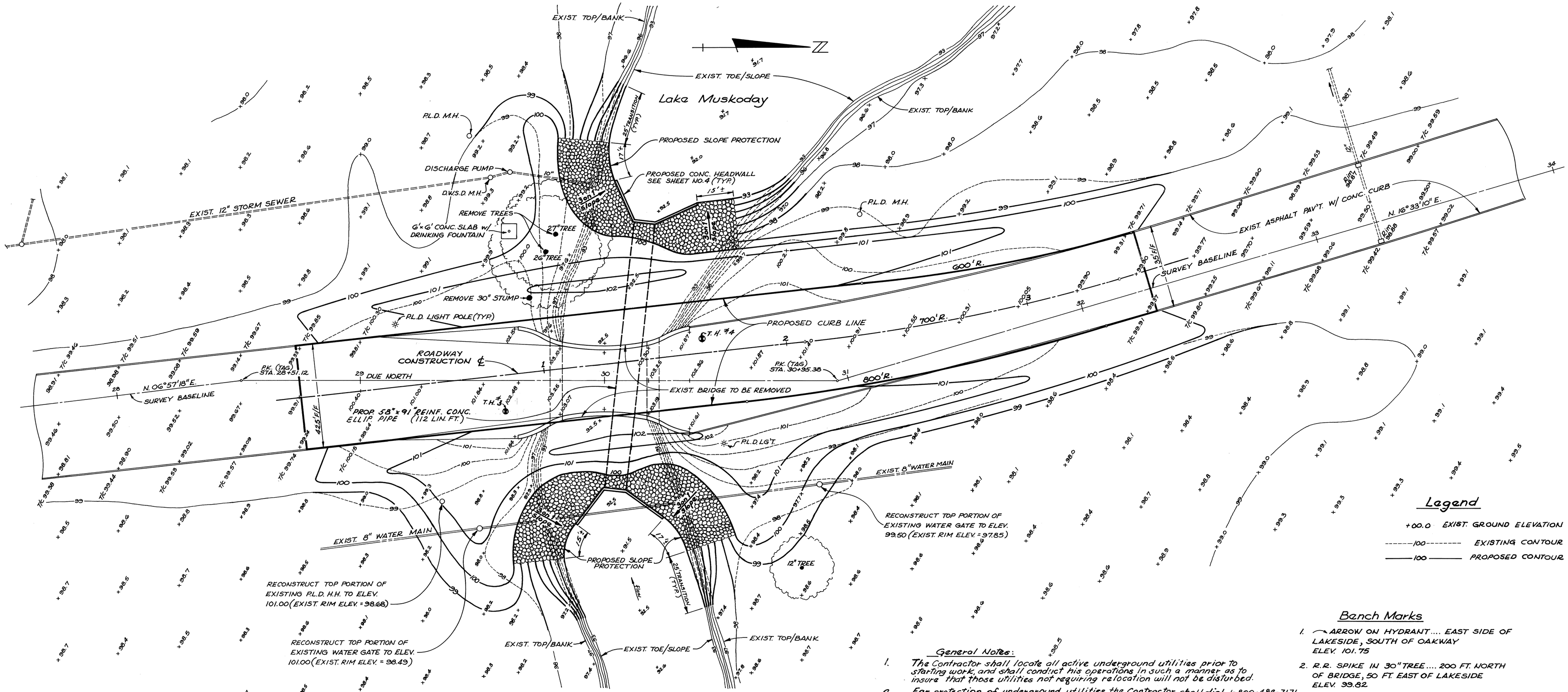
NWB N5379 100 3/86 1102F



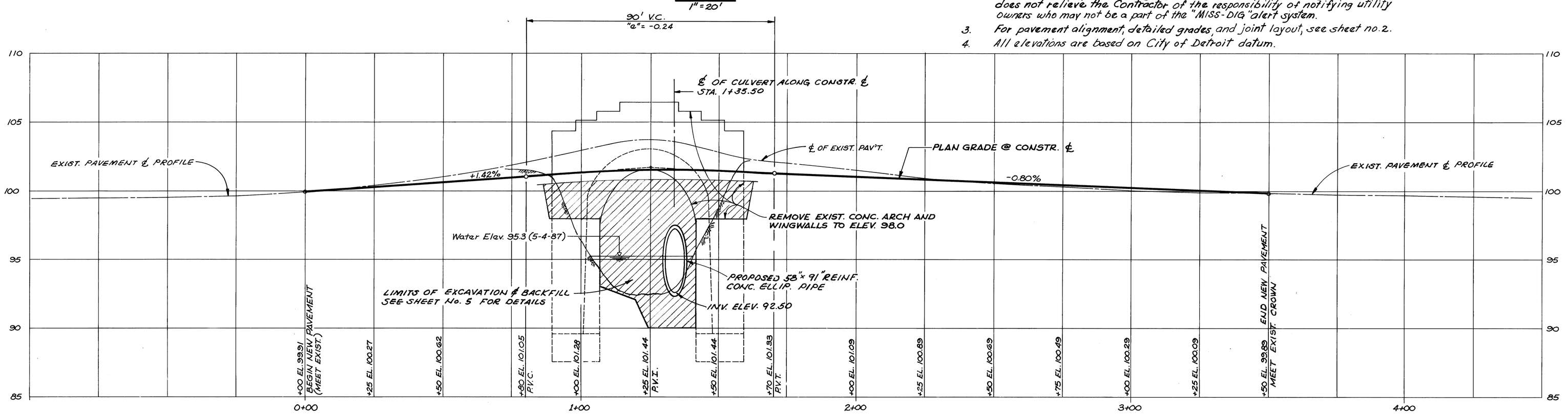
Bench Marks

1. ARROW ON HYDRANT.... EAST SIDE OF LAKESIDE, SOUTH OF OAKWAY ELEV. 101.75
2. R.R. SPIKE IN 30" TREE.... 200 FT. NORTH OF BRIDGE, 50 FT. EAST OF LAKESIDE ELEV. 99.82

General Notes:

1. The Contractor shall locate all active underground utilities prior to starting work and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.
2. For protection of underground utilities the Contractor shall dial 1-800-482-7171 a minimum of 48 hours prior to excavating in the vicinity of utility lines. All "MISS-DIG" participating members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be a part of the "MISS-DIG" alert system.
3. For pavement alignment, detailed grades, and joint layout, see sheet no. 2.
4. All elevations are based on City of Detroit datum.

PLAN
1" = 20'



PROFILE
HOR.: 1" = 20'
VERT.: 1" = 4'

CITY OF DETROIT
LAKESIDE DRIVE CULVERT

Project

Sheet Title: SITE PLAN

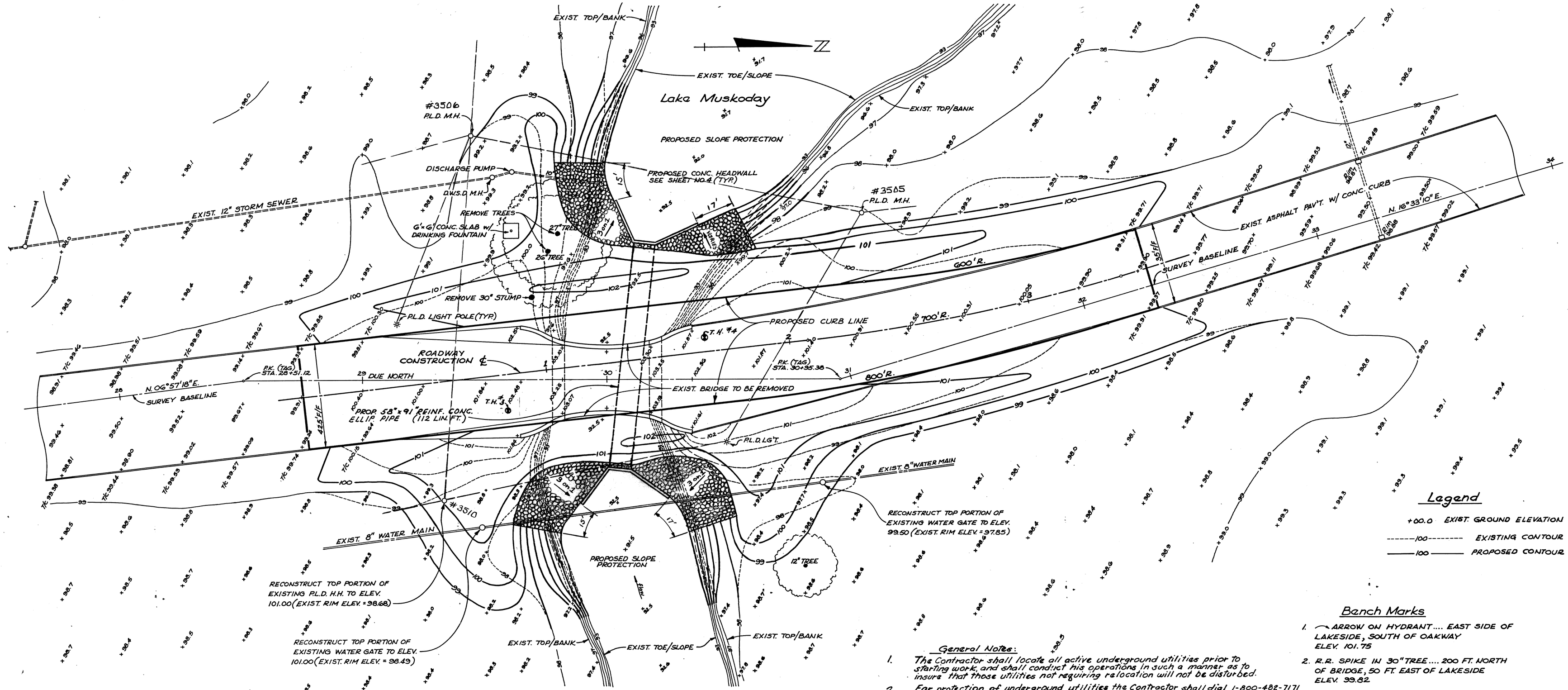
MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
615 Griswold Street
Detroit, Michigan 48226

DESIGN BY	K.C.H.
DRAWN BY	K.C.H.
CHECKED BY	S.O.
DATE	FEB. 1989
PROJECT NO.	8605
SHEET NO.	1

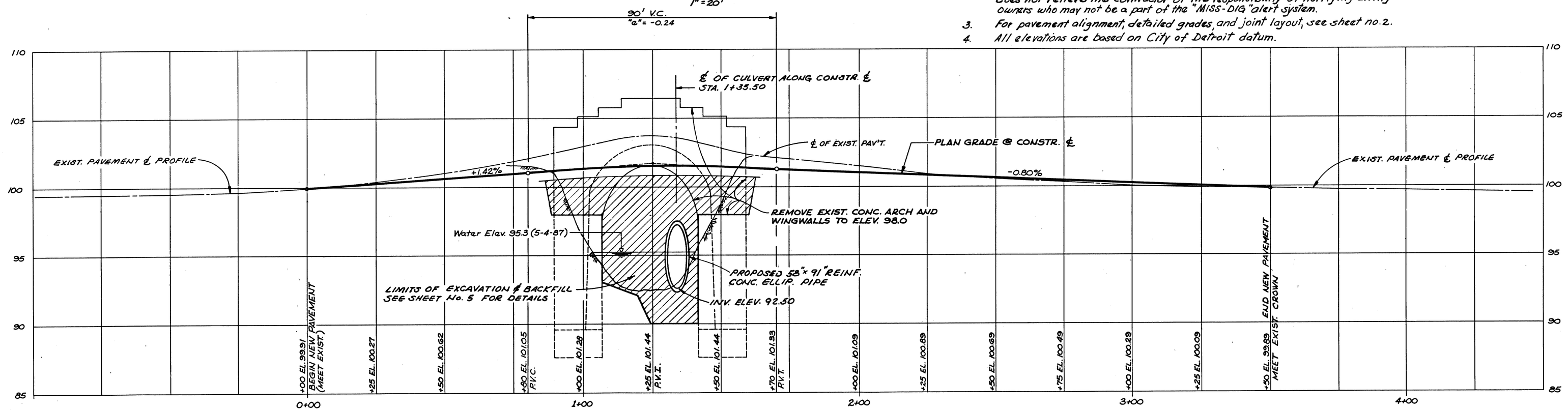
STATE OF MICHIGAN
BHAGU PATEL
ENGINEER
No. 28283
REGISTERED PROFESSIONAL ENGINEER

11/14/89 OWNERS REVIEW

NWB N5379 100 3/86 1102F



PLAN
1" = 20'



PROFILE
HOR.: 1" = 20'
VERT.: 1" = 4'

Legend
+00.0 EXIST. GROUND ELEVATION
------100------ EXISTING CONTOUR
——100—— PROPOSED CONTOUR

Bench Marks
1. ⌒ ARROW ON HYDRANT.... EAST SIDE OF LAKESIDE, SOUTH OF OAKWAY ELEV. 101.75
2. R.R. SPIKE IN 30" TREE.... 200 FT. NORTH OF BRIDGE, 50 FT. EAST OF LAKESIDE ELEV. 99.82

General Notes:
1. The Contractor shall locate all active underground utilities prior to starting work, and shall conduct his operations in such a manner as to insure that those utilities not requiring relocation will not be disturbed.
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3. For pavement alignment, detailed grades, and joint layout, see sheet no. 2.
4. All elevations are based on City of Detroit datum.

3/3/89	SHORTENED CULVERT & ADD P.L.D.
11/14/88	OWNERS REVIEW

Sheet Title: **SITE PLAN**

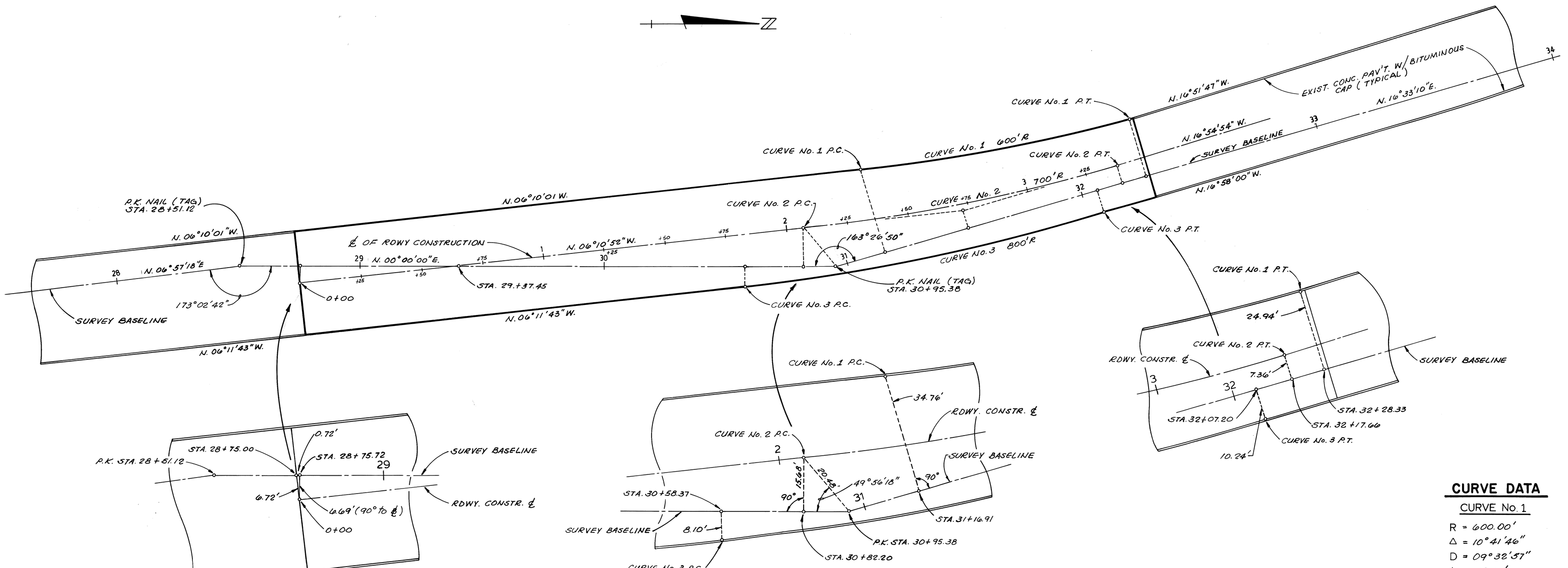
Project: **CITY OF DETROIT**
LAKESIDE DRIVE CULVERT

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
615 Griswold, Suite 615
Detroit, Michigan 48226

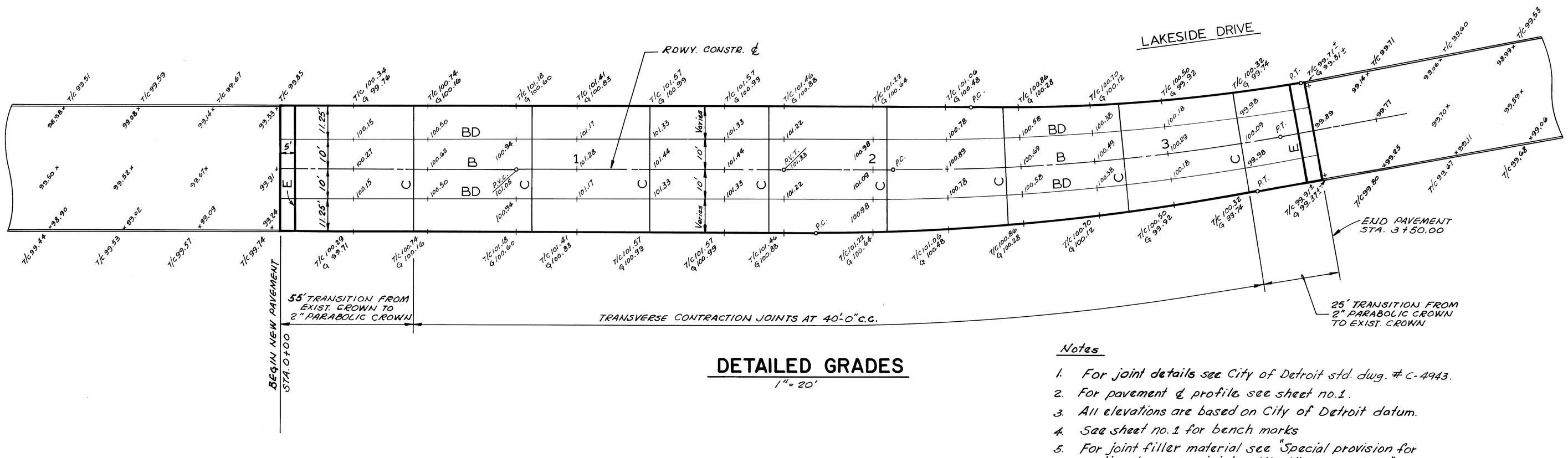
DESIGN BY	K.C.H.
DRAWN BY	K.C.H.
CHECKED BY	S.D.
DATE	FEB. 1989
PROJECT NO.	8605
SHEET NO.	1-R

STATE OF MICHIGAN
BHAGU PATEL ENGINEER
No. 28283
LICENSED PROFESSIONAL ENGINEER

NWB 2958 100 3-88 3600F



ALIGNMENT DIAGRAM
1" = 20'



DETAILED GRADES
1" = 20'

CURVE DATA

CURVE No. 1
- R = 600.00'
- Δ = 10°41'46"
- D = 09°32'57"
- L = 112.01'
- T = 56.17'
- Ch = 111.85'

CURVE No. 2
- R = 700.00'
- Δ = 10°44'02"
- D = 08°11'06"
- L = 131.14'
- T = 65.76'
- Ch = 130.95'

CURVE No. 3
- R = 800.00'
- Δ = 10°46'17"
- D = 07°09'43"
- L = 150.40'
- T = 75.42'
- Ch = 150.18'

Notes
1. For joint details see City of Detroit std. dwg. # C-4943.
2. For pavement & profile see sheet no. 1.
3. All elevations are based on City of Detroit datum.
4. See sheet no. 1 for bench marks
5. For joint filler material see "Special provision for sealing transverse joints with silicone sealant."
6. See sheet no.'s for stage construction details.
7. Pavement elevations given are to finished grade bituminous overlay.

STATE OF MICHIGAN
BHAGU PATEL
ENGINEER
No. 28263
LICENSED PROFESSIONAL ENGINEER

11/1988 CHANGES REVIEW

Sheet Title: ALIGNMENT DIAGRAM AND DETAILED GRADES

Project: CITY OF DETROIT
LAKESIDE DRIVE CULVERT

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

DESIGN BY	K.C.H.
DRAWN BY	C.J.B.
CHECKED BY	SO
DATE	FEB. 1989
PROJECT NO.	8605
SHEET NO.	2

TO #3505
P.L.D. M.H.

FROM #3505
P.L.D M.H.

Lake Muskoday

flow

3 ON 1 SLOPE

SLOPE VARIES

2 ON 1 SLOPE

SLOPE VARIES

Horizontal Control Pt.
Sta. 30+54.27

Survey ℄

Horizontal Control Pt.
Sta. 30+31.07

Ref. Pt. "A"

Proposed Concrete Headwall and Footing (See sht. no.4)

8'-0"

58"x91" R.C.P.

℄ of Culvert
Sta. 30+09.47

84°

96°

75.79'

52.83'

12'-6"

60°

Limits of stone slope protection

Place stone to elev. 100.0

Existing Conc. Arch to be removed (see sheet no.5)

Horizontal Control Pt.
Sta. 29+16.47

Horizontal Control Pt.
Sta. 29+78.25

27" tree

20" tree

Remove trees

3 on 1 max.

Exist. 10" Storm Sewer

Exist. Storm Water Pump to Lake

Exist. Conc. slab to remain

Shoulder hinge point

½"/ft.

Survey ℄

Proposed Pavement

Existing Pavement

FROM #3506
P.L.D. M.H.

Exist. 12" Storm Sewer

P.L.D. L&T

3 on 1 max.

Exist 8" Water Main

3 on 1 Slope

17½'

Ref. Pt. "B"

Exist. 8" Water Main

Proposed Concrete Headwall and Footing (See sht. no.4)

15'±

Limits of Stone Slopeprotection

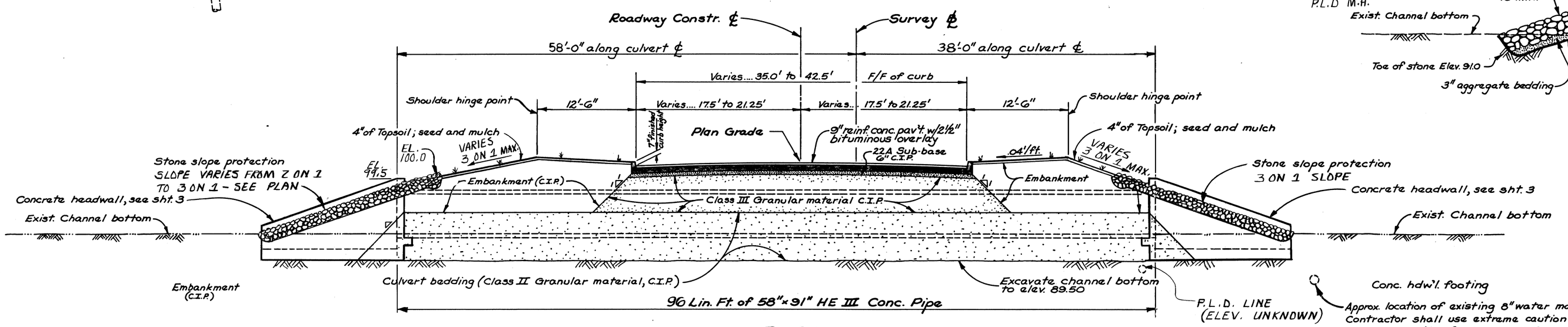
Place stone to elev. 100.0

Exist. water gate

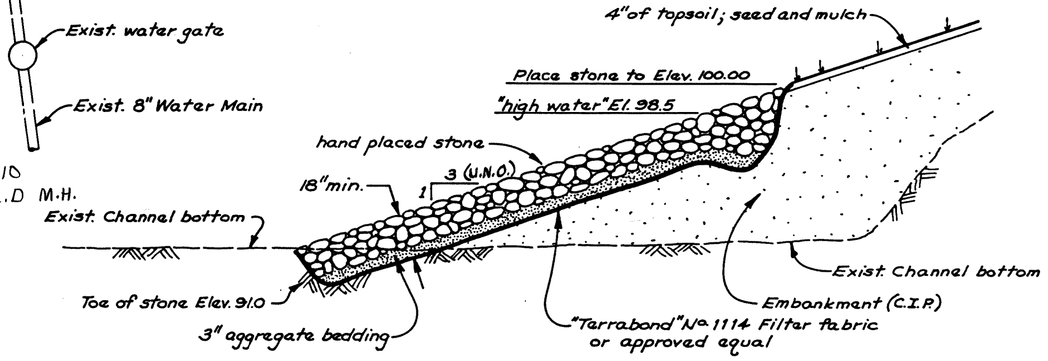
Exist. 8" Water Main

TO #3510
P.L.D M.H.

Plan
1/8" = 1'-0"



Profile
1/8" = 1'-0"



Slope Protection Section
not to scale

3/13/89 SHORTEN CULVERT & ADD P.L.D. JB/RK

Sheet Title: CULVERT DETAILS

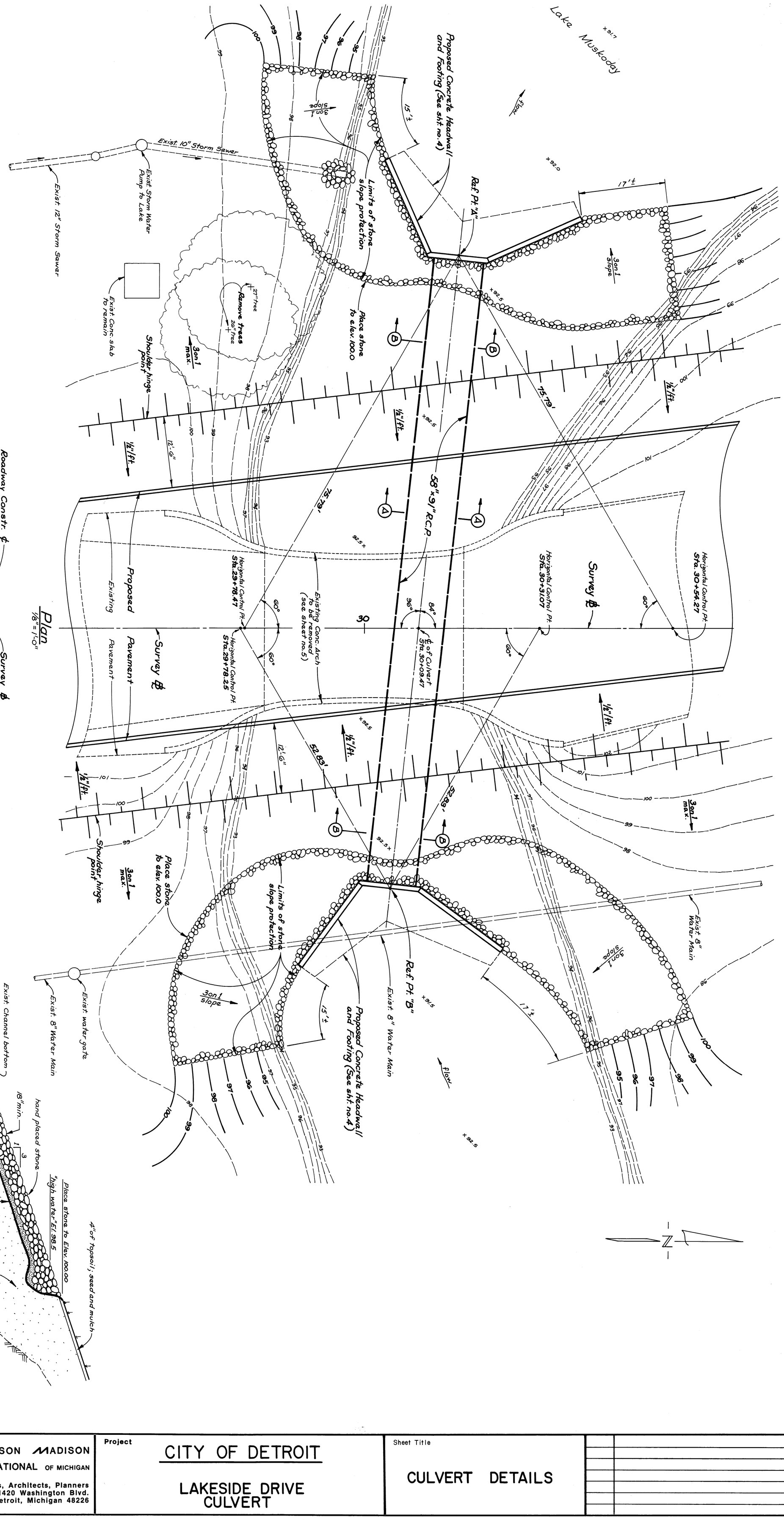
Project: CITY OF DETROIT
LAKESIDE DRIVE
CULVERT

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

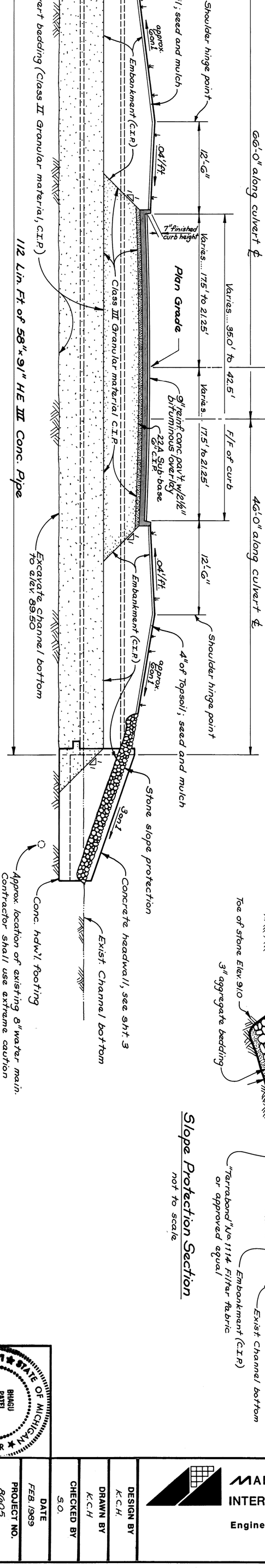
DESIGN BY	K.C.H.
DRAWN BY	K.C.H
CHECKED BY	S.O.
DATE	FEB. 1989
PROJECT NO.	8605
SHEET NO.	3-R

LICENSED STATE OF MICHIGAN BHAGU PATEL ENGINEER No. 28263 PROFESSIONAL ENGINEER

NWB 2323 100 2-68 34525F

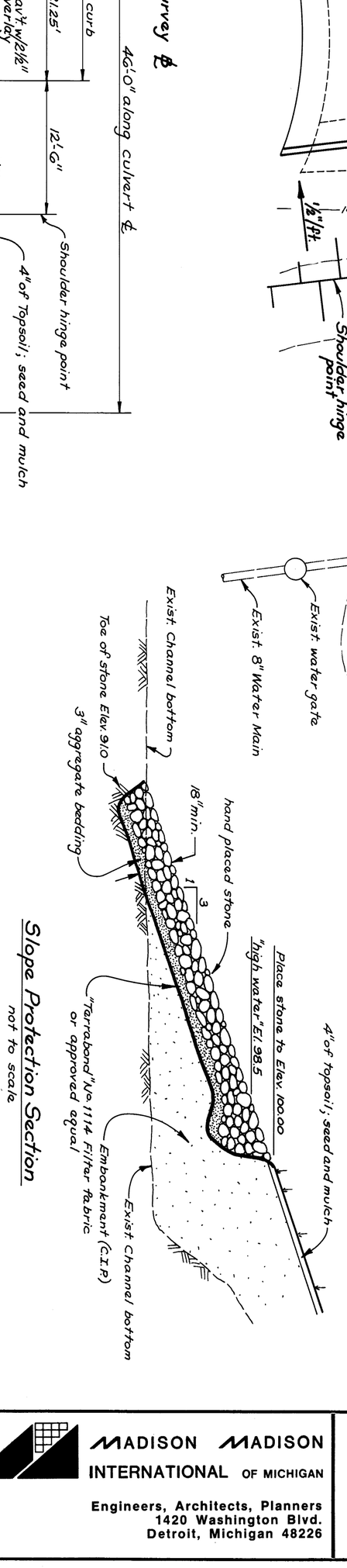


Plan
1/8" = 1'-0"



Profile
1/8" = 1'-0"

112 Lin. Ft. of 58"x91" HE III Conc. Pipe



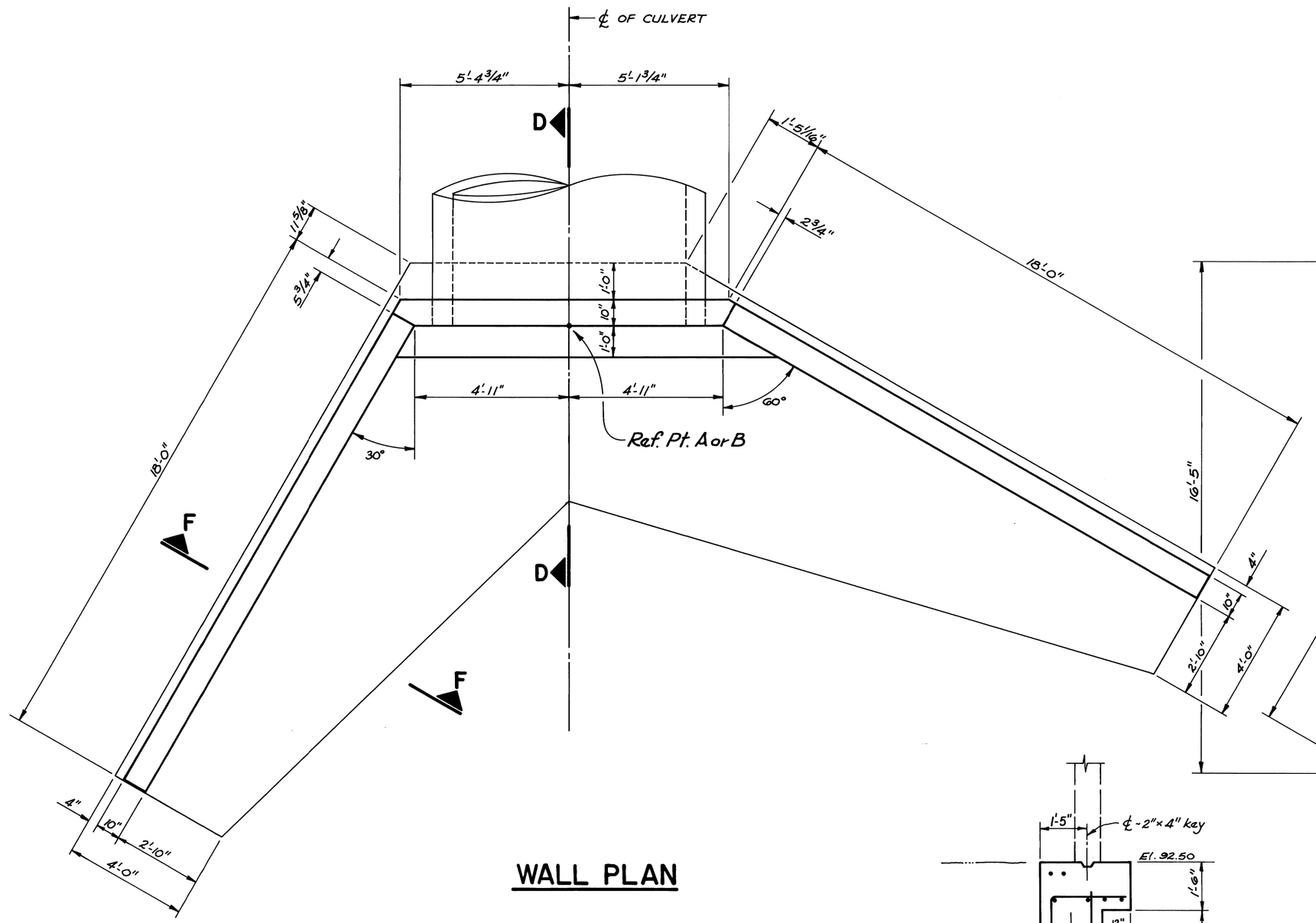
Slope Protection Section
not to scale

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

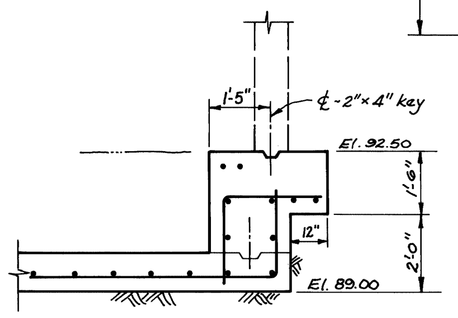
Project
CITY OF DETROIT
LAKESIDE DRIVE CULVERT

Sheet Title
CULVERT DETAILS

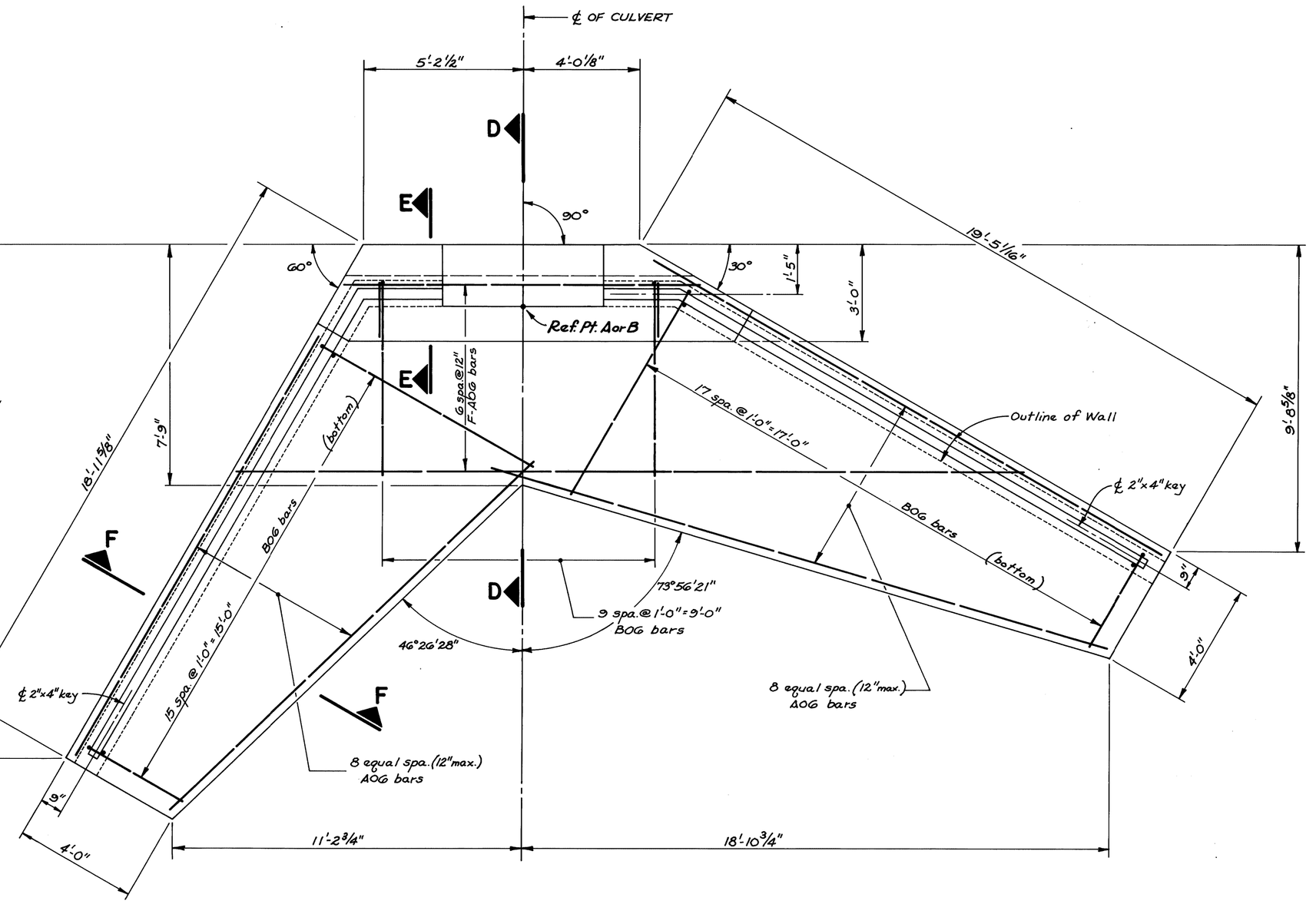
DESIGN BY	K.C.H.
DRAWN BY	K.C.H
CHECKED BY	S.O.
DATE	FEB. 1969
PROJECT NO.	8605
SHEET NO.	3



WALL PLAN



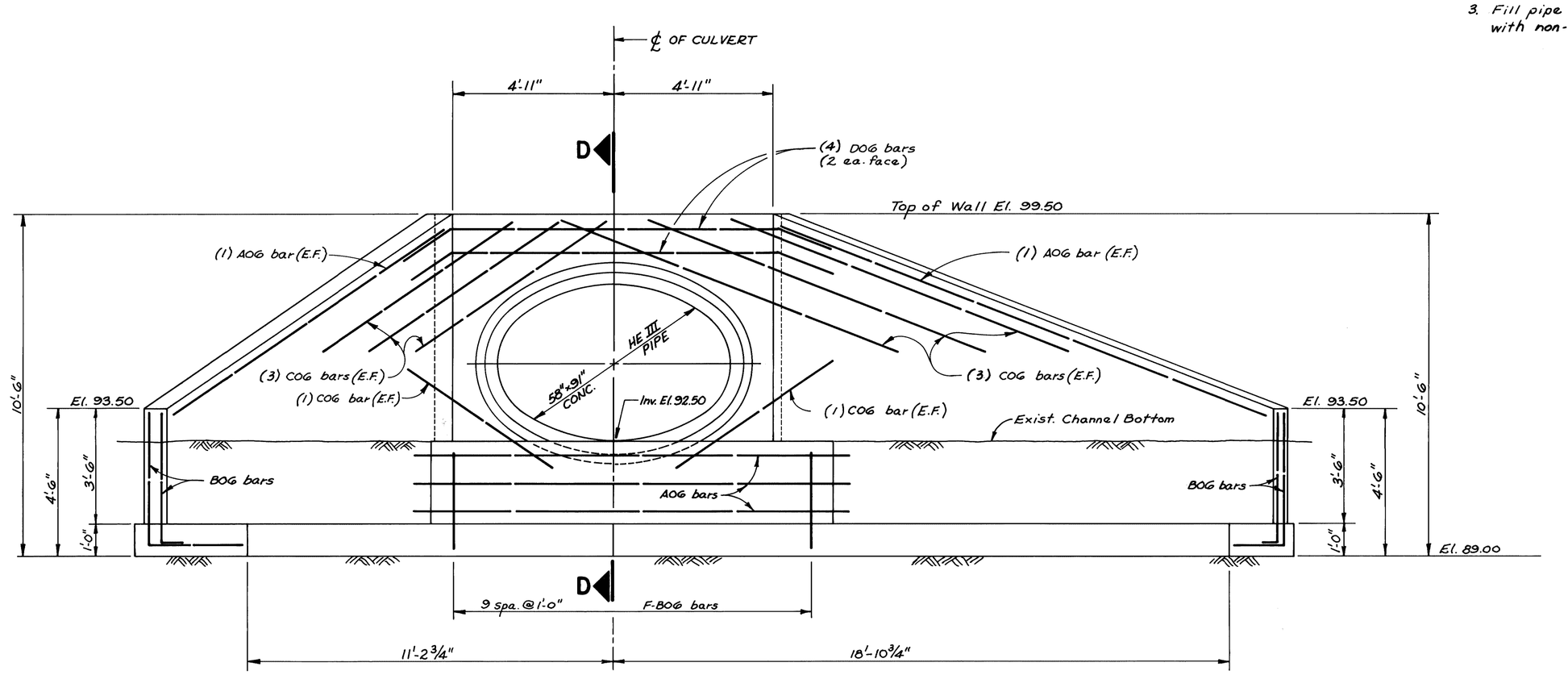
SECTION E-E



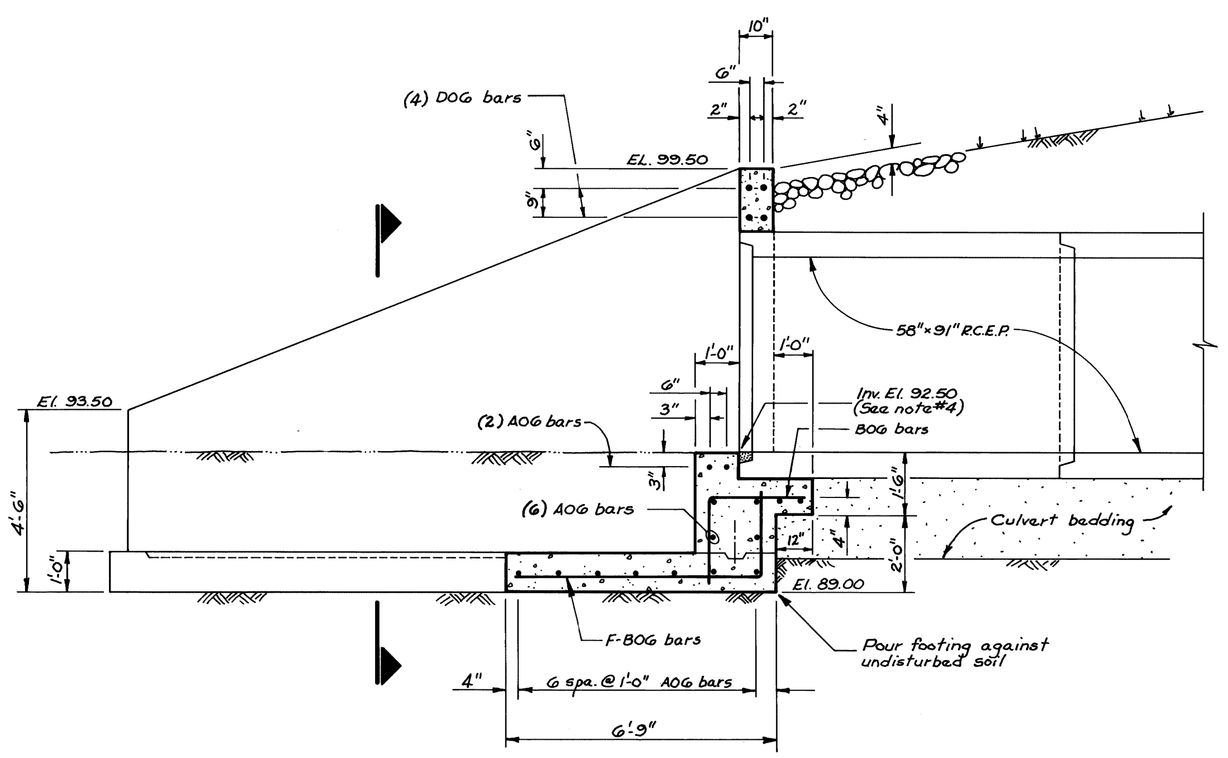
FOOTING PLAN

Notes:

1. All exposed edges shall be beveled one-half (½) inch.
2. The bell or grooved end of the pipe shall be placed upstream with end of pipe flush with headwall face.
3. Fill pipe groove along flow line at face of wall with non-shrink grout.



ELEVATION



SECTION D-D

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

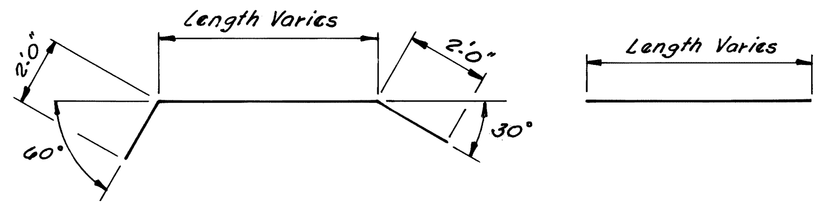
Project: CITY OF DETROIT

Sheet Title: LAKESIDE DRIVE CULVERT

Sheet Title: HEADWALL DETAILS

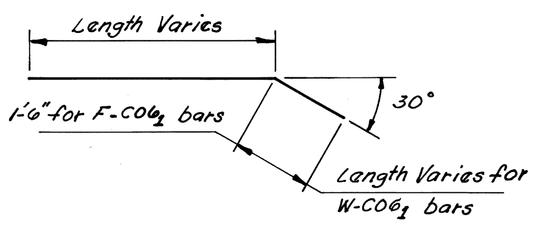
DESIGN BY	K.C.H.
DRAWN BY	K.C.H.
CHECKED BY	S.O.
DATE	FEB. 1989
PROJECT NO.	B605
SHEET NO.	4

STATE OF MICHIGAN
BHAGU PATEL
ENGINEER
No. 28263
LICENSED PROFESSIONAL ENGINEER

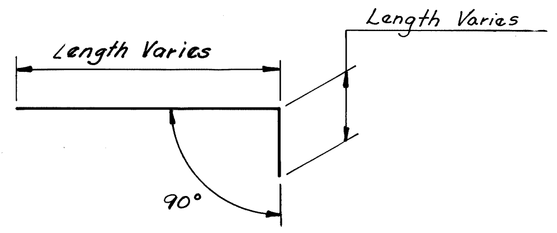


D06 bars

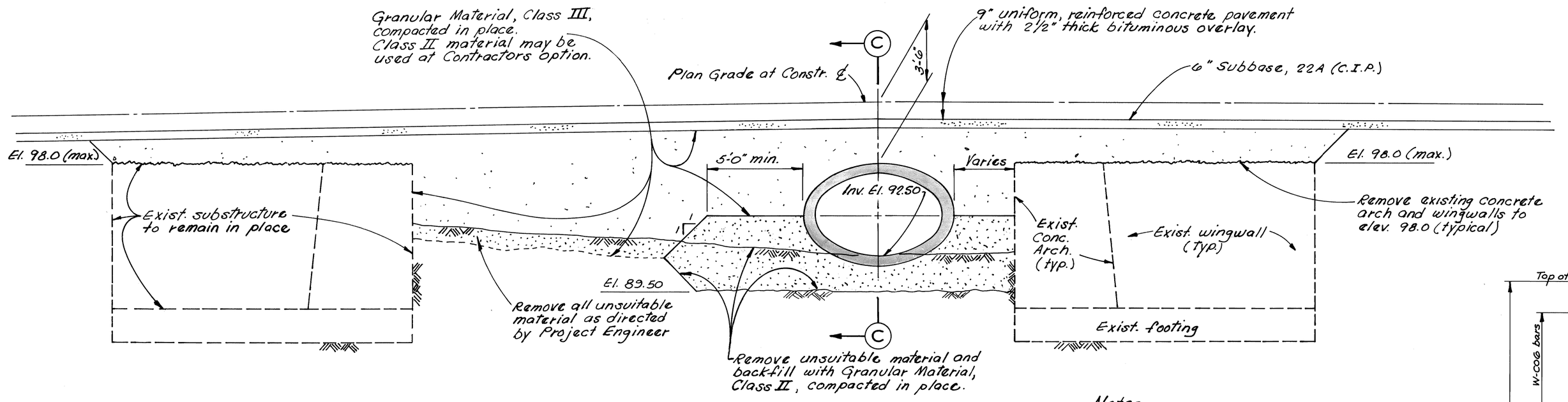
A06 bars



C06 bars

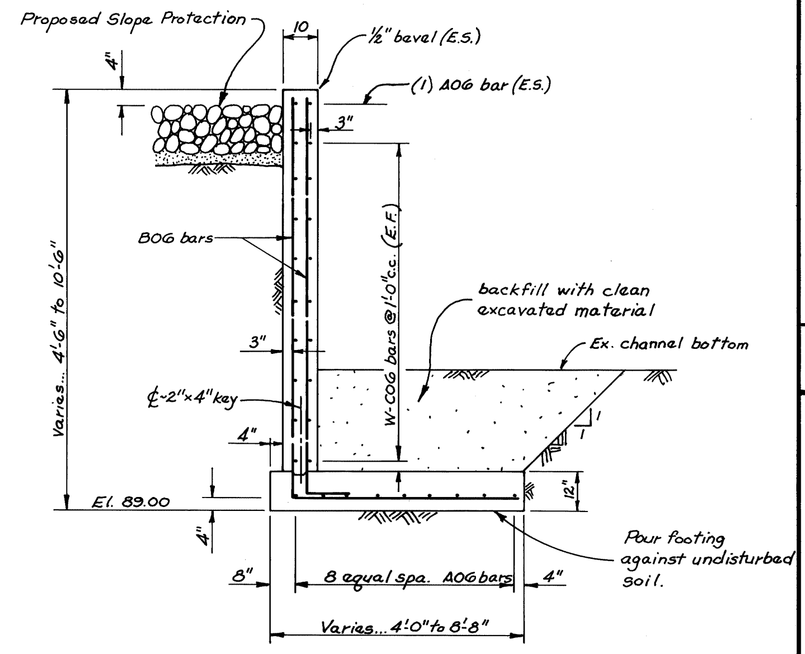


B06 bars



SECTION A-A

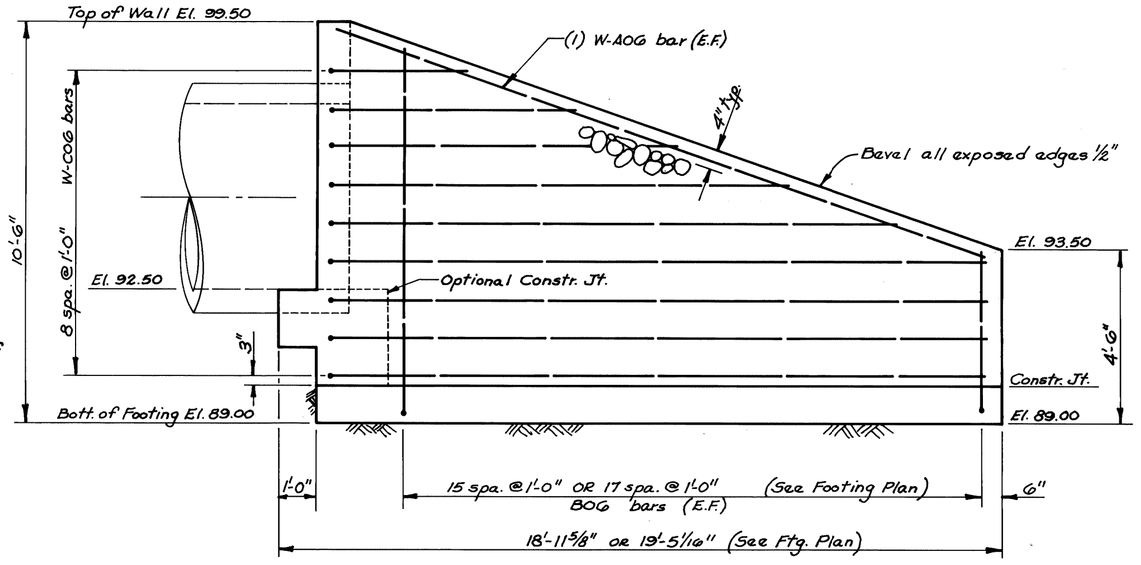
(This section to be used where the culvert is placed within the influence of the proposed roadbed. See sht. no. 2 for influence limits.)



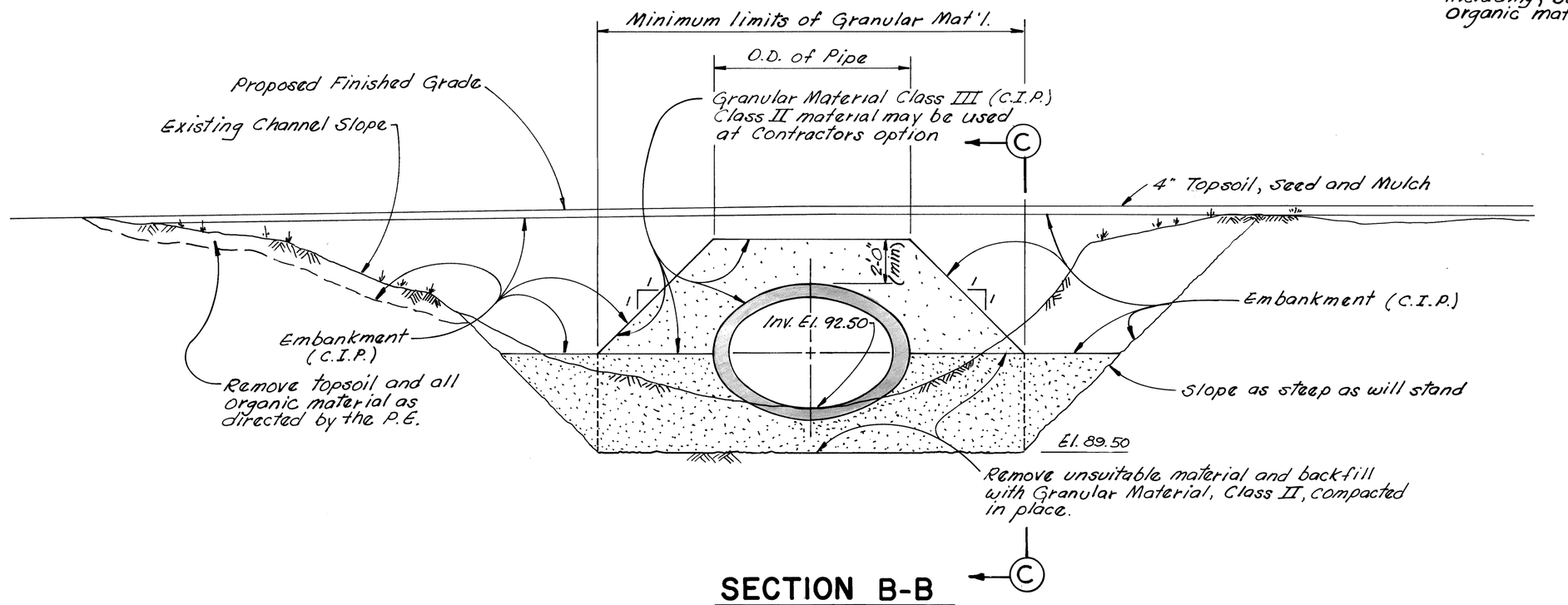
SECTION F-F

Notes

1. All earthwork operations shall be done in strict accordance with Section 2.08 of the standard specifications.
2. All backfill materials shall be placed using the "Controlled Density Method" under Sec. 2.08.11 of the standard specifications.
3. Unsuitable material is soil which is too soft or spongy to provide a firm bed for the culvert including, but not limited to, topsoil and any organic material encountered.

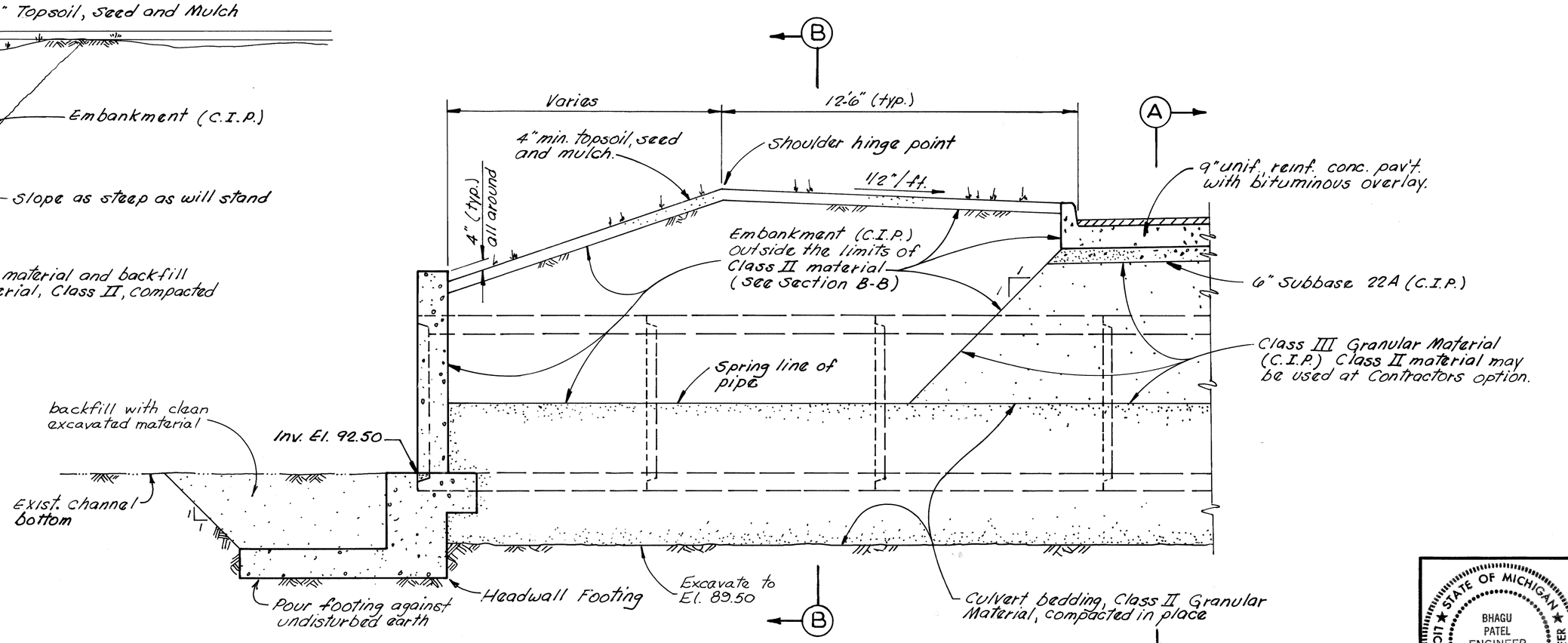


TYPICAL WALL ELEVATION



SECTION B-B

(This section to be used where culvert is placed outside the influence of the proposed roadbed. See sht. no. 2 for "influence of roadbed" limits.)



SECTION C-C

STATE OF MICHIGAN
BHAGU PATEL
ENGINEER
No. 28263
LICENSED PROFESSIONAL ENGINEER

Project

CITY OF DETROIT

LAKESIDE DRIVE CULVERT

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

DESIGN BY K.C.H.

DRAWN BY C.J.B.

CHECKED BY S.O.

DATE FEB. 1989

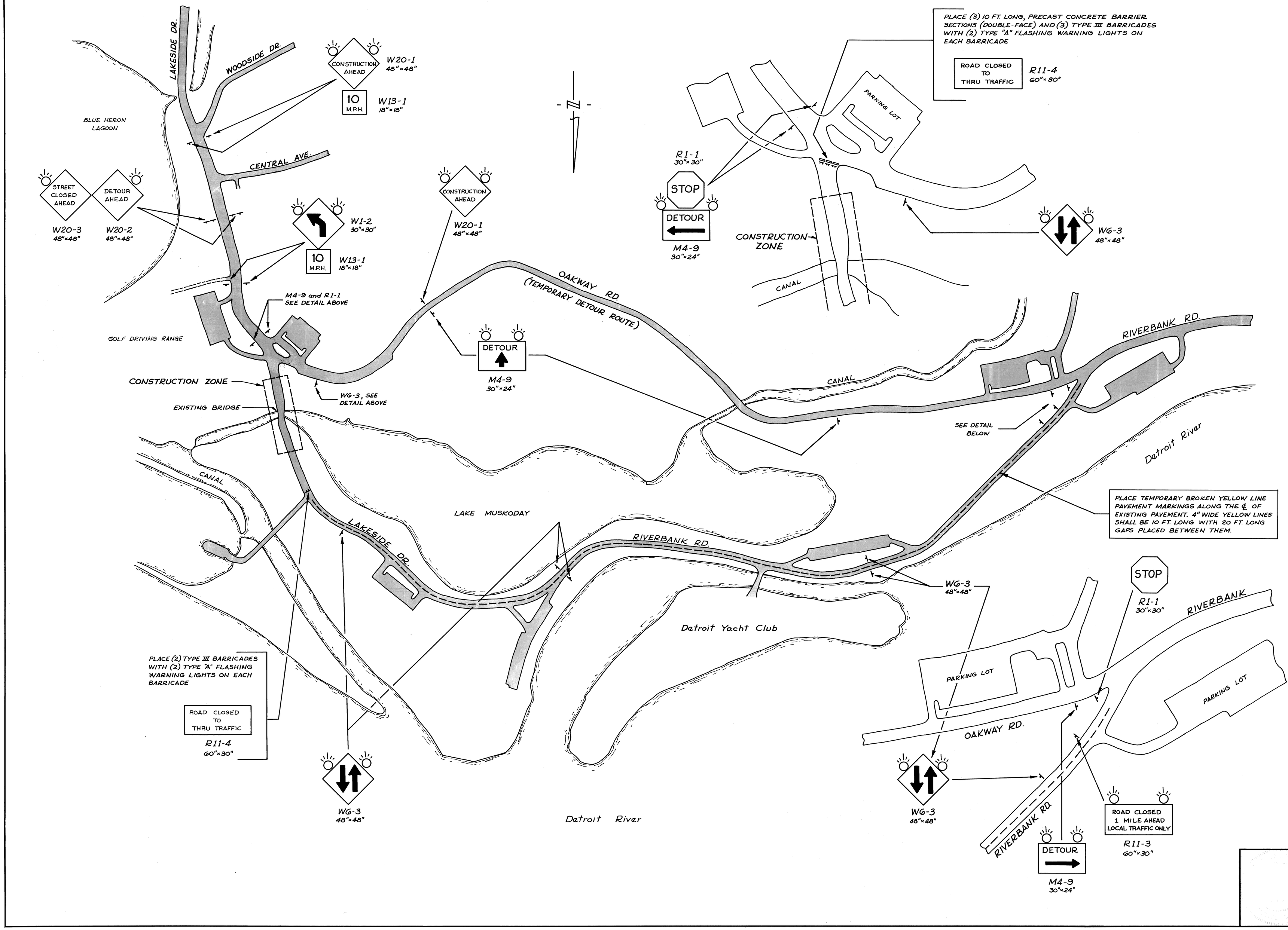
PROJECT NO. 8605

SHEET NO. 5

Sheet Title

HEADWALL AND EARTHWORK DETAILS

1/14/91 OWNERS REVIEW



TRAFFIC CONTROL

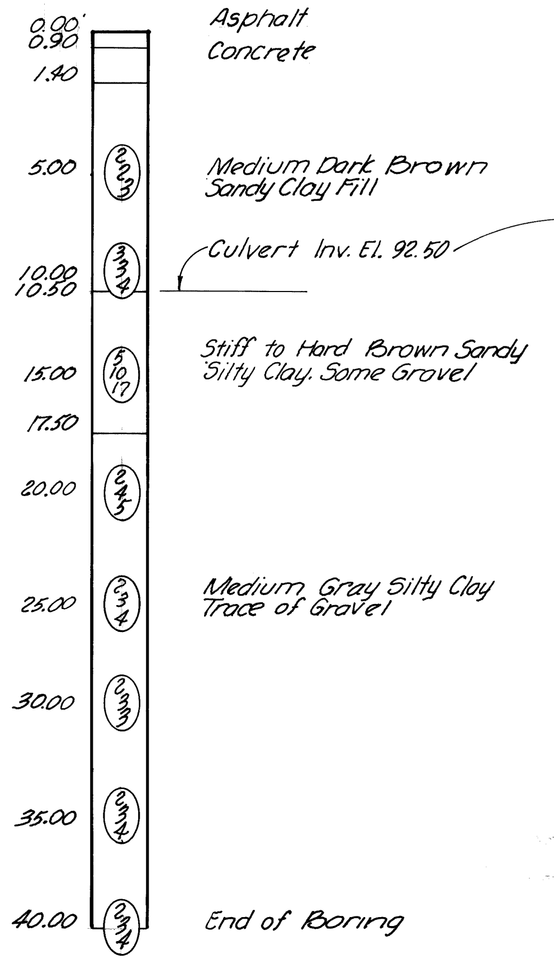
Project: CITY OF DETROIT

Sheet Title: LAKESIDE DRIVE CULVERT

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

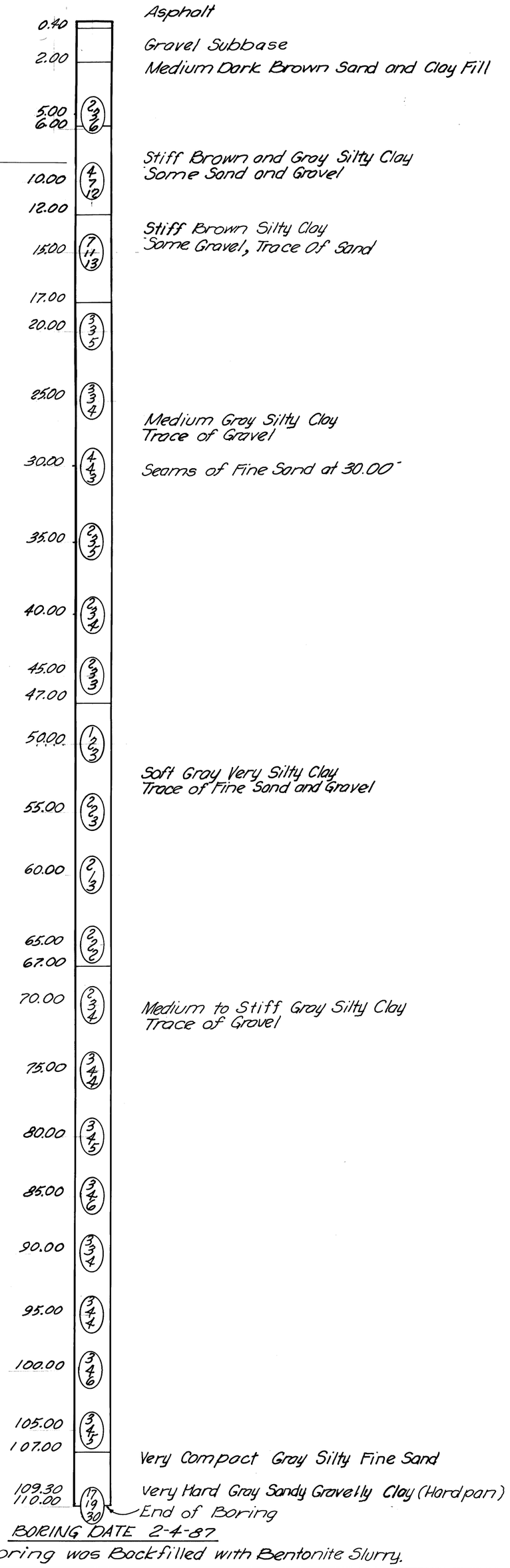
DESIGN BY	K.C.H.
DRAWN BY	K.C.H.
CHECKED BY	B.M.P.
DATE	FEB. 1989
PROJECT NO.	8605
SHEET NO.	6

TEST HOLE NO. 3



BORING DATE 2-3-87
Boring Dry at Completion.
Backfilled with the Excavated Material.

TEST HOLE NO. 4



BORING DATE 2-4-87
Boring was Backfilled with Bentonite Slurry.

Notes:

(0 / 0 / 0) 1st 6" 2nd 6" 3rd 6"

1. Numbers In Circle Denotes Number Of Blows Required To Drive A 2.00" O.D. x 1.50" I.D. Split Spoon Sampler 3 Successive 6" Increments Using A 140# Hammer Falling 30"
2. The Soil Boring Logs Represent Point Information. Presentation Of This Information In No Way Implies That Subsurface Conditions Are The Same At Locations Other Than The Exact Location Of The Boring.

SOIL BORING LOGS NO. 3 and 4

Project
CITY OF DETROIT
LAKESIDE DRIVE CULVERT

MADISON MADISON INTERNATIONAL OF MICHIGAN
Engineers, Architects, Planners
1420 Washington Blvd.
Detroit, Michigan 48226

DESIGN BY
DRAWN BY C.W.
CHECKED BY S.O.
DATE
PROJECT NO. 8605
SHEET NO. SB-1