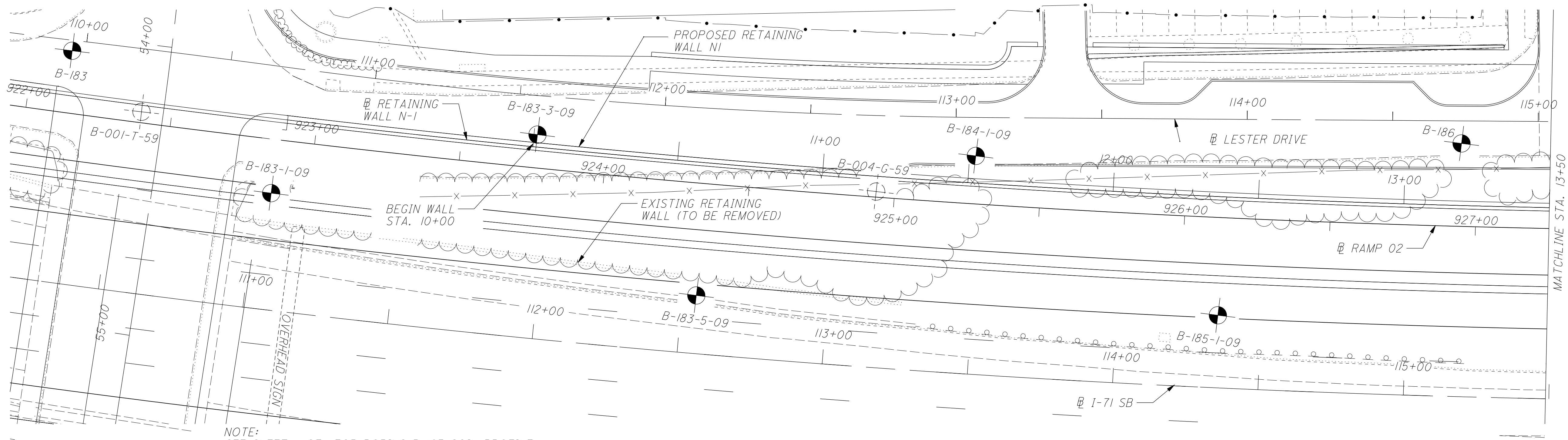
0 25 50 75 100
 HORIZONTAL SCALE IN FEET

DRAWN BY N.K.S.
 CHECKED BY NT

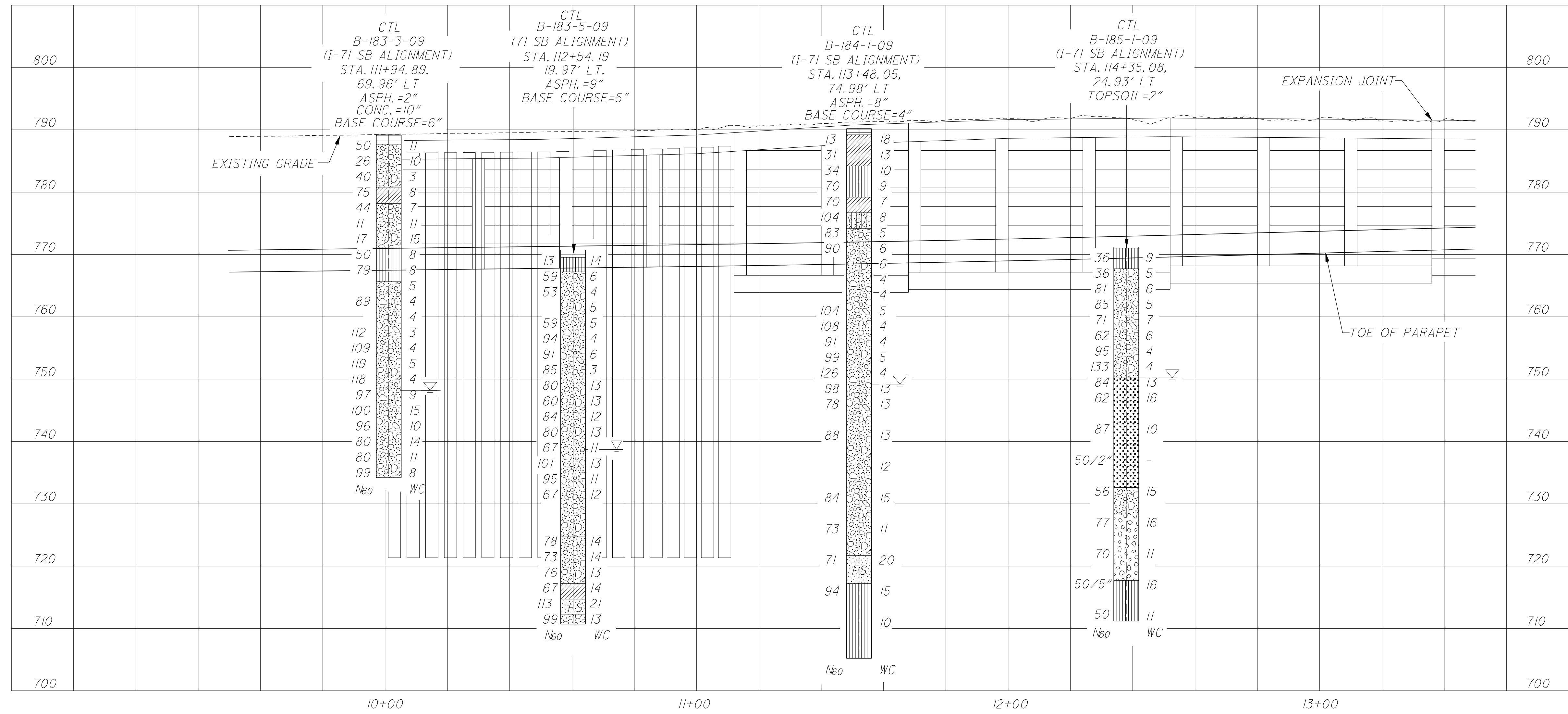
PLAN AND PROFILE - BROAD STREET
 STA. 51+75.00 TO STA. 58+90

FRA-71-17.14
PID NO. 77371





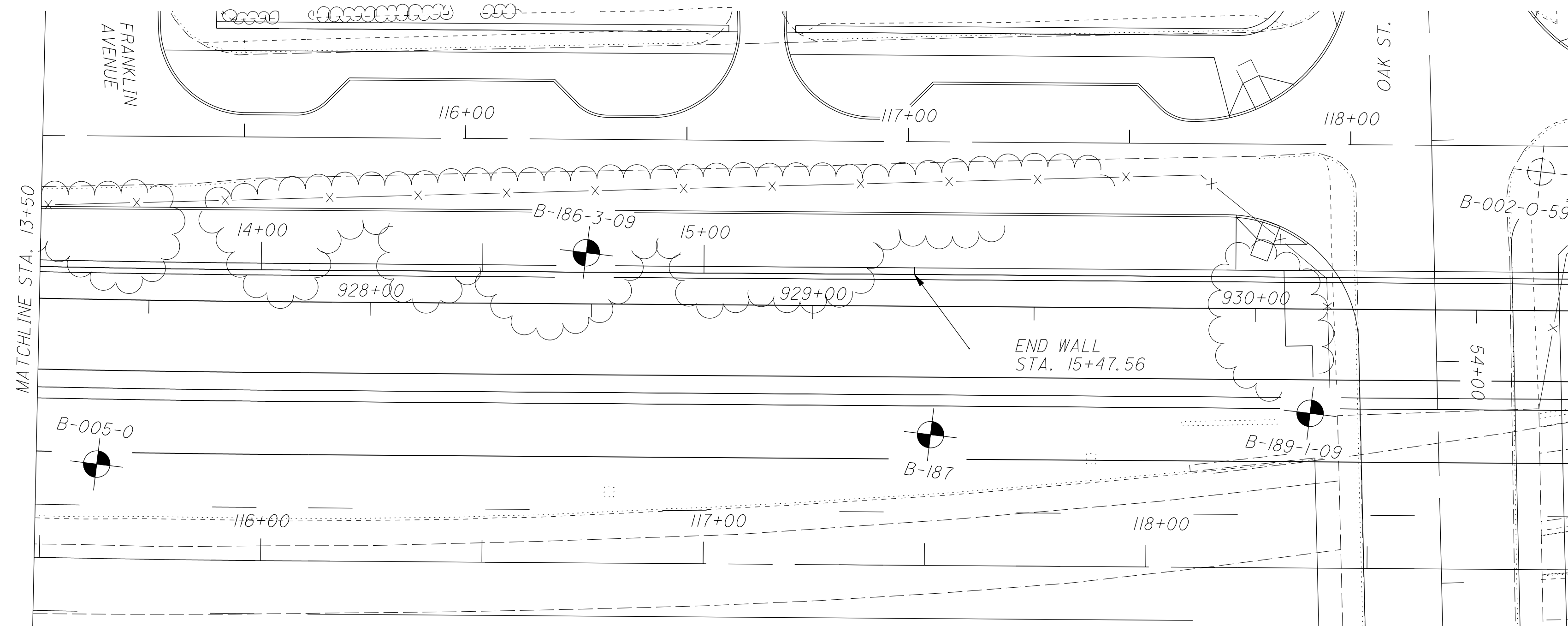
NOTE:
 SEE SHEET - OF - FOR BORING B-183 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-183-1-09 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-186 SOIL PROFILE



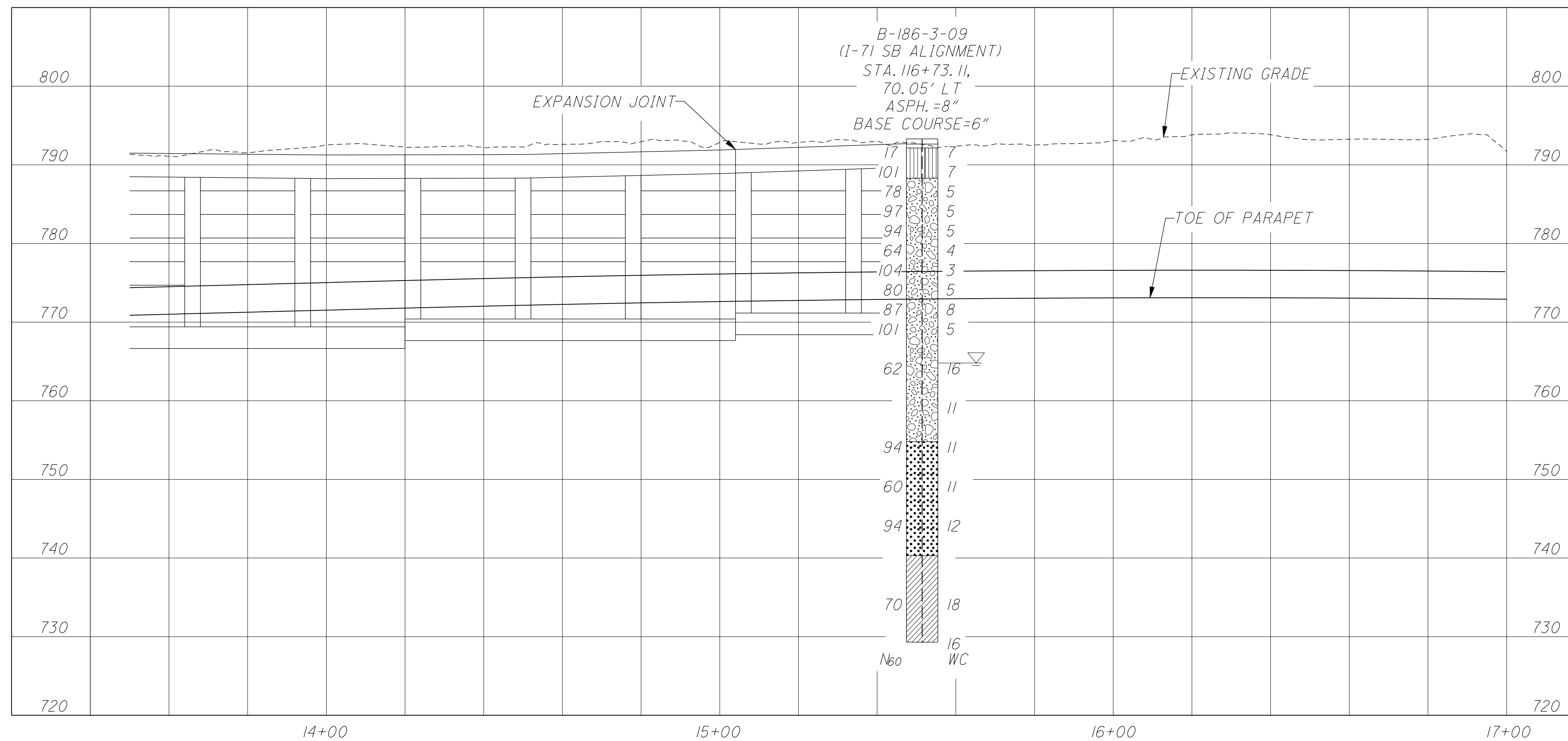
**PLAN AND PROFILE - I-71 EAST TRENCH
 N1 RETAINING WALL
 STA. 10+00 TO STA. 13+50**

**FRA-71-17.14
 PID NO. 77371**

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NOTE:
 SEE SHEET - OF - FOR BORING B-187 SOIL PROFILE
 SEE SHEET - OF - FOR BORING B-189-1-09 SOIL PROFILE



**PLAN AND PROFILE - I-71 EAST TRENCH
 N1 RETAINING WALL
 STA. 13+50 TO STA. 15+47.56**

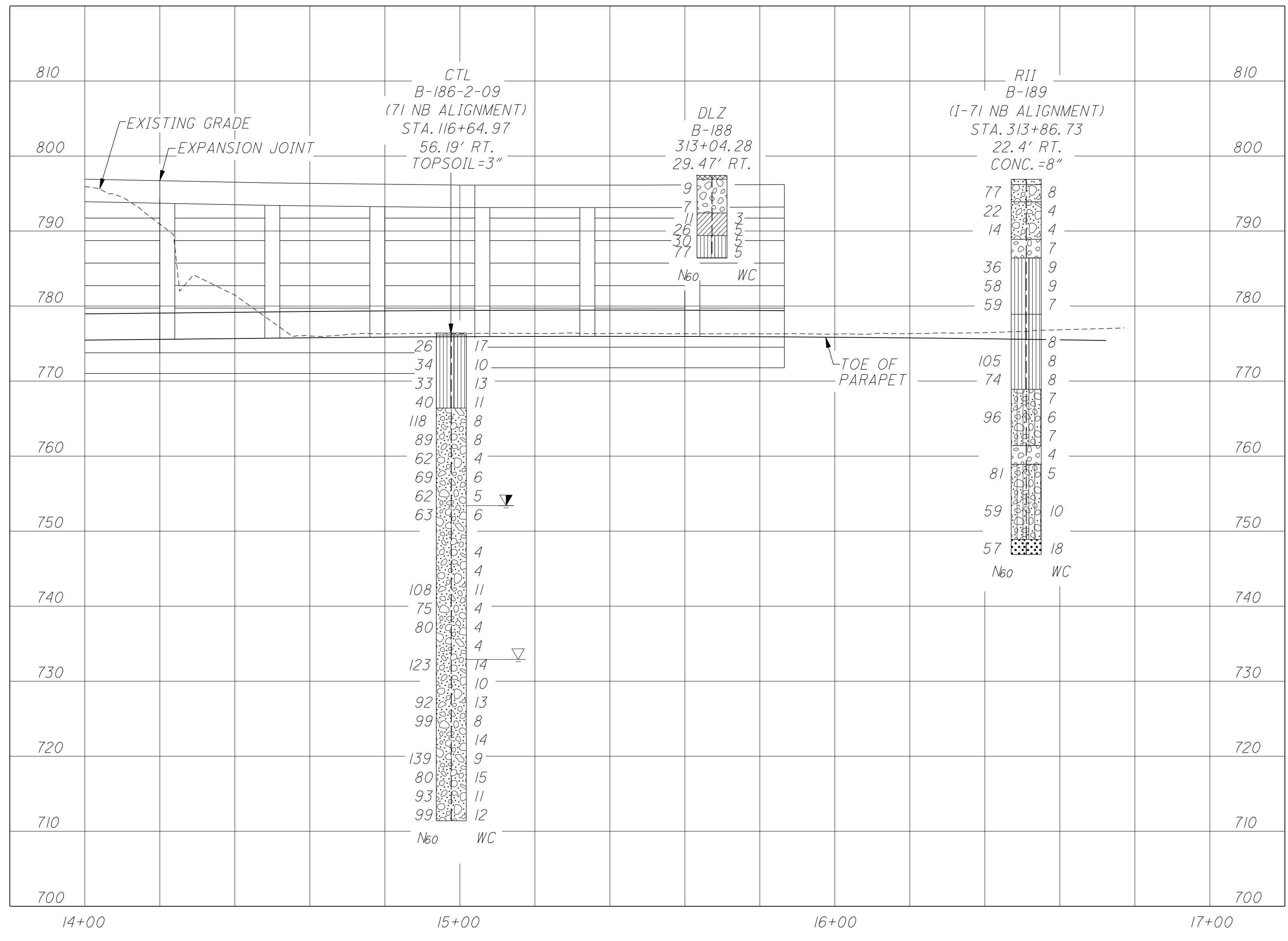
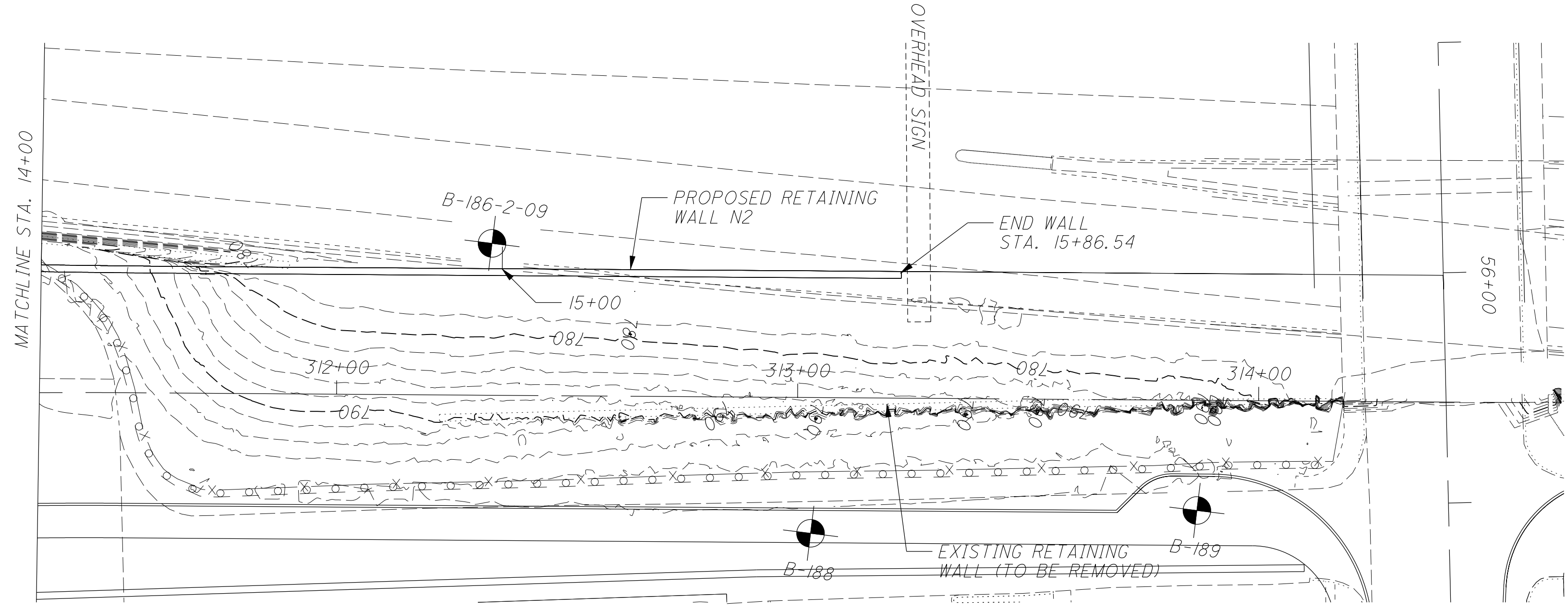
**FRA-71-17.14
 PID NO. 77371**

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DRAWN: N.K.S.
 CHECKED: NT

HORIZONTAL SCALE: 1" = 40'
 SCALE: IN FEET

N

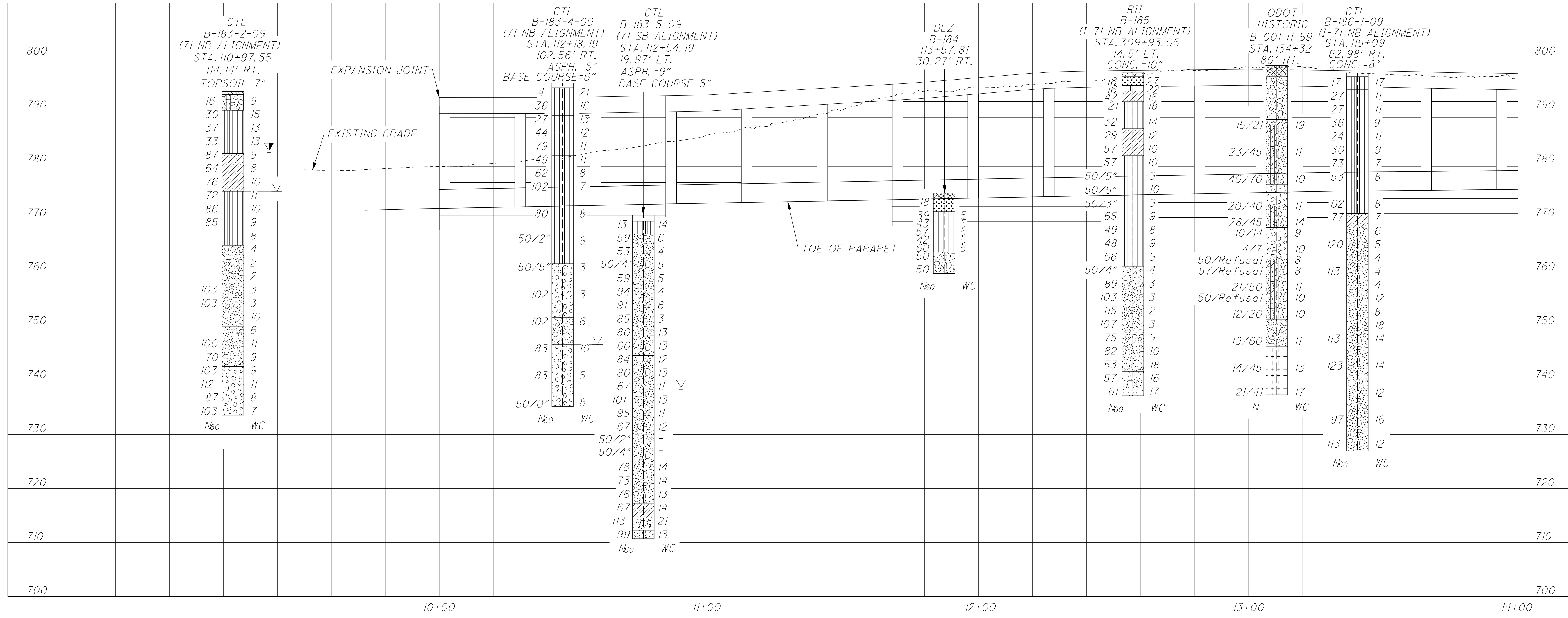
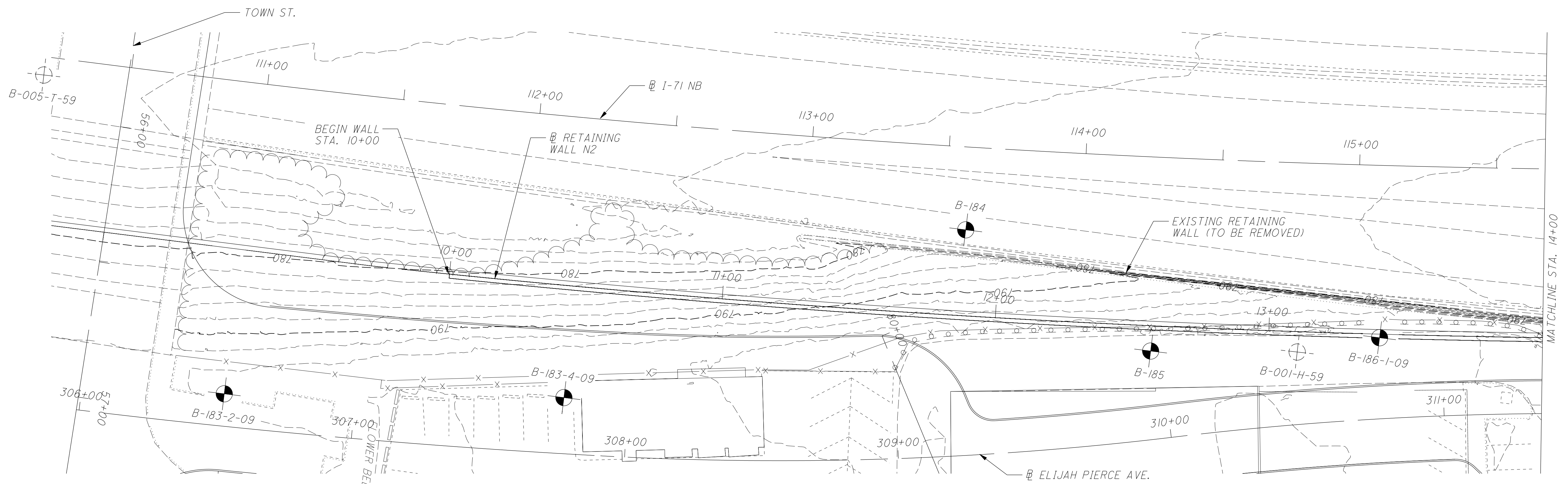


DRAWN	N.K.S.
CHECKED	NT

PLAN AND PROFILE - I-71 EAST TRENCH
N2 RETAINING WALL
STA. 14+00 TO STA. 15+86.54

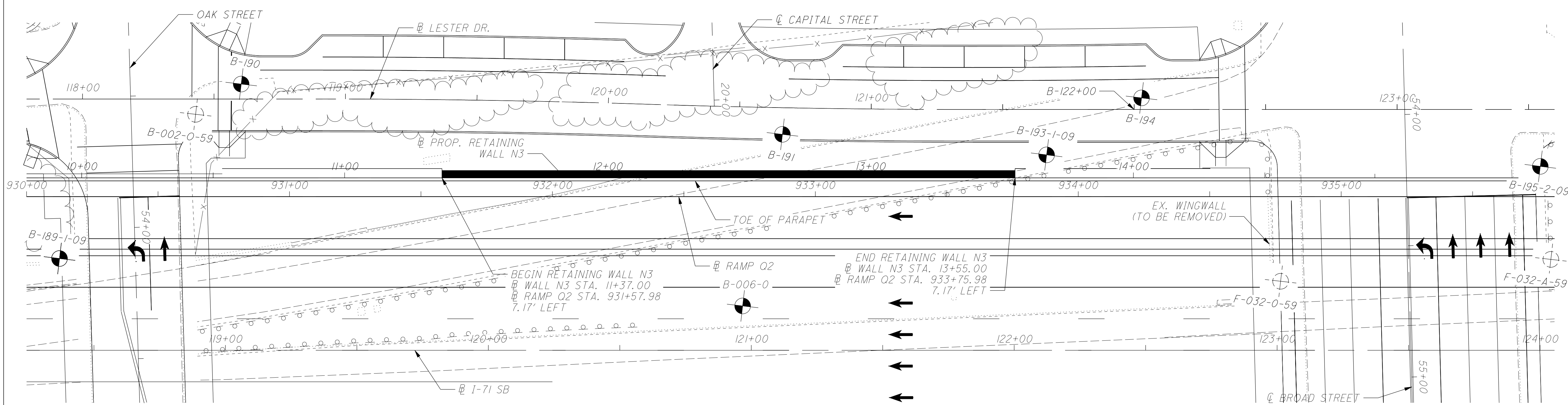
FRA-71-17.14
PID NO. 77371

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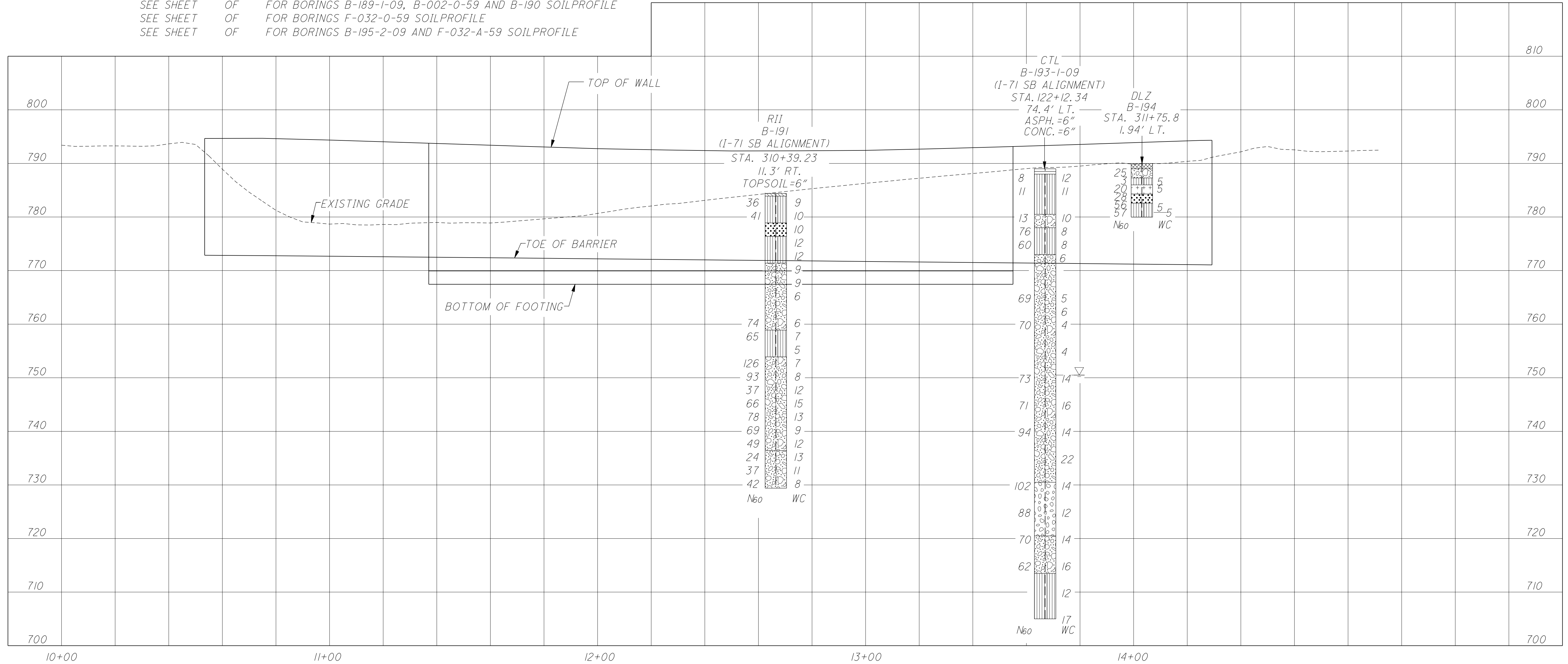


PLAN AND PROFILE - I-71 EAST TRENCH N2 RETAINING WALL STA. 10+00 TO STA. 14+00

**FRA-71-17.14
PID NO. 77371**



NOTE:
 SEE SHEET OF FOR BORINGS B-189-1-09, B-002-0-59 AND B-190 SOILPROFILE
 SEE SHEET OF FOR BORINGS F-032-0-59 SOILPROFILE
 SEE SHEET OF FOR BORINGS B-195-2-09 AND F-032-A-59 SOILPROFILE



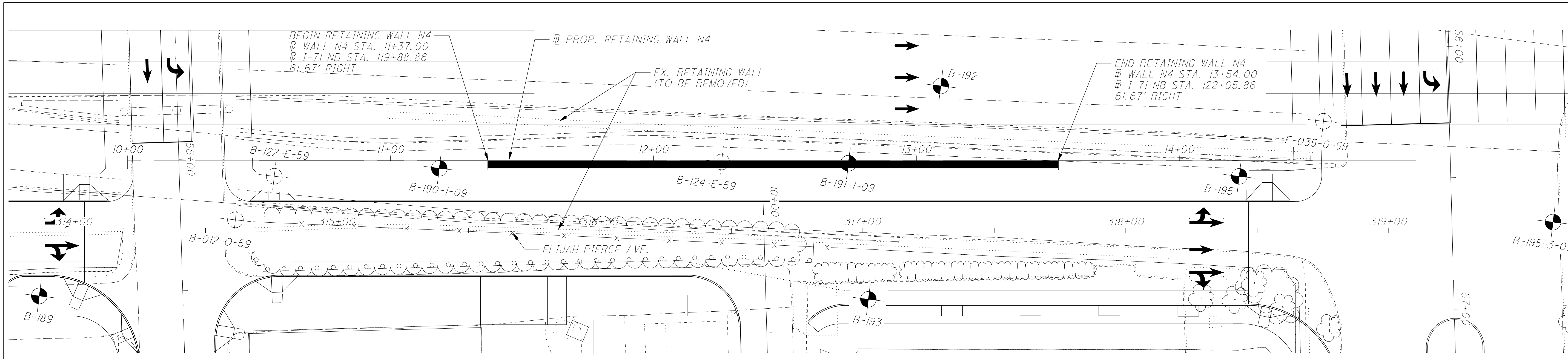
HORIZONTAL SCALE IN FEET

DRAWN: N.K.S.
 CHECKED: NT

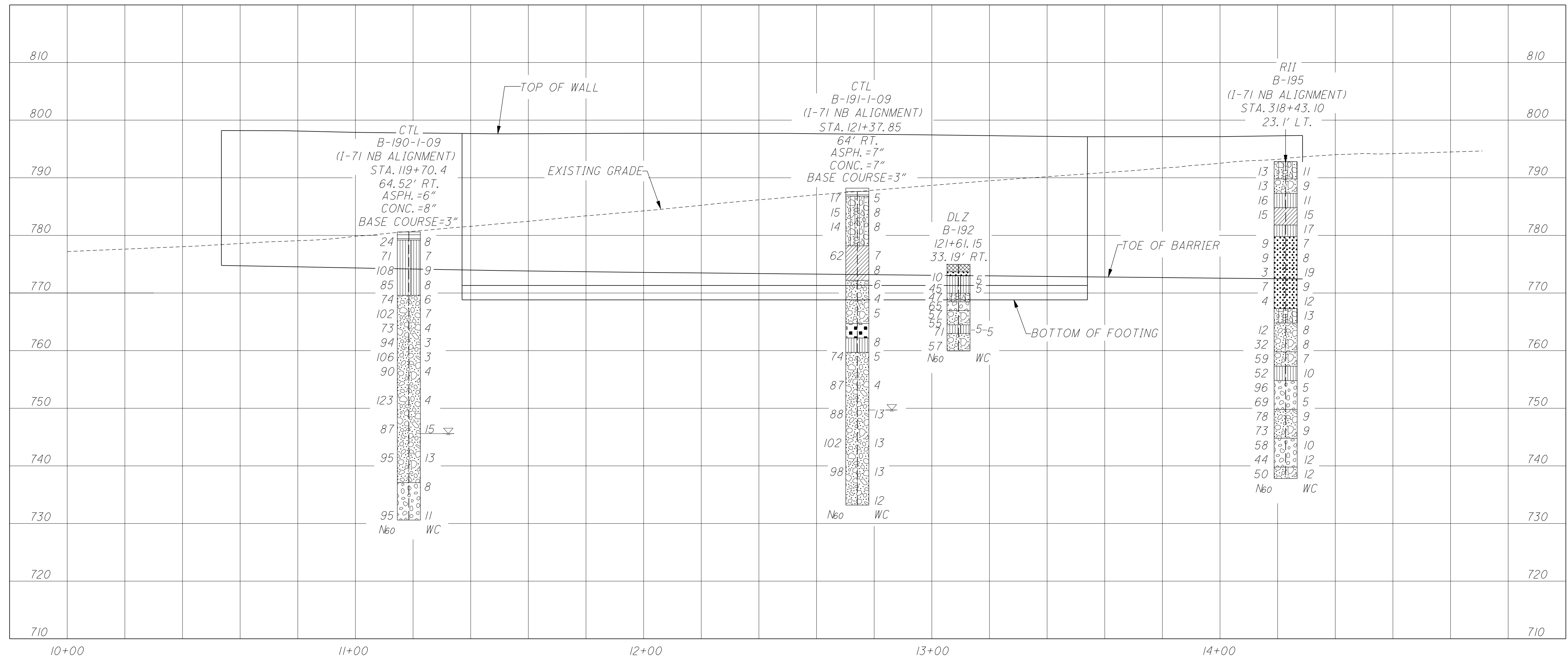
**PLAN AND PROFILE
 N3 RETAINING WALL
 ALONG RAMP Q2**

**FRA-71-17.14
 PID NO. 77371**

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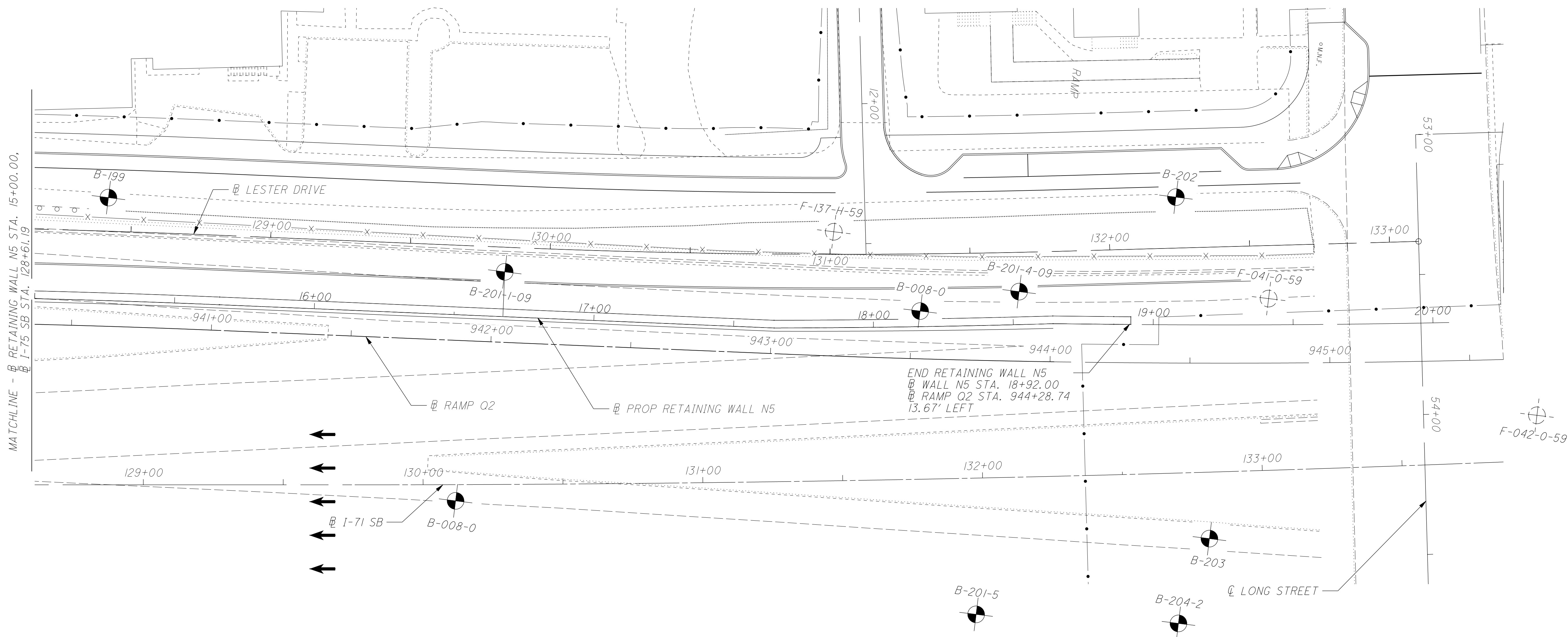


NOTE:
 SEE SHEET OF FOR BORINGS B-189 SOILPROFILE
 SEE SHEET OF FOR BORINGS B-012-0-59 AND B-122-E-59 SOILPROFILE
 SEE SHEET OF FOR BORINGS B-035-0-59 AND B-195-3-09 SOILPROFILE



**PLAN AND PROFILE
 RETAINING WALL N4
 ALONG I-71 NB**

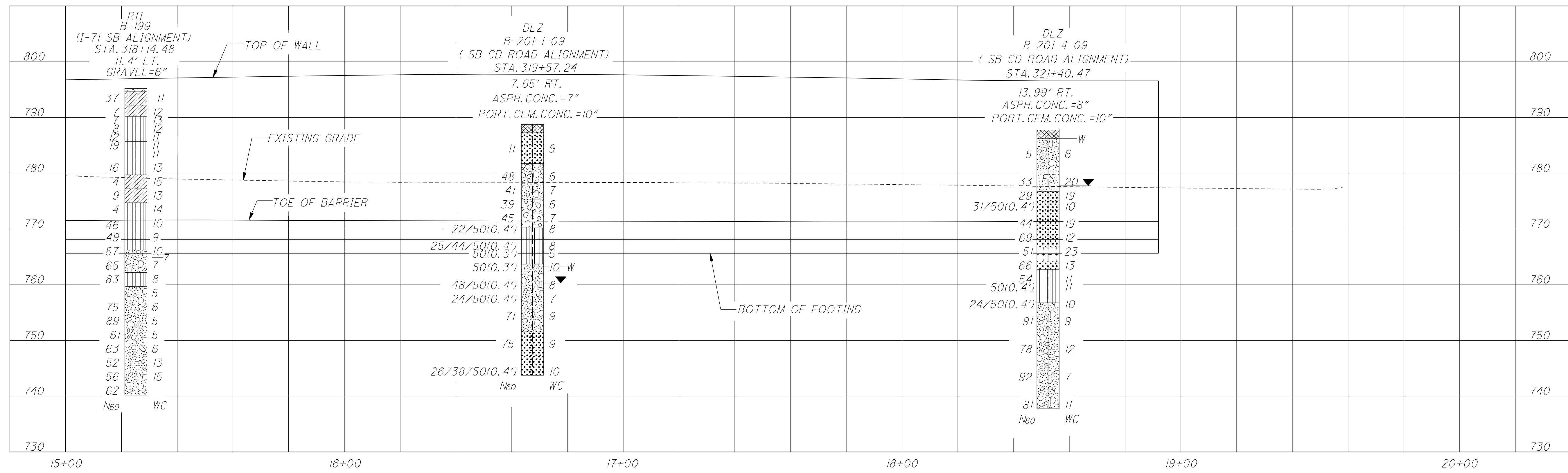
**FRA-70-9.83
 PID NO. 77371**

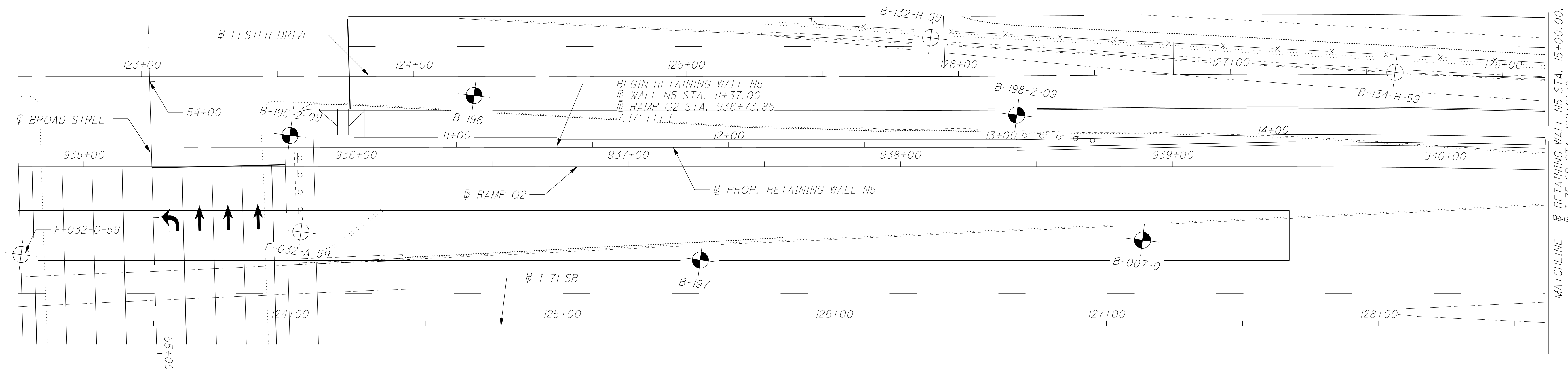


N
 0 20 40
 HORIZONTAL SCALE IN FEET
 DRAWN: N.K.S.
 CHECKED: NT


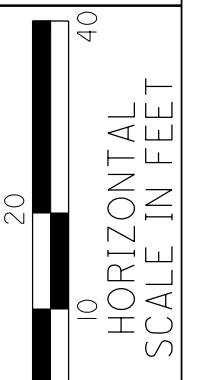
PLAN AND PROFILE
RETAINING WALL N5 - ALONG RAMP Q2
STA. 15+00 TO STA. 20+00

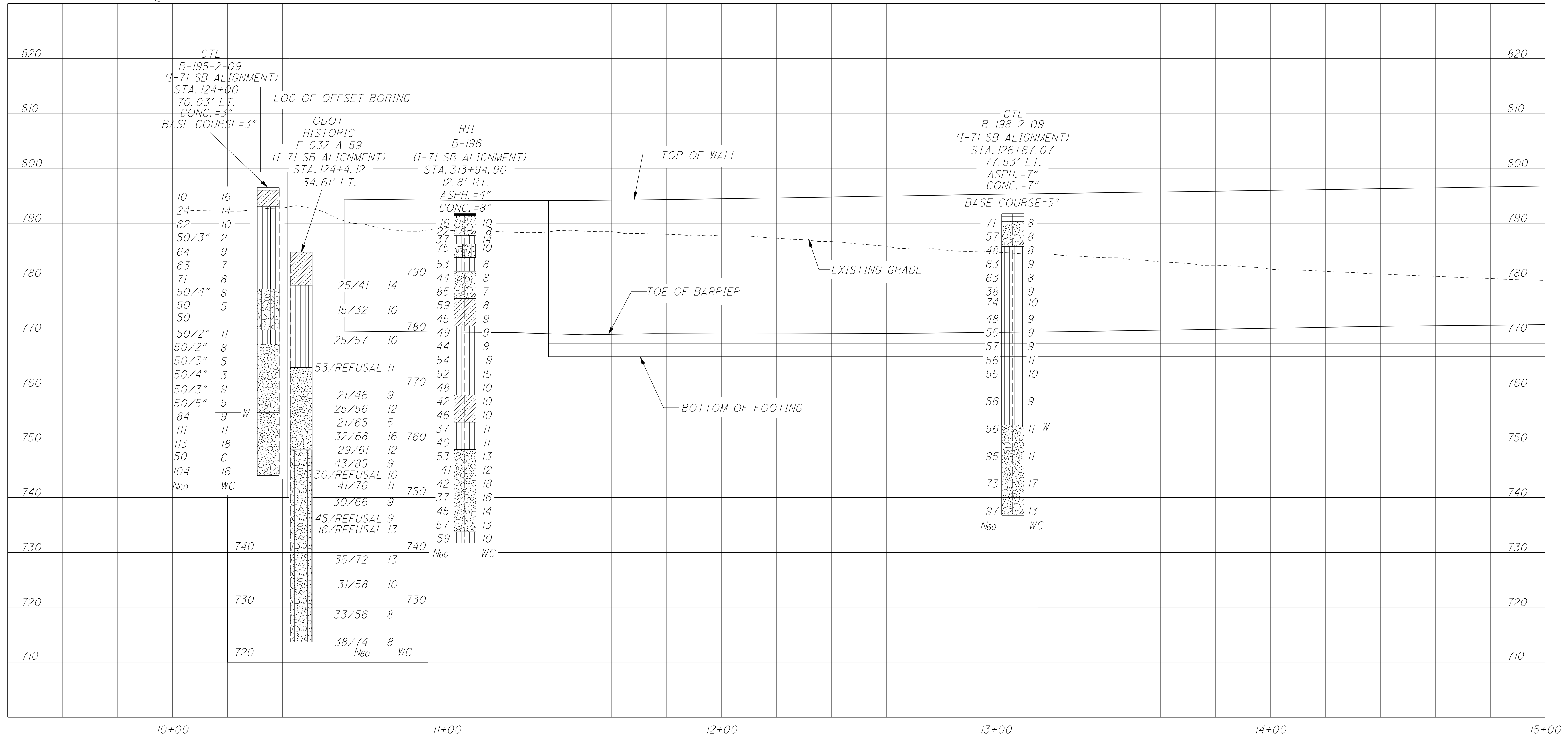
FRA-70-9.83
PID NO. 77371



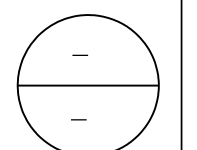


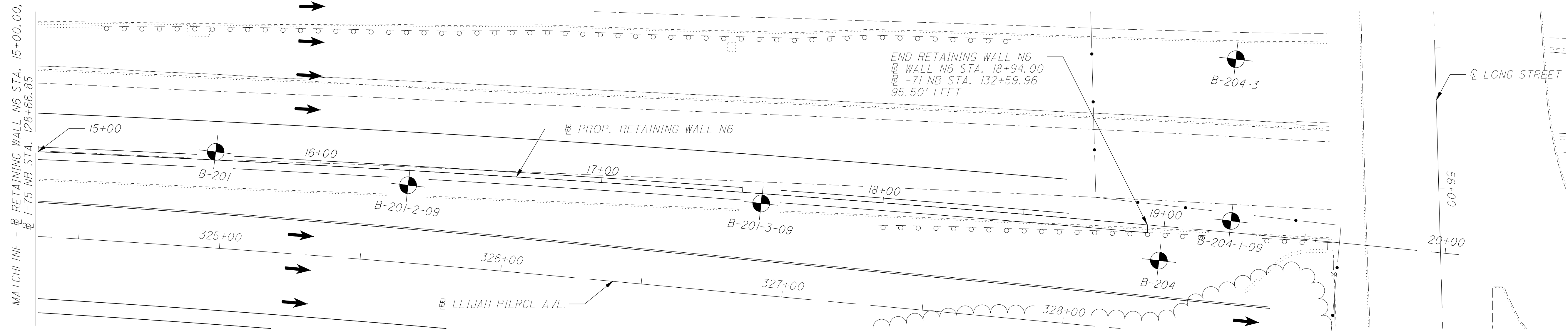
MATCHLINE - RETAINING WALL N5 STA. 15+00.00.
 I-75 SB STA. 128+61.19



 HORIZONTAL SCALE IN FEET
 DRAWN: N.K.S.
 CHECKED: NT

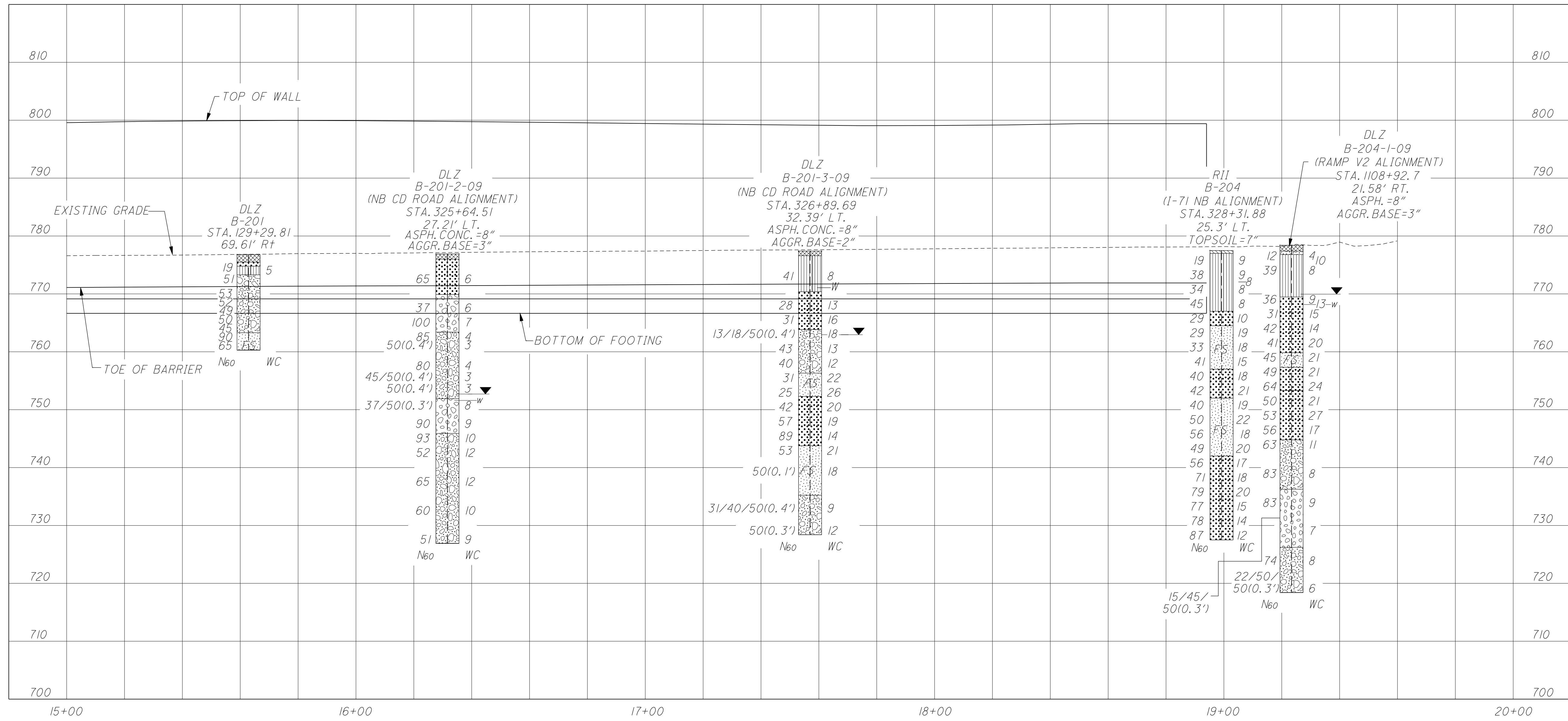


PLAN AND PROFILE
RETAINING WALL N5 - ALONG RAMP Q2
STA. 10+00 TO STA. 15+00

FRA-70-9.83
PID NO. 77371
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NOTE:
SEE SHEET OF FOR BORING B-204-3 SOILPROFILE



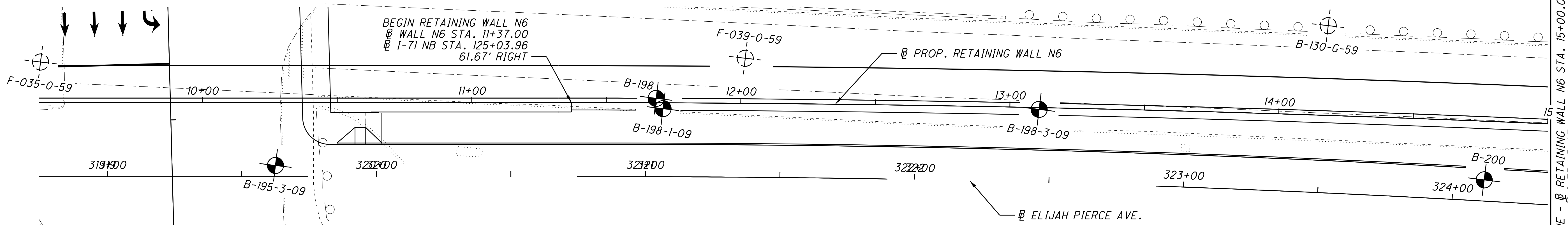
HORIZONTAL SCALE IN FEET

DRAWN	N.K.S.
CHECKED	NT

PLAN AND PROFILE
RETAINING WALL N6
ALONG I-71 NB

FRA-70-9.83
PID NO. 77371

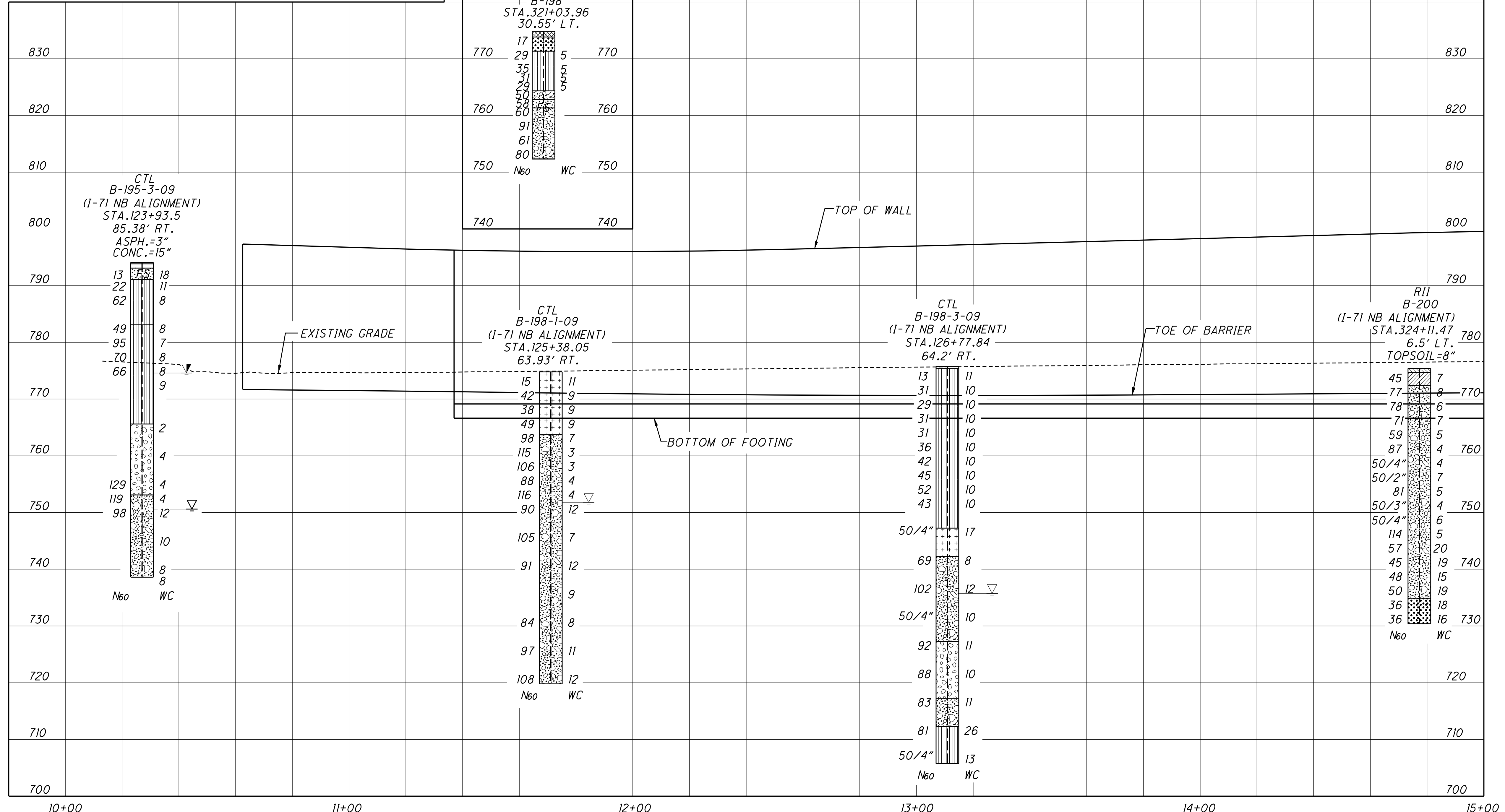
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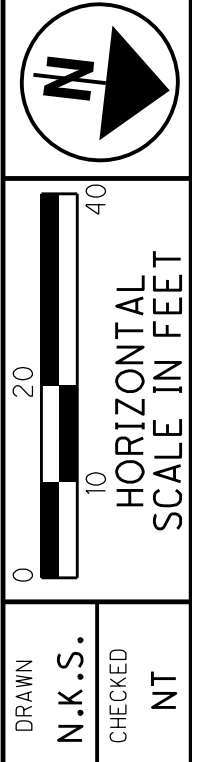
NOTE:
 SEE SHEET OF FOR BORING F-035-0-59 SOILPROFILE
 SEE SHEET OF FOR BORING B-130-G-59 SOILPROFILE

LOG OF OFFSET BORING

780	DLZ	780
	B-198	
	STA. 321+03.96	
	30.55' LT.	
770	17	770
	29	
	35	
	39	
	50	
	58	
	60	
	91	
	61	
	80	
750	N60	WC
740		740



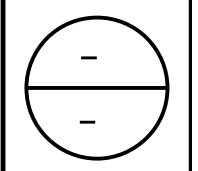
MATCHLINE - RETAINING WALL N6 STA. 15+00.00, I-71 NB STA. 128+66.85

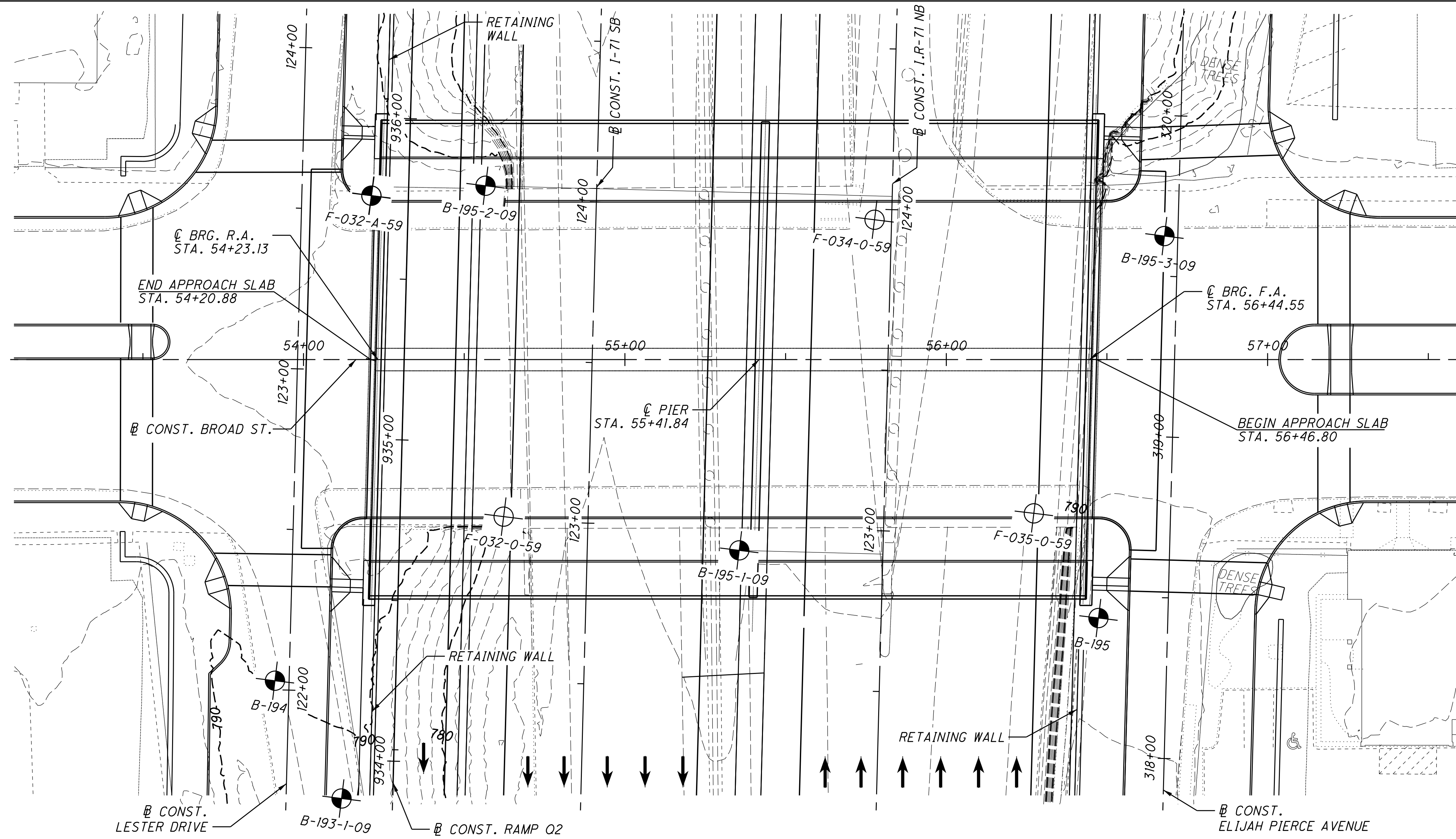


**PLAN AND PROFILE
RETAINING WALL N6
ALONG I-71 NB**

**FRA-70-9.83
PID NO. 77371**

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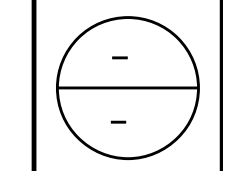


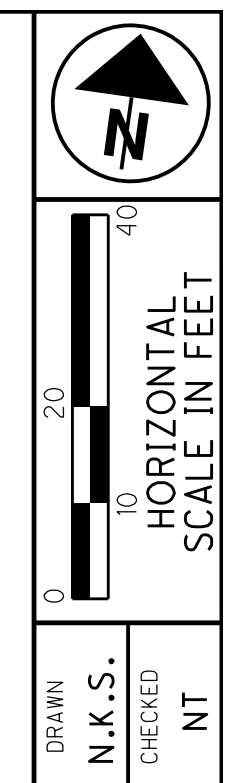
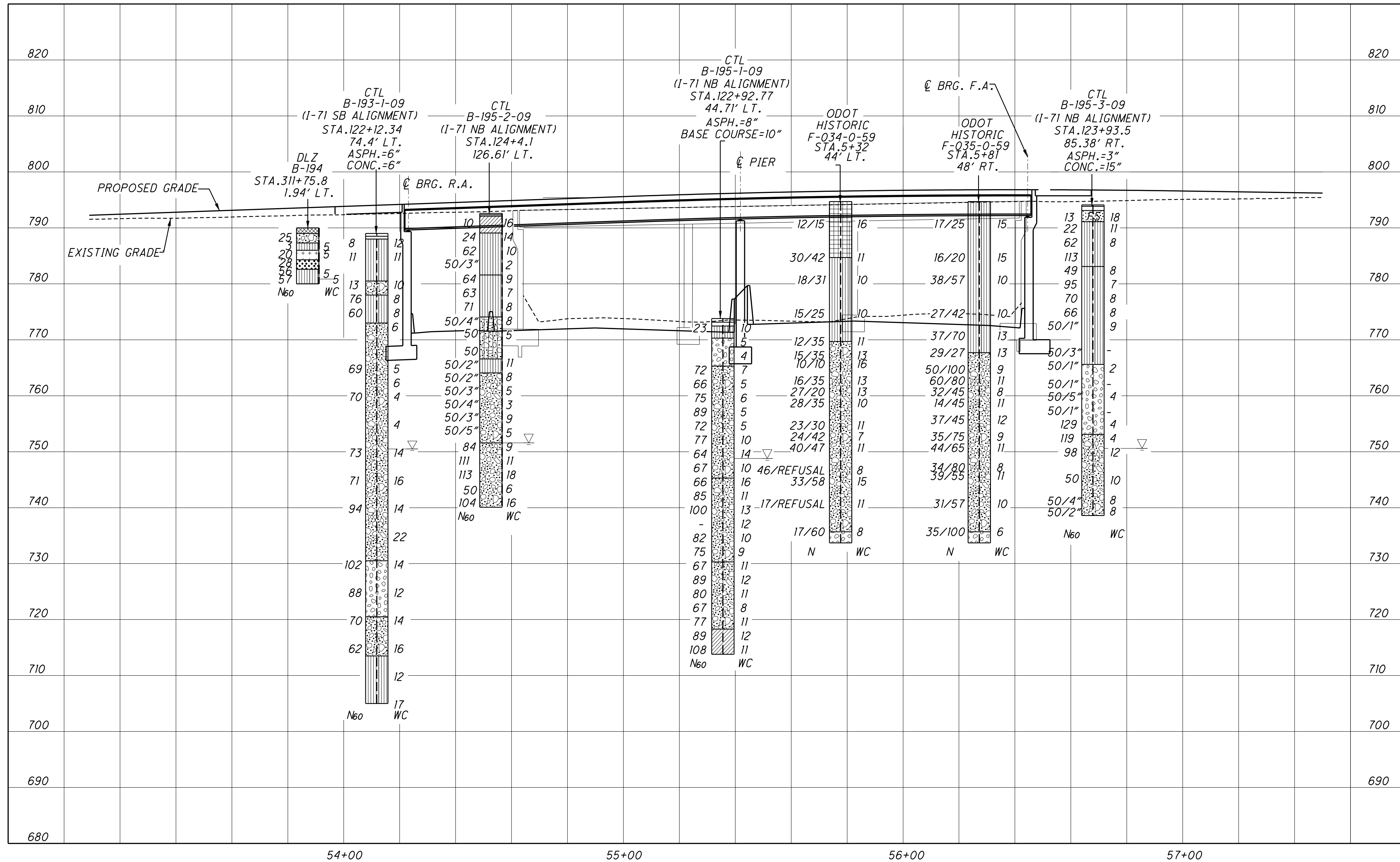
DRAWN
 N.K.S.
 CHECKED
 NT

0 20 40
 1" = 40'
 HORIZONTAL
 SCALE IN FEET

STRUCTURE FOUNDATION EXPLORATION
 BRIDGE NO. FRA-040-1351
 U.S. 40/ BROAD ST. OVER I-71

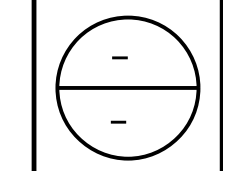
FRA-71-17.41
 PID NO. 77371

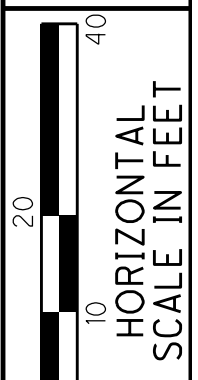
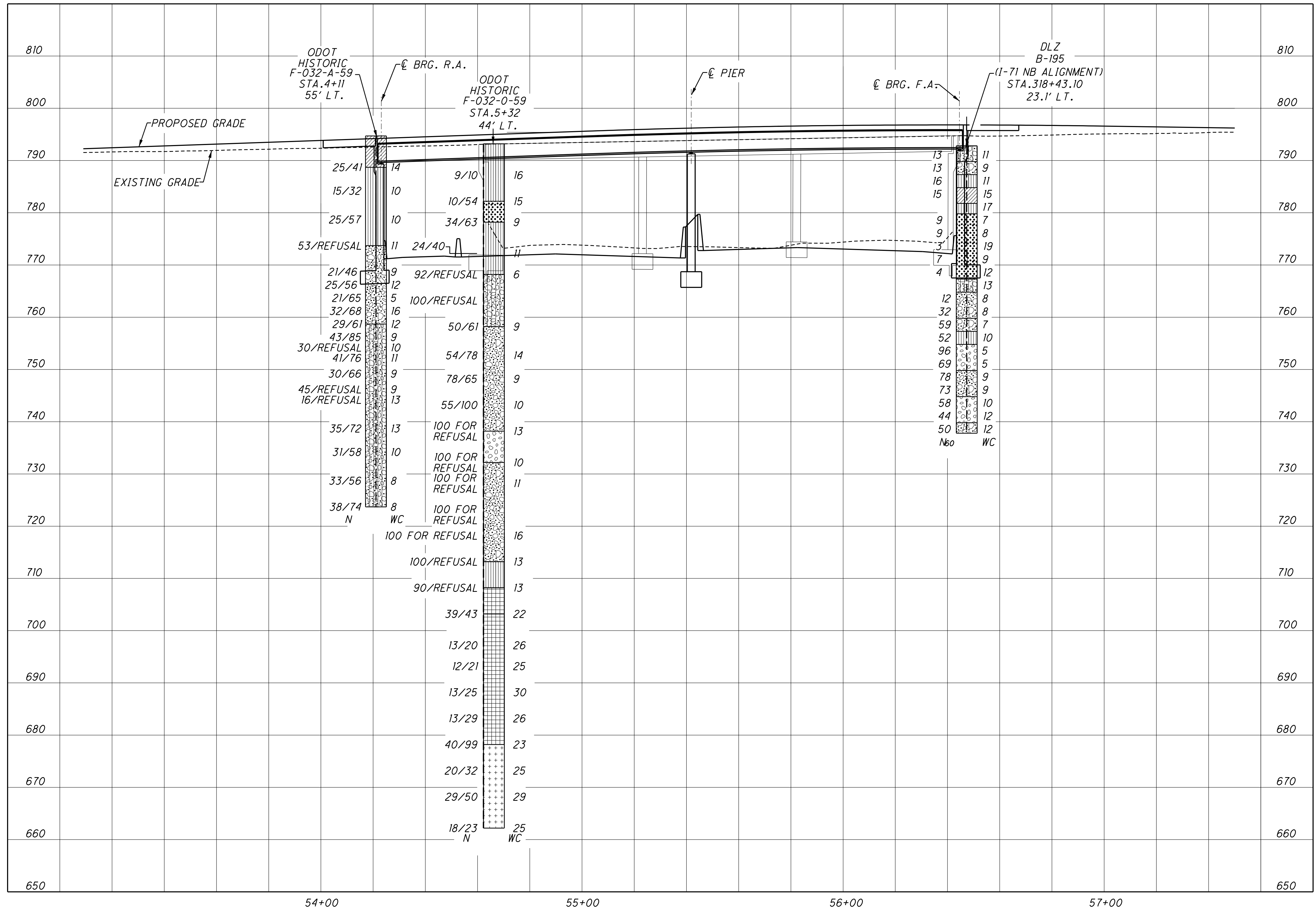




STRUCTURE FOUNDATION EXPLORATION
 BRIDGE NO. FRA-040-1351
 U.S. 40/ BROAD ST. OVER I-71

FRA-71-17.41
 PID NO. 77371

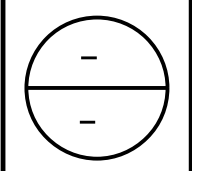


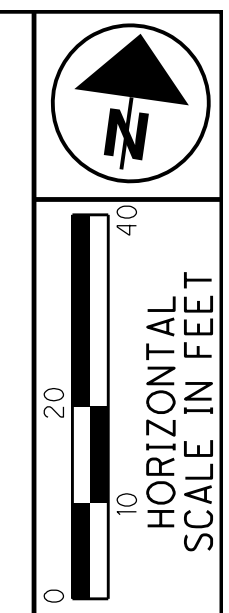


DRAWN BY: N.K.S.
 CHECKED BY: NT

STRUCTURE FOUNDATION EXPLORATION
 BRIDGE NO. FRA-040-1351
 U.S. 40/ BROAD ST. OVER I-71

FRA-71-17.41
PID NO. 77371



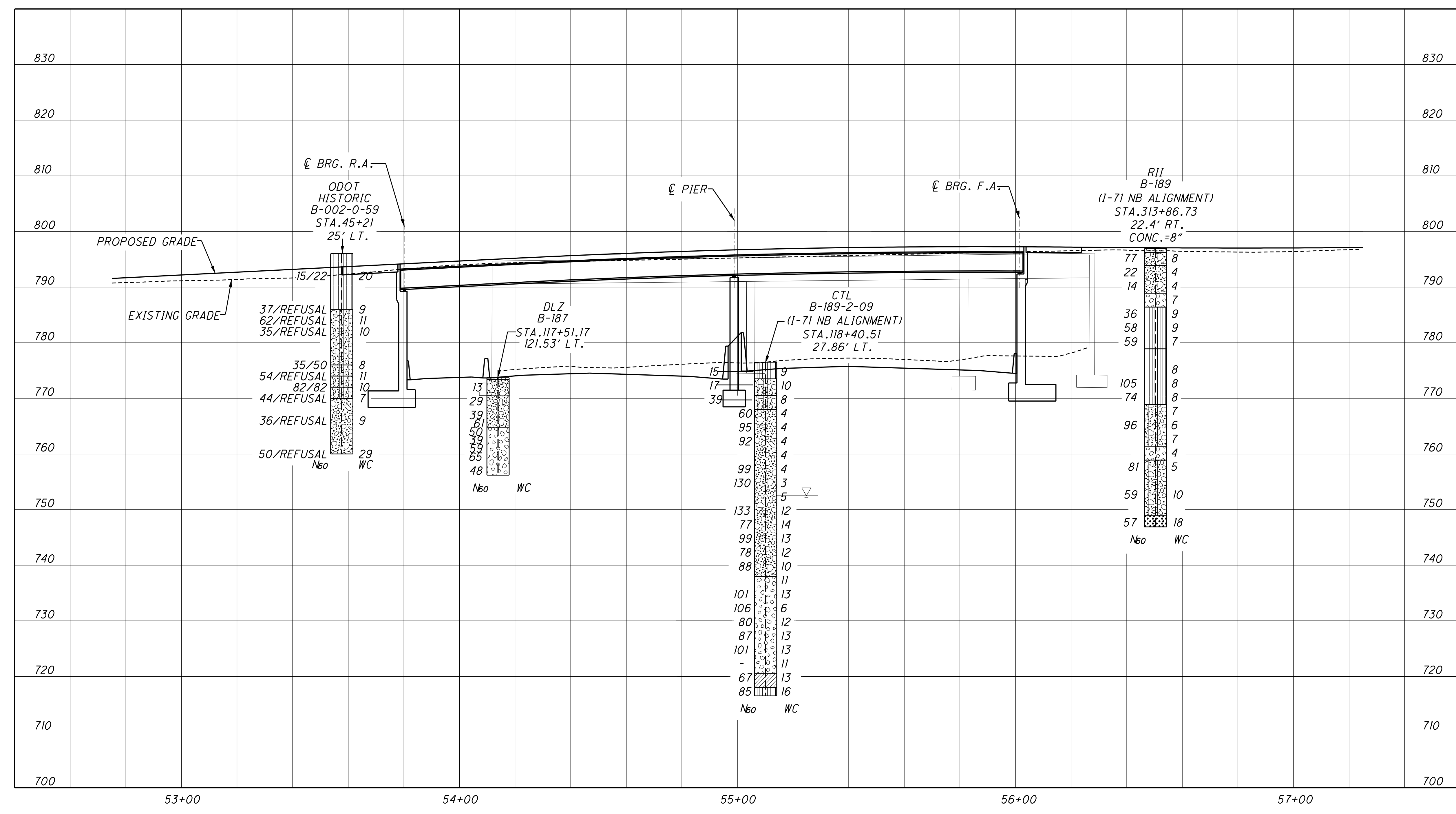
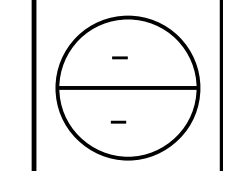


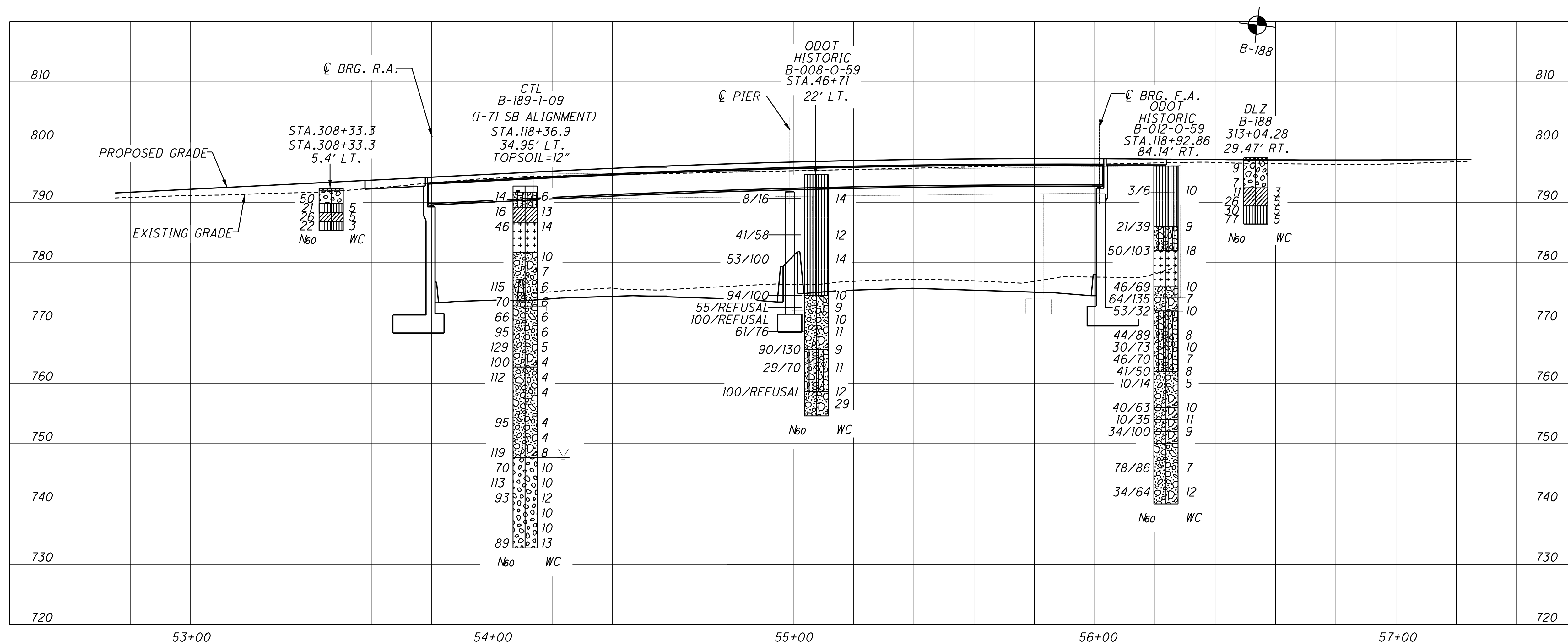
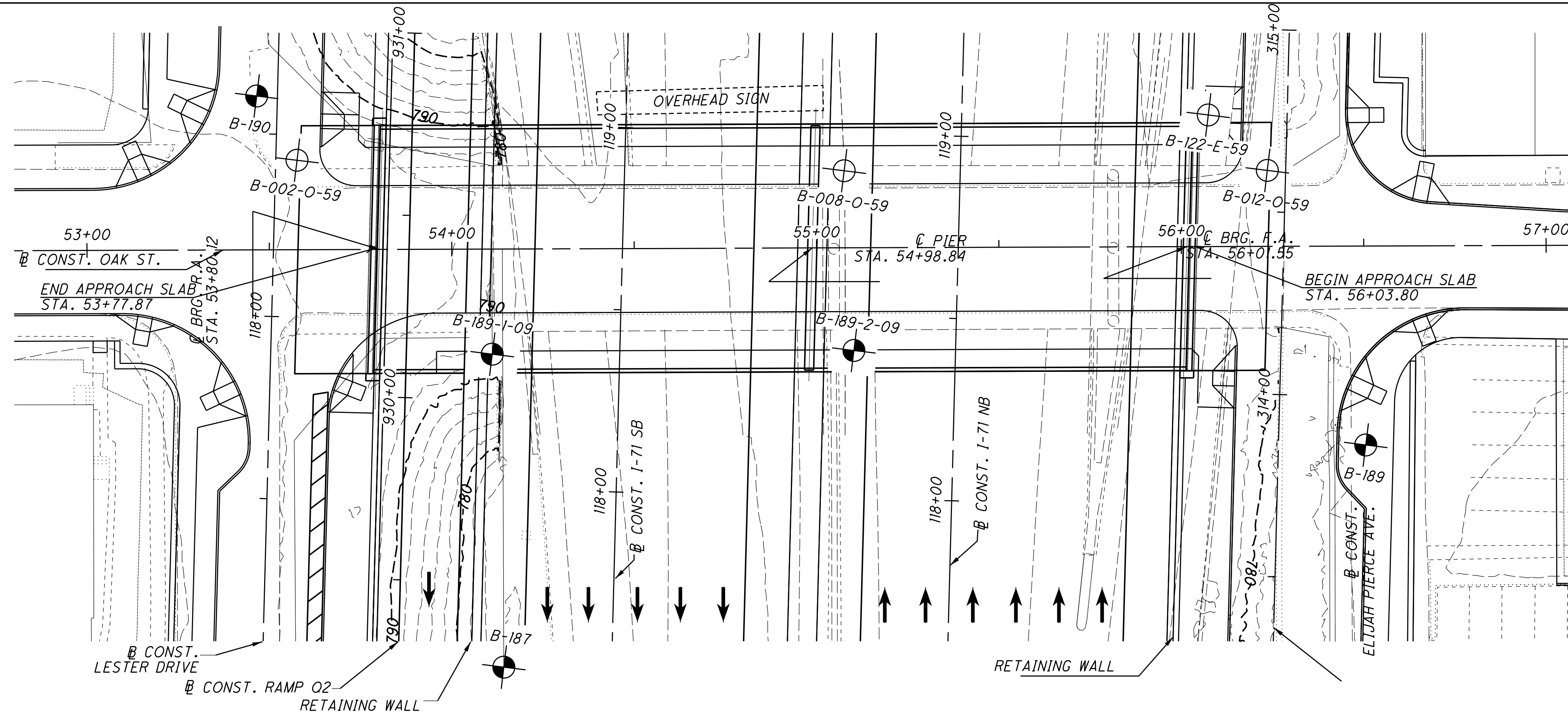
DRAWN
N.K.S.
CHECKED
NT

STRUCTURE FOUNDATION EXPLORATION
 BRIDGE NO. FRA-071-1751
 I-71 UNDER OAK STREET

FRA-71-17.41
PID NO. 77371

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STRUCTURE FOUNDATION EXPLORATION
 BRIDGE NO. FRA-071-1751
 I-71 UNDER OAK STREET

DRAWN: N.K.S. CHECKED: NT

FRA-71-17.41
 PID NO. 77371

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HORIZONTAL SCALE IN FEET
 0 10 20 40

N

PROJECT: FRA-71-17.14 DRILLING FIRM / OPERATOR: CTL / ZF
 TYPE: STRUCTURE SAMPLING FIRM / LOGGER: CTL / ZF
 PID: BR ID: DRILLING METHOD: 3.25" HSA
 START: 5/21/10 END: 5/21/10 SAMPLING METHOD: SPT
 DRILL RIG: 0305R025
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 6/27/07
 ENERGY RATIO (%): 84
 STATION / OFFSET: 13+48.05, 74.98 LT
 ALIGNMENT: 71 SB
 ELEVATION: 790.2 (MSL) EOB: 85.0 ft.
 COORD: 714779.253 N, 1833093.039 E
 EXPLORATION ID: B-184-I-09
 PAGE: 1 OF 1

ELEV.	DEPTHS	SPT / ROD	REC (%)	SAMPLE ID	HP (t+ft)	GRADATION (%)										WC	ODOT CLASS (G1)	INST.	
						GR	CS	FS	SI	CL	LL	PL	PI						
789.5	1	2	13	44	SS-1	3.00	-	-	-	-	-	-	-	-	-	-	18	A-6a (V)	
789.2	2	3	6	44	SS-1	3.00	-	-	-	-	-	-	-	-	-	-	-	18	A-6a (V)
784.2	3	9	10	31	67	SS-2	4.50	5	7	15	44	29	28	14	14	13	13	A-6a (9)	
779.2	4	8	10	34	67	SS-3	4.50	-	-	-	-	-	-	-	-	-	10	A-6a (V)	
776.7	5	19	22	70	61	SS-5	4.50	-	-	-	-	-	-	-	-	-	7	A-6a (V)	
774.2	6	20	24	104	-	SS-6	-	47	13	10	25	5	NP	NP	NP	8	A-2-4 (O)		
766.7	7	16	27	83	44	SS-7	-	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	8	25	31	90	56	SS-8	-	42	26	16	13	3	NP	NP	NP	6	A-1-b (O)		
	9	38	38	-	89	SS-9	4.50	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	10	50/4"	-	100	SS-10	-	-	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	11	22	28	-	91	SS-11	-	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	12	27	39	104	-	SS-12	-	43	31	15	9	2	NP	NP	NP	5	A-1-b (O)		
	13	35	42	108	67	SS-13	-	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	14	33	34	91	67	SS-14	-	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	15	35	36	99	67	SS-15	-	-	-	-	-	-	-	-	-	-	5	A-1-b (V)	
	16	47	43	126	-	SS-16	-	35	35	16	11	3	NP	NP	NP	4	A-1-b (O)		
	17	22	31	98	67	SS-17	-	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	18	20	24	78	67	SS-18	-	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	19	35	32	88	67	SS-19	-	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	20	50	50	-	83	SS-20	-	49	27	14	8	2	NP	NP	NP	12	A-1-b (O)		
	21	27	30	73	-	SS-22	-	33	42	17	7	1	NP	NP	NP	11	A-1-b (O)		

STRUCTURE FOUNDATION EXPLORATION
N1 RETAINING WALL

DRAWN: B.R.U. CHECKED: NT

PID NO. 77371

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SHEET 5

LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. _____
RETAINING WALL - G
LOCATION: T.H. G-B STA. 132+55 OFFSET 137' LT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
792.4	0			
	2			
	4			
787.4	6			Fill-Bouldery Sandy Clay
	8			
782.4	10	22/38	24122	Brown Sandy Silt
	12			
	14			
777.4	16	26/38	24123	Gray Gravelly Sandy Silt w/Stone Fragments
	18			
772.4	20	43/50	24124	Brown Silty Sandy Gravel
	22			
	24			
767.4	26	75/*	24125	Gray Sandy Gravel
764.9	28	68/*	24126	Gray Sand & Gravel
762.4	30	29/*	24127	Gray Silty Gravelly Sand
	32			
759.9	34	100/*	24128	Gray Sandy Gravel
757.4	36	80/*	24129	Gray Silty Gravelly Sand

no
7.29.59

LOG OF BORING (CONTINUED)

SHEET 6

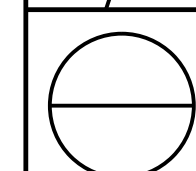
BRIDGE NO. RETAINING WALL-G T.H. A-G-B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
754.9	38	50/*	24130	Brown & Gray Silty Gravelly Sand
752.4	40	25/*	24131	Gray Silty Sandy Gravel
	42			
749.9	44	60/*	24132	Gray Sandy Gravel
747.4	46	20/73	24133	Gray Silty Sandy Gravel
	48			
742.4	50	---	24134	Gray Sand & Gravel (Wash Sample)
				BOTTOM OF BORING
	52			*Refusal
	54			
	56			
	58			
	60			
	62			
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

STRUCTURE FOUNDATION EXPLORATION
N1 RETAINING WALL

FRA-71-17.14
PID NO. 77371

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DRAWN
B.R.U.
CHECKED
NT

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

LOG OF BORING

CO., RT. NO., SEC. FRA-40 - 13.83 BRIDGE NO. _____
RETAINING WALL-H
LOCATION: T.H. 1-H-B STA. 134+32 OFFSET 80' RT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
798.4	0			
	2			Fill Material
	4			
793.4	6			Brown Sandy Gravel With Boulders
	8			
788.4	10			
	12	15/21	24135	Brown Silty Sandy Gravel**
	14			
783.4	16	23/45	24136	Dark-Gray Silty Sandy Gravel
	18			
778.4	20			
	22	40/70	24137	Dark-Gray Silty Sandy Gravel
	24			
773.4	26	20/40	24138	Gray Gravel
770.9	28			
	30	28/45	24139	Gray Silty Sandy Gravel
768.4	32	10/14	24140	Brown Gravel
765.9	34	4/7	24141	Brown Sandy Gravel
763.4	36	50/*	24142	Brown Silty Gravelly Sand

*Refusal

MB
7.21.59

LOG OF BORING (CONTINUED)

SHEET 3

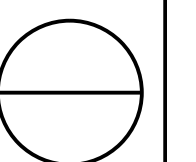
BRIDGE NO. _____ RETAINING WALL-H _____ T.H. _____ 1-H-B _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
760.9	38	57/*	24143	Gray Silty Sandy Gravel
758.4	40			
	42	21/50	24144	Gray Silty Sandy Gravel**
755.9	44	50/*	24145	Gray Silty Sandy Gravel **
753.4	46	12/20	24146	Gray Silty Gravelly Sand **
	48			
748.4	50			
	52	19/60	24147	Gray Gravelly Sand
	54			
743.4	56	14/45	24148	Gray Silty Sand**
	58			
738.4	60			
737.4	62	21/41	24149	Gray Silty Sand
	64			BOTTOM OF BORING
	66			* Refusal
	68			** Sample obtained by use of sand trap
	70			
	72			
	74			
	76			
	78			
	80			
	82			

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

FRA-71-17.14
PID NO. 77371

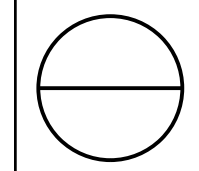
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DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.14	DRILLING FIRM / OPERATOR: _____	CTL / MF	DRILL RIG: 03050TKR349-09	STATION / OFFSET: 110+97.55, 114.14 RT	EXPLORATION ID														
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER: _____	CTL / MF	HAMMER: CME AUTOMATIC	ALIGNMENT: 71 NB	B-183-2-09														
PID: _____	BR ID: _____	3.25" HSA	CALIBRATION DATE: 10/13/09	ELEVATION: 793.6 (MSL)	EOB: 60.0 ft														
START: 6/3/10	END: 6/3/10	SPT	ENERGY RATIO (%): 86	COORD: 714544.065 N, 1833381.671 E	PAGE 1 OF 1														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/ ROD	REC (%)	SAMPLE ID	HP (SFT)	GR (%)	CS (%)	FS (%)	SI (%)	CL (%)	LL (%)	PL (%)	PI (%)	WC (%)	DOT CLASS (G)	INST.	
MEDIUM DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT, WITH COBBLES, MOIST		793.0																	
VERY STIFF, BROWN, SANDY SILT, SOME GRAVEL, LITTLE CLAY, WITH ORGANICS AND TREE ROOTS, MOIST		790.1																	
@6.0'; HARD																			
HARD, DARK BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, TILL, DAMP		782.1																	
HARD, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, DAMP		775.1																	
@33.5'; COBBLES																			
VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS, TRACE SILT, DAMP		765.1																	
@40.0'; PUMPED DRILLING MUD INTO AUGERS																			
VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, WET		750.1																	
VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS, SOME SAND, TRACE SILT, TRACE CLAY, WET		742.6																	
NOTES: GAVED AT 29'																			
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER, 94 LB. CEMENT																			

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 15:17 - J:\DEPTS\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.14 DRILLING FIRM / OPERATOR: CTL / MF
 TYPE: STRUCTURE SAMPLING FIRM / LOGGER: 3.25" HSA
 PID: BR ID: 5/18/10 5/18/10 DRILLING METHOD: SPT
 START: 5/18/10 END: 5/18/10 SAMPLING METHOD: SPT

DRILL RIG: 03050TKR349-09
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 10/13/09
 ENERGY RATIO (%): 86

STATION / OFFSET: 112+18.19, 102.56 RT
 ALIGNMENT: 71 NB
 ELEVATION: 795.2 (MSL) EOB: 60.0 ft
 COORD: 714664.296 N, 1833388.548 E

EXPLORATION ID: B-183-4-09
 PAGE: 1 OF 1

ELEV. (ft)	DEPTH (ft)	SPT / ROD	N ₆₀ (%)	REC ID	SAMPLE ID	HP (sf)	GRADATION (%)											WC	DOOT CLASS (g)	INST.
							GR	CS	FS	SI	CL	LL	PL	PI	WC	DOOT	CLASS			
794.8	794.3																			
Asphalt (5")																				
Base course (6")																				
SOFT, BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, BRICK FRAGMENTS AND BLACK SLAG, FILL, DAMP																				
@3.5' HARD, WITH COBBLES																				
VERY STIFF, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP																				
789.2		8	9	27	67	SS-3	2.00	10	9	20	41	20	25	15	10	13	A-4a (5)			
@8.5' HARD																				
HARD, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP																				
781.7		16	16	49	72	SS-6	4.50	8	12	21	42	17	23	15	8	11	A-4a (5)			
HARD, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP																				
@28.5' COBBLES																				
761.7		23	32	86	SS-10	4.50	-	-	-	-	-	-	-	-	-	9	A-4a (V)			
VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS, SOME SAND, TRACE SILT, TRACE CLAY, WITH COBBLES, DRY																				
751.7		15	26	102	67	SS-13	-	37	28	27	7	1	NP	NP	NP	6	A-1-b (0)			
VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, TRACE SILT, TRACE CLAY, DRY																				
746.7		14	20	83	67	SS-14	-	-	-	-	-	-	-	-	-	10	A-1-a (V)			
VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS, AND SAND, TRACE SILT, WET																				
735.2		20	27	30/0	SS-16	-	-	-	-	-	-	-	-	-	-	8	A-1-a (V)			
@58.5' HEAVING SANDS IN AUGER (2)																				

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER, 184 LB. CEMENT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 15:17 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ



RESOURCE INTERNATIONAL, INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

LOG OF BORING
9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

Date Started 2/8/09 Date Completed 2/8/09 Method 3.75" HSA Water Elev. 746.0ft
Northing 714877.9897 Easting 1833325.1980 Hammer System Type: Automatic Calibration Date: 6/11/07
Sealing/Backfilling Type: AC Quantity: _____ Drill Rod Energy Ratio (ER): 79.3
Boring No. B-185 Baseline, Station & Offset: L-71 NB: 309+93.05, 14.5' LT Surface Elev. 797.2ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Spill)

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.	
797.2	0				0.8' Concrete												
796.4					FILL: Medium dense, brown fine to coarse SAND, some silt, little fine gravel, wet.	SS-1	14.4	41.8	10.7	10.3	22.8	NP	NP	NP	27		A-3a
794.7					FILL: Very stiff, brownish gray CLAY, little coarse to fine sand, trace fine gravel, moist.	SS-2	0.8	7.6	9.0	30.1	52.6	45	24	21	22		A-7-6
793.7					Hard, gray SILT and CLAY, some fine to coarse sand, little fine gravel, damp.	SS-3	12.6	28.5	11.0	19.8	28.1	39	24	15	15		A-6a
791.7	5				Very stiff to hard, brownish gray fine to coarse SANDY SILT, trace fine gravel, moist.	SS-4	6.2	24.4	15.0	18.5	35.9	25	18	7	18		A-4a
786.7	10				Very stiff to hard, brownish gray SILT and CLAY, some fine to coarse sand, trace fine gravel, damp.	SS-6	4.8	21.3	13.0	32.0	28.9	29	18	11	12		A-6a
781.7	15				Hard, gray fine to coarse SANDY SILT, trace fine gravel, damp to dry.	SS-8	9.1	25.4	15.4	20.7	29.4	24	16	8	10		A-4a
	20				same as above	SS-9											A-4a Visual

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

Form TE-151 Revised 9/94

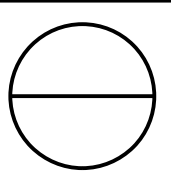
Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.	
	20				same as above												
					-qh = 4.5 tsf	SS-10	9.7	22.2	17.3	18.8	32.0	23	14	9	10		A-4a
					-qh = 4.5 tsf	SS-11											A-4a Visual
					-qh = 4.5 tsf	SS-12	6.5	24.1	18.4	20.9	30.2	21	14	7	9		A-4a
					-qh = 4.5 tsf	SS-13											A-4a Visual
					-qh = 4.5 tsf	SS-14	8.6	21.5	18.7	18.2	32.9	22	14	8	9		A-4a
					-qh = 4.5 tsf	SS-15											A-4a Visual
761.2					Very dense, gray coarse to fine GRAVEL, some fine to coarse sand, trace silt, dry.	SS-16	67.8	14.8	8.2	9.3							A-1-a
759.2					Very dense, gray fine to coarse SAND and fine GRAVEL, little to trace silt, dry to damp.	SS-17											A-1-b Visual
	40					SS-18	46.4	30.1	12.3	4.7	6.5						A-1-b
						SS-19											A-1-b

Boring No. B-185 Baseline, Station & Offset: L-71 NB: 309+93.05, 14.5' LT Surface Elev. 797.2ft Project: W-07-109

Method 3.75" HSA Water Elev. 746.0ft

Calibration Date: 6/11/07

Form TE-151 Revised 9/94



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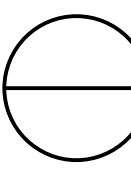
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

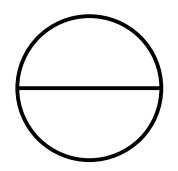
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NT

Boring No. B-185 Baseline, Station & Offset L-71 NB: 309+93.05, 14.5' LT Surface Elev. 797.2ft Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	Nos	Rec. (%)	Description	Sample No.	Physical Characteristics							ODOT Class		
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.		P.I.	W.C.
	45				same as above	SS-20								3	A-1-b Visual	
						SS-21									9	A-1-b Visual
						SS-22	42.9	36.0	15.6		5.4				10	A-1-b
						SS-23									18	A-1-b Visual
741.7	55					Very dense, gray FINE SAND, trace fine gravel, trace silt, wet.	SS-24	0.5	22.1	67.7		9.7			16	A-3
							SS-25								17	A-3 Visual
737.2	60					Bottom of Boring = 60.0 feet										

	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION N2 RETAINING WALL	<small>DRAWN</small> B.R.U. <small>CHECKED</small> NT
<small>96</small> / <small>145</small>			

PROJECT: FRA-71-17.14		DRILLING FIRM / OPERATOR: _____		CTL / MF		DRILL RIG: 03050TKR349-09		STATION / OFFSET: 115+09, 62.98 RT		EXPLORATION ID								
TYPE: STRUCTURE		SAMPLING FIRM / LOGGER: _____		CTL / MF		HAMMER: CME AUTOMATIC		ALIGNMENT: 71 NB		B-186-1-09								
PID: _____		BR ID: _____		3.25" HSA		CALIBRATION DATE: 10/13/09		ELEVATION: 797.0 (MSL)		EOB: 70.0 ft								
START: 5/20/10		END: 5/20/10		SPT		ENERGY RATIO (%): 86		COORD: 714960.379 N, 1833310.249 E		PAGE								
SAMPLING METHOD: _____		SAMPLING METHOD: _____		SPT						1 OF 2								
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/ ROD	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (g)	INST.
Concrete (8")		797.0																
VERY STIFF, GRAY, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, FILL, DAMP		794.0																
VERY STIFF, GRAY, SANDY SILT, LITTLE GRAVEL, LITTLE CLAY, DAMP																		
@6.0': WITH COBBLES																		
@8.5': HARD																		
@11.0': VERY STIFF, WITH COBBLES																		
@16.0': HARD, TRACE GRAVEL, TRACE CLAY																		
@21.0': COBBLE																		
HARD, GRAY, SILT AND CLAY, AND SAND, TRACE GRAVEL, TILL, DAMP		771.0																
HARD, GRAY, SILT AND CLAY, AND SAND, TRACE GRAVEL, TILL, DAMP		768.5																
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, TRACE SILT, TRACE CLAY, DAMP																		
@30.0': BOULDER																		
@40.0': PUMPED DRILLING MUD INTO AUGERS																		
@41.0': COBBLES																		
@58.5': COBBLES																		
@48.5': LITTLE SILT																		
@58.5': COBBLES																		



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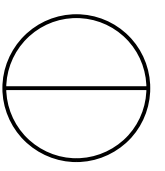
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

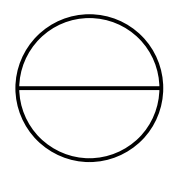
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CHECKED
NT

PID: _____	BR ID: _____	PROJECT: FRA-71-17.14	STATION / OFFSET: 115+09.62.98 RT	START: 5/20/10	END: 5/20/10	PG 2 OF 2	B-186-1-09													
MATERIAL DESCRIPTION AND NOTES		ELEV. 737.0	DEPTH	SPT/ ROD	REC No (%)	REC SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	NP	PL	PI	WC	ODOT CLASS (g)	INST.	
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, TRACE SILT, TRACE CLAY, DAMP (continued)			61																	
			62																	
			63																	
			64	34	97	78	-	-	-	-	-	-	-	-	-	-	16	A-1-b (V)		
			65	36																
			66																	
			67																	
			68	3	113	-	-	26	43	19	10	2	NP	NP	NP					
			69	46																
		727.0	70																	
@68.5', TRACE SILT																				

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER, 285 LB. CEMENT

	98 / 145	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION N2 RETAINING WALL	DRAWN B.R.U. CHECKED NT
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PROJECT: FRA-71-17.14		DRILLING FIRM / OPERATOR: _____		CTL / MF		DRILL RIG: 03050TKR349-09		STATION / OFFSET: 116+64.97, 56.19 RT		EXPLORATION ID																							
TYPE: STRUCTURE		SAMPLING FIRM / LOGGER: _____		CTL / MF		HAMMER: CME AUTOMATIC		ALIGNMENT: 71 NB		B-186-2-09																							
PID: _____		BR ID: _____		3.25" HSA		CALIBRATION DATE: 10/13/09		ELEVATION: 776.4 (MSL)		EOB: 65.0 ft																							
START: 6/4/10		END: 6/4/10		SPT		ENERGY RATIO (%): 86		COORD: 715+17.968 N, 1833294.316 E		PAGE 1 OF 2																							
MATERIAL DESCRIPTION AND NOTES		ELEV.		DEPTH		SPT / No		REC (%)		SAMPLE ID		HP (tsf)		GR (%)		FS (%)		SI (%)		CL (%)		LL (%)		PL (%)		PI (%)		WC (%)		ODOT CLASS (g)		INST.	
Topsoil (3")		776.2																															
VERY STIFF, BROWN, SANDY SILT, LITTLE CLAY, TRACE GRAVEL, MOIST		776.4																															
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, WITH COBBLES, DAMP		766.4																															
@3.5': COBBLES																																	
@3.5': COBBLES																																	
@3.5': TRACE SILT, NO CLAY																																	
@3.0': COBBLES																																	
@4.0': PUMPED DRILLING MUD INTO AUGERS																																	
@4.3.5': WET																																	
@3.5': GRAY, TRACE CLAY																																	



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

DRAWN
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NT

PID: _____	BR ID: _____	PROJECT: FRA-71-17.14	STATION / OFFSET: 116+64.97, 56.19 RT	START: 6/4/10	END: 6/4/10	PG 2 OF 2	B-186-2-09									
MATERIAL DESCRIPTION AND NOTES		ELEV. 716.4	DEPTH	SPT/ ROD	N ₆₀ (%)	REC SAMPLE ID	HP (tsf)	GR	GRADATION (%)			ATTERBERG		WC	ODOT CLASS (g)	INST.
VERY DENSE, BROWN GRAVEL AND/OR STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, WITH COBBLES, DAMP (continued)																
		711.4														
			61	30	93	78	SS-25	-	-	-	-	-	-	11	A-1-b (V)	
			62	32	33											
			63													
			64	27	99	78	SS-26	-	45	32	14	8	1	NP	NP	12
			65	33	36											A-1-b (0)
			EOB													

NOTES: CAVED AT 24
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER, 94 LB. CEMENT

100 / 145	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION N2 RETAINING WALL	DRAWN B.R.U. CHECKED NT
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RESOURCE INTERNATIONAL, INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

LOG OF BORING
9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

Date Started 2/1/09 Date Completed 2/1/09 Method 3.75" HSA Water Elev. 753.9ft
Northing 715274.7468 Easting 1833325.5830 Hammer System Type Automatic Calibration Date: 6/11/07
Sealing/Backfilling Type AC Quantity Quantify
Boring No. B-189 Baseline, Station & Offset L-71 NB; 313+86.73, 22.4' RT Drill Rod Energy Ratio (ER) 72.3
Surface Elev. 796.9ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Spill)

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.
796.9	0				0.7' - Concrete											
796.2					FILL: Very dense, brownish gray fine to coarse SAND and coarse to fine GRAVEL, some silt, dry.	SS-1	43.1	26.5	8.8	8.5	13.3	20	15	5	8	A-1-b
793.9					Medium dense, brown fine to coarse SAND and fine GRAVEL, some silt, dry.	SS-2	31.2	29.1	14.3	19.9	5.5	NP	NP	NP	4	A-1-b
788.9					Very dense, brown coarse to fine GRAVEL, some fine to coarse sand, little silt, dry.	SS-3									4	A-1-b Visual
786.4					Medium dense to dense, gray fine to coarse SANDY SILT, some to little fine gravel, dry.	SS-4	50.6	25.3	13.2	9.2	1.7	NP	NP	NP	7	A-1-a
						SS-5	22	24.5	11.3	25.8	16.4	24	16	8	9	A-4a
						SS-6									9	A-4a Visual
						SS-7	13.3	25.6	15.5	32.1	13.4	22	15	7	7	A-4a
						SS-8										A-4a Visual

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

Form TE-151 Revised 9/94

2/30

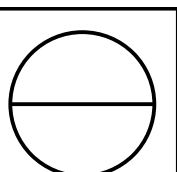
Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.
					same as above											
						SS-9	10	26.0	20.3	20.6	23.2	22	16	6	8	A-4a
						SS-10									8	A-4a Visual
						SS-11									8	A-4a Visual
						SS-12	33.6	26.3	14.1	19.7	6.2	NP	NP	NP	7	A-2-4 Visual
						SS-13	18.7	35.3	17.8	19.1	9.0	22	13	9	6	A-2-4
						SS-14									7	A-2-4 Visual
						SS-15	58	21.7	8.0	9.9	2.3	NP	NP	NP	4	A-1-a
						SS-16	43.6	14.6	12.8	21.3	7.6	NP	NP	NP	5	A-2-4
						SS-17									10	A-2-4

Boring No. B-189

Baseline, Station & Offset L-71 NB; 313+86.73, 22.4' RT

Surface Elev. 796.9ft

Project: W-07-109



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

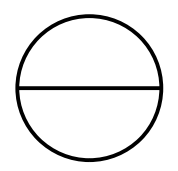
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Boring No. B-189 Baseline, Station & Offset L-71 NB: 313+96.73, 22.4' RT

Surface Elev. 796.9ft

Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	Nos	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.			
	45				same as above														
748.9		14/20/27	57	89	Very dense, gray COARSE and FINE SAND, little silt, trace fine gravel, wet.	SS-18	2.4	32.7	46.9	17.2	0.8	NP	NP	NP	18	A-3a			
746.9	50				Bottom of Boring = 50.0 feet														



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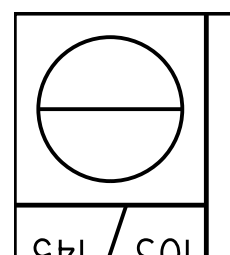
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N2 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PID: _____		BR ID: _____		PROJECT: FRA-71-17.14		STATION / OFFSET: 122+12.34 74.4 LT		START: 6/21/10		END: 6/22/10		PG 2 OF 2		B-193-1-09				
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	ATTERBERG PL	WC	ODOT CLASS (g)	INST.	
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS, SOME SAND, LITTLE SILT, TRACE CLAY, WITH COBBLES, WET (continued)		729.0	61 -															
@63.5; COBBLES			62 -															
			63 -															
			64 -	27	88	61	SS-19	-	-	-	-	-	-	-	12	A-1-a (V)		
			65 -	32	31													
			66 -															
			67 -															
			68 -															
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, TRACE SILT, MOIST		720.5	69 -	26														
			70 -	26	24	70	SS-20	-	42	35	14	9	0	NP	NP	14	A-1-b (O)	
			71 -															
			72 -															
			73 -															
			74 -	30														
			75 -	25	19	62	SS-21	-	-	-	-	-	-	-	16	A-1-b (V)		
HARD, GRAY, SANDY SILT, LITTLE GRAVEL, TRACE CLAY, TILL, DAMP		713.5	76 -															
			77 -															
			78 -															
			79 -	30		100	SS-22	-	19	14	28	29	10	19	12	7	12	A-4a (1)
			80 -															
			81 -															
			82 -															
			83 -															
@63.5; MOIST		705.0	84 -	50		-	100	SS-23	-	-	-	-	-	-	-	-	17	A-4a (V)

NOTES: CAVED AT 26'
ABANDONMENT METHODS: MATERIALS QUANTITIES: 100 LB. BENTONITE POWDER, 184 LB. CEMENT



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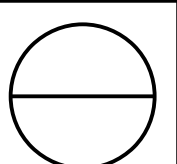
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N3 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.14	DRILLING FIRM / OPERATOR:	CTL / ZF	DRILL RIG: 0306R025	STATION / OFFSET: 122+12.34, 74.4 LT	EXPLORATION ID: B-193-1-09														
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER:	CTL / ZF	HAMMER: CME AUTOMATIC	ALIGNMENT: 789.0 (MSL)	71 SB														
PID: 104 / 145	BR ID: FRA-71-17.14	3.25" HSA	CALIBRATION DATE: 6/27/07	ELEVATION: 789.0 (MSL)	EOB: 84.0 ft														
START: 6/21/10	END: 6/22/10	SPT	ENERGY RATIO (%): 84	COORD: 715632.692 N, 1833007.723 E	84.0 ft														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT / ROD	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (g)	INST.	
Asphalt (6")		789.0																	
Concrete (6")		788.5																	
MEDIUM STIFF, BROWN, SANDY SILT, SOME GRAVEL, TRACE CLAY, DAMP		788.0																	
@3.5' STIFF		780.5																	
@6.0' HARD, NO RECOVERY																			
MEDIUM DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, LITTLE SILT, DAMP		778.0																	
HARD, GRAYISH BROWN, SANDY SILT, SOME GRAVEL, TRACE CLAY, TILL, DAMP		773.0																	
@18.0' BOULDERS																			
@21.0' BOULDERS																			
@26.0' COBBLES																			
@28.5' TRACE SILT																			
@38.5' LITTLE SILT, PUMPED DRILLING MUD INTO AUGERS, WET																			
@3.5' TRACE SILT																			
@43.5' TRACE SILT																			
@53.5' COBBLES																			
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS, SOME SAND, LITTLE SILT, TRACE CLAY, WITH COBBLES, WET		730.5																	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 16:56 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ



104 / 145

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N3 RETAINING WALL

DRAWN
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RESOURCE INTERNATIONAL, INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

LOG OF BORING
9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

Date Started 1/26/09 Date Completed 1/26/09 Method 3.75" HSA Water Elev. 754.4ft
Northing 715533 6425 Easting 1833006 6700 Hammer System Type Automatic Calibration Date: 6/11/07
Sealing/Backfilling Type AC Quantity L-71 SB: 310+39.23, 11.3' RT
Boring No. B-191 Baseline, Station & Offset L-71 SB: 310+39.23, 11.3' RT Drill Rod Energy Ratio (ER) 79.3
Surface Elev. 784.4ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Spill)

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.	
784.4	0				0.5' - Topsoil												
783.9					Hard, brown fine to coarse SANDY SILT, little to trace fine gravel, dry to damp.												
		4/12/15	36	89	-qh = 4.0 tsf	SS-1	12	20.4	18.1	32.7	16.9	23	15	8	9	A-4a	
		10/14/17	41	100	-qh = 2.5 tsf	SS-2	8.6	28.0	18.1	28.1	17.2	21	14	7	10	A-4a	
778.9	5				Very dense, COARSE and FINE SAND, some silt, little fine gravel (cobble and boulder fragments), trace clay, damp.												
		14/50/6"	50/6"	100		SS-3	15.7	29.7	20.2	21.4	13.1	20	15	5	10	A-3a	
776.4					Very dense, gray fine to coarse SANDY SILT, little fine gravel, damp.												
		5/17/50/6"	50/6"	72		SS-4	12.5	27.7	19.3	25.1	15.4	14	17	NP	12	A-4a	
	10				Very dense, brown fine to coarse SAND and fine GRAVEL (cobble and boulder fragments), some to little silt, dry.												
		50/3"	50/3"	67		SS-5	15.5	28.4	19.8	22.8	13.5	21	17	4	12	A-4a	
771.4						AS-6	33.8	26.1	16.8	12.2	11.0	18	15	3	9	A-1-b	
	15				Very dense, brown fine to coarse SAND and fine GRAVEL (cobble and boulder fragments), some to little silt, dry.												
		18/50/4"	50/4"	100		SS-7	39.8	23.5	15.4		21.2				9	A-1-b Visual	
					Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.												
		18/32/50/6"	50/6"	94		SS-8									6	A-1-b Visual	

Form TE-151 Revised 9/94

1/30

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.	
	20				same as above	SS-9											A-1-b Visual
		50/6"	50/6"	0	Very dense, brown fine to coarse SANDY SILT, some fine gravel, damp.												
758.9	25					SS-10	52.5	22.0	8.4		17.1				6	A-1-b	
		8/24/32	74	100		SS-11	20.5	23.7	13.3		42.4				7	A-4a	
					Very dense, brown fine to coarse SAND and fine GRAVEL, little to trace silt, trace clay, dry to moist.												
753.9	30					SS-12									5	A-4a Visual	
		23/48/47	126	100	Very dense to dense, brown fine to coarse SAND and fine GRAVEL, little to trace silt, trace clay, dry to moist.												
						SS-13	35.1	35.6	11.7		17.5				7	A-1-b	
		21/30/40	93	100		SS-14	35	39.0	17.9		5.2	2.8			8	A-1-b	
					Very dense to dense, brown fine to coarse SAND and fine GRAVEL, little to trace silt, trace clay, dry to moist.												
	35					SS-15									12	A-1-b Visual	
		24/50/6"/37	37	33	-running sands @ 43.0'												
						SS-16	41.7	36.5	17.5		3.6	0.7			15	A-1-b	
	40				-running sands @ 43.0'												
		16/25/25	66	100		SS-17									13	A-1-b Visual	
		10/24/35	78	100													
		8/21/31	69	94													

2/30

Boring No. B-191 Baseline, Station & Offset L-71 SB: 310+39.23, 11.3' RT

Surface Elev. 784.4ft

Project: W-07-109

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N3 RETAINING WALL

DRAWN
B.R.U.
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NT

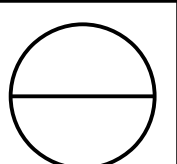
Boring No. B-191 Baseline, Station & Offset L-71 SB: 310+39.23, 11.3' RT

Surface Elev. 784.4ft

Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics							ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.		P.I.	W/C.		
	45				same as above													
		10/15/22	49	89		SS-19	46.8	32.5	16.3	3.4	1.0					12	A-1-b	
736.4		6/7/11	24	78	Medium dense to dense, brown fine to coarse SAND and fine GRAVEL, trace silt, trace clay, damp.	SS-20										13	A-1-b Visual	
	50	9/10/18	37	89		SS-21	19	49.2	27.2	4.0	0.7					11	A-1-b	
		11/15/17	42	67		SS-22										8	A-1-b Visual	
729.4	55																	

Bottom of Boring = 55.0 feet



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N3 RETAINING WALL

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RESOURCE INTERNATIONAL, INC.
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LOG OF BORING
9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

Date Started 1/24/09 Date Completed 1/24/09 Method 3.75" HSA Water Elev. 0.0ft
Northing 715722.9493 Easting 1833228.3150 Hammer System Type Automatic Calibration Date: 6/11/07
Sealing/Backfilling Type AC Quantity Quantify
Boring No. B-195 Baseline, Station & Offset L-71 NB: 318+43.10, 23.1' LT Drill Rod Energy Ratio (ER) 79.3
Surface Elev. 792.8ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Spill)

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Physical Characteristics						ODOT Class					
						Sample No.	% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.L.	P.I.	W.C.	
792.8	0				Medium dense, brown CLAYEY coarse to fine SAND, little fine gravel, moist.	SS-1	17.7	21.5	26.0	17.8	16.9	18	12	6	11	A-2-4	
799.8		4/4/6	13	94	Medium dense, brown fine to coarse SAND and fine GRAVEL, some silt, dry.	SS-2	33.4	26.2	16.7	23.7						9	A-1-b
787.3	5				Very stiff, brown coarse to fine SANDY SILT, little fine gravel, moist. -qh = 1.75 tsf	SS-3	15	23.5	25.2	19.4	16.8	23	13	10	11	A-4a	
784.8		4/5/6	15	100	Stiff, grayish brown SILT and CLAY, some coarse to fine sand, trace fine gravel, moist. -qh = 4.0 tsf	SS-4	8.1	12.7	17.9	28.8	32.4	27	15	12	15	A-6a	
781.8	10				Stiff, grayish brown coarse to fine SANDY SILT, trace fine gravel, moist. -qu @ 11.7' = 2.04 tsf, wet density = 138.5 pcf -qh = 4.5 tsf	ST-5	9.3	17.2	23.2	29.3	21.0	24	15	9	17	A-4a	
779.8		3/4/3	9	100	Loose to very loose, brown COARSE and FINE SAND, little to some fine gravel, little silt, dry to wet.	SS-6	13.6	29.5	45.3	11.7						7	A-3a
	15					SS-7										8	A-3a Visual
		0/1/1	3	100		SS-8	10.3	30.4	47.7	5.2	6.3					19	A-3a

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

Form TE-151 Revised 9/94

2/30

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Physical Characteristics						ODOT Class						
						Sample No.	% Agg	% C.S.	% F.S.	% Silt	% Clay		L.L.	P.L.	P.I.	W.C.		
	20				same as above	SS-9											9	A-3a Visual
		1/2/3	7	89		SS-10	24.1	23.8	31.0	13.0	8.1	NP	NP	NP	NP	12	A-3a	
	25					SS-11	20.6	20.8	24.9	23.1	10.6	NP	NP	NP	NP	13	A-2-4	
767.3		7/50/3*	50/3*	78	Very dense, brown SILTY coarse to fine SAND, some fine gravel, moist.	SS-12	39.4	27.3	20.0	13.3						8	A-1-b	
764.8		4/4/5	12	72	Medium dense to dense, brown coarse to fine SAND and fine GRAVEL, trace silt, dry.	SS-13	51.7	17.8	13.1	17.4						8	A-1-b	
759.8		5/9/15	32	33		SS-14	43.6	23.8	11.2	21.3						7	A-1-b	
757.3	35				Very dense, brownish gray fine to coarse SAND and fine GRAVEL, some silt, dry.	SS-15	21.6	15.8	19.1	25.3	18.2	23	17	6	10	A-4a		
		13/17/22	52	89	Very dense, gray coarse to fine SANDY SILT, some fine gravel, damp.	SS-16	52.7	24.4	9.8	13.1						5	A-1-a	
754.8		18/36/37	96	78	Very dense, brown coarse to fine GRAVEL, some fine to coarse sand, little silt, dry.	SS-17										5	A-1-a Visual	
	40					SS-18	38.5	36.7	15.1	9.7						9	A-1-b	
749.8		15/22/30	69	78														
		16/23/36	78	72	Very dense, brown fine to coarse SAND and fine GRAVEL, trace silt, dry.													

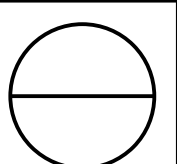
Boring No. B-195

Baseline, Station & Offset L-71 NB: 318+43.10, 23.1' LT

Surface Elev. 792.8ft

Project: W-07-109

2/30



108 / 145

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N4 RETAINING WALL

DRAWN
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NT

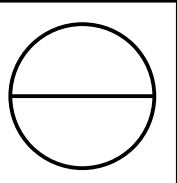
Boring No. B-195 Baseline, Station & Offset 1-71 NB: 318+43.10, 23.1' LT

Surface Elev. 792.8ft

Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	No.	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.			
	45				same as above														
		13/22/33	73	72		SS-19									9				A-1-b Visual
744.8																			
		9/18/26	58	78		SS-20	56.7	26.6	10.6		6.0				10				A-1-a
	50																		
		9/15/18	44	89		SS-21									12				A-1-a Visual
739.8																			
		11/16/22	50	56		SS-22	19.6	50.8	23.1		6.5				12				A-1-b
737.8	55																		

Bottom of Boring = 55.0 feet



109 / 145

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N4 RETAINING WALL

DRAWN
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STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SHEET 4

LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. FRA-40-1447
FORWARD ABUTMENT E. INNERBELT UNDER OAK STREET
 LOCATION: T.H. 12B STA. 47+87 OFFSET 22' LT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
796.0	0			
	2			
	4			
791.0	6	3/6	27625	Brown Sandy Silt
	8			
786.0	10	21/39	27626	Dark-Gray Gravelly Sandy Silt
	12			
	14			
781.0	16	50/103	27627	Gray Silt
	18			
776.0	20	46/69	27628	Gray Sandy Silt
	22			
773.5	24	64/135	27629	Gray Gravelly Sandy Silt
	26			
771.0	26	53/32	27630	Gray Silty Sandy Gravel
	28			
768.5	28	44/89	27631	Gray Silty Sandy Gravel
	30			
766.0	30	30/73	27632	Gray Gravelly Sand
	32			
763.5	34	46/70	27633	Gray Silty Gravelly Sand
	34			
761.0	36	41/50	27634	Gray Sandy Gravel

MS
8.24.59

LOG OF BORING (CONTINUED)

SHEET 7

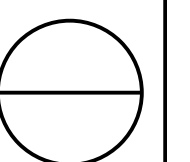
BRIDGE NO. FRA-40-1447 T.H. 12B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
658.5	38	10/14	27635	Gray Sandy Gravel
	40			
756.0	40	40/63	27636	Gray Gravelly Sand
	42			
753.5	42	10/35	27637	Gray Sandy Gravel
	44			
751.0	46	34/100	27638	Gray Sandy Gravel
	48			
746.0	50	78/86	27639	Gray Gravelly Sand
	52			
	54			
741.0	56	34/64	27640	Gray Gravelly Sand
740.0	56			BOTTOM OF BORING
	58			
	60			
	62			
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

STRUCTURE FOUNDATION EXPLORATION
N4 RETAINING WALL

FRA-71-17.14
PID NO. 77371

110 / 145



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PROJECT: FRA-71-17.14 DRILLING FIRM / OPERATOR: CTL / ZF
 TYPE: STRUCTURE SAMPLING FIRM / LOGGER: CTL / ZF
 PID: BR ID: DRILLING METHOD: 3.25" HSA
 START: 6/10/10 END: 6/10/10 SAMPLING METHOD: SPT

DRILL RIG: 0305R025
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 6/27/07
 ENERGY RATIO (%): 84

STATION / OFFSET: 119+70.4, 64.52 RT
 ALIGNMENT: 71 NB
 ELEVATION: 780.6 (MSL) EOB: 50.0 ft
 COORD: 715420.346 N, 1833259.977 E

EXPLOSION ID: B-190-1-09
 PAGE: 1 OF 1

ELEV.	DEPTH	SPT/ ROD	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	DOOT CLASS (g)	INST.
						GR	CS	FS	SI	CL	LL	PL	PI			
780.1	1	6														
779.5	2	5	24	SS-1	4.50	-	-	-	-	-	-	-	-	-	8	A-4a (V)
779.2	3	12	72													
	4	19	71	SS-2	4.50	15	13	24	40	8	21	13	8	7	A-4a (3)	
	5	24	27													
	6	26	45	SS-3	4.50	-	-	-	-	-	-	-	-	9	A-4a (V)	
	7	32	108													
	8	45														
	9	21	85	SS-4	4.50	-	-	-	-	-	-	-	-	8	A-4a (V)	
	10	22	39													
	11	17	74	SS-5	-	-	-	-	-	-	-	-	-	6	A-1-b (V)	
	12	20	33													
	13															
	14	21	102	SS-6	-	40	25	19	13	3	NP	NP	NP	7	A-1-b (0)	
	15	27	46													
	16	19	73	SS-7	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	17	24	28													
	18															
	19	14	94	SS-8	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
	20	32	35													
	21	24	50	SS-9	-	-	-	-	-	-	-	-	-	3	A-1-b (V)	
	22	26	106													
	23															
	24	21	90	SS-10	-	41	31	19	7	2	NP	NP	NP	4	A-1-b (0)	
	25	36	28													
	26															
	27															
	28															
	29	30	123	SS-11	-	-	-	-	-	-	-	-	-	4	A-1-b (V)	
	30	45	43													
	31															
	32															
	33															
	34	20	87	SS-12	-	44	32	17	6	1	NP	NP	NP	15	A-1-b (0)	
	35	30	32													
	36															
	37															
	38															
	39	31	95	SS-13	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	40	29	39													
	41															
	42															
	43															
	44	30	100	SS-14	-	55	24	13	8	0	NP	NP	NP	8	A-1-a (0)	
	45	37	50													
	46															
	47															
	48															
	49	37	95	SS-15	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	50	35	33													

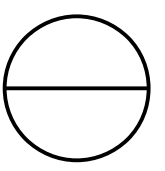
789.6
 VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP
 @3.5'; TRACE SILT
 @35.0'; PUMPED DRILLING MUD INTO AUGERS, WET
 737.1
 VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS, AND SAND, TRACE SILT, TRACE CLAY, WET
 730.6
 EOB

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 50 LB. BENTONITE POWDER, 94 LB. CEMENT

PROJECT: FRA-71-17.14		DRILLING FIRM / OPERATOR: _____		CTL / ZF		DRILL RIG: 0305R025		STATION / OFFSET: 124+00.11, 70.03 LT		EXPLORATION ID									
TYPE: STRUCTURE		SAMPLING FIRM / LOGGER: _____		CTL / ZF		HAMMER: CME AUTOMATIC		ALIGNMENT: 71 SB		B-195-2-09									
PID: BR ID: _____		DRILLING METHOD: 3.25" HSA		SPT		CALIBRATION DATE: 6/27/07		ELEVATION: 792.6 (MSL)		EOB: 52.5 ft									
START: 5/23/10		END: 5/23/10		SPT		ENERGY RATIO (%): 84		COORD: 715820.474 N, 1833000.676 E		PAGE 1 OF 1									
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	DOT CLASS (g)	INST.
Concrete (3")		792.6																	
Base course (3")		792.3																	
STIFF, BROWN, SILT AND CLAY. TRACE SAND. LITTLE GRAVEL. FILL, DAMP		789.1																	
VERY STIFF, BROWN, SANDY SILT, SOME CLAY. LITTLE GRAVEL. FILL, DAMP																			
@6.0': HARD																			
@8.5': COBBLES, DRY																			
HARD, GRAY, SANDY SILT, LITTLE CLAY, LITTLE GRAVEL, TILL, DRY		781.6																	
LOOSE, GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT, WITH COBBLES, DRY		774.1																	
@23.5': NO RECOVERY																			
HARD, GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, TILL, DAMP		766.6																	
VERY DENSE, GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACES OF CLAY, DRY		764.1																	
@33.5': COBBLES																			
VERY DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, TRACES OF SILT, TRACES OF CLAY, WET		751.6	W																
@51.0': NO CLAY		740.1	EOB																

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/13/11 18:57 - J:\DEPTS\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ

NOTES: CAVED AT 35.0'. BOTTOM 15' OF AUGER STRING BROKE OFF. ABANDONED IN HOLE. GROUNDWATER AT 9.0' AT COMPLETION
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 144 LB. BENTONITE GROUT

 113 / 145	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION N5 RETAINING WALL	DRAWN B.R.U. CHECKED NT
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RESOURCE INTERNATIONAL, INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

LOG OF BORING
9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

Date Started 2/1/09 Date Completed 2/1/09 Method 3.75" HSA Water Elev. 747.7ft
Northing 715886.9177 Easting 1832963.6020 Hammer System Type Automatic Calibration Date: 6/11/07
Sealing/Backfilling Type AC Quantity L-71 SB: 313+94.90, 12.8' RT Drill Rod Energy Ratio (ER) 79.3
Boring No. B-196 Baseline, Station & Offset L-71 SB: 313+94.90, 12.8' RT Surface Elev. 790.7ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Spill)

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.	
790.7	0				0.3' - Asphalt												
790.4					0.7' - Concrete												
789.7					Medium dense, brown fine to coarse SAND and fine GRAVEL, some to little silt, damp to dry.	SS-1	27.7	31.8	20.4	9.1	10.9	NP	NP	10		A-1-b	
						SS-2	25.8	48.8	9.1	9.9	6.4			8		A-1-b	
786.7					Hard, brown SILT, some coarse to fine sand, trace fine gravel, moist.	SS-3	4.7	9.2	11.7	60.4	14.0			14		A-4a	
					-qh = 3.0 tsf												
785.2					Very dense to dense, brown changing to gray SILTY fine to coarse GRAVEL, some fine to coarse sand, some silt, damp.	SS-4	52.7	12.2	8.9	16.8	9.4			10		A-2-4	
						SS-5	11.9	12.2	25.0	35.8	15.0	22	14	8		A-4a	
782.7					Very dense, gray coarse to fine SANDY SILT, little fine gravel, dry.												
						SS-6										A-1-b Visual	
780.2					Very dense to dense, gray fine to coarse SAND and coarse to fine GRAVEL, some silt, dry.												
						SS-7	34.9	29.1	13.6	18.7	3.7	21	16	5	7		A-1-b
						SS-8											A-6a Visual
775.2					Hard, gray SILT and CLAY, some fine to coarse sand, little fine gravel, dry.												
						SS-9	10.6	20.5	17.9	36.4	14.6	26	14	12	9		A-6a

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

Form TE-151 Revised 9/94

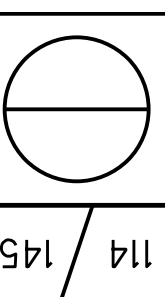
2/30

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class				
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.	
770.2					Hard, gray fine to coarse SANDY SILT, trace to little fine gravel, dry to moist	SS-10											A-4a Visual
						SS-11	5.8	24.9	17.2	25.1	27.0	22	14	8	9		A-4a
						SS-12											A-4a Visual
						SS-13	8.6	22.8	20.5	33.5	14.5	NP	NP	15			A-4a
						SS-14	11.7	19.9	16.9	43.6	8.0	24	16	8	10		A-4a
767.7					Hard, gray SILT and CLAY, some fine to coarse sand, trace fine gravel, damp.	SS-15											A-6a Visual
						SS-16	8.2	22.0	16.5	30.6	22.7	26	15	11	10		A-6a
752.7					Hard, gray coarse to fine SANDY SILT, trace fine gravel, damp.	SS-17	7.8	14.9	14.0	47.0	16.4	23	16	7	11		A-4a
						SS-18											A-4a Visual
747.7					Dense to very dense, gray fine to coarse SAND and coarse to fine GRAVEL, trace to little silt, moist to wet.	SS-19	29.3	44.9	16.7	9.1							A-1-b

Boring No. B-196 Baseline, Station & Offset L-71 SB: 313+94.90, 12.8' RT

Surface Elev. 790.7ft

Project: W-07-109



FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N5 RETAINING WALL

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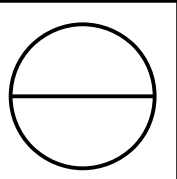
Boring No. B-196 Baseline, Station & Offset L-71 SB: 313+94.90, 12.8' RT

Surface Elev. 790.7ft

Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics							ODOT Class			
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.		P.I.	W/C.	
	45				same as above												
		9/15/16	41	78		SS-20	34.3	28.8	20.2	13.5	3.3				12	A-1-b	
		8/15/17	42	94		SS-21									18	A-1-b Visual	
	50														16	A-1-b	
		10/13/15	37	78		SS-22	33.6	48.7	13.7	4.0					14	A-1-b Visual	
		11/16/18	45	89		SS-23									13	A-1-b	
		10/20/23	57	78		SS-24	29.3	35.8	24.3	9.3	1.3				10	A-4a	
		13/18/27	59	56		SS-25	38.4	6.7	16.4	33.0	5.5						
732.7																	
730.7	60																

Bottom of Boring = 60.0 feet



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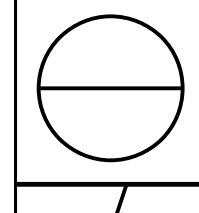
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N5 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.14		DRILLING FIRM / OPERATOR:		CTL / ZF		DRILL RIG: 0305R025		STATION / OFFSET: 126+67.07, 77.53 LT		EXPLORATION ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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<tr><td>5</td><td>20</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6</td><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>7</td><td>15</td><td>48</td><td>SS-3</td><td>4.50</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>8</td><td>A-4a (V)</td></tr> <tr><td>8</td><td>19</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>9</td><td>17</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>10</td><td>20</td><td>63</td><td>SS-4</td><td>4.50</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>9</td><td>A-4a (V)</td></tr> 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<tr><td>16</td><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>17</td><td>18</td><td>74</td><td>SS-7</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>10</td><td>A-4a (V)</td></tr> <tr><td>18</td><td>25</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>19</td><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>20</td><td>15</td><td>48</td><td>SS-8</td><td>4.50</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>9</td><td>A-4a (V)</td></tr> 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STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/13/11 18:57 - J:\DEPTS\10 PROJECTS\10050038COL-BURGESS-NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ



116 / 145

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N5 RETAINING WALL

DRAWN: B.R.U.
CHECKED: NT

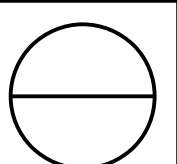
Boring No. B-199 Baseline, Station & Offset L-71 SB: 318+14.48, 11.4' LT

Surface Elev. 795.2ft

Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	Nos	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class	
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.
	45				same as above	SS-22							6	A-1-b Visual
		17/19/29	63	83										
		14/18/21	52	61		SS-23	17.1	43.9	23.3		15.7		13	A-1-b
	50													
		13/18/24	56	56		SS-24							15	A-1-b Visual
		14/19/28	62	89		SS-25	21.8	45.7	19.1	9.1	4.3			A-1-b
740.2	55													

Bottom of Boring = 55.0 feet



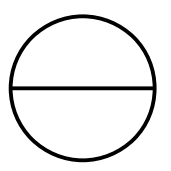
118 / 145

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N5 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.76/FRA-670.4.19		DRILLING FIRM / OPERATOR: DLZ / K. CONRAD		DRILL RIG: CME 75 TRUCK		STATION / OFFSET: 319+57.24, 7.65 RT		EXPLORATION ID										
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: DLZ / M. EVENER		HAMMER: CME AUTOMATIC		ALIGNMENT: SB CD ROAD		B-201-1-09										
PID: 77369 BR ID: 12/4/09		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 2/15/08		ELEVATION: 777.5 (MSL) EOB: 44.9 ft.		PAGE										
START: 12/4/09 END: 12/4/09		SAMPLING METHOD: SPT		ENERGY RATIO (%): 62		COORD: 716445.690 N, 1832908.130 E		1 OF 2										
MATERIAL DESCRIPTION AND NOTES																		
ELEV.	DEPTHS	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	HOLE SEALED	
776.1	1																	
Medium dense brown COARSE AND FINE SAND (A-3a), trace silt; damp.																		
770.5	7																	
Dense brown GRAVEL WITH SAND (A-1-b), trace to little silt; damp.																		
764.0	13																	
Dense brown GRAVEL (A-1-a), some fine to coarse sand, trace to little silt; damp.																		
759.0	14																	
Hard gray SANDY SILT (A-4a), some to "and" fine to coarse sand, trace gravel; damp.																		
752.5	24																	



119 / 145

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N5 RETAINING WALL

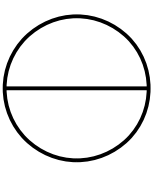
DRAWN
B.R.U.
CHECKED
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PID: 77369		BR ID:		PROJECT: FRA-71-17.76/FRA-670-4.19		STATION / OFFSET: 319+57.24, 7.65 RT		START: 12/4/09		END: 12/4/09		PG 2 OF 2		B-201-1-09						
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (sf)	GRADATION (%)			ATTERBERG	WC	ODOT CLASS (g)	HOLE SEALED			
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; wet.				752.5							GR	CS	FS	SI	CL	LL	PL	PI		
@ 31.0', becomes gray.					26			100	SS-9	-	-	-	-	-	-	-	-	-	10	A-1-b (V)
					27															
@ 33.5', 1.0 foot sand heave; washed out with tlicone.					28															
					29	48 50/5"	-	100	SS-10	-	49	26	12	-13	-	NP	NP	NP	8	A-1-b (0)
Very dense gray COARSE AND FINE SAND (A-3a), little gravel, trace silt; wet.					30															
					31	24 50/5"	-	100	SS-11	-	-	-	-	-	-	NP	NP	NP	7	A-1-b (V)
					32															
					33															
					34	22 36	71	100	SS-12	-	40	33	15	-12	NP	NP	NP	9	A-1-b (0)	
					35															
					36															
					37															
					38															
					39	46 38	75	100	SS-13	-	-	-	-	-	-	-	-	-	-	9
					40															
					41															
					42															
					43															
					44	26 38	-	100	SS-14	-	-	-	-	-	-	-	-	-	10	A-3a (V)
					45	50/5"														

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/13/11 18:53 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ

NOTES: SEEPAGE AT 25.5 FEET. WATER LEVEL PRIOR TO ADDING WATER = 28.4 FEET. FINAL WATER LEVEL INCLUDING DRILLING WATER = 27.0 FEET.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS, 2 BAGS QUICKGROUT, SOIL CUTTINGS

	120 / 145	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION N5 RETAINING WALL	DRAWN B.R.U. CHECKED NT
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PROJECT: FRA-71-17.76/FRA-670.4.19
 TYPE: ROADWAY
 PID: 77369 BR ID: 123/09 END: 12/4/09
 START: 12/3/09 END: 12/4/09

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
 SAMPLING FIRM / LOGGER: DLZ / M. EVENER
 DRILLING METHOD: 3.25" HSA
 SAMPLING METHOD: SPT

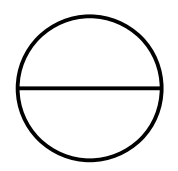
DRILL RIG: CME 75 TRUCK
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 2/15/08
 ENERGY RATIO (%): 62

STATION / OFFSET: 321+40.47, 13.99 RT
 ALIGNMENT: SB CD ROAD
 ELEVATION: 777.1 (MSL) EOB: 50.0 ft.
 COORD: 716629.150 N, 1832894.170 E

EXPLORATION ID: B-201-4-09
 PAGE: 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG			WC	ODOT CLASS (G)	HOLE SEALED
								GR	CS	FS	SI	CL	LL	PL			
Asphalt Concrete - 8" Portland Cement Concrete - 10"	777.1																
POSSIBLE FILL: Loose brown GRAVEL WITH SAND (A-1-b), trace silt, wet.	775.6	1															
		2															
		3															
		4	2	2	28	SS-1	-	-	-	-	-	-	-	6	A-1-b (V)		
		5	3	5													
		6															
		7															
Dense brown FINE SAND (A-3), little coarse sand, trace silt, trace gravel, wet.	770.1	7															
		8															
		9	13	16	33	SS-2	-	7	14	69	-10	-	-	20	A-3 (0)		
		10															
		11	11	8	29	SS-3	-	-	-	-	-	-	-	19	A-3a (V)		
Dense to very dense dark brown COARSE AND FINE SAND (A-3a) little to some silt, trace gravel, wet. @ 11.0'-12.5', medium dense.	766.1	11															
		12	8	20													
		13															
		14	31	50/5"	-	SS-4	-	-	-	-	-	-	-	10	A-3a (V)		
@ 13.5', 1.5 feet sand heave, washed out with thicone.		15															
		16	14	20	44	SS-5	-	0	3	76	-21	-	-	19	A-3a (0)		
@ 16.0', becomes gray.		17	20	23													
		18															
		19	19	35	69	SS-6	-	-	-	-	-	-	-	12	A-3a (V)		
		20															
		21	13	22	51	SS-7	-	-	-	-	-	-	-	23	A-4b (V)		
Dense gray SILT (A-4b), little fine sand, wet.	756.1	21															
		22	22	27													
		23															
Very dense gray COARSE AND FINE SAND (A-3a), some gravel, little to some silt, wet.	753.6	23															
		24	18	31	66	SS-8	-	28	21	30	-21	-	-	13	A-3a (0)		
		25	33														

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/13/11 18:53 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS-NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ



121 / 145

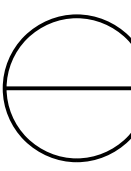
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N5 RETAINING WALL

DRAWN: B.R.U.
CHECKED: NT

PID:	BR ID:	PROJECT:	STATION / OFFSET:	START:	END:	PG 2 OF 2	B-201-4-09													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ ROD	REC N ₆₀ (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (g)	HOLE SEALED		
Hard gray SANDY SILT (A-4s), "and" fine to coarse sand, trace to little gravel; damp to moist.		752.1																		
Very dense gray GRAVEL WITH SAND (A-1-b), trace to little silt; wet.		746.1																		
			26																	
			27	17 21 31	54	83	SS-9	4.5+	-	-	-	-	-	-	-	-	11	A-4s (V)		
			28																	
			29	50/5"	-	100	SS-10	4.5+	10	19	21	33	17	22	14	8	11	A-4s (3)		
			30																	
			31	24 50/5"	-	27	SS-11	-	-	-	-	-	-	-	-	-	10	A-1-b (V)		
			32																	
			33																	
			34	27 48 40	91	100	SS-12	-	-	-	-	-	-	-	-	-	9	A-1-b (V)		
			35																	
			36																	
			37																	
			38																	
			39	24 39	78	100	SS-13	-	39	35	17	-	9	-	-	12	A-1-b (0)			
			40																	
			41																	
			42																	
			43																	
			44	48 43	92	100	SS-14	-	-	-	-	-	-	-	-	7	A-1-b (V)			
			45																	
			46																	
			47																	
			48																	
			49	37 39	81	100	SS-15	-	-	-	-	-	-	-	-	11	A-1-b (V)			
			50																	

NOTES: SEEPAGE AT 1.5 FEET. WATER LEVEL PRIOR TO ADDING WATER = 10.0 FEET. FINAL WATER LEVEL INCLUDING DRILLING WATER = 25.2 FEET.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAGS BENTONITE CHIPS, 2 BAGS QUICKGROUT, SOIL CUTTINGS

	122 / 145	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION N5 RETAINING WALL	DRAWN B.R.U. CHECKED NT
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PROJECT: FRA-71-17.14 DRILLING FIRM / OPERATOR: CTL / ZF
 TYPE: STRUCTURE SAMPLING FIRM / LOGGER: 3.25" HSA
 PID: BR ID: DRILLING METHOD: SPT
 START: 6/17/10 END: 6/17/10 SAMPLING METHOD: SPT

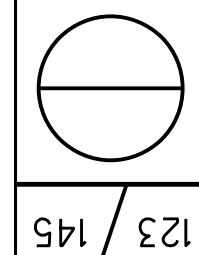
DRILL RIG: 0306R025
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 6/27/07
 ENERGY RATIO (%): 84

STATION / OFFSET: 123+93.5, 85.38 RT
 ALIGNMENT: 71 NB
 ELEVATION: 794.1 (MSL) EOB: 55.5 ft
 COORD: 715852.197 N, 1833220.140 E

EXPLOSION ID: B-195-3-09
 PAGE: 1 OF 1

DEPTH	SPT / ROD	N ₆₀	REC (%)	SAMPLE ID	HP (sf)	GRADATION (%)				ATTERBERG				WC	DOOT CLASS (g)	INST.
						GR	CS	FS	SI	CL	LL	PL	PI			
1																
2	3															
3	4	5	61	SS-1	-	-	-	-	-	-	-	-	-	-	-	18
4	4	8	72	SS-2	4.50	8	10	17	43	22	25	15	10	11		A-4a (6)
5																
6																
7	19	22	56	SS-3	-	-	-	-	-	-	-	-	-	-	-	8
8																
9	45	38	0	SS-4	-	-	-	-	-	-	-	-	-	-	-	
10																
11	12	23	49	SS-5	4.50	11	11	19	44	15	22	14	8	8		A-4a (5)
12																
13																
14	21	27	95	SS-6	4.50	-	-	-	-	-	-	-	-	-	-	7
15																
16	17	23	70	SS-7	4.50	-	-	-	-	-	-	-	-	-	-	8
17																
18																
19	14	21	66	SS-8	4.50	13	11	23	39	14	22	12	10	8		A-4a (4)
20																
21	12	20	75	SS-9	4.50	-	-	-	-	-	-	-	-	-	-	9
22																
23																
24																
25																
26																
27																
28																
29																
30																
31																
32																
33																
34	26	50	82	SS-14	-	55	20	10	11	4	NP	NP	NP	4		A-1-a (0)
35																
36																
37																
38																
39	31	42	129	SS-16	-	-	-	-	-	-	-	-	-	-	-	4
40																
41	31	36	119	SS-17	-	30	26	30	13	1	NP	NP	NP	4		A-1-b (0)
42																
43																
44	27	29	98	SS-18	-	-	-	-	-	-	-	-	-	-	-	12
45																
46																
47																
48																
49	31	50	-	SS-19	-	46	25	17	11	1	NP	NP	NP	10		A-1-b (0)
50																
51																
52																
53																
54	34	40	-	SS-20	-	-	-	-	-	-	-	-	-	-	-	8
55	50	50	-	SS-21	-	-	-	-	-	-	-	-	-	-	-	8

NOTES: CAVED AT 20'
 ABANDONMENT METHODS: MATERIALS QUANTITIES: 50 LB. BENTONITE POWDER, 94 LB. CEMENT



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FRA-71-17.14
 PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
 N6 RETAINING WALL

DRAWN: B.R.U.
 CHECKED: NT

PROJECT: FRA-71-17.14 DRILLING FIRM / OPERATOR: CTL / ZF
 TYPE: STRUCTURE SAMPLING FIRM / LOGGER: CTL / ZF
 PID: BR ID: DRILLING METHOD: 3.25" HSA
 START: 5/27/10 END: 5/27/10 SAMPLING METHOD: SPT

HAMMER: 0305R025
 CALIBRATION DATE: 6/27/07
 ENERGY RATIO (%): 84

STATION / OFFSET: 125+38.05, 63.93 RT
 ALIGNMENT: 71 NB
 ELEVATION: 774.8 (MSL) EOB: 55.0 ft
 COORD: 715984.223 N, 1833194.643 E

DEPTH	SPT/ ROD	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	ODOT CLASS (g)	INST.	
					GR	CS	FS	SI	CL	LL	PL	PI				
1	3	15	SS-1	4.50	-	-	-	-	-	-	-	-	-	-	11	A-4b (V)
2	4	7														
3																
4	9	13	42	67	SS-2	4.50	-	-	-	-	-	-	-	-	9	A-4b (V)
5																
6	10	12	38	67	SS-3	4.50	8	10	21	50	11	25	15	10	9	A-4b (S)
7																
8																
9	9	14	49	67	SS-4	4.50	-	-	-	-	-	-	-	-	9	A-4b (V)
10																
11																
12	26	36	98	67	SS-5	-	22	34	28	13	3	NP	NP	NP	7	A-1-b (0)
13																
14	23	42	115	67	SS-6	-	-	-	-	-	-	-	-	-	3	A-1-b (V)
15																
16	38	37	106	67	SS-7	-	-	-	-	-	-	-	-	-	3	A-1-b (V)
17																
18																
19	14	39	88	67	SS-8	-	-	-	-	-	-	-	-	-	4	A-1-b (V)
20																
21	49	45	116	56	SS-9	-	30	32	26	11	1	NP	NP	NP	4	A-1-b (0)
22																
23																
24	31	30	90	56	SS-10	-	-	-	-	-	-	-	-	-	12	A-1-b (V)
25																
26																
27																
28																
29	15	32	105	67	SS-11	-	48	22	15	12	3	NP	NP	NP	7	A-1-b (0)
30																
31																
32																
33																
34	22	31	91	67	SS-12	-	-	-	-	-	-	-	-	-	12	A-1-b (V)
35																
36																
37																
38																
39	50	-	100		SS-13	-	51	18	18	11	2	NP	NP	NP	9	A-1-b (0)
40																
41																
42																
43																
44	29	29	84	56	SS-14	-	-	-	-	-	-	-	-	-	8	A-1-b (V)
45																
46																
47																
48																
49	26	31	97	56	SS-15	-	42	30	17	9	2	NP	NP	NP	11	A-1-b (0)
50																
51																
52																
53																
54	18	33	108	89	SS-16	-	-	-	-	-	-	-	-	-	12	A-1-b (V)
55																

763.8
 @3.5' HARD
 STIFF, BROWN, SILT, SOME SAND, LITTLE CLAY, TRACE GRAVEL, TILL, DAMP
 @3.0' PUMPED DRILLING MUD INTO AUGERS, WET
 @3.5' COBBLES
 @4.8.5' TRACE CLAY
 719.8
 EOB

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 100 LB. BENTONITE POWDER, 94 LB. CEMENT



RESOURCE INTERNATIONAL, INC.
 6350 PRESIDENTIAL GATEWAY
 COLUMBUS, OHIO 43231
 (614) 823-4949

LOG OF BORING
 9885 ROCKSIDE ROAD
 CLEVELAND, OHIO 44125
 (216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
 CINCINNATI, OHIO 45242
 (513) 769-6998

Date Started 2/4/09 Date Completed 2/4/09 Method 3.75" HSA Water Elev. 737.2ft
 Northing 716290.4564 Easting 1833186.0650 Hammer System Type: Automatic Calibration Date: 6/11/07
 Sealing/Backfilling Type: AC Quantity: _____ Drill Rod Energy Ratio (ERR) 79.3
 Boring No. B-200 Baseline, Station & Offset: L-71 NB: 324+11.47, 6.5' LT Surface Elev. 775.4ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Spill)

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics					L.L.	P.L.	P.I.	W.C.	ODOT Class
							% Agg	% C.S.	% F.S.	% Silt	% Clay					
775.4	0				0.7' - Topsoil											
774.7					Hard, brown SILT and CLAY, some coarse to fine sand, little fine gravel, dry.	SS-1	15.3	16.2	18.1	29.3	21.1	26	15	11	7	A-6a
772.4					Very dense to dense, brown fine to coarse SAND and fine GRAVEL (cobble fragments), little to trace silt, dry to wet.	SS-2	38.5	30.5	13.2		17.8				8	A-1-b
						SS-3									6	A-1-b Visual
						SS-4	19.2	36.7	29.3	9.7	5.0				7	A-1-b Visual
						SS-5									5	A-1-b Visual
						SS-6									4	A-1-b Visual
						SS-7									4	A-1-b Visual
						SS-8									7	A-1-b Visual

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

Form TE-151 Revised 9/94

2/30

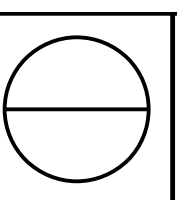
Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics					L.L.	P.L.	P.I.	W.C.	ODOT Class
							% Agg	% C.S.	% F.S.	% Silt	% Clay					
					same as above	SS-9									5	A-1-b Visual
						SS-10	50.9	23.9	13.6		11.5				4	A-1-b
						SS-11									6	A-1-b Visual
						SS-12	46.8	28.8	13.3		11.1				5	A-1-b
						SS-13	13.4	45.2	36.9		4.5				20	A-1-b
						SS-14									19	A-1-b Visual
						SS-15	8	48.9	35.3	5.3	2.6				15	A-1-b
						SS-16									19	A-1-b Visual
						SS-17	0.7	7.0	74.1	13.1	5.1				18	A-3a
						SS-18									16	A-3a

Boring No. B-200

Baseline, Station & Offset: L-71 NB: 324+11.47, 6.5' LT

Surface Elev. 775.4ft

Project: W-07-109



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

DRAWN
B.R.U.
 CHECKED
NT

Boring No. B-200

Baseline, Station & Offset L-71 NB: 324+11.47, 6.5' LT

Surface Elev. 775.4ft

Project: W-07-109

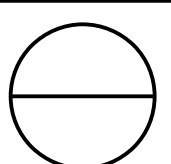
Elev. (ft)	Depth (ft)	Std.	Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class
								% Agg	% C.S.	% F.S.	% Silt	% clay	L.L.	

Bottom of Boring = 45.0 feet

730.4

45

same as above



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.76/FRA-670-4.19
 TYPE: ROADWAY
 PID: 77369 BR ID: 11/16/09
 START: 11/16/09 END: 11/16/09

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
 SAMPLING FIRM / LOGGER: DLZ / M. EVENER
 DRILLING METHOD: 3.25" HSA
 SAMPLING METHOD: SPT

DRILL RIG: CME 75 TRUCK
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 2/15/08
 ENERGY RATIO (%): 62

STATION / OFFSET: 325+64.51, 27.21 L
 ALIGNMENT: NB CD ROAD
 ELEVATION: 776.9 (MSL) EOB: 50.0 ft.
 COORD: 716443.160 N, 1833159.560 E

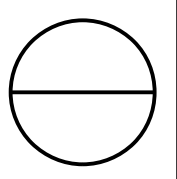
EXPLORATION ID: B-201-2-09
 PAGE: 1 OF 2

MATERIAL DESCRIPTION AND NOTES

ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC SAMPLE ID (%)	HP ID (tsf)	GRADATION (%)				ATTERBERG			WC	ODOT CLASS (G)	BACK FILL	
						GR	CS	FS	SI	CL	LL	PL				PI
776.0	1															POSSIBLE FILL: Very dense brown and gray COARSE AND FINE SAND (A-3a), some silt, little gravel; damp.
769.9	7															Very dense brown GRAVEL (A-1-a), some coarse sand, trace to little fine sand, trace to little silt; damp.
763.4	13															Very dense brown GRAVEL WITH SAND (A-1-b), trace silt; damp.
	14	15	85	100	SS-4	-	-	-	-	-	-	-	-	-	4	A-1-b (V)
	15	36	46													
	16	50/5"		100	SS-5	-	-	-	-	-	-	-	-	-	3	A-1-b (V)
	17															
	18															
	19	30	43	80	SS-6	-	48	25	19	-	8	-	-	-	4	A-1-b (O)
	20	34														
	21	45	50/5"		SS-7	-	-	-	-	-	-	-	-	-	3	A-1-b (V)
	22			100												
	23															
	24	50/5"		60	SS-8	-	-	-	-	-	-	-	-	-	3	A-1-b (V)

@ 23.5'-23.9', contains rock fragments.

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 18:56 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ



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FRA-71-17.14
 PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
 N6 RETAINING WALL

DRAWN: B.R.U.
 CHECKED: NT

PROJECT: FRA-71-17.76/FRA-670.4.19 ROADWAY
 TYPE: ROADWAY
 PID: 77369 BR ID: 11/17/09
 START: 11/16/09 END: 11/17/09

DRILLING FIRM / OPERATOR: DLZ / K. CONRAD
 SAMPLING FIRM / LOGGER: DLZ / M. EVENER
 DRILLING METHOD: 3.25" HSA
 SAMPLING METHOD: SPT

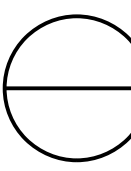
DRILL RIG: CME 75 TRUCK
 HAMMER: CME AUTOMATIC
 CALIBRATION DATE: 2/15/08
 ENERGY RATIO (%): 62

STATION / OFFSET: 326+89.69, 32.39 L
 ALIGNMENT: NB CD ROAD
 ELEVATION: 777.4 (MSL) EOB: 48.8 ft
 COORD: 716568.200 N, 1833151.690 E

EXPLORATION ID: B-201-3-09
 PAGE: 1 OF 2

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	ODOT CLASS (G)	BACK FILL	
								GR	CS	FS	SI	CL	LL	PL	PI				
Asphalt Concrete - 8" Aggregate Base - 2"	777.4																		
POSSIBLE FILL: Hard grayish brown SANDY SILT (A-4a), "sand" fine to coarse sand, trace gravel, damp.	776.6	1																	
		2																	
		3																	
		4	11	19	41	100	SS-1	4.5+	8	13	24	36	19	22	13	9	8	A-4a (4)	
		5																	
		6																	
		7																	
Medium dense to dense brown COARSE AND FINE SAND (A-3a), trace silt, trace gravel, wet.	770.4	7																	
		8																	
		9	9	14	28	100	SS-2	-	-	-	-	-	-	-	-	-	13	A-3a (V)	
		10																	
		11																	
		12	3	15	31	100	SS-3	-	-	-	-	-	-	-	-	-	16	A-3a (V)	
		13																	
		14																	
Dense to very dense brown GRAVEL WITH SAND (A-1-b), trace silt, wet.	763.9	13																	
		14	13	18	50.5*	100	SS-4	-	13	42	38	-	7	-	NP	NP	NP	18	A-1-b (0)
		15																	
		16																	
@ 16.0', 2.0 feet sand heave; washed out with tricone.		16																	
		17	15	18	43	100	SS-5	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
		18																	
		19	17	18	40	100	SS-6	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
		20																	
		21																	
Medium dense to dense brown FINE SAND (A-3), little coarse sand, trace to little silt, trace gravel, wet.	756.4	21																	
		22	11	15	31	100	SS-7	-	7	15	68	-	10	-	NP	NP	NP	22	A-3 (0)
		23																	
		24	9	15	25	100	SS-8	-	-	-	-	-	-	-	-	-	26	A-3 (V)	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 18:55 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ



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FRA-71-17.14
PID NO. 77371

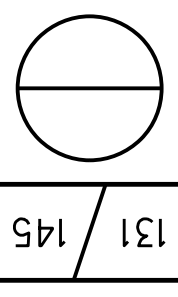
STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PID: 77369		BR ID:		PROJECT: FRA-71-17.76/FRA-670-4.19			STATION / OFFSET: 326+89.69 - 32.39 LT			START: 11/16/09			END: 11/17/09			PG 2 OF 2		B-201-3-09												
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG			WC	ODOT CLASS (G)	BACK FILL											
Dense to very dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel, wet.				752.4								GR	CS	FS	SI	CL	LL	PL	PI											
Very dense brown FINE SAND (A-3), some coarse sand, trace silt, trace gravel, wet.				743.9																										
Very dense brown GRAVEL WITH SAND (A-1-b), little silt, wet.				735.4																										
SOIL LOG				728.6	EOB																									

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 18:55 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ

NOTES: SEEPAGE AT 7.0 FEET. WATER LEVEL PRIOR TO ADDING WATER = 12.9 FEET. FINAL WATER LEVEL INCLUDING DRILLING WATER = 14.8 FEET.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2.7 BAGS BENTONITE CHIPS. SOIL CUTTINGS



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

DRAWN
B.R.U.
CHECKED
NT

PROJECT: FRA-71-17.76/FRA-670.4.19		DRILLING FIRM / OPERATOR: DLZ / B. HOSKINS		DRILL RIG: CME 75 TRUCK		STATION / OFFSET: 1108+92.7, 21.58 RT		EXPLORATION ID										
TYPE: ROADWAY		SAMPLING FIRM / LOGGER: DLZ / J. AURAND		HAMMER: CME AUTOMATIC		ALIGNMENT: 778.4 (MSL)		RAMP V2										
PID: 77369 BR ID: 11/17/09		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 2/11/09		ELEVATION: 778.4 (MSL)		EOB: 59.8 ft										
START: 11/16/09 END: 11/17/09		SAMPLING METHOD: SPT		ENERGY RATIO (%): 61.2		COORD: 716734.300 N, 1833138.880 E		PAGE										
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/ ROD	REC SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG	WC	ODOT CLASS (G)	BACK FILL				
			778.4					GR	CS	FS	SI	CL	LL	PL	PI			
Asphalt - 9" Aggregate Base - 3"			777.4															
FILL: Medium dense brown GRAVEL WITH SAND (A-1-b), little silt, moist.			776.8	1	4	SS-1A	250	-	-	-	-	-	-	-	-	-	4	A-1-b (V)
POSSIBLE FILL: Very stiff to hard brown SANDY SILT (A-4a), trace to little gravel; damp.				2	6			-	-	-	-	-	-	-	-	-	10	A-4a (V)
				3														
				4	6	SS-2	4.5+	9	12	24	36	19	21	13	8	8	8	A-4a (4)
				5	15													
				6	23													
				7														
				8														
				9	5	SS-3A	4.5+	-	-	-	-	-	-	-	-	-	9	A-4a (V)
Dense brown COARSE AND FINE SAND (A-3a), trace to little silt, trace gravel; wet.			769.5	9	16													
				10	19													
				11	36	SS-4	8	28	52	-12	-	-	-	-	-	-	13	A-3a (V)
				12	42													
				13	83	SS-5	-	-	-	-	-	-	-	-	-	-	14	A-3a (V)
				14	89													
				15	41	SS-6	-	-	-	-	-	-	-	-	-	-	20	A-3a (V)
				16	67													
				17	22													
				18	45	SS-7	-	1	88	-9	-	-	-	-	-	-	21	A-3 (0)
Dense brown FINE SAND (A-3), trace silt; wet.			759.9	18	83													
				19	23													
				20	49	SS-8	-	-	-	-	-	-	-	-	-	-	21	A-3a (V)
				21	67													
Dense to very dense brown COARSE AND FINE SAND (A-3a), little silt, trace gravel; wet.			757.4	21	27													
				22	49													
				23	64	SS-9	-	-	-	-	-	-	-	-	-	-	24	A-3a (V)
				24	89													

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 18:57 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ

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FRA-71-17.14
PID NO. 77371

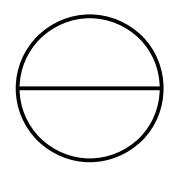
STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

DRAWN
B.R.U.

CHECKED
NT

PID: 77369		BR ID:		PROJECT: FRA-71-17.76/FRA-670-4.19		STATION / OFFSET: 1108+92.7, 21.58 RT		START: 11/16/09		END: 11/17/09		PG 2 OF 3		B-204-1-09						
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADUATION (%)			ATTERBERG			WC	ODOT CLASS (g)	BACK FILL			
									GR	CS	FS	SI	CL	LL	PL	PI				
Very dense brown FINE SAND (A-3), trace to little silt; wet.		753.4																		
			26																	
			27	10 20 29	50	89	SS-10	-	0	1	89	-10	-	NP	NP	NP	21	A-3 (0)		
			28																	
			29	9 24 28	53	83	SS-11	-	-	-	-	-	-	-	-	-	27	A-3 (V)		
			30																	
			31																	
			32	9 22 33	56	89	SS-12	-	-	-	-	-	-	-	-	-	17	A-3 (V)		
			33																	
Very dense brown GRAVEL WITH SAND (A-1-b), trace silt; wet.		744.9																		
			34	8 26 36	63	100	SS-13	-	44	36	16	-4	-	NP	NP	NP	11	A-1-b (0)		
			35																	
			36																	
			37																	
			38																	
			39	8 42 39	83	83	SS-14	-	-	-	-	-	-	-	-	-	8	A-1-b (V)		
			40																	
			41																	
			42																	
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; wet.		736.4																		
			43																	
			44	11 31 50	83	72	SS-15	-	52	29	9	-10	-	NP	NP	NP	9	A-1-a (0)		
			45																	
			46																	
			47																	
			48																	
			49	15 45 50/4"	-	63	SS-16	-	-	-	-	-	-	-	-	-	7	A-1-a (V)		
			50																	

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 18:57 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ



133 / 145

FRA-71-17.14
PID NO. 77371

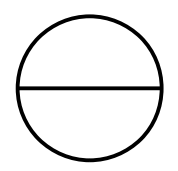
STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

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NT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/7/11 18:57 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\DLZ\0221-1004-01_FRA-71_670.GPJ

PID: 77369		BR ID:		PROJECT: FRA-71-17.76/FRA-670-4.19		STATION / OFFSET: 1108+92.7, 21.58 RT		START: 11/16/09		END: 11/17/09		PG 3 OF 3		B-204-1-09				
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (sf)	GRADATION (%)				ATTERBERG			WC	ODOT CLASS (G)	BACK FILL
									GR	CS	FS	SI	CL	LL	PL			
Very dense brown GRAVEL (A-1-a), "and" fine to coarse sand, trace to little silt; wet. (continued)		727.6	51															
Very dense brown GRAVEL WITH SAND (A-1-b), little silt; wet.		726.4	52															
			53															
			54	15	74	61	SS-17	-	-	-	-	-	-	-	8	A-1-b (V)		
			55	32	41													
			56															
			57															
			58															
			59	22	50	53	SS-18	-	-	-	-	-	-	6	A-1-b (V)			
			EOB	30/3"														
		718.6																

NOTES: SEEPAGE AT 11.0 FEET. WATER LEVEL PRIOR TO ADDING WATER = 10.5 FEET. FINAL WATER LEVEL INCLUDING DRILLING WATER = 8.9 FEET.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: 4 BAGS BENTONITE CHIPS. SOIL CUTTINGS



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FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

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RESOURCE INTERNATIONAL, INC.
6350 PRESIDENTIAL GATEWAY
COLUMBUS, OHIO 43231
(614) 823-4949

LOG OF BORING
9885 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(216) 573-0955

4480 LAKE FOREST DRIVE, SUITE 308
CINCINNATI, OHIO 45242
(513) 769-6998

Date Started 2/6/09 Date Completed 2/6/09 Method 3.75" HSA Water Elev. 759.8ft
 Northing 716710.5156 Easting 1833155.7510 Hammer System Type Automatic Calibration Date: 6/11/07
 Sealing/Backfilling Type AC Quantity: Quantity: Drill Rod Energy Ratio (ER) 79.3
 Boring No. B-204 Baseline, Station & Offset L-71 NB; 328+31.88, 25.3' LT Surface Elev. 777.5ft

Project Identification: W-07-109
FRA-70-8-93 (70-71 Split)

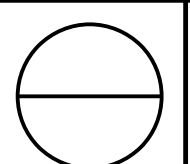
Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics							ODOT Class		
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.		P.I.	W.C.
777.5	0				6.0" - Topsoil											
777.0					Very stiff to hard, gray coarse to fine SANDY SILT, trace to little fine gravel, dry.	SS-1	8.1	11.4	21.7	34.9	23.9	24	14	10	9	A-4a
	4/6/8		19	100	-qh = 4.5 tsf											
						SS-2									9	A-4a Visual
	10/13/16		38	100	-qh = 4.5 tsf	ST-3	11.1	11.2	22.7	34.4	20.6	22	14	8	8	A-4a
				42	-direct shear (D-3080) was performed @ 4.9'	SS-4	8	13.0	22.1	32.7	24.3	24	14	10	8	A-4a
	9/11/15		34	100	-qh = 4.5 tsf											
						SS-5	16.1	19.5	19.6	27.3	17.5	19	14	5	8	A-4a
	10/16/18		45	89	-qh = 4.25 tsf											
767.0	10				Medium dense, gray COARSE and FINE SAND, some silt, little fine gravel, damp.	SS-6	15.7	31.7	31.2	11.7	9.7				10	A-3a
	8/11/11		29	39												
						SS-7									19	A-3a Visual
	7/9/13		29	89	Medium dense to dense, gray FINE SAND, little fine gravel, trace silt, wet.											
						SS-8	13.7	28.1	50.5	7.7					18	A-3
	8/13/12		33	94												
						SS-9									15	A-3 Visual
	10/13/18		41	94												

Particle Sizes: Agg => 2.00mm, Coarse Sand = 2.00-0.42mm, Fine Sand = 0.42-0.074mm, Silt = 0.074-0.005mm, Clay =< 0.005mm.

Form TE-151 Revised 9/94

Boring No. B-204 Baseline, Station & Offset L-71 NB; 328+31.88, 25.3' LT Surface Elev. 777.5ft Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics							ODOT Class		
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.L.		P.I.	W.C.
757.0	20				Dense, gray COARSE and FINE SAND, little silt, trace fine gravel, wet.	SS-10	8.3	32.6	47.7	8.1	3.3				18	A-3a
	9/15/15		40	89		SS-11									21	A-3a Visual
	10/15/17		42	100		SS-12	1.2	23.0	67.2	5.0	3.6				19	A-3
752.0	25				Dense to very dense, gray FINE SAND, trace fine gravel, trace silt, wet. -running sands @ 26.0'											
						SS-13										
	10/16/22		50	89		SS-14	3.6	11.2	76.6	6.9	1.6				22	A-3 Visual
	9/17/20		49	78		SS-15									20	A-3 Visual
742.0	35				Very dense, gray COARSE and FINE SAND, little silt, trace fine gravel, wet to moist.											
						SS-16	1.6	10.0	69.6	14.1	4.7				17	A-3a
	11/20/22		56	89												
						SS-17									18	A-3a Visual
	10/23/31		71	94												
						SS-18	0.5	4.9	75.3	14.2	5.2				20	A-3a
	11/27/33		79	78												
						SS-19									15	A-3a
	12/22/36		77	89												



FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

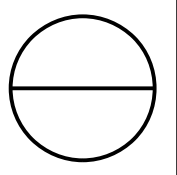
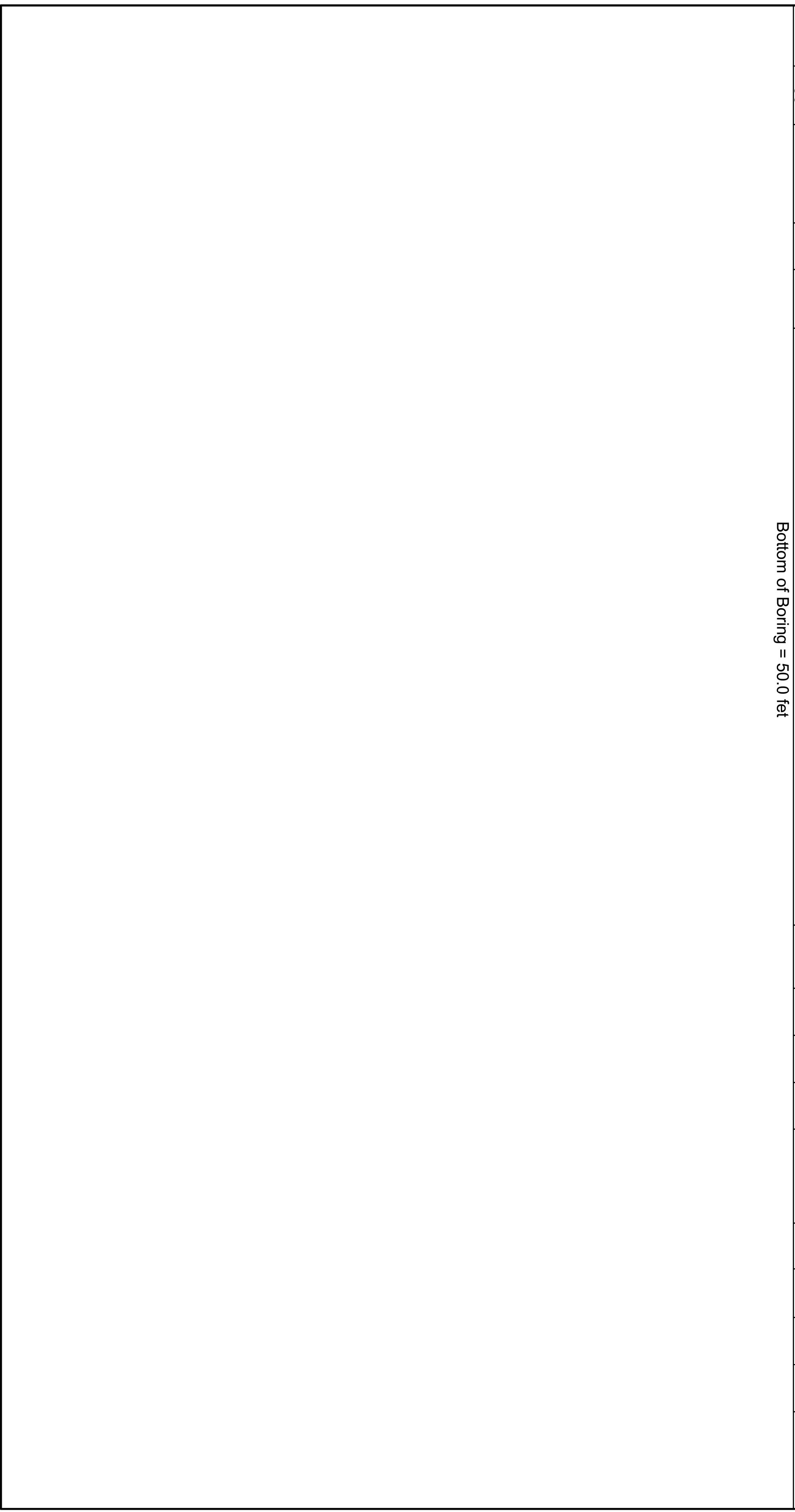
Boring No. B-204 Baseline, Station & Offset L-71 NB: 328+31.88, 25.3' LT

Surface Elev. 777.5ft

Project: W-07-109

Elev. (ft)	Depth (ft)	Std. Pen.	N ₆₀	Rec. (%)	Description	Sample No.	Physical Characteristics						ODOT Class						
							% Agg	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.L.	P.I.	W.C.			
	45				same as above														
			13/27/32	78			SS-20	1.4	31.9	53.3	10.3	3.1						14	A-3a
			14/28/38	87														12	A-3a Visual
727.5	50			89		SS-21													

Bottom of Boring = 50.0 feet



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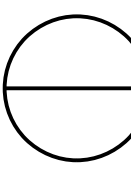
FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
N6 RETAINING WALL

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PROJECT: FRA-71-17.14		DRILLING FIRM / OPERATOR: _____		CTL / MF		DRILL RIG: 03050TKR349-09		STATION / OFFSET: 122+92.77, 44.71 LT		EXPLORATION ID									
TYPE: STRUCTURE		SAMPLING FIRM / LOGGER: _____		CTL / MF		HAMMER: CME AUTOMATIC		ALIGNMENT: 71 NB		B-195-1-09									
PID: BR ID: _____		DRILLING METHOD: 3.25" HSA		SPT		CALIBRATION DATE: 10/13/09		ELEVATION: 773.8 (MSL)		EOB: 60.0 ft									
START: 6/1/10		END: 6/1/10		SPT		ENERGY RATIO (%): 86		COORD: 715728, 151 N, 1833114.693 E		PAGE 1 OF 1									
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/ ROD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (g)	INST.
Asphalt (8")		773.1																	
Base course (10")		772.4																	
MEDIUM DENSE, GRAVISH BROWN, SANDY SILT, LITTLE CLAY, LITTLE GRAVEL, DAMP		770.3																	
VERY DENSE, BROWN, GRAVEL AND STONE FRAGMENTS, AND SAND, TRACES OF SILT WITH COBBLES, DAMP		765.3																	
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, TRACES OF SILT, TRACES OF CLAY, DRY																			
@23.5: LITTLE SILT, DAMP																			
@25.0: WET																			
@36.0: COBBLES																			
@38.5: COBBLES																			
VERY DENSE, DARK BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, TRACES OF SILT, TRACES OF CLAY, WET		745.3																	
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, AND SAND, TRACES OF SILT, TRACES OF CLAY, WET		730.3																	
HARD, GRAY, SILT AND CLAY, TRACE SAND, TRACE GRAVEL, TILL, DAMP		718.3																	
NOTES: CAVED AT 19.0'																			
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 144 LB. BENTONITE GROUT																			

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/8/11 16:01 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ

	137 / 145	FRA-71-17.14 PID NO. 77371	STRUCTURE FOUNDATION EXPLORATION BRIDGE NO. FRA-040-1351, U.S. 40/ BROAD ST. OVER I-71	DRAWN B.R.U. CHECKED NT
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STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

DREB 17

LOG OF BORING

CO., RT. NO. SEC. FRA-3-17.06 BRIDGE NO. FRA-
REAR ABUTMENT EAST INNERBELT UNDER BROAD STREET
LOCATION: T.H. FH-32 STA. 4+16 OFFSET 48' RT. FED. NO.

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
793.2	0			
	2			
	4			
788.2	6	9/10	17656	Brown Sandy Silt
	8			
783.2	10	10/54	17657	Gray Silty Gravelly Sand
	12			
	14			
778.2	16	34/63	17658	Gray Gravelly Sandy Silt
	18			
773.2	20	24/40	17659	Gray Sandy Gravelly Silt
	22			
	24			
768.2	26	92/*	17660	Gray Silty Sandy Gravel
	28			
763.2	30	100*	-----	Brown Silty Sandy Gravel w/ Boulders.
	32			
	34			
758.2	36	50/61	17661	Gray & Brown Silty Sandy Gravel

RC
6-16-59

LOG OF BORING (CONTINUED)

SHEET 5

BRIDGE NO. FRA- T.H. FH-32

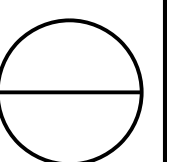
ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
	38			
753.2	40	54/78	17662	Gray Silty Sand
	42			
	44			
748.2	46	78/65	17663	Gray Silty Sand and Gravel
	48			
743.2	50	58/100	17664	Gray Silty Sand w/Gravel & Stone Fragts.
	52			
	54			
738.2	56	100*	17665	Gray Gravel
	58			
733.2	60	100*	17666	Gray Silty Sandy Gravel & Stone Fragts.
	62			
	64			
728.2	66	100*	17667	Gray Sandy Gravel
	68			
723.2	70	100*	-----	Gray Bouldery Sandy Gravel
	72			
	74			
718.2	76	100*	17668	Gray Sandy Gravel
	78			
713.2	80	100/*	17669	Gray Gravelly Sand
	82			

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STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. FRA-040-1351, U.S. 40/BROAD ST. OVER I-71

FRA-71-17.14
PID NO. 77371

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LOG OF BORING (CONTINUED)

BRIDGE NO. FRA- T.H. FH-32

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
708.2	84			
	86	90/*	17670	Gray Gravelly Sandy Silt
	88			
703.2	90	39/43	17671	Gray Gravelly Clay
	92			
	94			
698.2	96	13/20	17672	Gray Silty Clay
	98			
693.2	100	12/21	17673	Gray Clay
	102			
	104			
688.2	106	13/25	17674	Gray Clay
	108			
683.2	110	13/29	17675	Gray Clay
	112			
	114			
678.2	116	40/99	17676	Gray Silt
	118			
673.2	120	20/32	17677	Gray Silt
	122			
	124			
668.2	126	29/50	17678	Gray Silt
	128			

LOG OF BORING (CONTINUED)

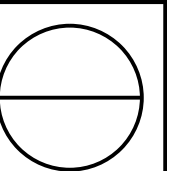
BRIDGE NO. FRA- T.H. FH-32

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
663.2	130			
662.2	132	18/23	17679	Gray Silt and Clay
				BOTTOM OF BORING
				*Refusal

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STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. FRA-040-1351, U.S. 40/BROAD ST. OVER I-71

FRA-71-17.14
PID NO. 77371



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SHEET 8

LOG OF BORING

CO., RT. NO., SEC. FRA-3-17.06 BRIDGE NO. FRA-
REAR ABUTMENT EAST INNERBELT UNDER BROAD STREET
 LOCATION: T.H. FH-32A STA. 4+11 OFFSET 55'LT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
794.7	0			
	2			
	4			
789.7	6	25/41	19531	Brown Sandy Clay
	8			
784.7	10	15/32	19532	Gray Gravelly Sandy Silt
	12			
	14			
779.7	16	25/57	19533	Gray Gravelly Sandy Silt
	18			
774.7	20	53/*	19534	Gray Silty Gravelly Sand
	22			
	24			
769.7	26	21/46	19535	Gray Silty Sandy Gravel
767.2	28	25/56	19536	Gray Sandy Gravel
764.7	30	21/65	19537	Gray Sandy Gravel
	32			
762.2	34	32/68	19538	Gray Sandy Gravel
759.7	36	29/61	19539	Gray Sandy Gravel

RC
6-16-59

LOG OF BORING (CONTINUED)

SHEET 9

BRIDGE NO. FRA- T.H. FH-32A

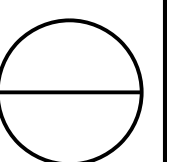
ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
757.2	38	43/85	19540	Gray Silty Sandy Gravel
754.7	40	30/*	19541	Gray Silty Sand
	42			
752.2	44	41/76	19542	Gray Silty Gravelly Sand
749.7	46	30/66	19543	Gray Silty Gravelly Sand
747.2	48	45/*	19544	Gray Silty Gravelly Sand
744.7	50	46/*	19545	Gray Silty Gravelly Sand
	52			
	54			
739.7	56	35/72	19546	Gray Silty Gravelly Sand
	58			
734.7	60	31/58	19547	Gray Silty Sandy Gravel
	62			
	64			
729.7	66	33/56	19548	Gray Sandy Gravel
	68			
724.7	70	38/74	19549	Gray Gravelly Sand
723.7	72			BOTTOM OF BORING
	74			
	76			*Refusal
	78			
	80			
	82			

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STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. FRA-040-1351, U.S. 40/BROAD ST. OVER I-71

FRA-71-17.14
PID NO. 77371

140/145



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SHEET 12

MISLABELED -
SHOULD BE
FH-34

LOG OF BORING

CO., RT. NO., SEC. FRA-3-17.06 BRIDGE NO. FRA
FORWARD PIER EAST INNERBELT UNDER BROAD STREET
LOCATION: T.H. FH-39 STA. 5+32 OFFSET 44' BT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
794.7	0			
	2			
	4			
789.7	6	12/15	18720	Br. & Gr. Sandy Gravelly Clay
	8			
784.7	10			
	12	30/42	18721	Brown Gravelly Sandy Silt
	14			
779.7	16	18/31	18722	Gray Gravelly Sandy Silt
	18			
774.7	20			
	22	15/25	18723	Gray Sandy Silt
	24			
769.7	26	12/35	18724	Brown Silty Sandy Gravel
767.2	28	15/35	18725	Brown Silty Sandy Gravel
764.7	30			
	32	10/10	18726	Brown Silty Gravelly Sand
762.2	34	16/35	18727	Brown Silty Sandy Gravel
759.7	36	27/20	18728	Brown Silty Gravelly Sand

BM
6-16

LOG OF BORING (CONTINUED)

SHEET 13

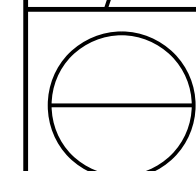
BRIDGE NO. FRA T.H. FH-39

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
757.2	38	28/35	18729	Brown Silty Sandy Gravel
754.7	40			
	42	23/30	18730	Brown Silty Gravelly Sand
752.2	44	24/42	18731	Brown Silty Gravelly Sand
749.7	46	40/47	18732	Brown Silty Gravelly Sand
747.2	48	46/*	18733	Brown Silty Gravelly Sand
744.7	50			
	52	33/58	18734	Brown Silty Gravelly Sand
	54			
739.7	56	17/*	18735	Brown Silty Sandy Gravel
	58			
734.7	60			
733.7	62	17/60	18736	Brown Gravel W/Stone Fragments
	64			← BOTTOM OF BORING
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

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STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. FRA-040-1351, U.S. 40/BROAD ST. OVER I-71

FRA-71-17.14
PID NO. 77371



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TESTING LABORATORY

SHEET 10

LOG OF BORING

CO., RT. NO., SEC. FRA-3-17.06 BRIDGE NO. FRA
FORWARD ABUTMENT EAST INNERBELT UNDER BROAD STREET
LOCATION: T.H. FH-35 STA. 5+81 OFFSET 48' RT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
794.7	0			
	2			
	4			
789.7	6	17/25	18737	Brown Sandy Silt
	8			
784.7	10	16/20	18738	Gray Sandy Silt
	12			
	14			
779.7	16	38/57	18739	Brown Gravelly Sandy Silt W/Boulders
	18			
774.7	20	27/42	18740	Gray Sandy Silt
	22			
	24			
769.7	26	37/70	18741	Brown Sandy Silt W/Boulders
767.2	28	29/27	18742	Gray Silty Sandy Gravel
764.7	30	50/100	18743	Brown Silty Sandy Gravel
	32			
762.2	34	60/80	18744	Brown Silty Sandy Gravel
759.7	36	32/45	18745	Brown Silty Gravelly Sand

BM
6.16.59

LOG OF BORING (CONTINUED)

SHEET //

BRIDGE NO. FRA T.H. FH-35

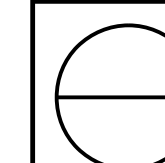
ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
757.2	38	14/45	18746	Brown Silty Sandy Gravel W/Stone Fragts.
754.7	40	37/45	18747	Brown Silty Gravelly Sand
	42			
752.2	44	35/75	18748	Brown Silty Sandy Gravel
749.7	46	44/65	18749	Brown Silty Gravelly Sand W/Boulders
747.2	48	34/80	18750	Brown Sandy Gravel
744.7	50	39/55	18751	Brown Silty Gravelly Sand
	52			
	54			
739.7	56	31/57	18752	Brown Silty Sandy Gravel W/Boulders
	58			
734.7	60	35/100	18753	Brown Gravel W/Boulders
733.7	62			BOTTOM OF BORING
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			

DRAWN
B.R.U.
CHECKED
NT

STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. FRA-040-1351, U.S. 40/ BROAD ST. OVER I-71

FRA-71-17.14
PID NO. 77371

142 / 145



LOG OF BORING

CO., RT. NO., SEC. FRA-40-13.83 BRIDGE NO. FRA-40-1447
THIRD PIER E. INNERBELT UNDER OAK ST.
LOCATION: TH. 8B STA. 46+71 OFFSET 22'LT FED. NO. _____

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
794.6	0			
	2			
	4			
789.6	6	8/16	28440	Brown Sandy Gravelly Silt
	8			
784.6	10	41/58	28441	Brown Sandy Gravelly Silt
	12			
	14			
779.6	16	53/100	28442	Gray Sandy Gravelly Silt
	18			
774.6	20	94/100	28443	Brown Silty Gravelly Sand
772.6	22	55/*	28444	Gray Gravelly Sandy Silt
	24			
769.6	26	100*	28445	Brown Sandy Gravel
767.1	28	61/76	28446	Brown Sandy Gravel
764.6	30			
	32	90/130	28447	Brown Sandy Gravel
762.1	34	29/70	28448	Brown Silty Gravelly Sand
759.6				
758.6	36	100*	28449	Gray Silty Gravelly Sand

BOTTOM OF BORING

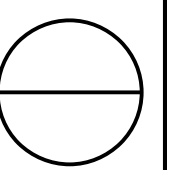
*Refusal

MS
8.24.59

LOG OF BORING (CONTINUED)

BRIDGE NO. FRA-40-1447 T.H. 2B

ELEV.	DEPTH	NO. BLOWS	SAMPLE NO.	DESCRIPTION
755.7	38	----	25596	Brown Sandy Gravel (Wash Sample)
752.7	40	----	-----	Brown Sandy Gravel
	42			BOTTOM OF BORING
	44			
	46			
	48			
	50			
	52			
	54			
	56			
	58			
	60			
	62			
	64			
	66			
	68			
	70			
	72			
	74			
	76			
	78			
	80			
	82			



PROJECT: FRA-71-17.14	DRILLING FIRM / OPERATOR:	CTL / ZF	DRILL RIG: 0305R025	STATION / OFFSET: 118+40.51, 27.86 LT	EXPLORATION ID												
TYPE: STRUCTURE	SAMPLING FIRM / LOGGER:	CTL / ZF	HAMMER: CME AUTOMATIC	ALIGNMENT: 71 NB	B-189-2-09												
PID: 145 / 149	BR ID:	3.25" HSA	CALIBRATION DATE: 6/27/07	ELEVATION: 776.5 (MSL)	EOB: 60.0 ft												
START: 6/1/10	END: 6/1/10	SPT	ENERGY RATIO (%): 84	COORD: 715280.764 N, 1833183.021 E	PAGE 1 OF 1												
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ N₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (g)	INST.

STIFF, BROWN, SANDY SILT, SOME CLAY, LITTLE GRAVEL, DAMP	776.5																			
MEDIUM DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT, TRACES OF CLAY, DAMP	773.5	1	5															9	A-4a (V)	
DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT, DAMP	770.5	2	4	15	44	SS-1	4.00	-	-	-	-	-	-	-	-	-	-	10	A-2-4 (0)	
		3																		
		4	6	17	56	SS-2	-	41	16	16	19	8	NP	NP	NP			10	A-2-4 (0)	
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, AND SAND, TRACES OF SILT, TRACES OF CLAY, DRY	768.0	5	8	39	56	SS-3	-	-	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
		6																		
		7	5	20																
		8																		
		9	16	60	100	SS-4	-	-	-	-	-	-	-	-	-	-	-	-	4	A-1-b (V)
		10	20	23																

DRILL RIG: 0305R025	HAMMER: CME AUTOMATIC	CALIBRATION DATE: 6/27/07	ENERGY RATIO (%): 84	ALIGNMENT: 71 NB	ELEVATION: 776.5 (MSL)	EOB: 60.0 ft	EXPLOATION ID: B-189-2-09
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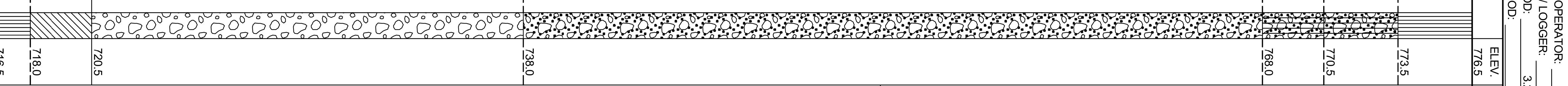
STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 9/8/11 14:04 - J:\DEPT5\10 PROJECTS\10050038COL-BURGESS- NIPLE-FRA 71\REPORTS\LOGS\10050038COL.GPJ

VERY DENSE, GRAYISH BROWN, GRAVEL AND/OR STONE FRAGMENTS, AND SAND, TRACES OF SILT, TRACES OF CLAY, WET

@31.0': PUMPED DRILLING MUD INTO AUGERS

@24.0': WET

HARD, GRAY, SILT AND CLAY, LITTLE SAND, TRACE GRAVEL, TILL, DAMP

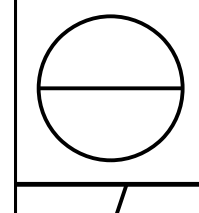


NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 144 LB. BENTONITE GROUT

FRA-71-17.14
PID NO. 77371

STRUCTURE FOUNDATION EXPLORATION
BRIDGE NO. FRA-071-1751, I-71 UNDER OAK STREET



DRAWN: B.R.U.
CHECKED: NT