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NCBC GULFPORT
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LETTER REGARDING SAMPLING STRATEGY REMOVAL ACTION CONTAMINATED
SEDIMENTS ROUTE 28 ROAD WORK NCBC GULFPORT MS
4/5/1995
ABB ENVIRONMENTAL



2.2.0.2

April 5, 1995

Mississippi Department of Environmental Quality
Hazardous Waste Division
2380 Highway West
Jackson, Mississippi 39204

Attention: Mr. Jerry Banks
Mr. Phillip Weathersby

Subject: Sampling Strategy Removal Action: Contaminated Sediments Route 28 Road Work
Area, Naval Construction Battalion Center (NCBC) Gulfport, Mississippi

This letter, written on behalf of Southern Division (SouthDiv) and NCBC Gulfport, outlines the sampling strategy in support of the removal action of contaminated sediments along the Route 28 roadwork area north of NCBC Gulfport. This sampling strategy includes the overall sampling approach, a sample location map, a sample distribution table, and a sample summary table.

The contents of this letter are divided into three tasks. These are:

- Initial Sampling Activities;
- Data Evaluation and Reporting; and,
- Sediment Recovery Trap Pilot-Scale Testing.

This letter covers planned activities over the next few months; however, we request that Mississippi Department of Environmental Quality (MSDEQ) provide approval as soon as possible for only the initial sampling activities which are planned to begin Friday, April 7, 1995, and span for seven days.

INITIAL SAMPLING ACTIVITIES

Initial sampling activities include mobilization, field management, and sediment and surface soil sampling for analysis of dioxins to support removal action recommendations to the Navy's Remedial Action Contractor (RAC).

The mobilization subtask will involve certain preliminary activities necessary for successful completion of the field program. Such activities include, but may not be limited to, subcontractor coordination, personnel orientation, site set-up, and utility clearance.

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The field management subtask will include coordination of activities, record keeping, communication with the NCBC and Task Order Manager (TOM), and overall adherence to quality assurance and quality control (QA/QC) requirements.

The extent of dioxin contamination within the sediments will be evaluated using both an objective and a subjective approach. Objectivity will be provided through the use of a statistical approach to the location of samples and subjectivity through the current knowledge of previous sample results. Linear grid(s) will be laid-out along the ditch(es) and samples will be collected from statistically-selected locations. These locations have been selected through the use of a random-number generator. Also, known areas — or areas strongly suspected — of contamination will be sampled. Table 1 provides a summary of the sample location distribution.

Fifty-four environmental samples of soils and sediments will be collected from the area of proposed construction as shown on Figure 1. Twenty-eight of these samples will be sediments collected from twenty locations within the ditches, canal, and creek associated with the base's outfalls Nos. 1, 3, and 4. Sediments will be collected from depths of 6 inches, 18 inches, and 36 inches. Thirteen soil samples will be collected from a depth of 0 to 12 inches at statistically selected locations along the proposed Route 28 roadwork area. Twelve replicate samples will be collected from six environmental sample locations for statistical evaluation and support of less stringent dioxin cleanup and action levels (> 4.7 parts per trillion). Associated QA/QC samples will also be collected to meet NEESA Level C criteria. Table 2 provides a summary of sample media, location, and QA/QC needs.

All of the environmental samples and replicate samples, as well as the QA/QC samples, will be shipped to a qualified laboratory for analysis of dioxins. Dioxin analyses for 30 priority samples will be performed over a 7-day period. The remaining 24 samples will be analyzed over a 14-day period. Aliquots of the sediment and surface soil samples will be retained for grain-size (sieve-hydrometer) analyses and determination of organic fraction (total organic carbon) analyses.

DATA EVALUATION AND REPORTING

Data evaluation and reporting activities will include data validation, data management/preparation, a working group meeting with the Navy/ABB-ES/RAC project team, data evaluation and interpretation to support removal action recommendations to the Navy's RAC. ABB-ES will prepare a letter report that outlines the sampling and pilot-scale testing activities associated with the Removal Action and provides recommendations for the implementation of the excavation of dioxin contaminated sediments and the decommissioning and decontamination (D&D) of the underground structures.

The analytical data will be validated according to NEESA Level C criteria. Data validation and review will be performed over a three-day period for the 30 priority samples and a seven day period for the 24 remaining samples.

Table 1
 Sampling Location Distribution
 Removal Action - 28th Street Roadwork

NCBC Gulfport
 Gulfport, Mississippi

Area	# Locations	# Samples ¹
Initial Sampling Effort - Sediment Samples		
11th Street Ditch	5	5
Outfall #3, South of 11th Street	1	1 ²
Outfall #3, South of 28th Street	2	4
Outfall #3, North of 28th Street	6	11 ²
Outfall #3, North of 28th Street (Swamp)	1	1
Canal #1, North of 28th Street	4	5
Canal #1, South of 28th Street	1	1
Outfall #4, South of 28th Street .	2	2
Outfall #4, North of 28th Street	2	2
HO ditch downstream of 11th Street	2	2
Inflow to Canal #1 (one from offbase source and one from onbase source)	2	2
Canal #1 at existing/proposed renovation bridge	2	2
Ohio and Polk Streets	1	1
Additional Locations - To be determined	2	2
Initial Sampling Effort - Surface Soil Samples (Statistical Locations)		
South of 28th	8	8
North of 28th	5	5
QA/QC	1	5
MS/MSD	4	8
Duplicates (Statistical Replicate Samples)	6	12
Sediment Recovery Trap (SRT) Initial Sampling		
Upstream of SRTs	9	11 ³
QA/QC	1	4
Duplicate	2	2

¹ Depths of sediment samples at 6-inches and 18-inches.

² One sample in this area collected at 36-inch depth.

³ One sample to be collected upstream of each SRT prior to excavation activities; one sample to be collected from each of the two SRTs located in the ditch along 11th Street after excavation activities.

Table 2
 Sampling Analysis Plan
 Removal Action - 28th Street Roadwork
 NCBC Gulfport
 Gulfport, Mississippi

Sample I.D.	Media	Location	Triplicate	TAT	Data Validation	DV TAT
G3D001006	Sediment	11th Ditch, 80 ft. E Out#3	No	7	Yes	3
G3D002036	Sediment	Out#3, S 11th	No	7	Yes	3
G3D003006	Sediment	11th Ditch G#3	No	7	Yes	3
G3D004006	Sediment	11th Ditch G#8	No	7	Yes	3
G3D005006	Sediment	11th Ditch G#11	No	7	Yes	3
G3D006006	Sediment	11th Ditch G#26	No	7	Yes	3
G3D007006 G3D007018	Sediment	Out#3, S 28th	Yes	7	Yes	3
G3D008006 G3D008018	Sediment	Out#3, S 28th	Yes	7	Yes	3
G3D009006 G3D009018	Sediment	Out#3, N 28th	Yes	7	Yes	3
G3D010006	Sediment	Out#3, N 28th	No	7	Yes	3
G3D011006	Sediment	Out#3, N 28th	No	7	Yes	3
G3D012006 G3D012018 G3D012036	Sediment	Out#3, N 28th	No	7	Yes	3
G3D013006 G3D013018	Sediment	Out#3, N 28th	No	7	Yes	3
G3D014006 G3D014018	Sediment	Out#3, N 28th	No	7	Yes	3
G3D015006	Sediment	Canal #1, N 28th	Yes	7	Yes	3

Table 2 (continued)
 Sampling Analysis Plan
 Removal Action - 28th Street Roadwork
 NCBC Gulfport
 Gulfport, Mississippi

Sample I.D.	Media	Location	Tripllicate	TAT	Data Validation	DV TAT
G3D016006 G3D016018	Sediment	Canal #1, N 28th	No	7	Yes	3
G3D027006	Sediment	Out#4, NE 28th	No	7	Yes	3
G3D028006	Sediment	Out#4, NW 28th	No	7	Yes	3
G3D029006	Sediment	Out#4, SE 28th	No	7	Yes	3
G3D030006	Sediment	Out#4, SW 28th	No	7	Yes	3
G3D017	Sediment	HO ditch downstream of SRT	No	14	Yes	7
G3D018	Sediment	Secondary HO ditch outflow	No	14	Yes	7
G3D019	Sediment	Swamp, N 28th	No	14	Yes	7
G3D020	Sediment	Inflow Canal#1	No	14	Yes	7
G3D021	Sediment	Base inflow to Canal#1	No	14	Yes	7
G3D022	Sediment	Canal#1 brldge	No	14	Yes	7
G3D023	Sediment	Canal#1 brldge	No	14	Yes	7
G3D024	Sediment	Ohlo and Polk	No	14	Yes	7
G3D025	Sediment	TBD	No	14	Yes	7
G3D026	Sediment	TBD	No	14	Yes	7
G3D031	Sediment	Canal#1	No	14	Yes	7
G3D032	Sediment	Canal#1	No	14	Yes	7
G3D033	Sediment	Canal#1	No	14	Yes	7
G3S001	Surface Soil	S 28th, G#1	No	14	Yes	7
G3S002	Surface Soil	S 28th, G#2	No	14	Yes	7

Table 2 (continued)
 Sampling Analysis Plan
 Removal Action - 28th Street Roadwork
 NCBC Gulfport
 Gulfport, Mississippi

Sample I.D.	Media	Location	Triplicate	TAT	Data Validation	DV TAT
G3S003	Surface Soil	S 28th, G#5	No	14	Yes	7
G3S004	Surface Soil	S 28th, G#11	Yes	7	Yes	3
G3S005	Surface Soil	S 28th , G#14	No	14	Yes	7
G3S006	Surface Soil	S 28th, G#19	No	14	Yes	7
G3S007	Surface Soil	S 28th, G#24	No	14	Yes	7
G3S008	Surface Soil	S 28th, G#37	No	14	Yes	7
G3S009	Surface Soil	N 28th, G#2	No	14	Yes	7
G3S010	Surface Soil	N 28th, G#6	No	14	Yes	7
G3S011	Surface Soil	N 28th, G#9	Yes	7	Yes	3
G3S012	Surface Soil	N 28th, G#20	No	14	Yes	7
G3S013	Surface Soil	N 28th, G#25	No	14	Yes	7
G3F001	D.I. Field Blank	TBD	No	7	Yes	3
G3P001	Potable Blank	TBD	No	7	Yes	3
G3R001	Rinsate Blank	TBD	No	7	Yes	3
G3R002	Rinsate Blank	TBD	No	7	Yes	3
G3R003	Rinsate Blank	TBD	No	7	Yes	3
TBD (sed)	Matrix Spike	TBD	No	7	Yes	3
TBD (sed)	Matrix Duplicate	TBD	No	7	Yes	3
TBD (sed)	Matrix Spike	TBD	No	7	Yes	3
TBD (sed)	Matrix Duplicate	TBD	No	7	Yes	3
TBD (sed)	Matrix Spike	TBD	No	7	Yes	3

Table 2 (continued)
 Sampling Analysis Plan
 Removal Action - 28th Street Roadwork
 NCBC Gulfport
 Gulfport, Mississippi

Sample I.D.	Media	Location	Triplicate	TAT	Data Validation	DV TAT
TBD (sed)	Matrix Duplicate	TBD	No	7	Yes	3
G3D007006D1	Duplicate	Out#3, S 28th	Yes	7	Yes	3
G3D007006D2	Duplicate	Out#3, S 28th	Yes	7	Yes	3
G3D008006D1	Duplicate	Out#3, S 28th	Yes	7	Yes	3
G3D008006D2	Duplicate	Out#3, S 28th	Yes	7	Yes	3
G3D009006D1	Duplicate	Out#3, N 28th	Yes	7	Yes	3
G3D009006D2	Duplicate	Out#3, N 28th	Yes	7	Yes	3
G3D015006D1	Duplicate	Canal #1, N 28th	Yes	7	Yes	3
G3D015006D2	Duplicate	Canal #1, N 28th	Yes	7	Yes	3
TBD (soil)	Matrix Spike	TBD	No	14	Yes	7
TBD (soil)	Matrix Duplicate	TBD	No	14	Yes	7
G3S004D1	Duplicate	S 28th, G#11	Yes	7	Yes	3
G3S004D2	Duplicate	S 28th, G#11	Yes	7	Yes	3
G3S011D1	Duplicate	N 28th, G#9	Yes	7	Yes	3
G3S011D2	Duplicate	N 28th, G#9	Yes	7	Yes	3

Notes: TBD = To be determined.

All QA/QC will be analyzed for dioxins and furans using USEPA SW-846 Method 8290 and TOC.

All sediment and surface water samples are to be analyzed for dioxins and furans using USEPA SW-846 Method 8290 and TOC.

The data management and preparation subtask includes database compilation and manipulation in support of data interpretation. The analytical data will be used to evaluate the nature and extent of contamination and the dioxin/furan specific congeners present in the soil and sediment samples. Areas of data uncertainty, such as sampling residual error, will also be evaluated. This analysis is also a necessary first step for the statistical data analysis that will follow.

ABB-ES will present results of the dioxin analyses of the 30 priority samples to the base's commander and environmental coordinator, SouthDiv's remedial project manager, and representative(s) from the RAC. This data will be presented fifteen days after the commencement of the field sampling effort. Results of all of the analyses (dioxin, total organic carbon, and grain size) will be presented in the letter report.

The physical and chemical data collected during the sampling activities and sediment recovery trap pilot-scale testing will be evaluated to support recommendations for the removal action. This study will determine the variability and confidence in the analytical method used for dioxin as it relates to attaining the State's cleanup goal. The data from the triplicate split samples collected from various sites, as well as the analytical results of the entire sampling event, will undergo a statistical evaluation to determine the intrasample analytical variance. This will provide a measure of analytical precision and error that may be helpful in establishing a site-specific, realistic dioxin cleanup based on the best available analytical technology rather than a risk-based value.

The effect of the various dioxin congeners on the variability will also be evaluated by evaluating the recoveries of the analytical laboratory's radiolabeled dioxin spikes. This level of statistical analysis is beyond the extent required by the EPA's SOP for dioxin data validation and will be conducted by a subcontractor with expertise in this area. This data may also be useful in determining the effect of spike recovery on this statistical evaluation. This is important since there are several different soil types at the base and analytical recoveries may influence the cleanup levels established using this statistical evaluation. Also the effect of quality control will be a critical component in presenting the data to the regulatory community for a decision. An analysis of data within the lower end of EPA's generous QA/QC standards for analysis, will likely be less well received than one with a higher level of quality control.

Finally, the results of this statistical analysis will be presented to MSDEQ. A step-by-step presentation, with accompanying documentation and graphs, will help MSDEQ explain any decisions on site-specific dioxin cleanup levels to the lay public.

The results of the data analysis will also be provided in a letter report to the Navy, the installation, and MSDEQ. This report will include the data, graphs of the analysis and a discussion of the results of the statistical analysis.

SEDIMENT RECOVERY TRAP PILOT-SCALE TESTING

This task includes installation and performance monitoring of nine sediment recovery traps used to trap and control movement of potentially contaminated sediments during the sediment removal operations and D&D activities.

The materials selection subtask includes the selection of the materials for the construction of four sediment recovery traps. Materials will be evaluated for application to this site. The criteria for selection will be based on:

- Ability to reduce mobility or volume of the sediment,
- cost-effectiveness, and
- availability of the materials.

The materials selection and procurement process will be conducted over a 14-day period.

Sediment recovery traps (SRTs) will be installed at four locations within the ditches, canal and creek associated with the outfalls Nos. 1 and 3 at NCBC Gulfport. Another five SRTs will be installed in ditches associated with the herbicide orange area. ABB-ES and its subcontractor will install these SRTs at the nine locations shown on Figure 1. These activities will be conducted over a nine-day period that will commence after the completion of the initial sampling activities and materials selection subtasks.

The Health and Safety Plan (HASP) that was prepared for the Free-Phase Product Assessment at Site 6 and the Basewide Sediment Sampling project at NCBC Gulfport will be utilized for the Initial Sampling and SRT field efforts.

Please contact Mr. Art Conrad of SouthDiv at (803) 743-0520 or me at (615) 531-1922 if you have any questions regarding this overall sampling strategy.

Sincerely,

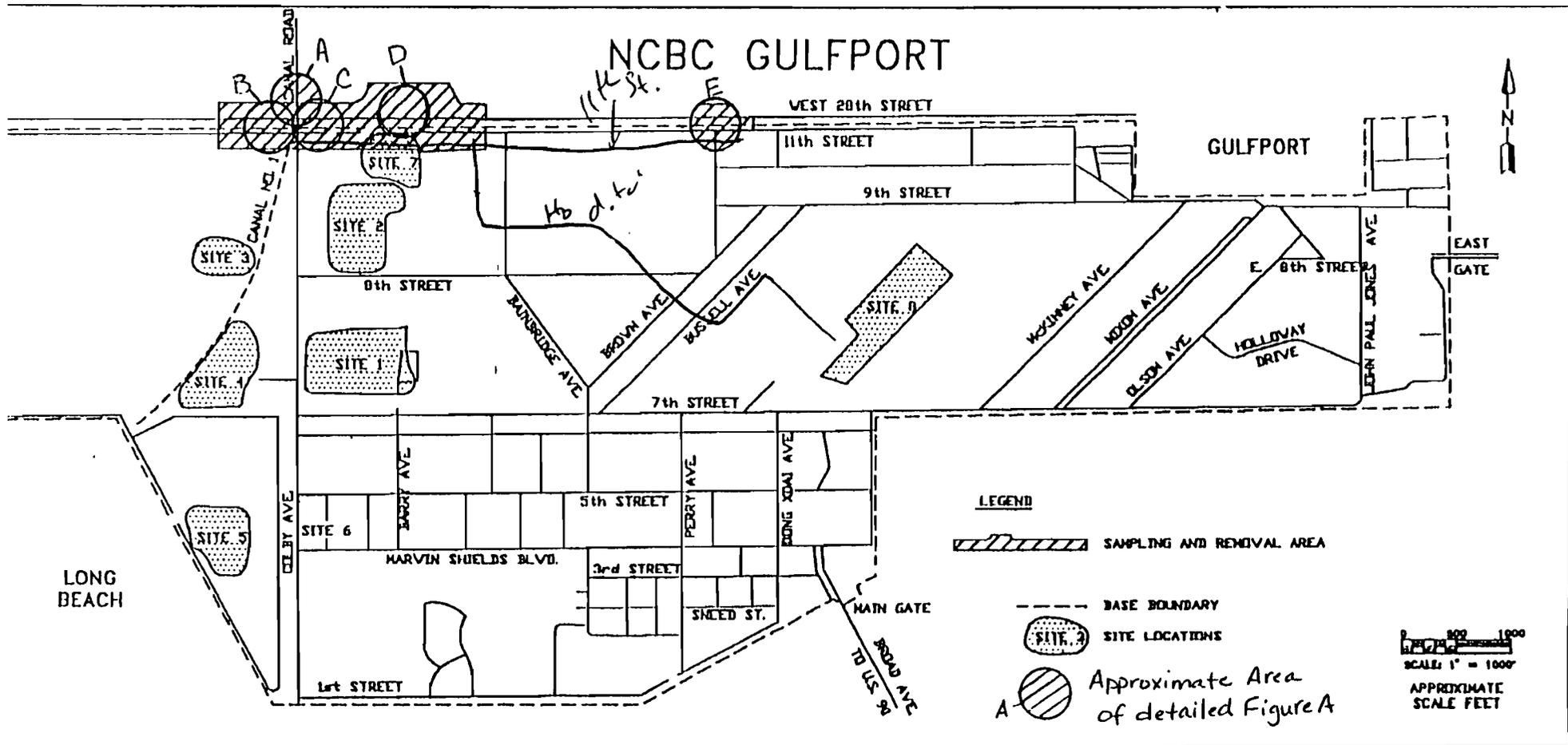
ABB Environmental Services, Inc.

A handwritten signature in black ink, appearing to read 'Penny Baxter', with a stylized flourish at the end.

Penny Baxter
Task Order Manager

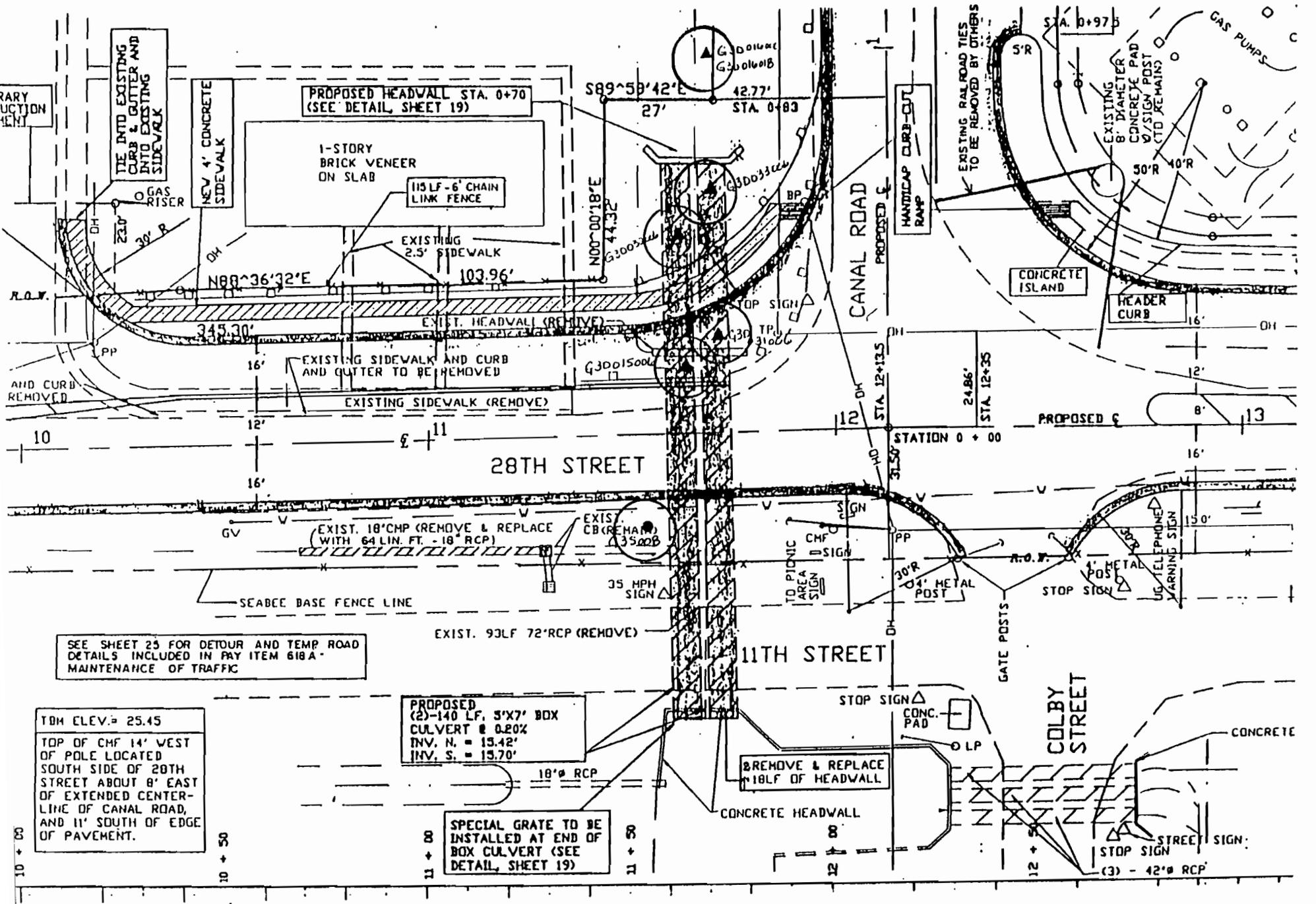


FIGURE 1



Sediment Samples
 Surface Soil Samples

} Indicated on attached maps 1A-1F



PROPOSED HEADWALL STA. 0+70
(SEE DETAIL, SHEET 19)

1-STORY
BRICK VENEER
ON SLAB

115 LF - 6' CHAIN
LINK FENCE

NEW 4' CONCRETE
SIDEWALK

TIE INTO EXISTING
CURB & GUTTER AND
INTO EXISTING
SIDEWALK

EXISTING
2.5' SIDEWALK

EXISTING SIDEWALK AND CURB
AND GUTTER TO BE REMOVED

EXISTING SIDEWALK (REMOVE)

28TH STREET

EXIST. 18" CMP (REMOVE & REPLACE
WITH 64 LIN. FT. - 18" RCP)

EXIST. CB (REMAIN)
35.028

SEABEE BASE FENCE LINE

EXIST. 93 LF 72" RCP (REMOVE)

11TH STREET

PROPOSED
(2) - 140 LF, 3'X7' BOX
CULVERT @ 0.20%
INV. N. = 15.42'
INV. S. = 15.70'

SPECIAL GRATE TO BE
INSTALLED AT END OF
BOX CULVERT (SEE
DETAIL, SHEET 19)

REMOVE & REPLACE
18 LF OF HEADWALL

CONCRETE HEADWALL

STOP SIGN
CONC. PAD

COLBY STREET

STOP SIGN
STOP SIGN
(3) - 42" RCP

TBM ELEV. = 25.45
TOP OF CMF 14" WEST
OF POLE LOCATED
SOUTH SIDE OF 20TH
STREET ABOUT 8' EAST
OF EXTENDED CENTER-
LINE OF CANAL ROAD,
AND 11' SOUTH OF EDGE
OF PAVEMENT.

SEE SHEET 25 FOR DETOUR AND TEMP ROAD
DETAILS INCLUDED IN PAY ITEM 618A -
MAINTENANCE OF TRAFFIC

STATION 0 + 00

STA. 12+35

STA. 12+135

CONCRETE
ISLAND

HEADER
CURB

HANDICAP CURB-CUT
RAMP

EXISTING RAIL ROAD TIES
TO BE REMOVED BY OTHERS

STA. 0+97

GAS PUMPS

EXISTING 8" DIAMETER
CONCRETE PAD
W/ SIGN POST
(STD REMAINS)

CONCRETE
ISLAND

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ISLAND

HEADER
CURB

HANDICAP CURB-CUT
RAMP

EXISTING RAIL ROAD TIES
TO BE REMOVED BY OTHERS

STA. 0+97

GAS PUMPS

EXISTING 8" DIAMETER
CONCRETE PAD
W/ SIGN POST
(STD REMAINS)

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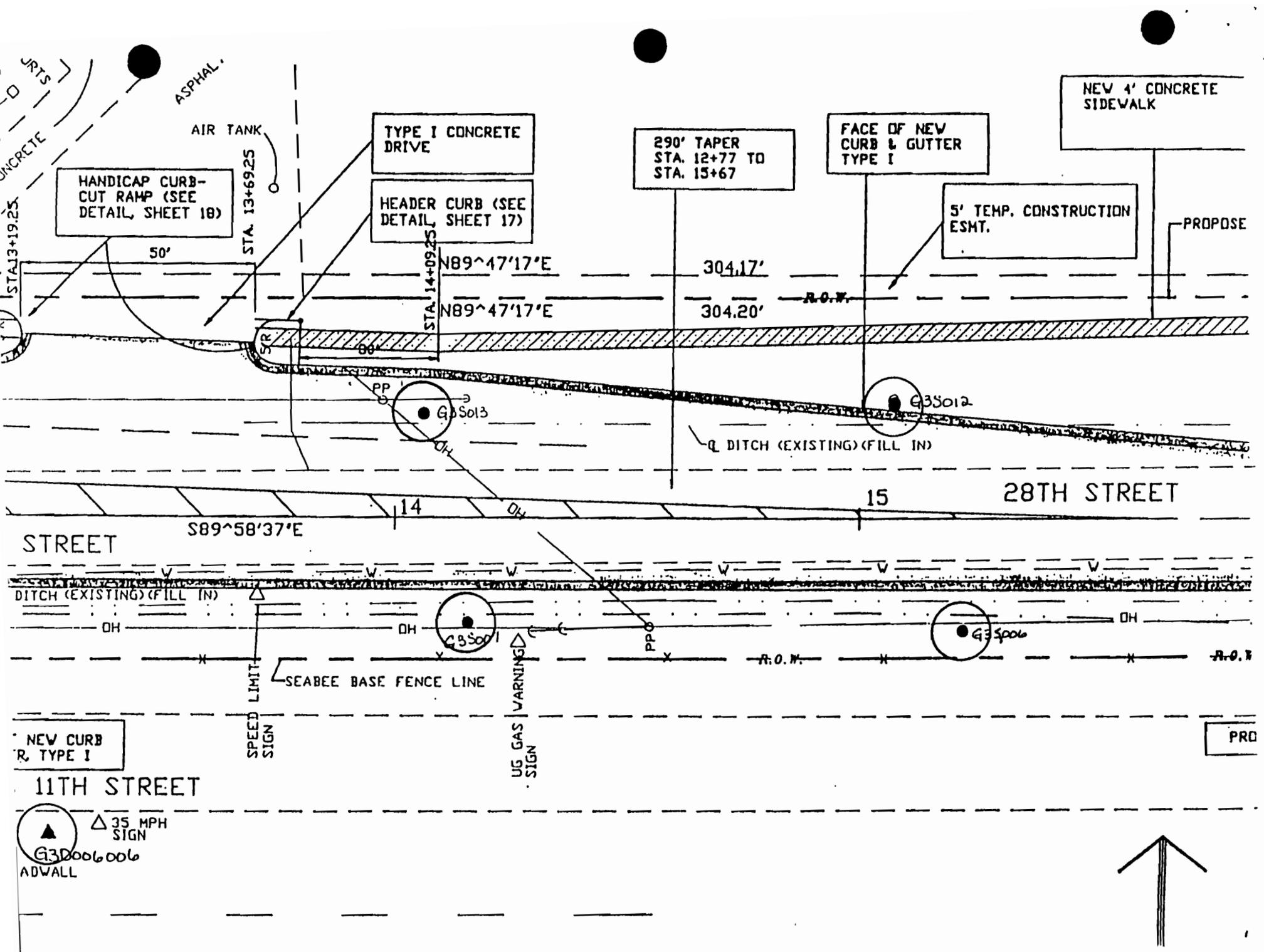
STA. 0+97

GAS PUMPS

EXISTING 8" DIAMETER
CONCRETE PAD
W/ SIGN POST
(STD REMAINS)

CONCRETE
ISLAND

HEADER
CURB

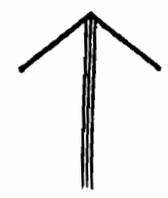


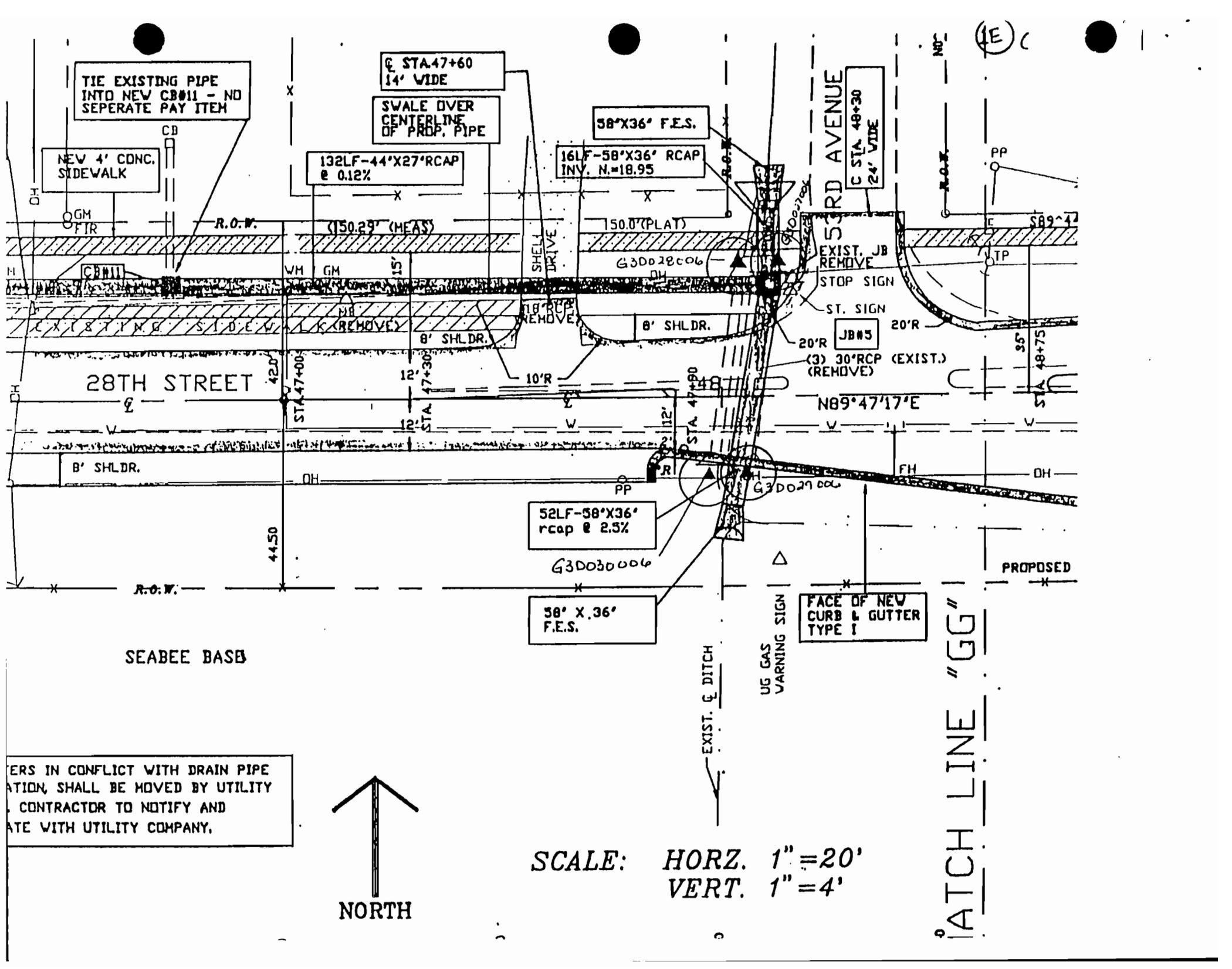
SCALE: HORZ. 1" = 20'

SATISFACTORY TO THE OWNER AND ENGINEER, AFTER CONSTRUCTION OF

SEE PDS DAY

17





TIE EXISTING PIPE INTO NEW CB#11 - NO SEPERATE PAY ITEM

NEW 4' CONC. SIDEWALK

☉ STA. 47+60
14' WIDE

SWALE OVER CENTERLINE OF PROP. PIPE

132LF-44\"X27\"RCAP @ 0.12%

58\"X36\" F.E.S.

16LF-58\"X36\" RCAP INV. N.=18.95

53RD AVENUE
☉ STA. 48+30
24' WIDE

28TH STREET

EXIST. JB REMOVE
STOP SIGN
ST. SIGN
JB#5
(3) 30\"RCP (EXIST.) (REMOVE)

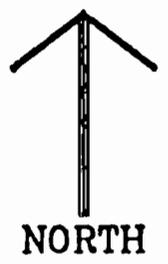
52LF-58\"X36\" rcap @ 2.5%

58\" X 36\" F.E.S.

FACE OF NEW CURB & GUTTER TYPE I

SEABEE BASE

ERS IN CONFLICT WITH DRAIN PIPE ATION, SHALL BE MOVED BY UTILITY CONTRACTOR TO NOTIFY AND DATE WITH UTILITY COMPANY.



SCALE: HORZ. 1\"=20'
VERT. 1\"=4'

ATCH LINE "GG"

