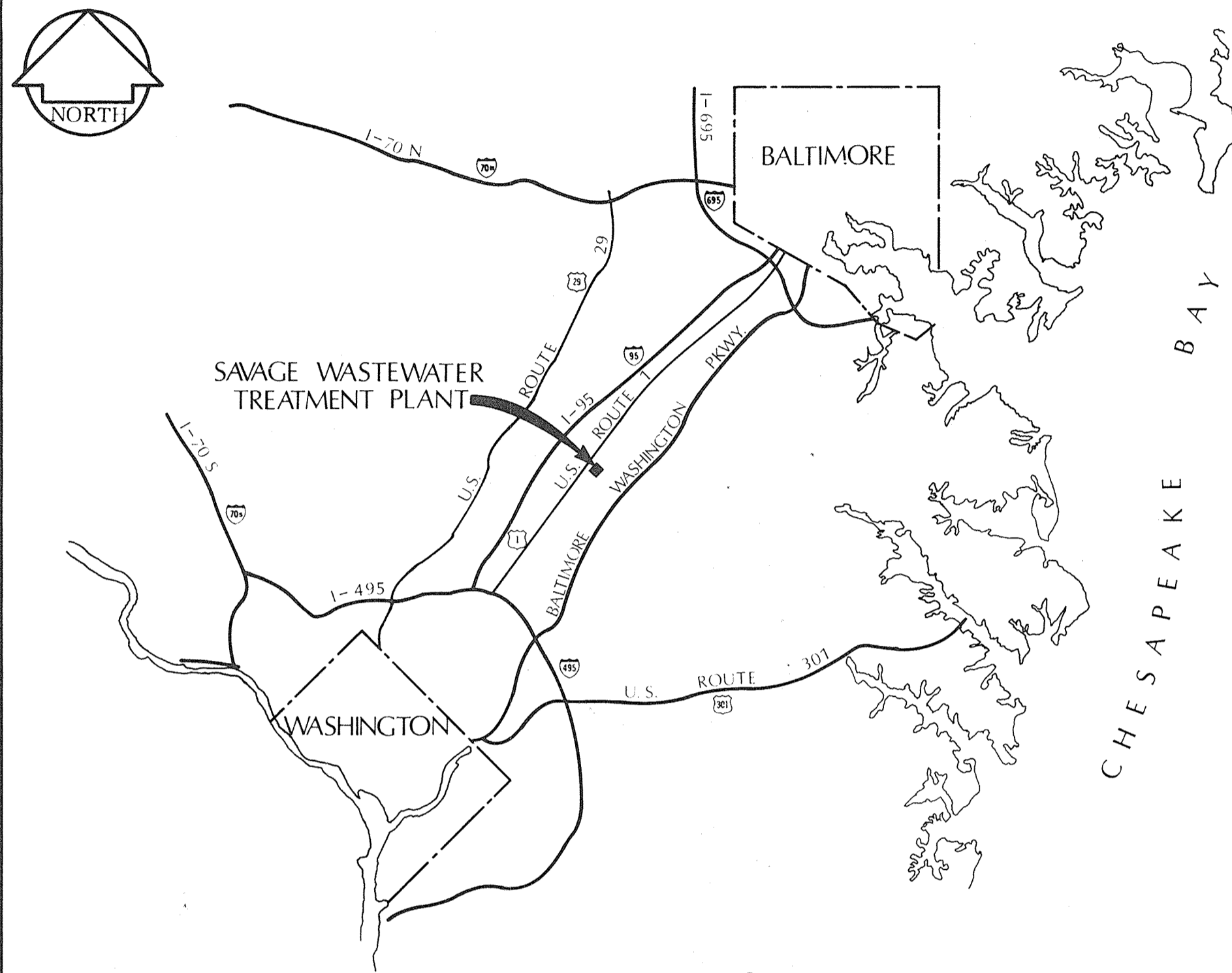
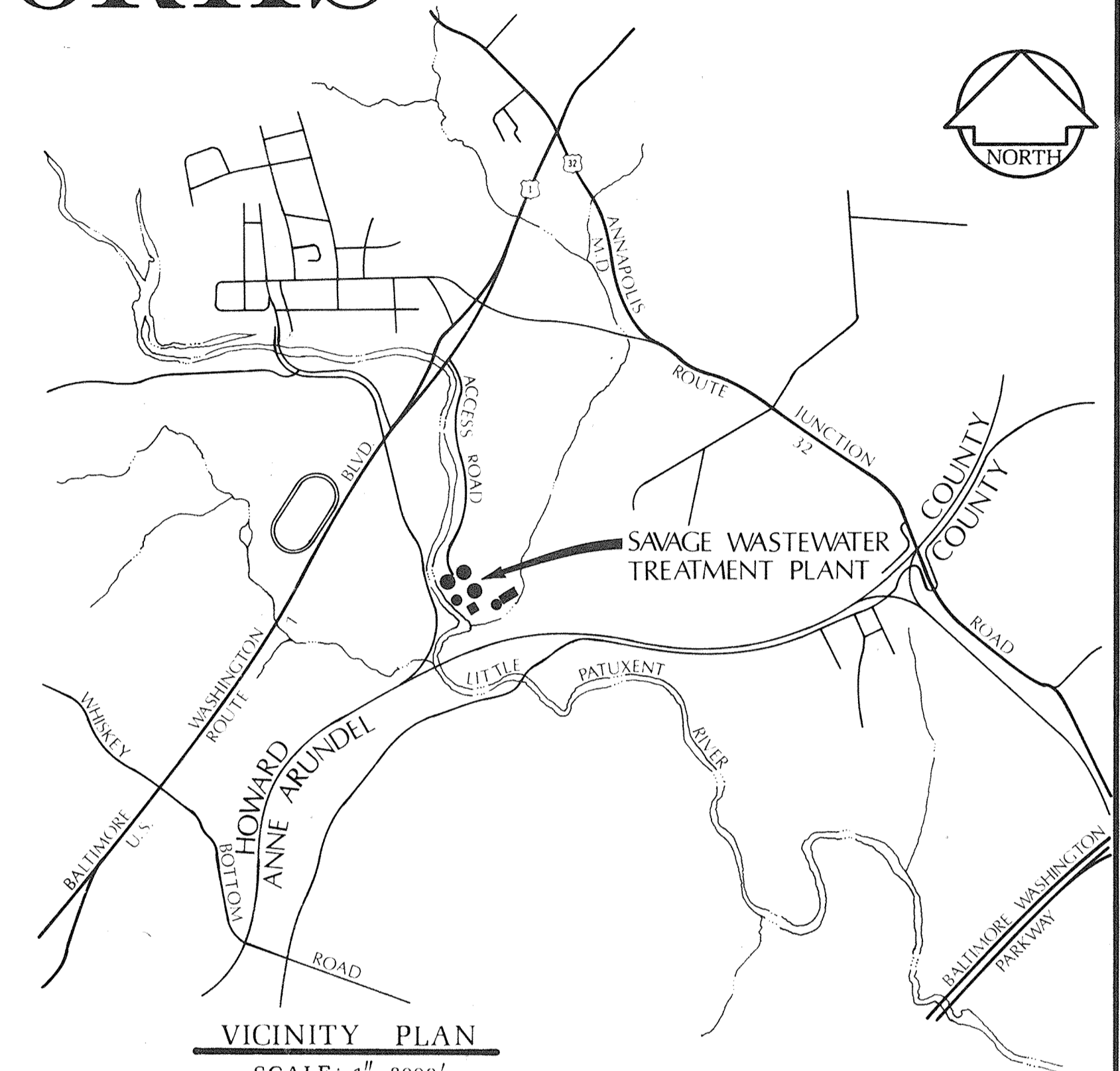
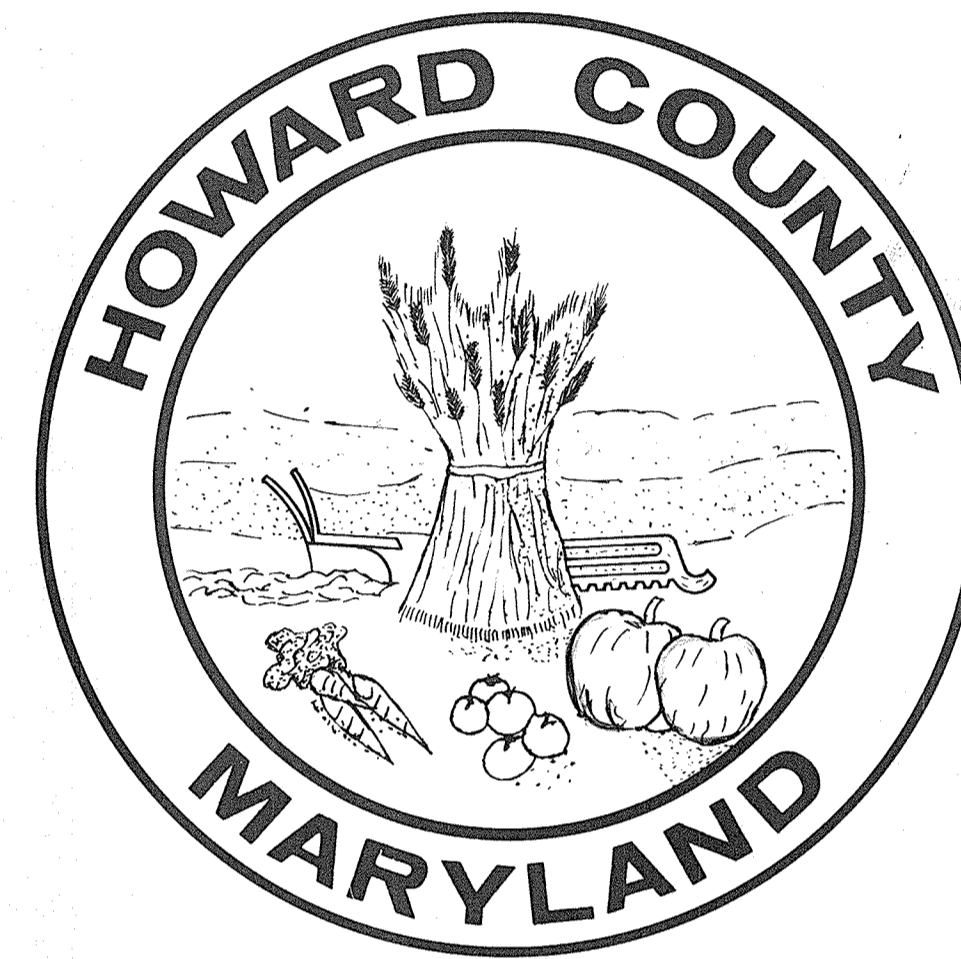


HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS



LOCATION MAP
SCALE: 1" = 6 MILES



VICINITY PLAN
SCALE: 1" = 2000'

SAVAGE WASTEWATER TREATMENT PLANT

ADDITION NO. 4
CONTRACT 504-S

HOWARD COUNTY

Thomas J. Regan Jr.
THOMAS J. REGAN JR. - DIRECTOR -
DEPARTMENT OF PUBLIC WORKS

W. O. Filbert 7-20-77
WILLIAM O. FILBERT - CHIEF - BUREAU OF ENGINEERING

WHITMAN, REQUARDT & ASSOCIATES - ENGINEERS

Kenneth A. McCord
KENNETH A. McCORD



GENERAL NOTES

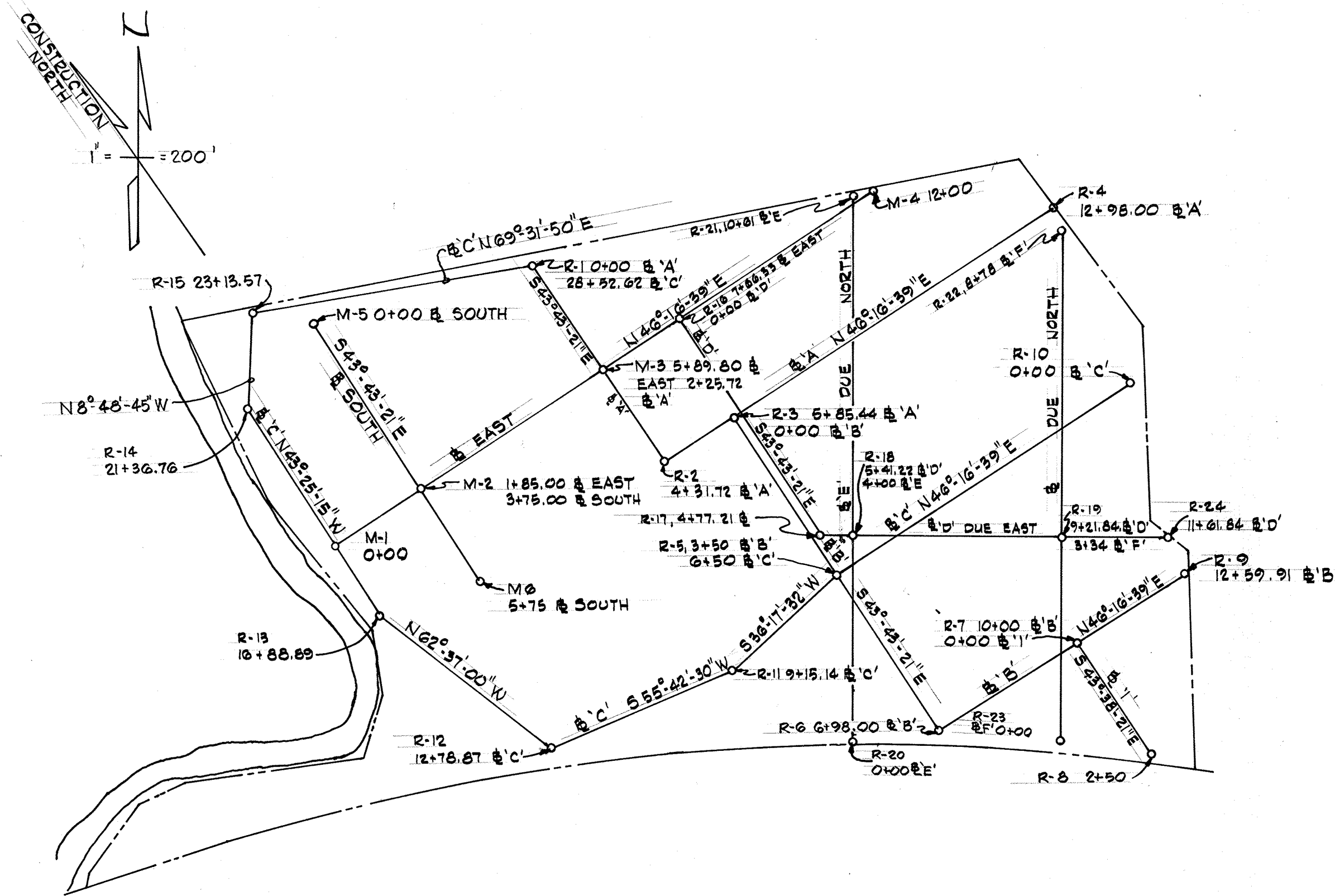
- The location of existing pipelines and structures are approximate. The Contractor shall take all necessary precautions to protect existing lines and structures and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
- The Contractor shall locate existing utilities by test pits a minimum of two weeks in advance of construction operations in the vicinity of the utilities.
- All pipeline profile elevations are invert elevations.
- For standard details - See Specifications.
- Pipelines shall be of the material listed in the specifications. All pipelines shall have a minimum cover of 2 feet except sewer and water lines shall have a minimum cover of 3 feet unless otherwise shown by profiles or elevations on the plans.
- Clear all utilities by a minimum of 6 inches vertically. All parallel pipe systems shall have 1.5 feet minimum horizontal clearance unless otherwise directed by the Engineer.
- All existing valve boxes, manhole frames and covers, and similar appurtenances shall be adjusted to finished grade.
- Elevations and grid coordinates are based on the Maryland State System. All structures, buildings, roadways, pipe, centerlines etc. are located by construction coordinates. Zero base for the construction coordinated system is as noted on Sheet C-1 @ the intersection of survey baselines. Existing ground elevations are from field surveys completed in 1973-1974.
- All existing walkways, paved areas that require removal for construction purposes or that are disturbed or damaged by construction activities, shall be replaced.

ABBREVIATIONS

D	DRAIN
DB	DUCTBANK
S	SEWER OR INTERCEPTOR
BL	BASELINE
CL	CENTERLINE
EX	EXISTING
MH	MANHOLE
INV	INVERT ELEVATION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
R	RADIUS
N	NORTH
No.	NUMBER
E	EAST
S	SOUTH
W	WEST
NIC	NOT IN CONTRACT

INDEX

DRAWING & SHEET NO.		DESCRIPTION
GENERAL		
1	G-1	TITLE SHEET
2	G-2	INDEX, LEGEND, ABBREVIATIONS & GENERAL NOTES
CIVIL		
3	C-1	CLEARING & GRUBBING PLAN
4	C-2	SITE PLAN
5	C-3	ROAD PROFILES
6	C-4	PLAN & PROFILE - NITROGEN ROAD
7	C-5	TYPICAL ROAD SECTIONS
8	C-6	DETAILS - PAVEMENT, GUARD RAIL
9	C-7	SEWER PROFILE, DETAILS - MANHOLES & STREAM RELOCATION
10	C-8	GRADING & DRAINAGE
ELECTRICAL		
11	E-1	ELECTRICAL PLAN
12	E-2	DUCTBANK PROFILES
13	E-3	MISCELLANEOUS UNDERGROUND DUCTBANK DETAILS
14	E-4	MISCELLANEOUS UNDERGROUND MANHOLE DETAILS
15	E-5	MISCELLANEOUS UNDERGROUND MANHOLE DETAILS
SOIL CONSERVATION		
16	SC-1	SOIL CONSERVATION PLAN
17	SC-2	SOIL CONSERVATION PLAN
18	SC-3	SOIL CONSERVATION SECTIONS & DETAILS
19	SC-4	SOIL CONSERVATION SECTIONS & DETAILS



PLAN-CONSTRUCTION & SURVEY BASELINE
Scale: 1" = 200'

LEGEND

	EXISTING	CONSTRUCTION THIS CONTRACT
LIMIT OF CLEARING AND GRUBBING		- L.C.G.
MANHOLES	○	○
FLARED END SECTION		▨
ELECTRICAL DUCTBANK	▨	▨
PROPERTY LINE	▨	▨
RAILROAD	▨	▨
EMBANKMENT	▨	▨
SURVEY TRAVERSE or CONSTRUCTION	▨	▨
WOODS	▨	▨
FENCE	▨	▨
STREAM	▨	▨
DITCH	▨	▨
CONTOURS	▨	▨
GRADE CONTROL ELEVATION		142.5
BUILDINGS or STRUCTURES	▨	▨
ROADWAYS	▨	▨
CURB	▨	▨
PIPELINE (8" & LARGER)	▨	▨
STRAW BALE DIKE		▨
(CONSTRUCTION BY OTHERS - SO NOTED & IDENTIFIED)		

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ENGINEERS
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BALTIMORE, MARYLAND

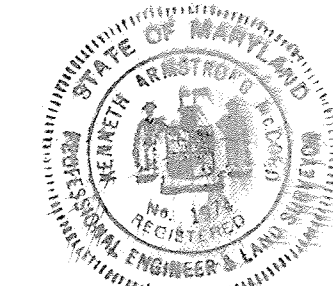
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

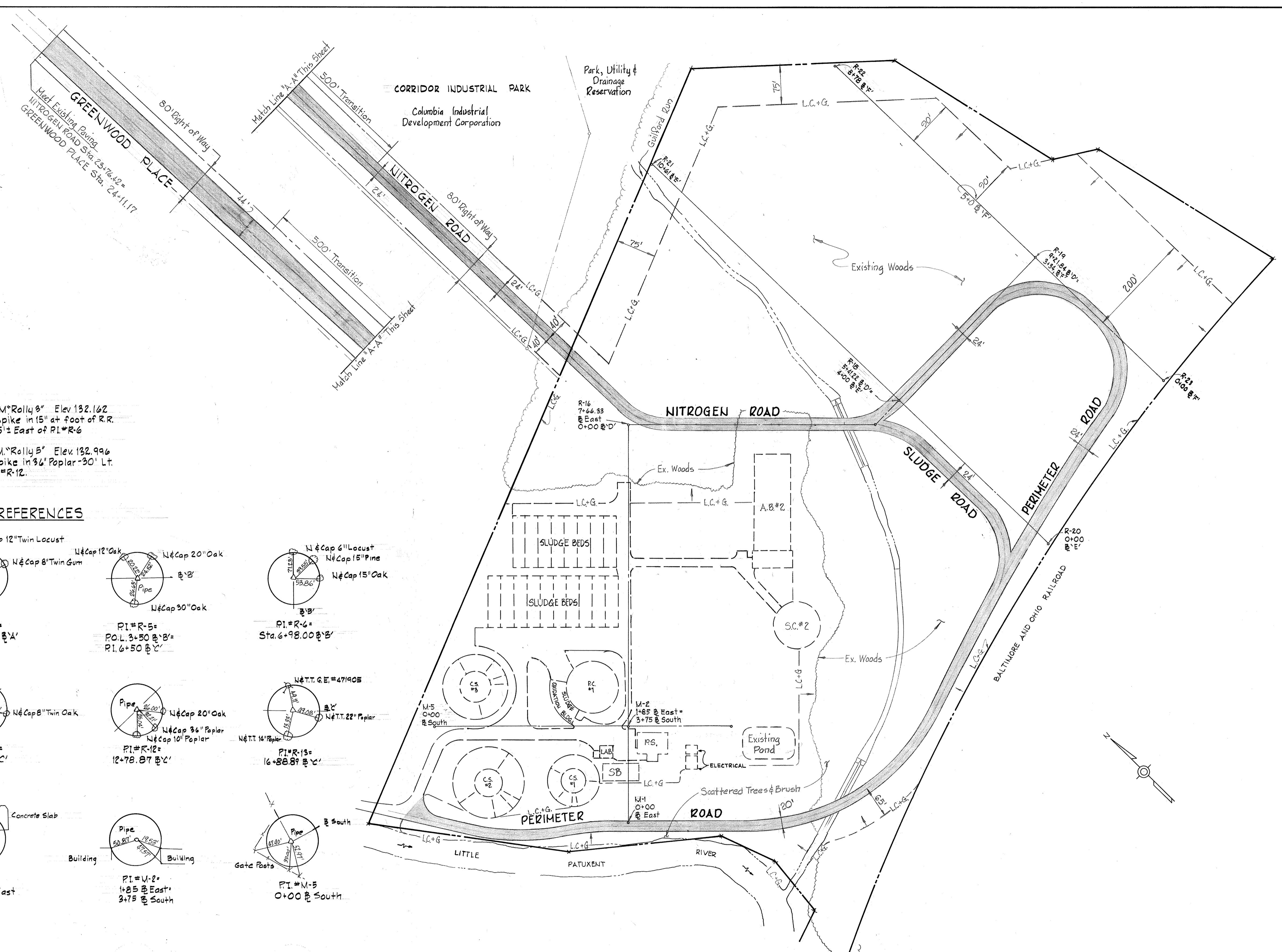
CONTRACT NO. 504-S

INDEX, LEGEND, ABBREVIATIONS,
AND GENERAL NOTES

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 2
OF 19
SCALE AS SHOWN





BENCH MARKS

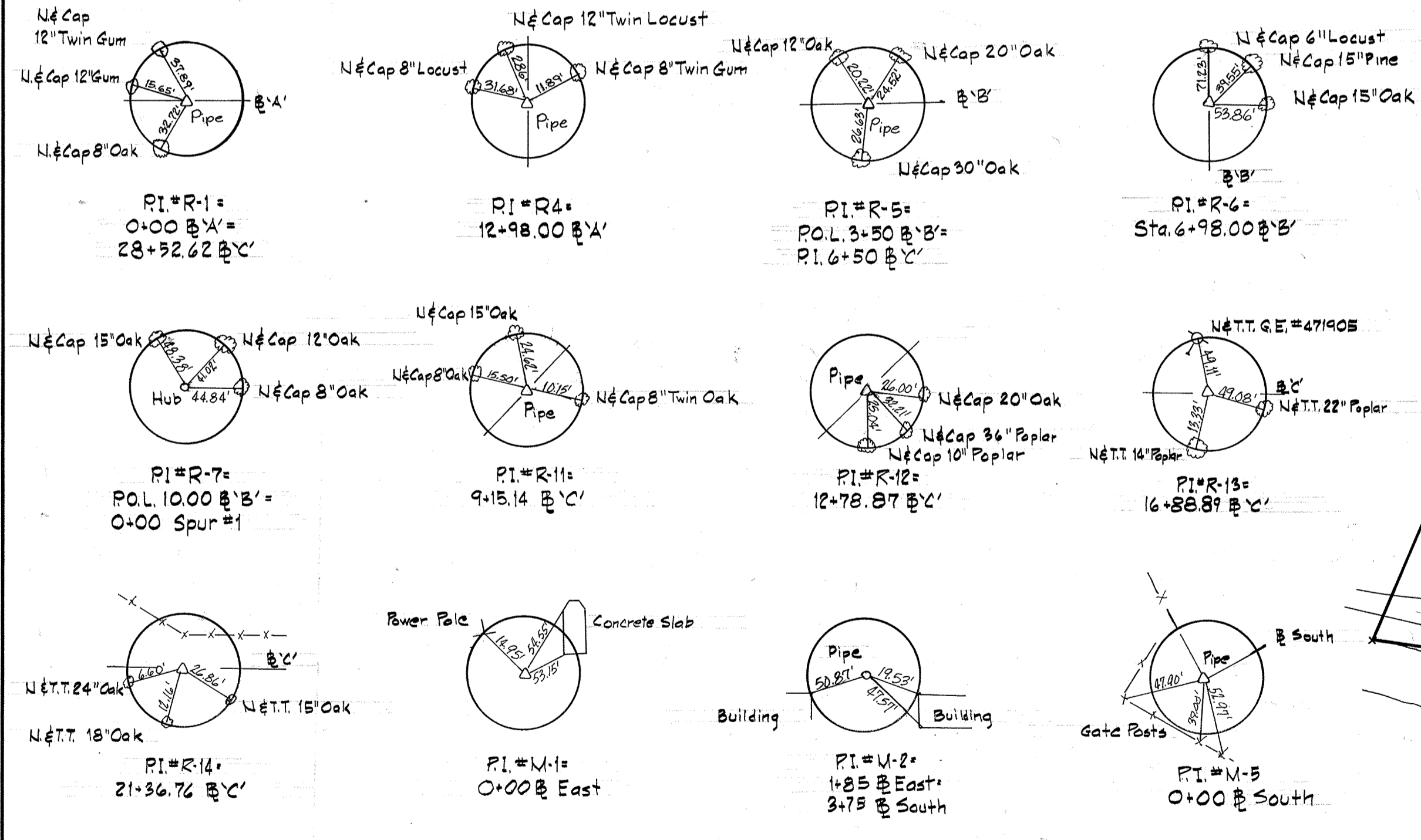
W.R.#A. B.U. "Blaine" Elev. 139.06
 X-Cut on flange bolt of firehydrant
 40' ± Rt of Sta. 2+25 ± E South

W.R.#A. B.M. "Rolly 8" Elev. 132.162
 R.R. Spike in 15" at foot of R.R.
 Fill 35' ± East of PI #R-6

W.R.#A. B.M. "Rolly 2" Elev. 147.087
 R.R. Spike in 8" Locust 4' ± from
 P.I. #R-4

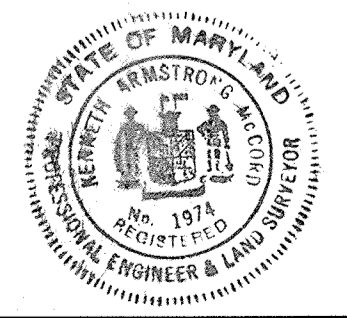
W.R.#A. B.M. "Rolly 5" Elev. 132.996
 R.R. Spike in 3/4" Poplar-30' Lt.
 of P.I. #R-12.

PI REFERENCES



CLEARING AND GRUBBING PLAN

Scale: 1"=100'



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND W.O. 7132-2 6-27-77 CHIEF-BUREAU OF ENGINEERING—DATE	CONTRACT NO. 504-S	CLEARING AND GRUBBING PLAN	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 3 OF 19	SCALE 1"=100'
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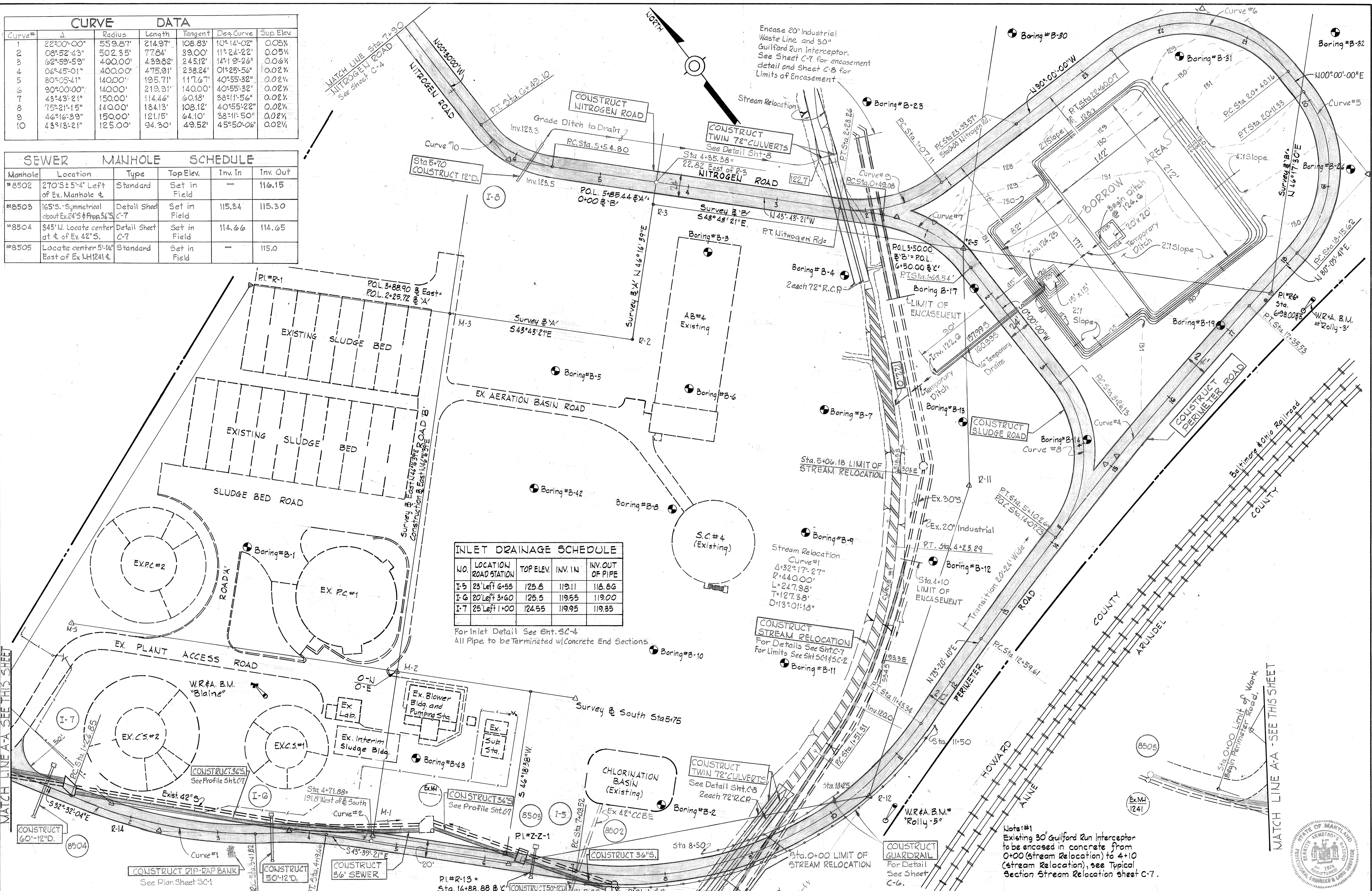
BRUNING 44-510 18392

CURVE DATA						
Curve#	Δ	Radius	Length	Tangent	Deq. Curve	Sup. Elev.
1	22°00'-00"	559.87'	214.97'	108.83'	10°14'-02"	0.05%
2	08°52'-43"	502.35'	77.84'	39.00'	11°24'-22"	0.05%
3	62°59'-59"	400.00'	439.82'	245.12'	14°19'-26"	0.06%
4	06°45'-01"	400.00'	475.91'	238.24'	0°25'-56"	0.02%
5	80°03'-01"	140.00'	195.71'	117.67'	40°55'-32"	0.02%
6	90°00'-00"	140.00'	219.31'	140.00'	40°55'-32"	0.02%
7	43°43'-21"	150.00'	114.46'	60.18'	38°11'-56"	0.02%
8	75°21'-15"	140.00'	184.13'	108.12'	40°55'-22"	0.02%
9	46°16'-39"	150.00'	121.15'	64.10'	33°11'-50"	0.02%
10	43°13'-21"	125.00'	94.30'	49.52'	45°50'-06"	0.02%

SEWER MANHOLE SCHEDULE					
Manhole	Location	Type	Top Elev.	Inv. In	Inv. Out
#8502	270° S ± 5'-4" Left of Ex. Manhole #	Standard	Set in Field	-	116.15
#8503	1/2 S. Symmetrical about Ex. 24' S ± Prop. 3/4 S	Detail Sheet C-7	Set in Field	115.34	115.30
#8504	945' N. Locate center at C of Ex. 42' S.	Detail Sheet C-7	Set in Field	114.66	114.65
#8505	Locate center 5'-1/2' East of Ex. H1241 #	Standard	Set in Field	-	115.0

INLET DRAINAGE SCHEDULE				
NO.	LOCATION	TOP ELEV.	INV. IN	INV. OUT OF PIPE
I-5	23' Left 6+55	125.8	119.11	118.86
I-6	20' Left 3+60	125.5	119.55	119.00
I-7	25' Left 1+00	124.55	119.95	119.35

For Inlet Detail See Sht. SC-4
All Pipe to be Terminated w/ Concrete End Sections



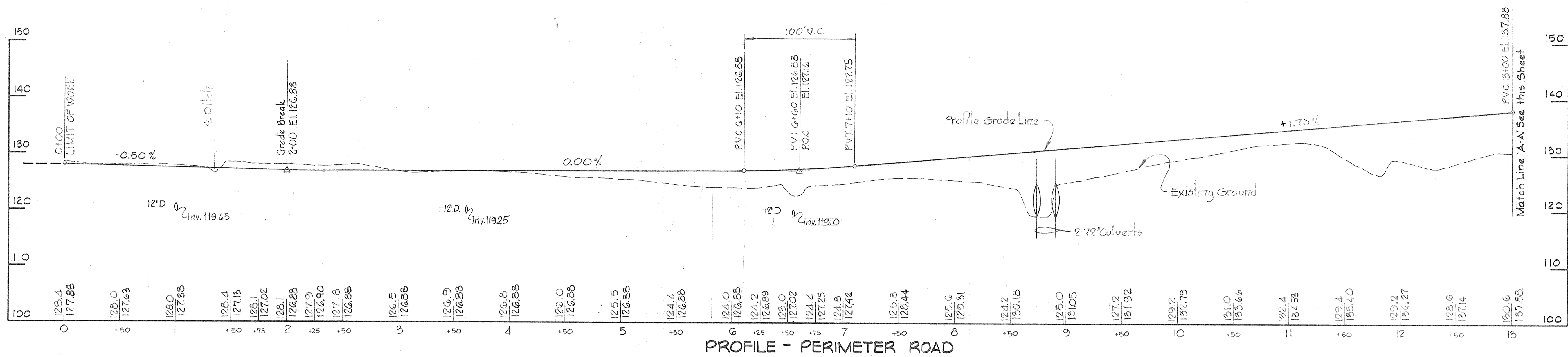
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE _____
CHIEF BUREAU OF ENGINEERING

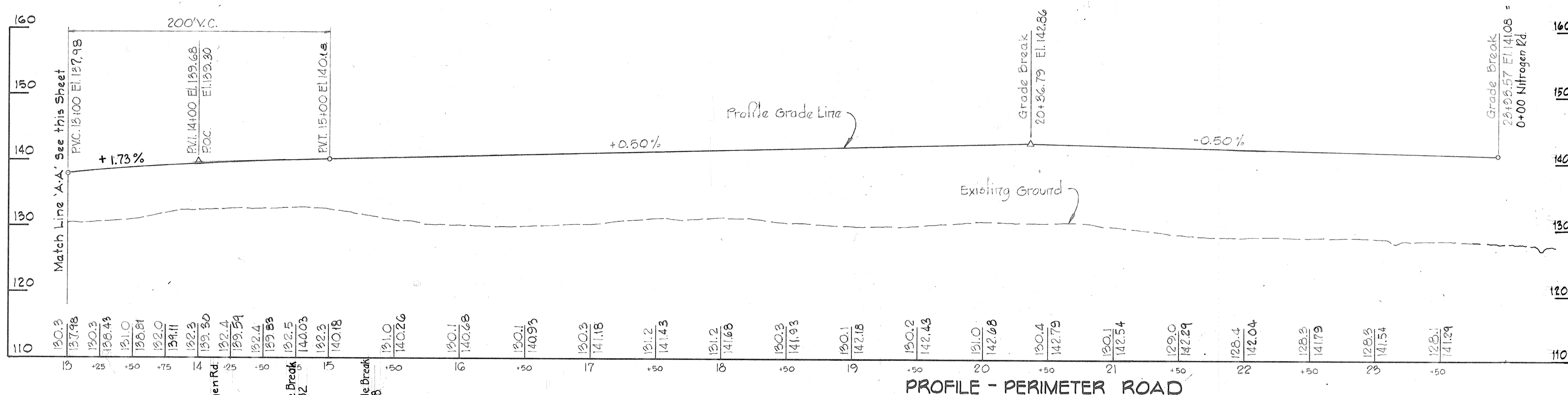
CONTRACT NO. 504-S
SITE PLAN

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

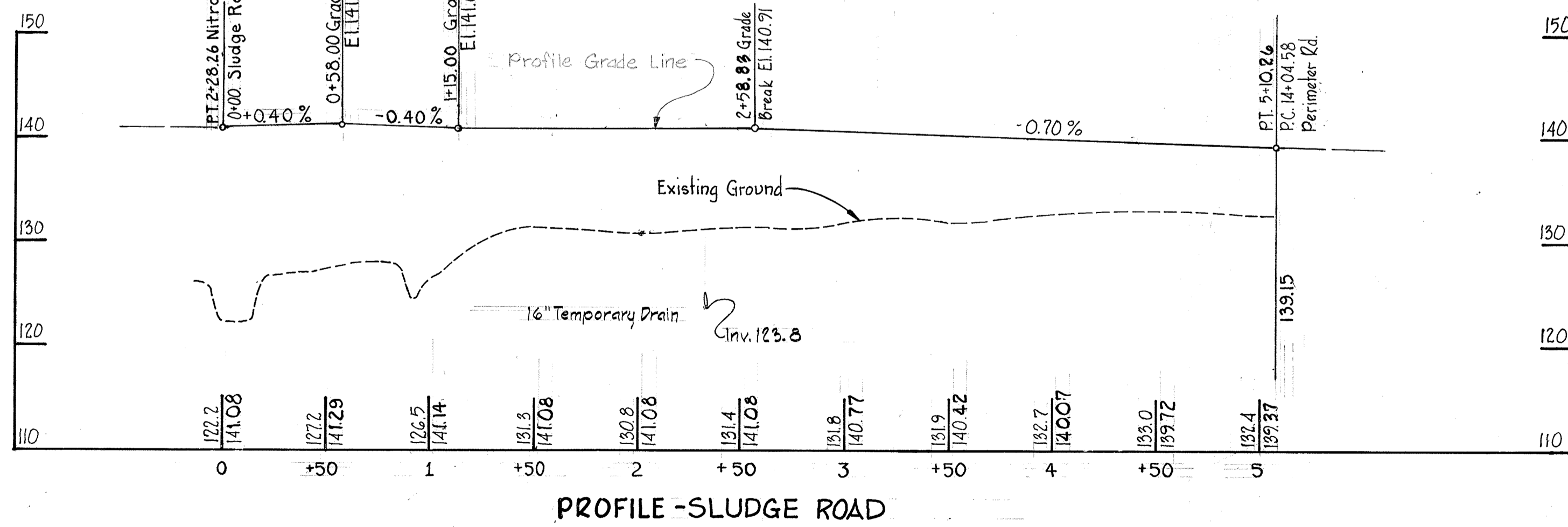
DRAWING NO. 4 OF 19
SCALE 1" = 50'



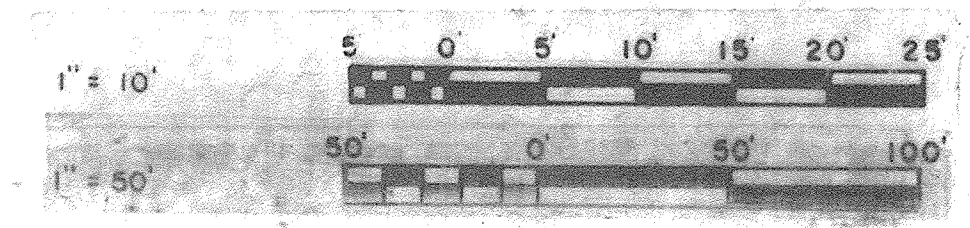
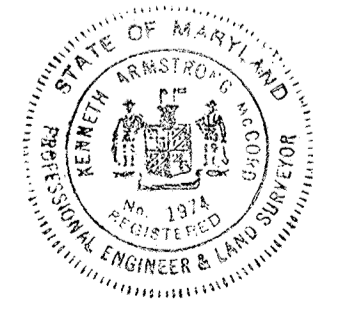
PROFILE - PERIMETER ROAD



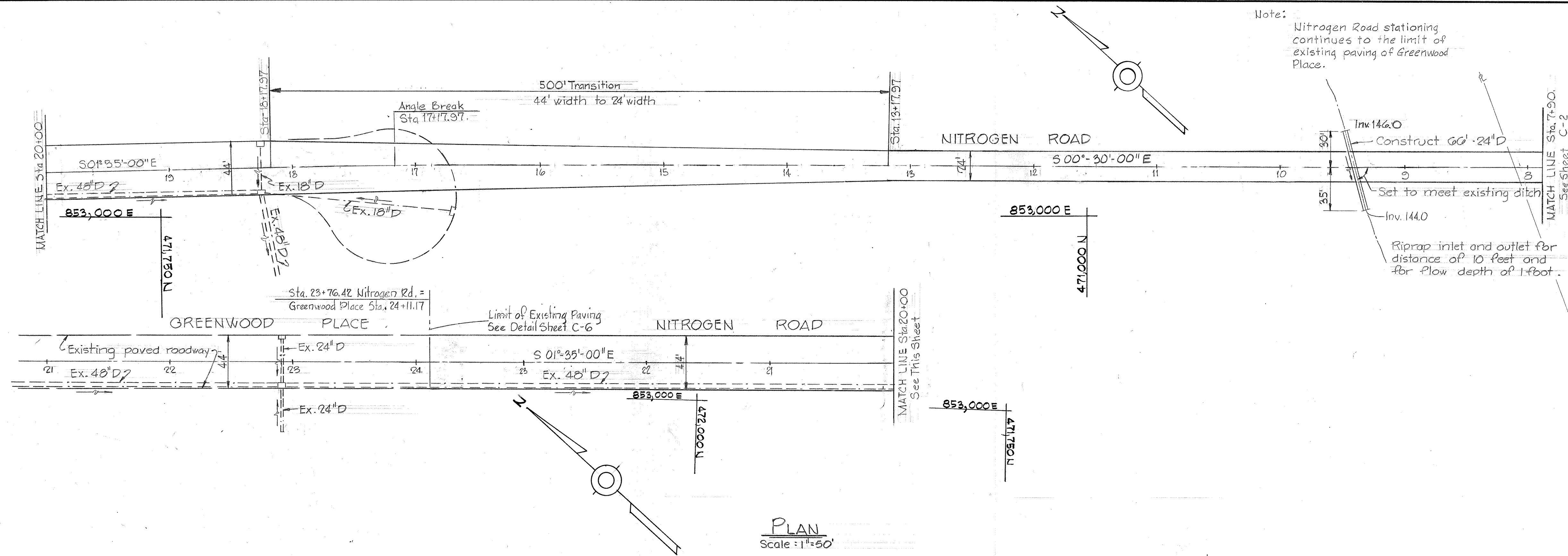
PROFILE - PERIMETER ROAD



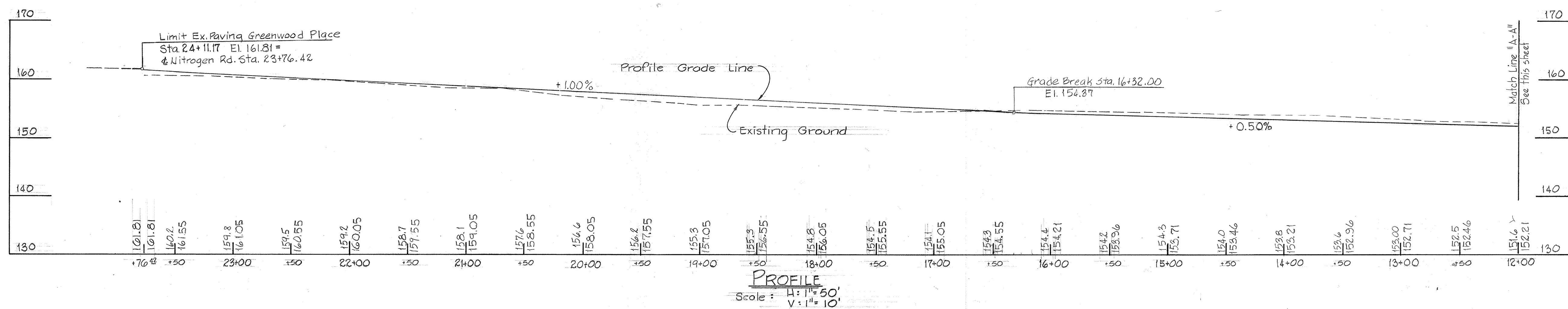
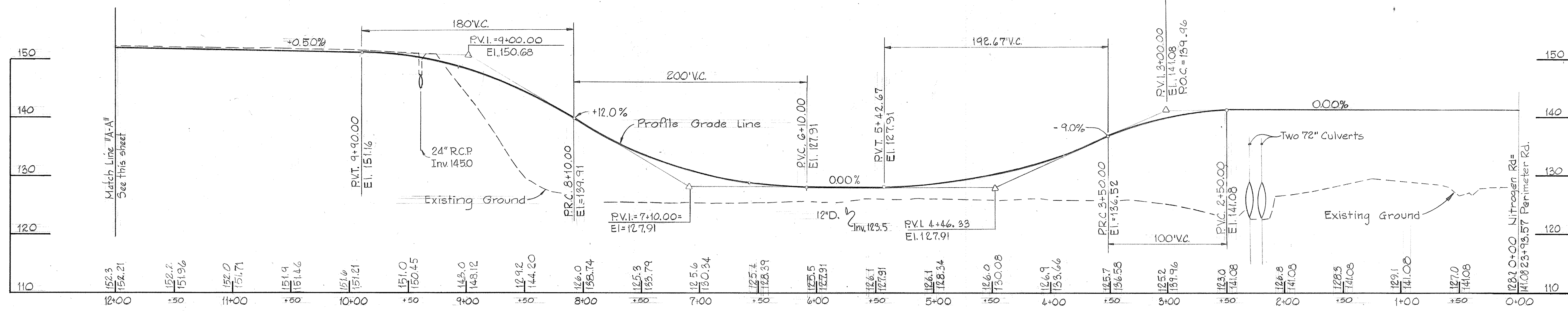
PROFILE - SLUDGE ROAD



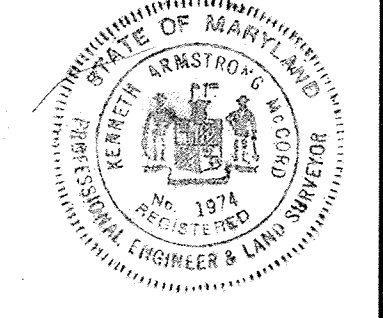
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 W. O. Gilbert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 504-S	ROAD PROFILES	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 5 OF 19	SCALE H: 1"=50' V: 1"=10'
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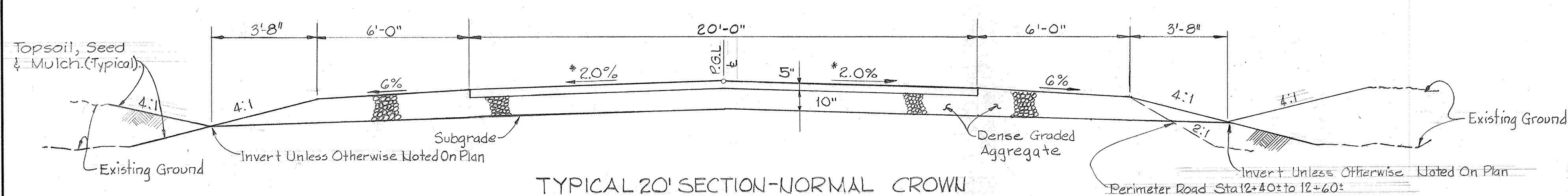
Note:
Nitrogen Road stationing continues to the limit of existing paving of Greenwood Place.



PROFILE
Scale: H: 1"=50'
V: 1"=10'

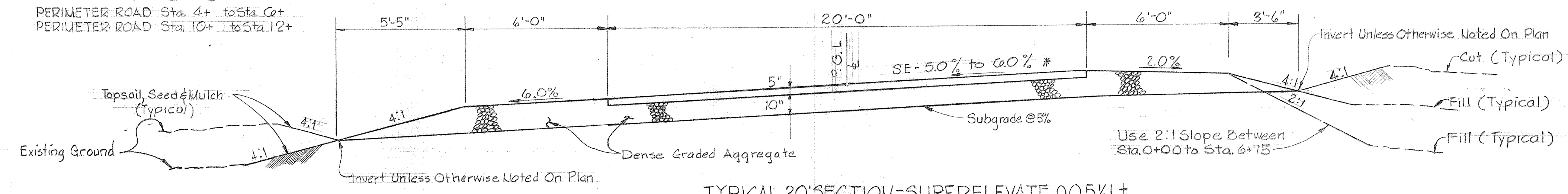


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE _____ W.O. P. [Signature] 6-27-77 CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 504-S	PLAN AND PROFILE NITROGEN ROAD	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 6 OF 19	SCALE AS SHOWN



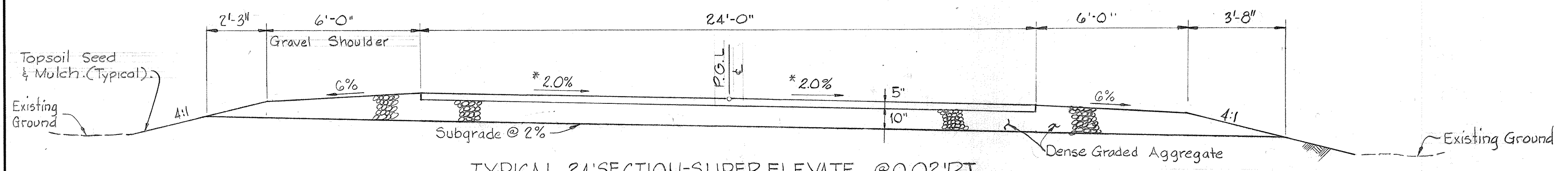
TYPICAL 20' SECTION-NORMAL CROWN

No Scale
 PERIMETER ROAD Sta. 4+ to Sta. 6+
 PERIMETER ROAD Sta. 10+ to Sta. 12+



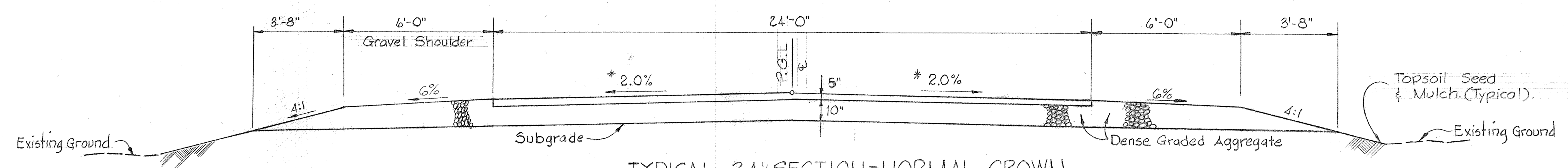
TYPICAL 20' SECTION-SUPERELEVATE @ 0.05% LT.

(Symmetrical to Section Super-Elevated @ 0.05% RT.)
 No Scale
 PERIMETER ROAD Sta. 0+ to Sta. 4+
 PERIMETER ROAD Sta. 6+ to Sta. 10+



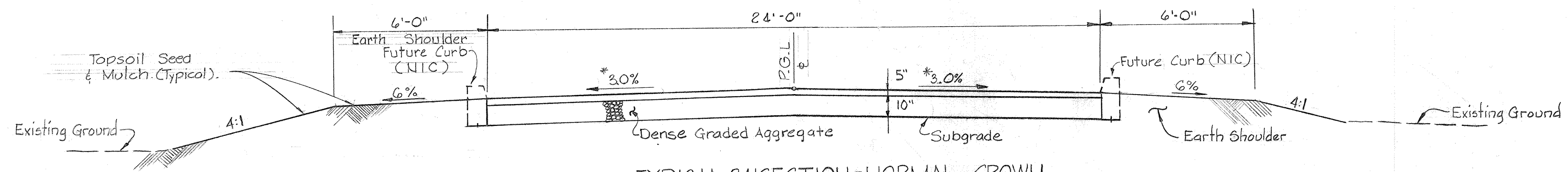
TYPICAL 24' SECTION-SUPER ELEVATE @ 0.02% RT.

(Symmetrical to Section Super-Elevated @ 0.02% LT.)
 No Scale
 NITROGEN ROAD Sta. 8+30± to Sta. 6+50±



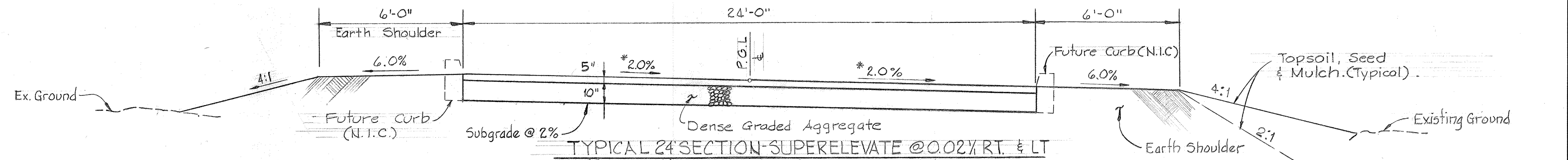
TYPICAL 24' SECTION-NORMAL CROWN

No Scale
 PERIMETER ROAD Sta. 12+ to Sta. 14+ (Transition 20' to 24' Roadway)



TYPICAL 24' SECTION-NORMAL CROWN

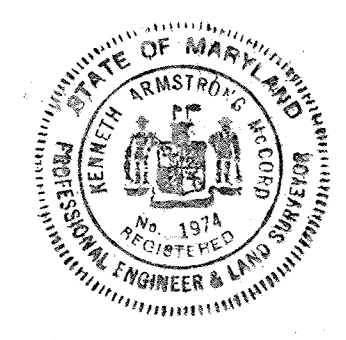
(Future Curb)
 No Scale
 NITROGEN ROAD STA. 13+ to STA. 16+ (Transition 24' to 44' Roadway)



TYPICAL 24' SECTION-SUPERELEVATE @ 0.02% RT. & LT.

(Future Curb) Symmetrical to Section Super-Elevated @ 0.02% LT.
 No Scale
 PERIMETER ROAD Sta. 15+ to Sta. 23+
 NITROGEN ROAD Sta. 0+ to Sta. 7+
 SLUDGE ROAD Sta. 0+90± to Sta. 4+20±

Note:
 For Detail of Padament Section - See Sch. C-0.
 * For Roadway Cross Slope - See Schedule Sch. C-0.



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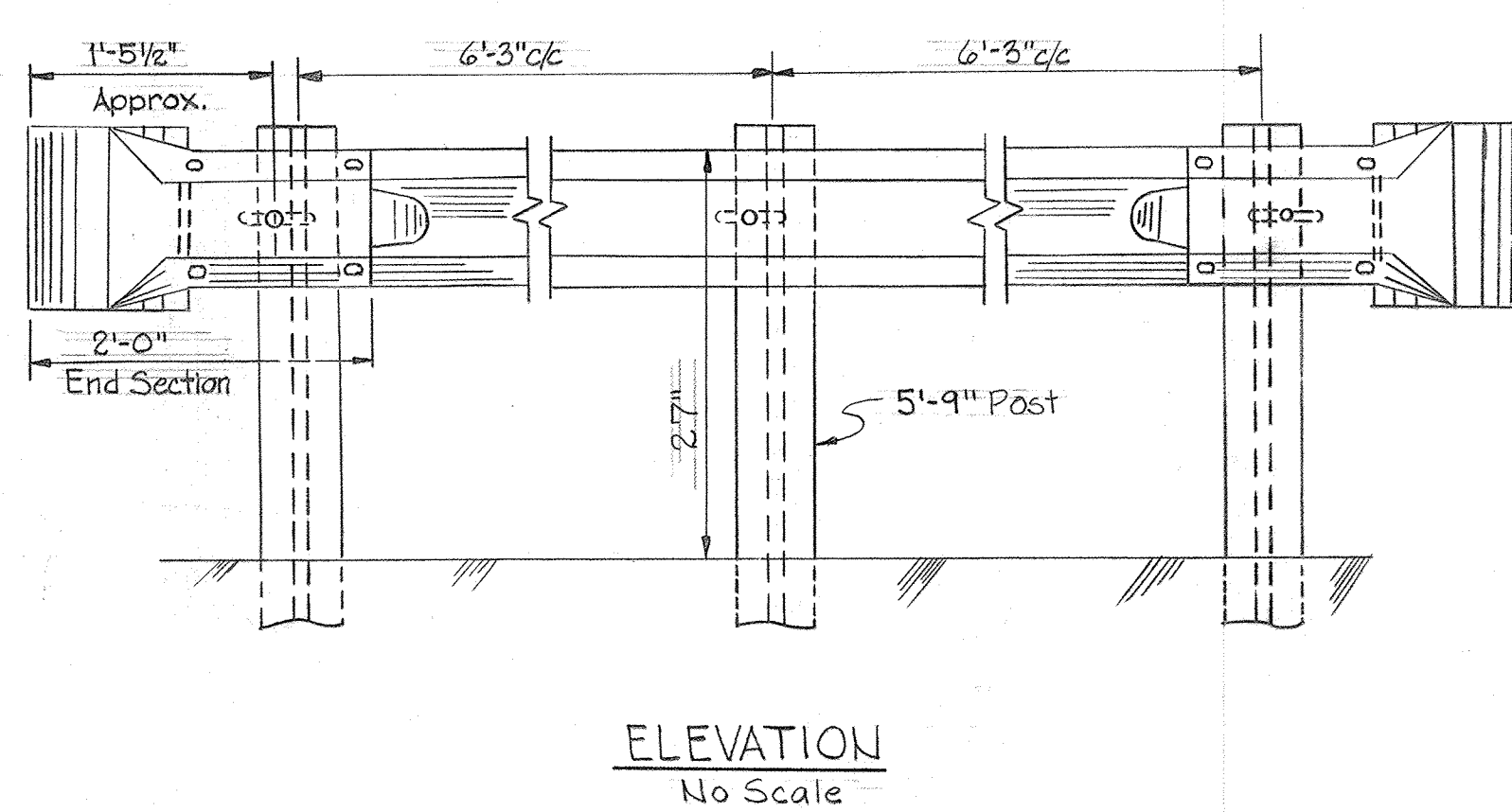
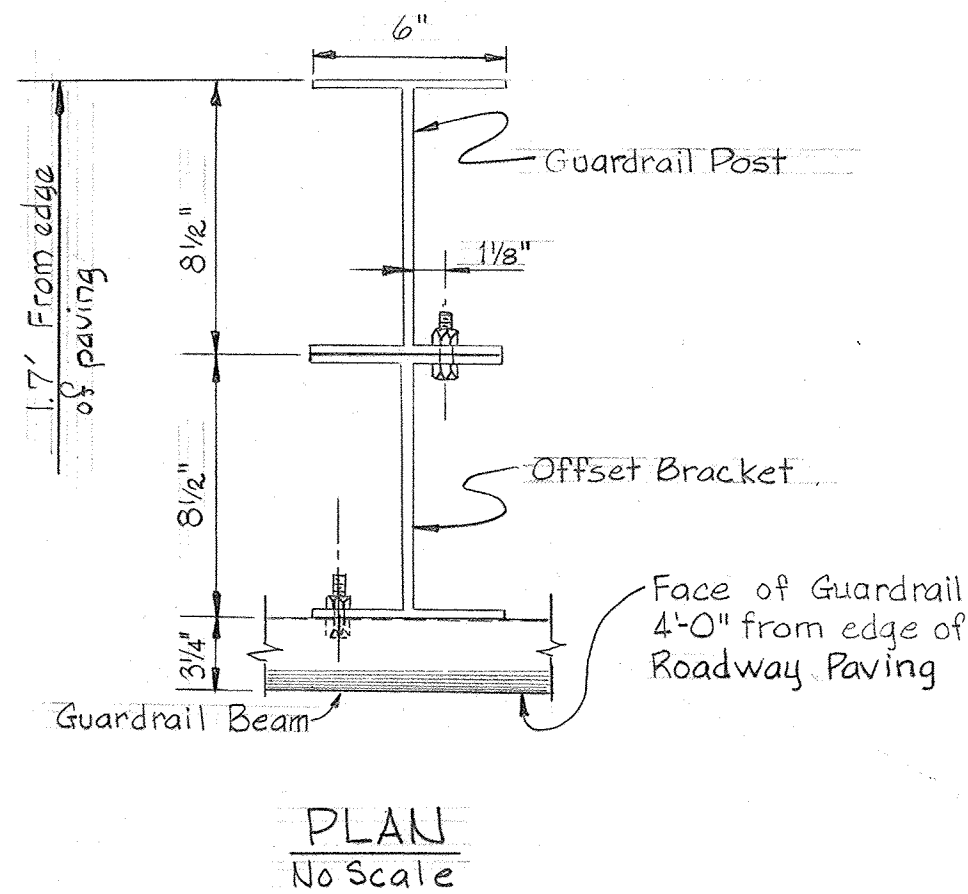
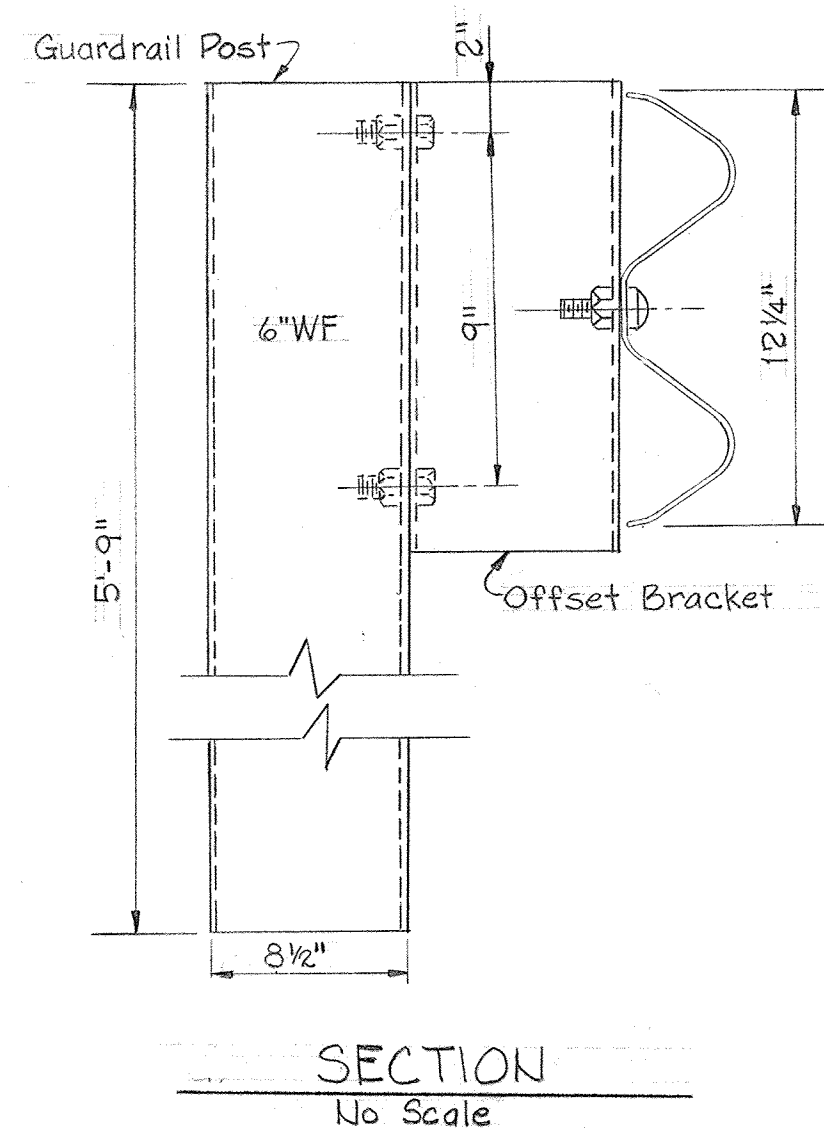
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 6/27/77
 CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 504-S

TYPICAL ROAD SECTIONS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 7 OF 19
 SCALE NONE

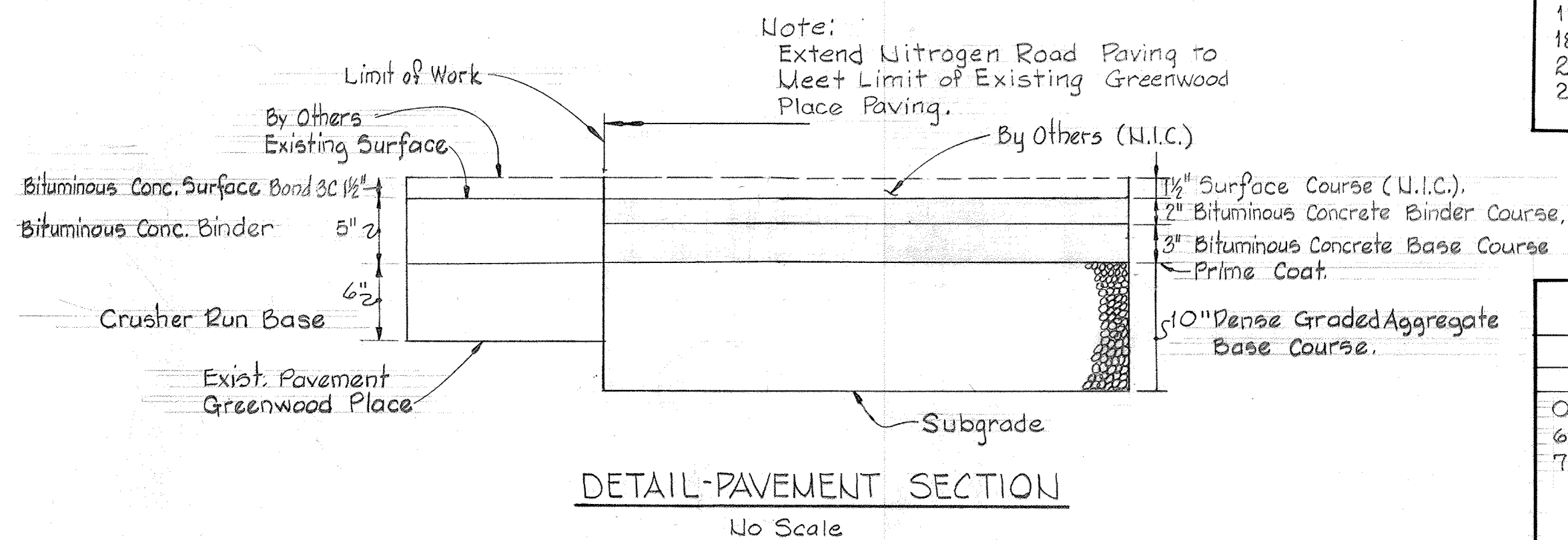


PLAN
No Scale

SECTION
No Scale

DETAIL - GUARDRAIL

ELEVATION
No Scale



DETAIL - PAVEMENT SECTION
No Scale

ROADWAY CROSS SLOPE SCHEDULE

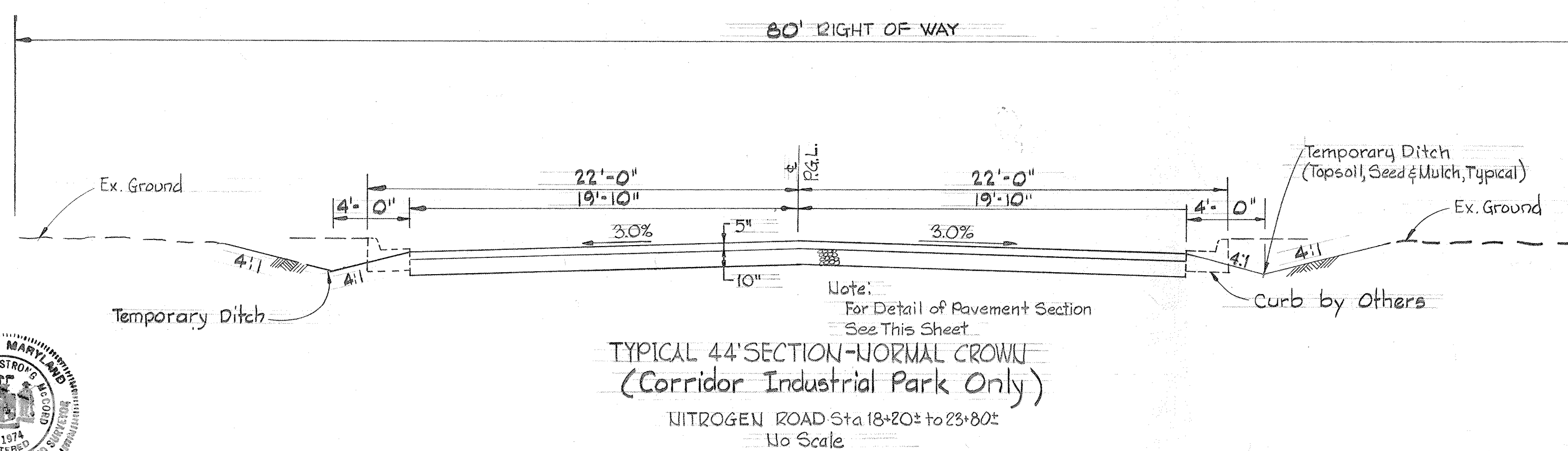
STATIONING		CROSS SLOPE (S.E. - SUPERELEVATION)
FROM	TO	
0+00	0+98.89	Transition to Meet Exist. Pavement
0+98.89	1+98.89	Transition to S.E. of 0.05% Lt.
1+98.89	3+03.94	S.E. @ 0.05% Lt.
3+03.94	3+99.21	Reverse S.E. @ 0.05% Rt.
3+99.21	4+99.21	Transition to Normal Crown @ 2% Cross Slope
4+99.21	6+03.52	Normal Crown @ 2% Cross Slope
6+03.52	7+53.52	Transition to S.E. of 0.06% Lt.
7+53.52	10+93.34	S.E. @ 0.06% Lt.
10+93.34	12+43.34	Transition to Normal Crown @ 2% Cross Slope
12+43.34	14+04	Normal Crown @ 2% Cross Slope
14+04	15+00	Transition to S.E. of 0.02% Rt.
15+00	17+48.95	See Plan-Intersection South Sht. C-8
17+48.95	18+48.95	S.E. @ 0.02% Rt.
18+48.95	22+26.74	Reverse S.E. @ 0.02% Lt.
22+26.74	23+26.74	S.E. @ 0.02% Lt.
23+26.74	23+93.57	Reverse S.E. @ 0.02% Rt.
		S.E. @ 0.02% Rt.

NITROGEN ROAD - CROSS SLOPE NOTES

STATIONING		CROSS SLOPE (S.E. SUPERELEVATION)
FROM	TO	
0+00	6+49.10	S.E. @ 0.02% Rt.
6+49.10	7+49.10	Transition to Normal Crown @ 3% Cross Slope
7+49.10	16+17.37	Normal Crown @ 3% Cross Slope

SLUDGE ROAD - CROSS SLOPE NOTES

STATIONING		CROSS SLOPE (S.E. - SUPERELEVATION)
FROM	TO	
0+00	1+15	See Plan-Intersection North - Sht. C-7
1+15	5+10.76	S.E. @ 0.02% Rt. See Plan-Intersection South Sht. C-7



TYPICAL 44' SECTION - NORMAL CROWN
(Corridor Industrial Park Only)

NITROGEN ROAD Sta 18+20± to 23+80±
No Scale



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ENGINEERS
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BALTIMORE, MARYLAND

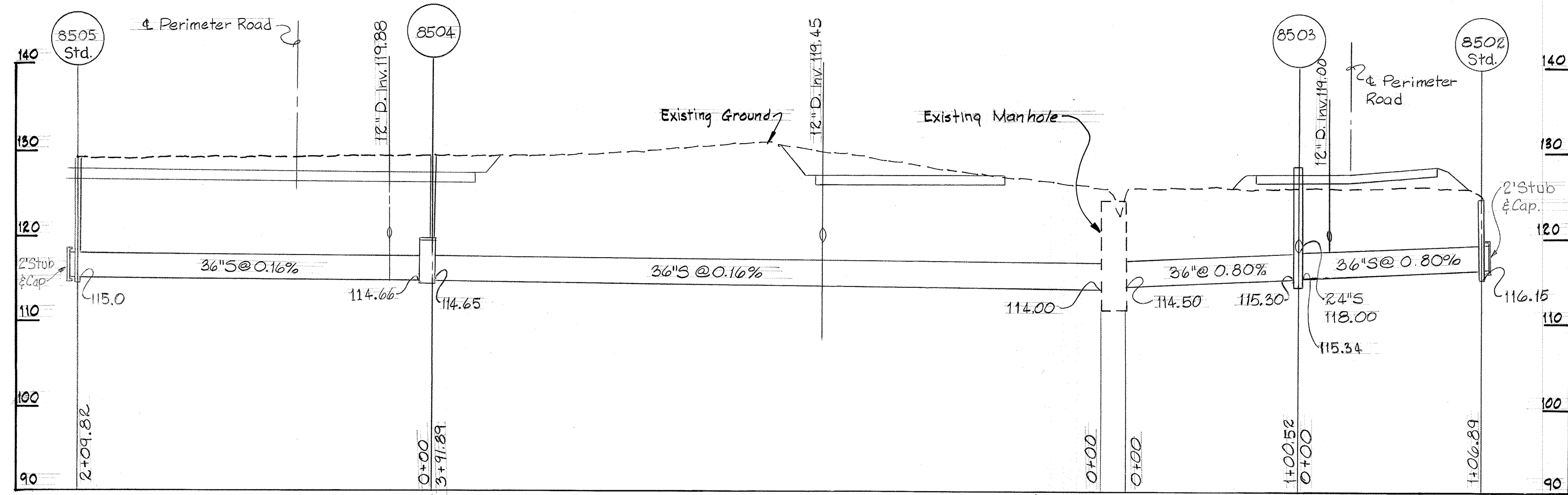
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CONTRACT NO. 504-S

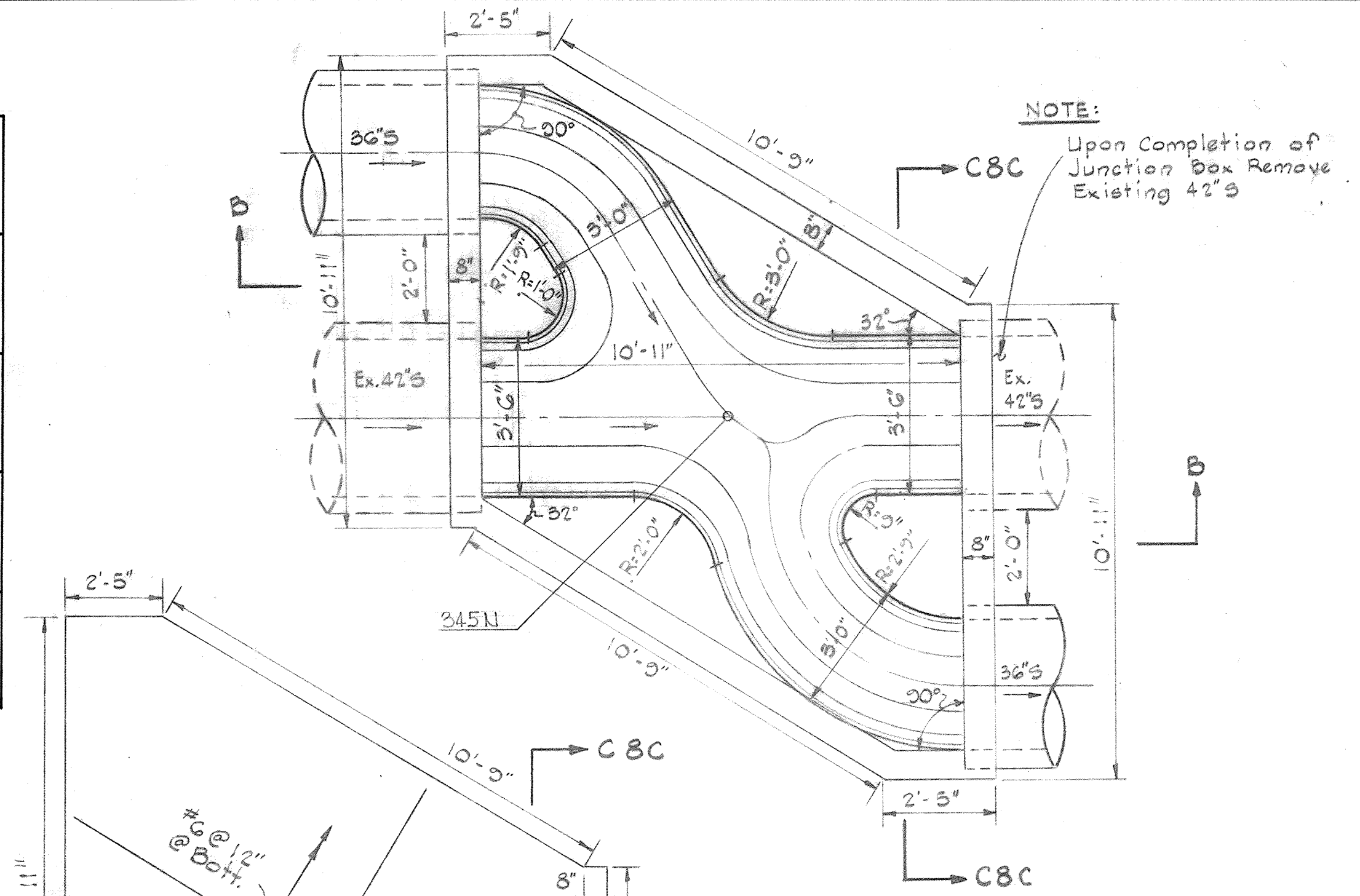
DETAILS - PAVEMENT - GUARDRAIL

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

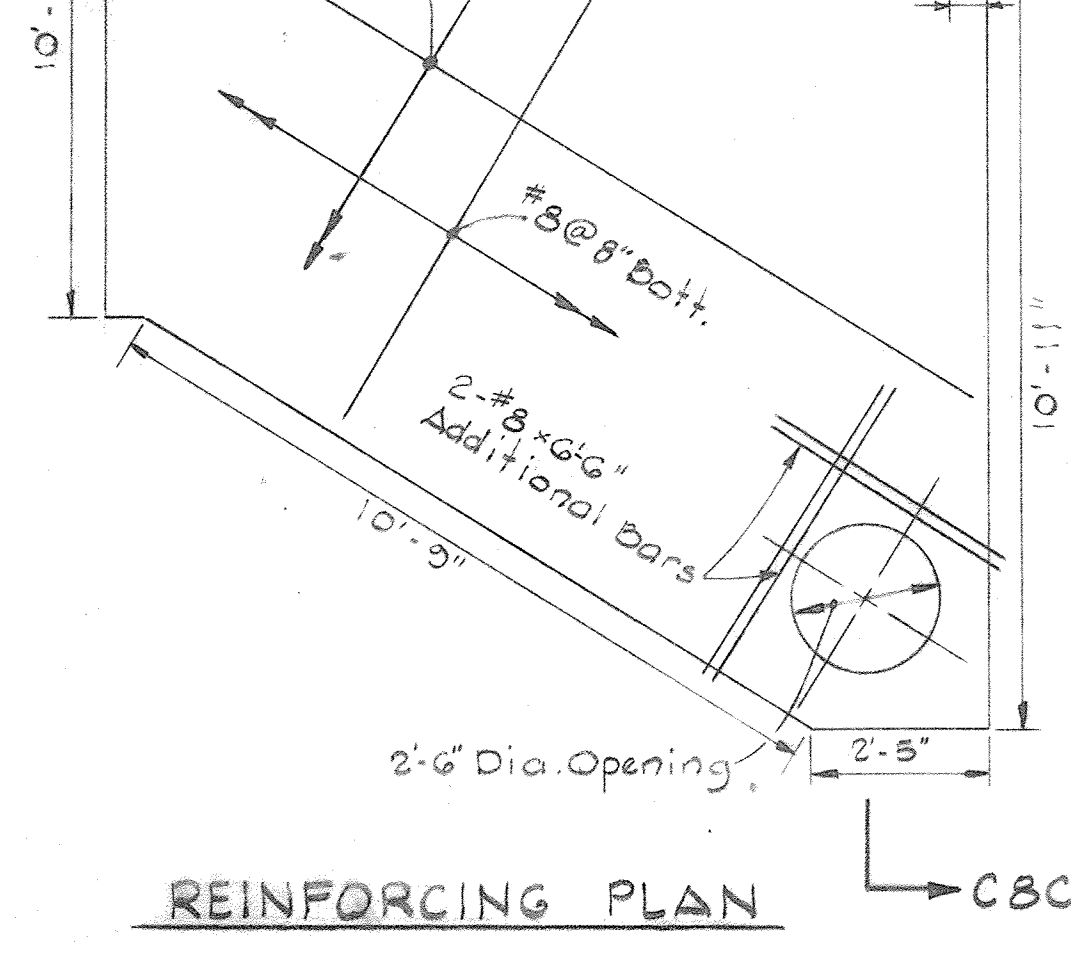
DRAWING NO. 8 OF 19
SCALE AS SHOWN



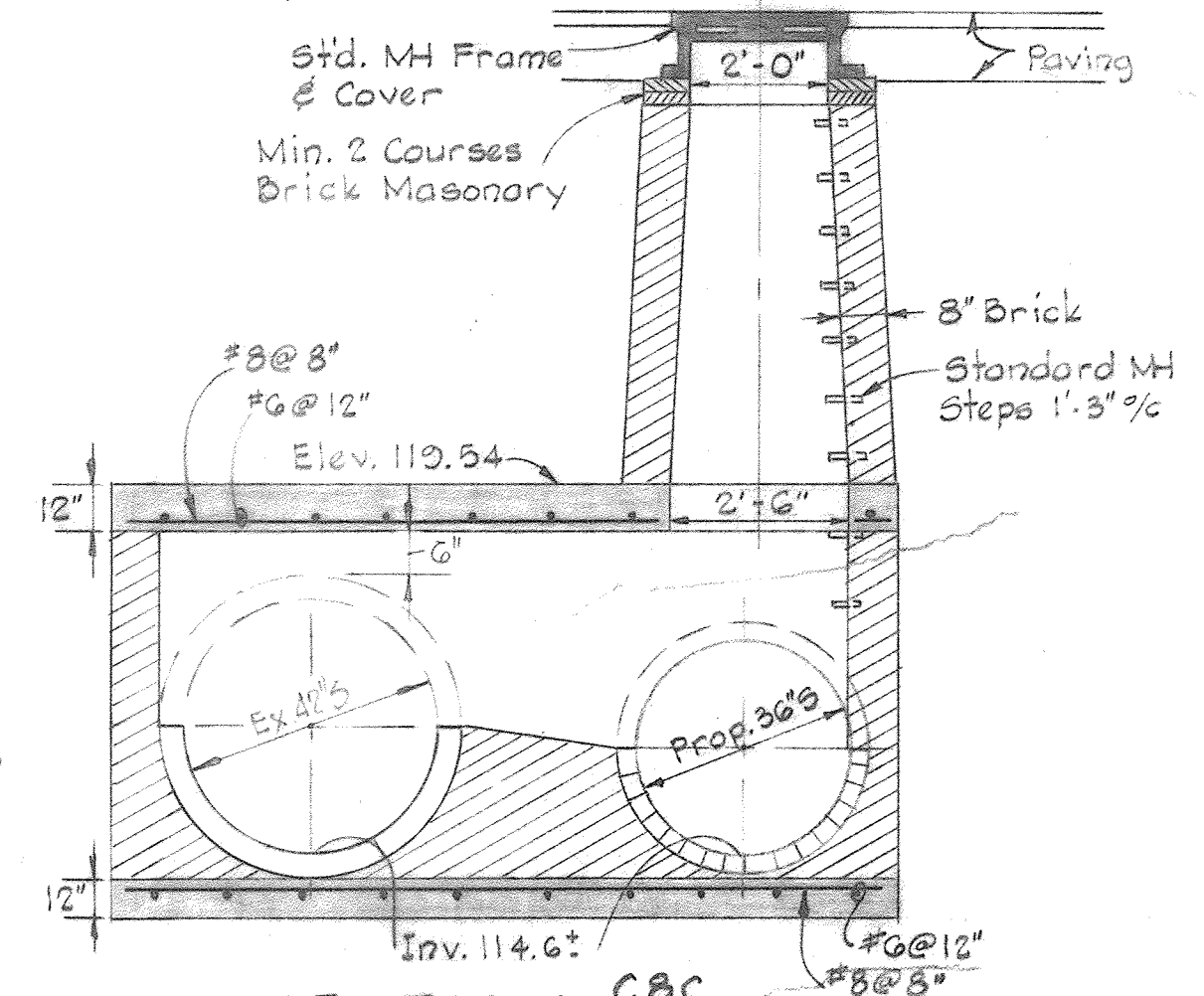
PROFILE
Scale: Hor. 1"=50'
Ver. 1"=10'



PLAN

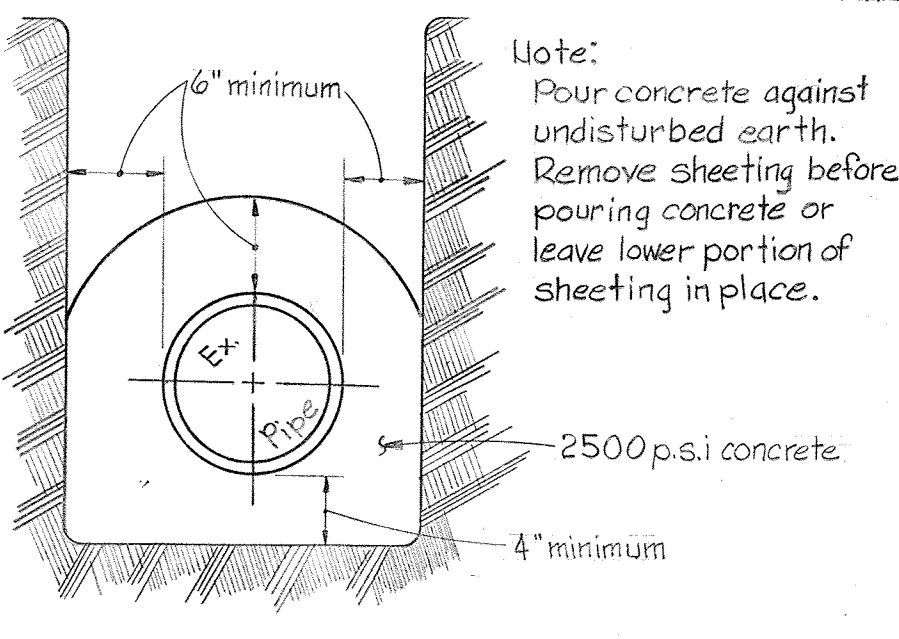


REINFORCING PLAN

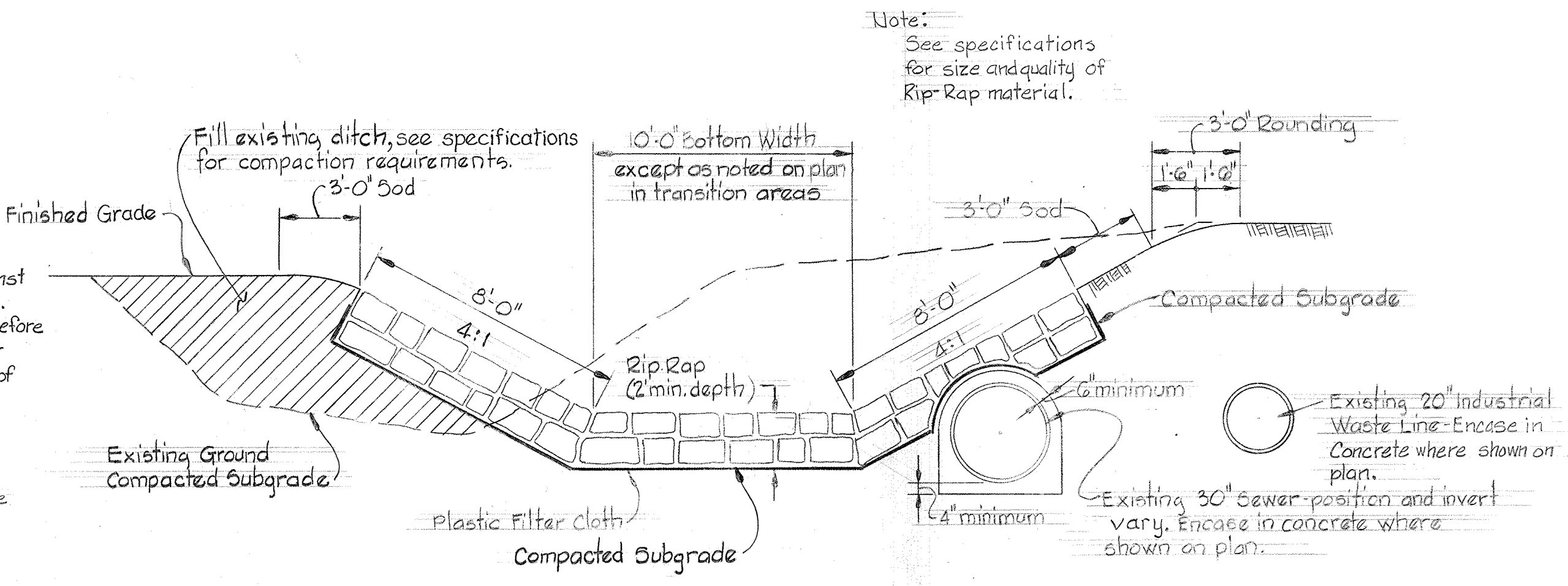


SECTION C8C

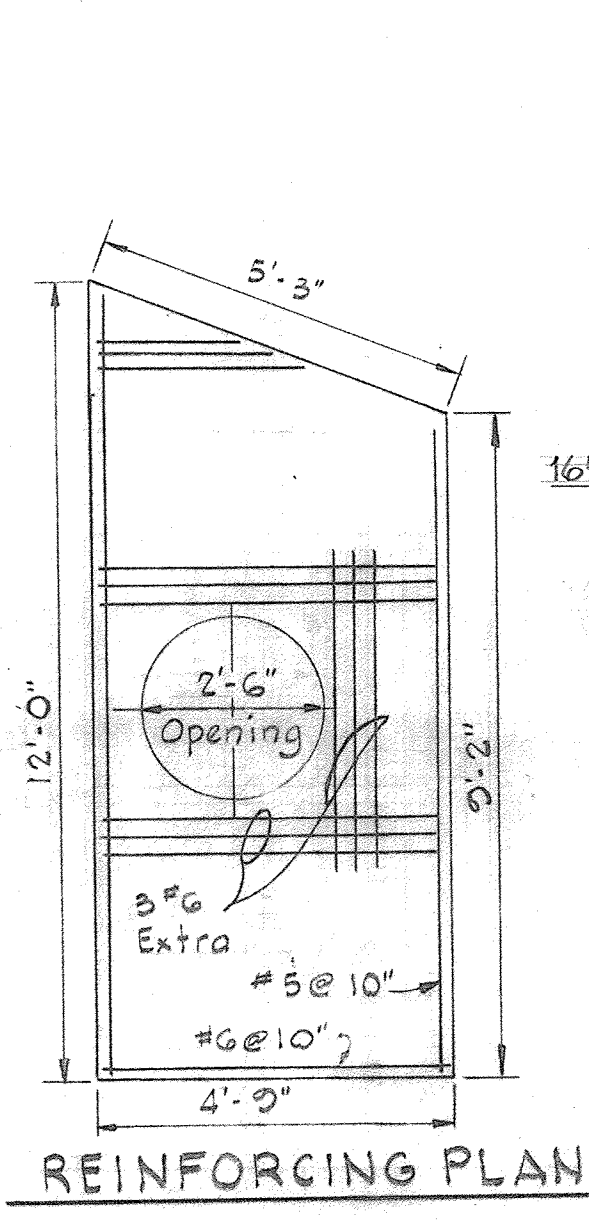
DETAIL OF MH 8504
No Scale



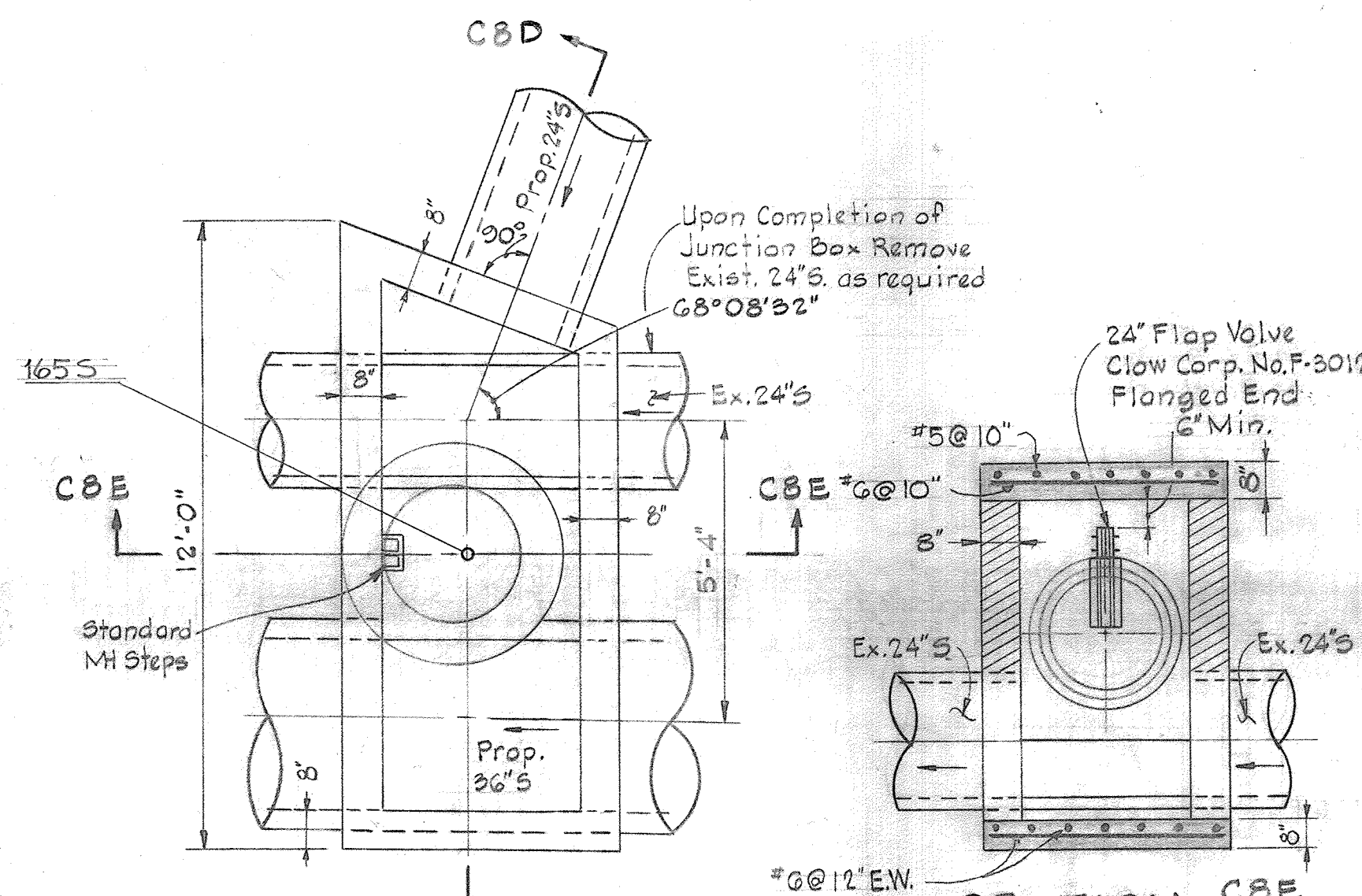
TYPICAL ENCASMENT DETAIL
No Scale



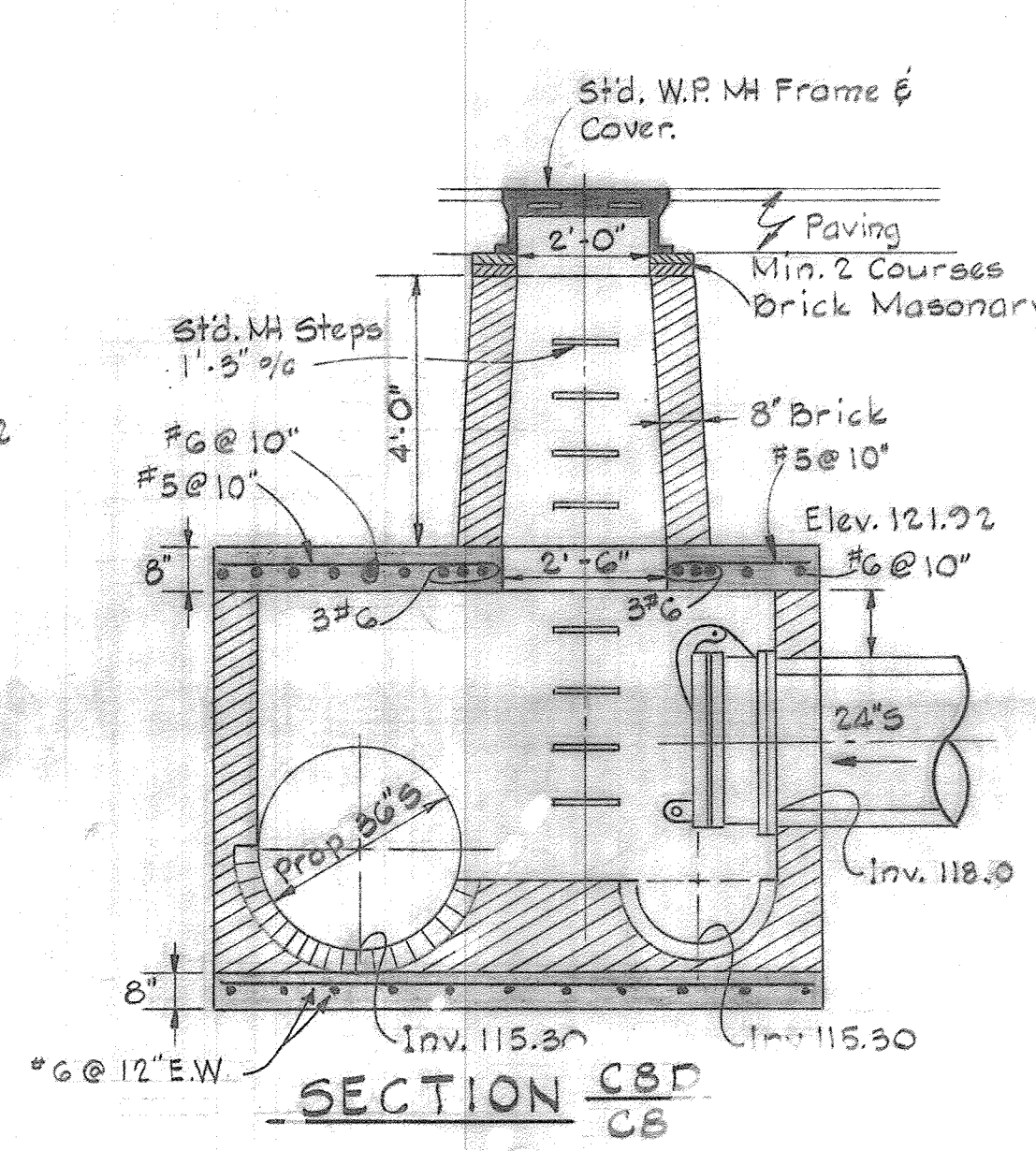
TYPICAL SECTION - STREAM RELOCATION - GUILFORD RUN
Scale: None



REINFORCING PLAN



SECTION C8E
DETAIL OF MH 8503
No Scale



SECTION C8D

Note: Detail of MH 8503 and MH 8504
At the Contractor's option reinforced concrete walls and concrete fill may be substituted for brick.
Manhole structures may be constructed around the existing interceptor and filter that portion of the existing interceptor pipe removed.

Note:
Manholes 8502 and 8505 are Standard Manholes - See detail in Technical Specifications.



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/15
DATE

W. O. Falbert
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 504-S

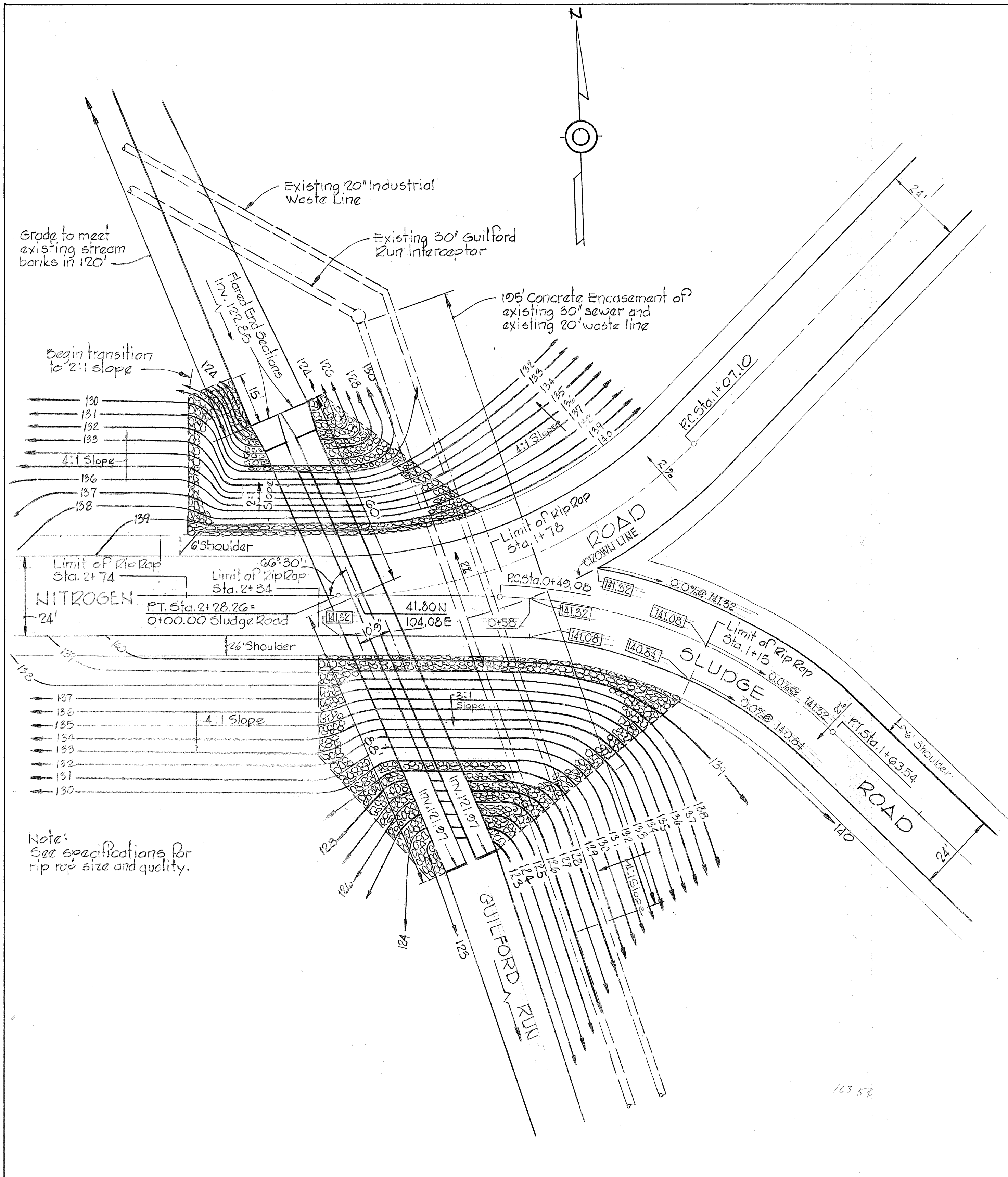
SEWER PROFILE, MANHOLE DETAIL,
AND STREAM RELOCATION

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 9
OF 19

SCALE AS SHOWN

SHEET C-7



PLAN-2-72" CULVERTS EAST
PLAN INTERSECTION NORTH

Grade to meet existing stream banks in 120'

Existing 20" Industrial Waste Line

Existing 30" Guilford Run Interceptor

105 Concrete Encasement of existing 30" sewer and existing 20" waste line

Begin transition to 2:1 slope

Flared End sections Inv. 122.85

130
131
132
133
4:1 Slope
136
137
138

Limit of Rip Rap Sta. 1+78

Limit of Rip Rap Sta. 2+74

Limit of Rip Rap Sta. 2+34

NITROGEN

PT. Sta. 2+28.26 = 0+00.00 Sludge Road

41.80N 104.08E

Limit of Rip Rap Sta. 1+15

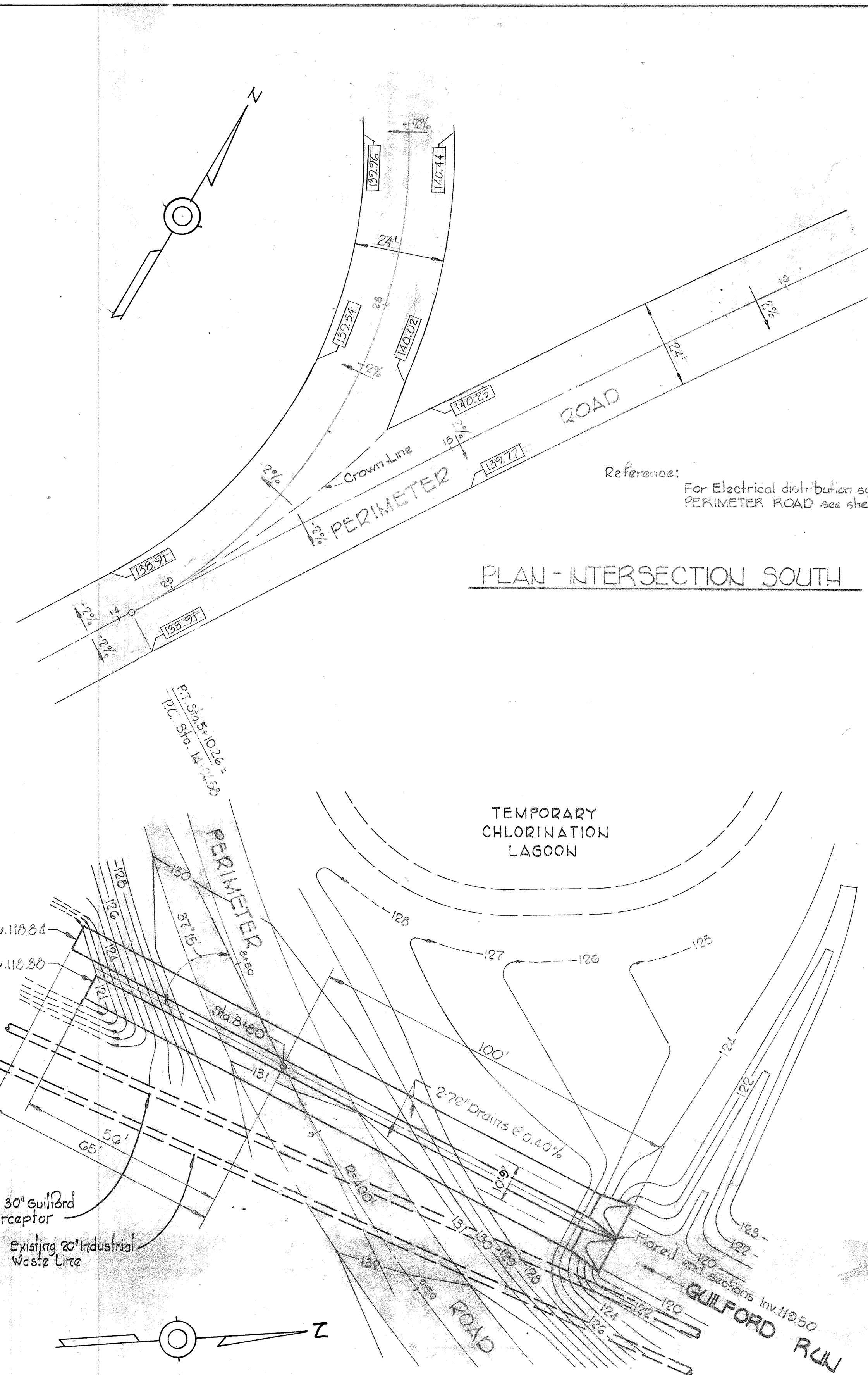
SLUDGE

Limit of Rip Rap Sta. 1+03.54

Note: See specifications for rip rap size and quality.

4:1 Slope

GUILFORD RUN



PLAN-INTERSECTION SOUTH

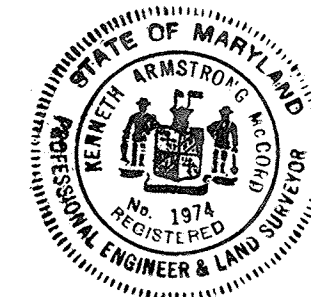
Reference: For Electrical distribution system in PERIMETER ROAD see sheet

TEMPORARY CHLORINATION LAGOON

Existing 30" Guilford Run Interceptor

Existing 20" Industrial Waste Line

PLAN-2-72" CULVERTS - WEST

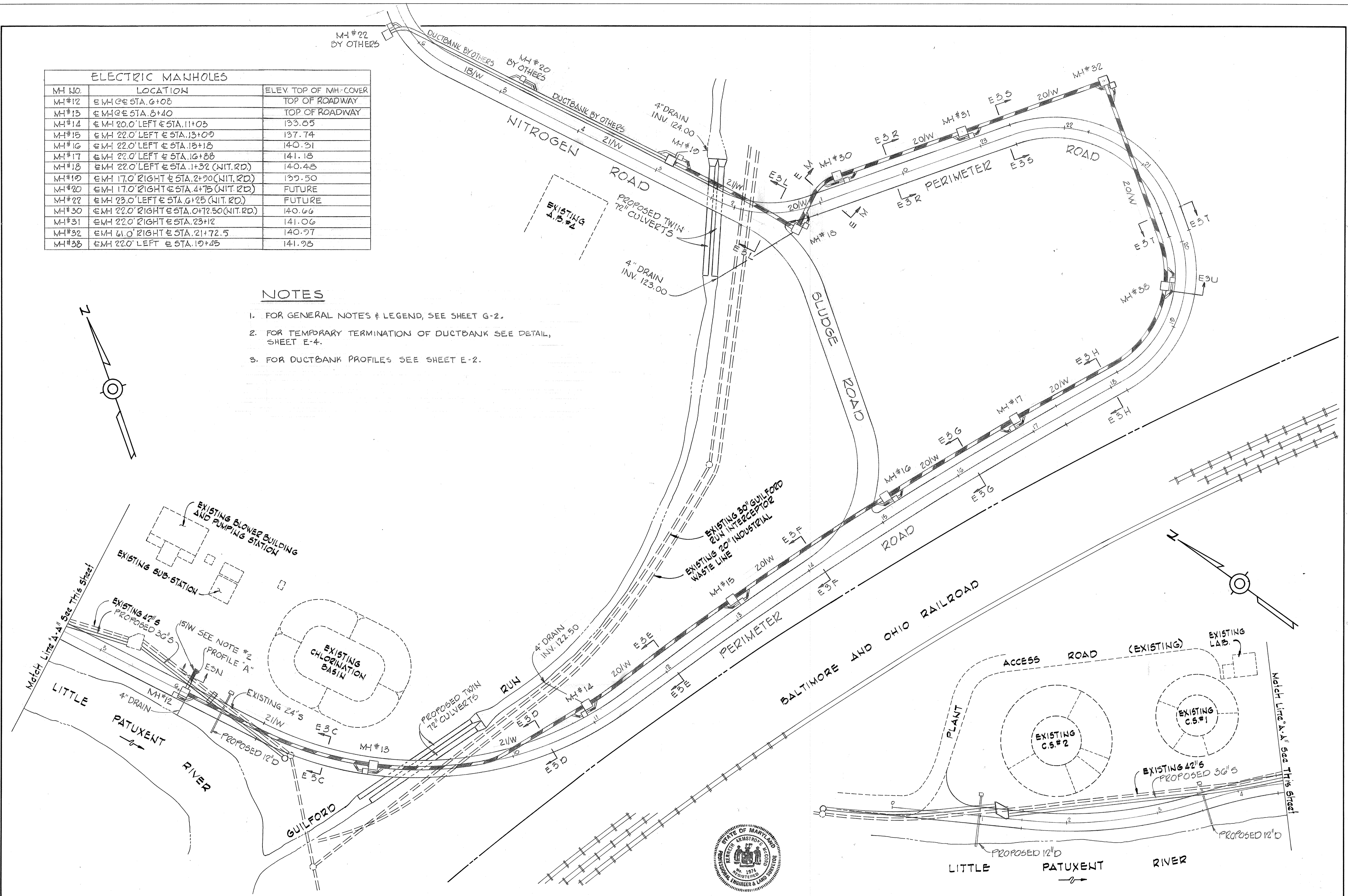


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 2/20/15 W. O. Gilbert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 504-S	GRADING & DRAINAGE	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 10 OF 19	SCALE 1"=20' SHEET C-8
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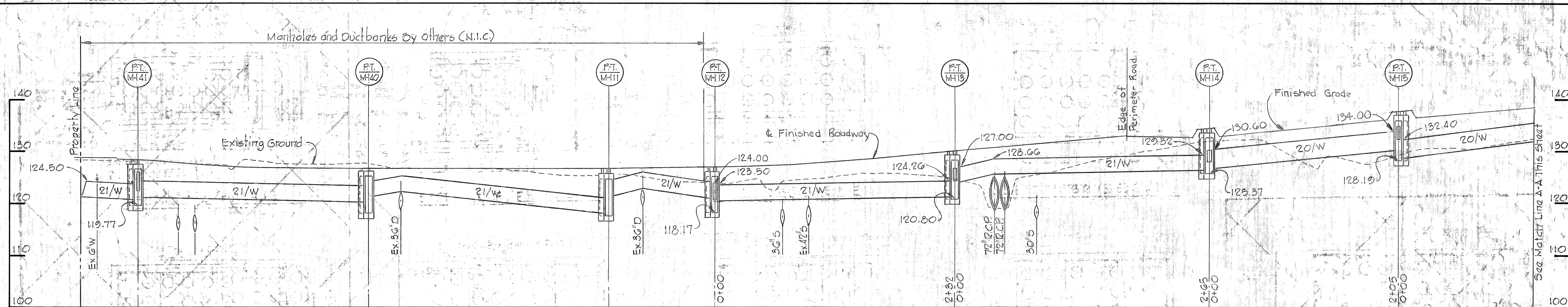
ELECTRIC MANHOLES		
MH NO.	LOCATION	ELEV. TOP OF MH-COVER
MH#12	E MH @ STA. 6+08	TOP OF ROADWAY
MH#13	E MH @ STA. 8+40	TOP OF ROADWAY
MH#14	E MH 20.0' LEFT @ STA. 11+03	133.85
MH#15	E MH 22.0' LEFT @ STA. 13+09	137.74
MH#16	E MH 22.0' LEFT @ STA. 15+15	140.31
MH#17	E MH 22.0' LEFT @ STA. 16+88	141.18
MH#18	E MH 22.0' LEFT @ STA. 1+32 (NIT. RD.)	140.48
MH#19	E MH 17.0' RIGHT @ STA. 2+20 (NIT. RD.)	139.50
MH#20	E MH 17.0' RIGHT @ STA. 4+75 (NIT. RD.)	FUTURE
MH#22	E MH 23.0' LEFT @ STA. 6+25 (NIT. RD.)	FUTURE
MH#30	E MH 22.0' RIGHT @ STA. 0+72.50 (NIT. RD.)	140.66
MH#31	E MH 22.0' RIGHT @ STA. 23+12	141.06
MH#32	E MH 61.0' RIGHT @ STA. 21+72.5	140.97
MH#38	E MH 22.0' LEFT @ STA. 19+45	141.98

NOTES

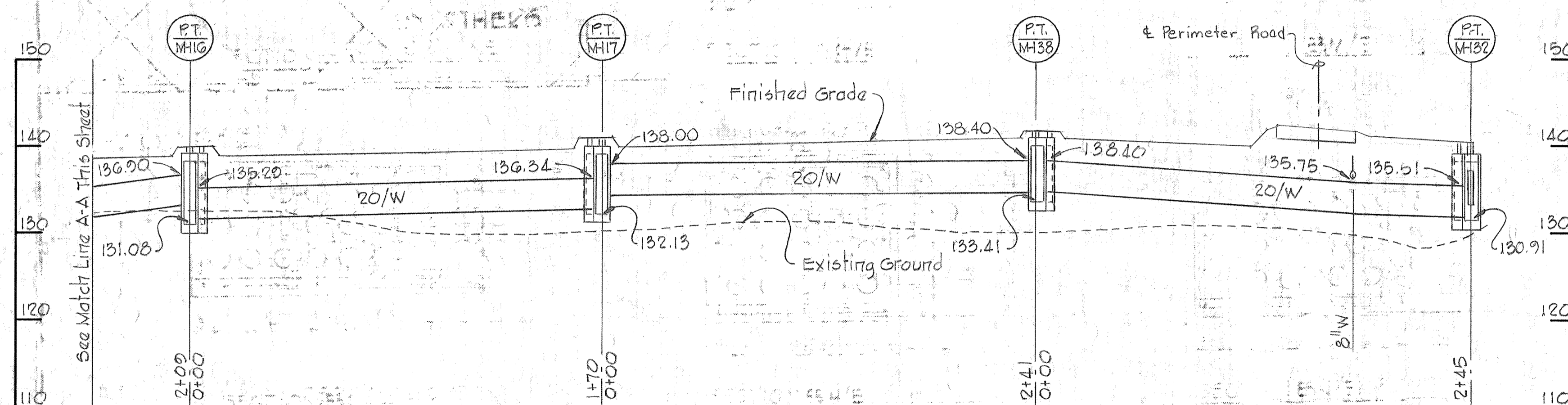
- FOR GENERAL NOTES & LEGEND, SEE SHEET G-2.
- FOR TEMPORARY TERMINATION OF DUCTBANK SEE DETAIL, SHEET E-4.
- FOR DUCTBANK PROFILES SEE SHEET E-2.



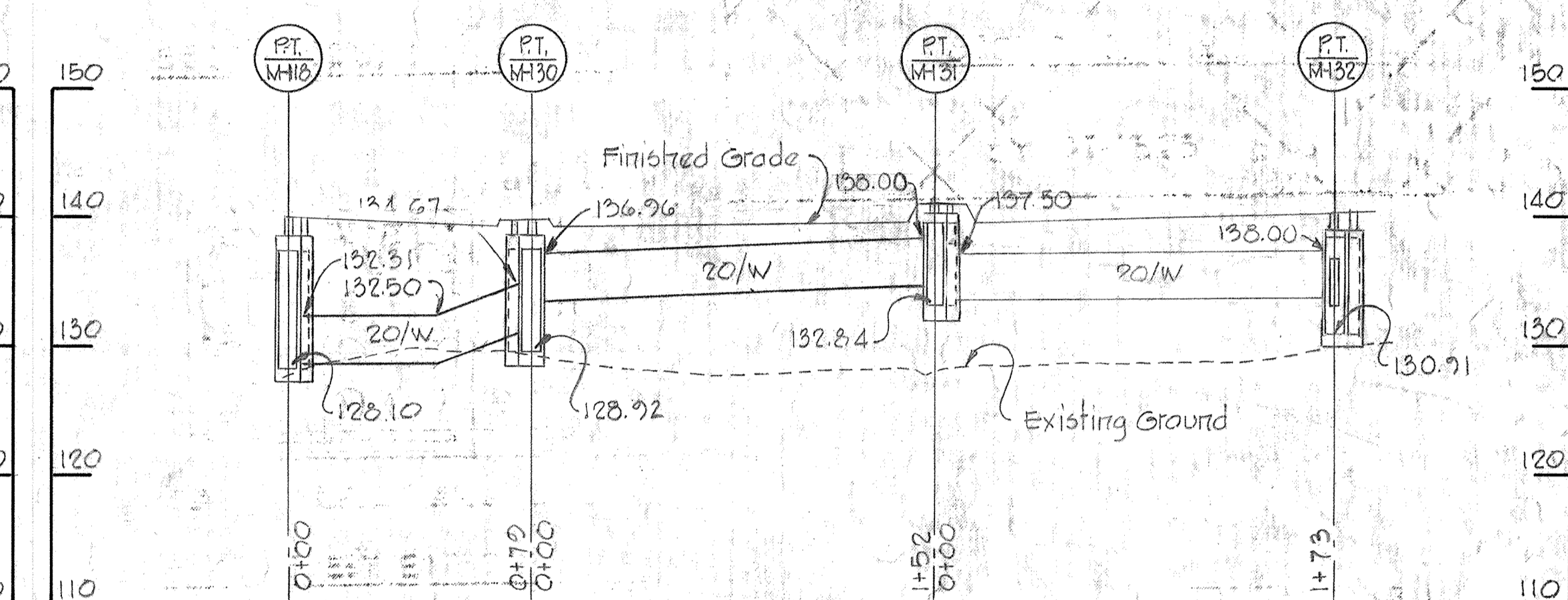
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND W. O. Whitman 6-27-77 CHIEF-BUREAU OF ENGINEERING—DATE	CONTRACT NO. 504-S	ELECTRICAL PLAN	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 11 OF 19	SCALE 1" = 50'
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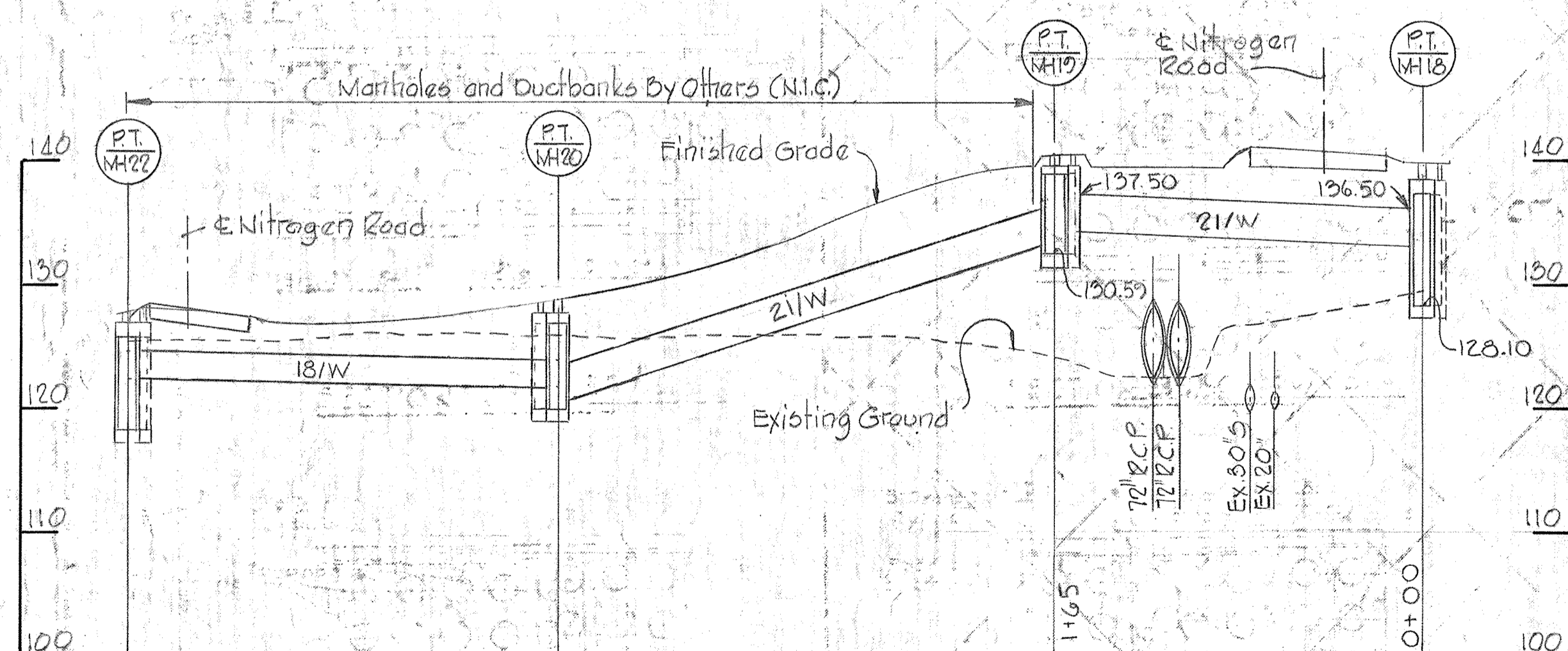
PROFILE - PERIMETER ROAD DUCTBANK



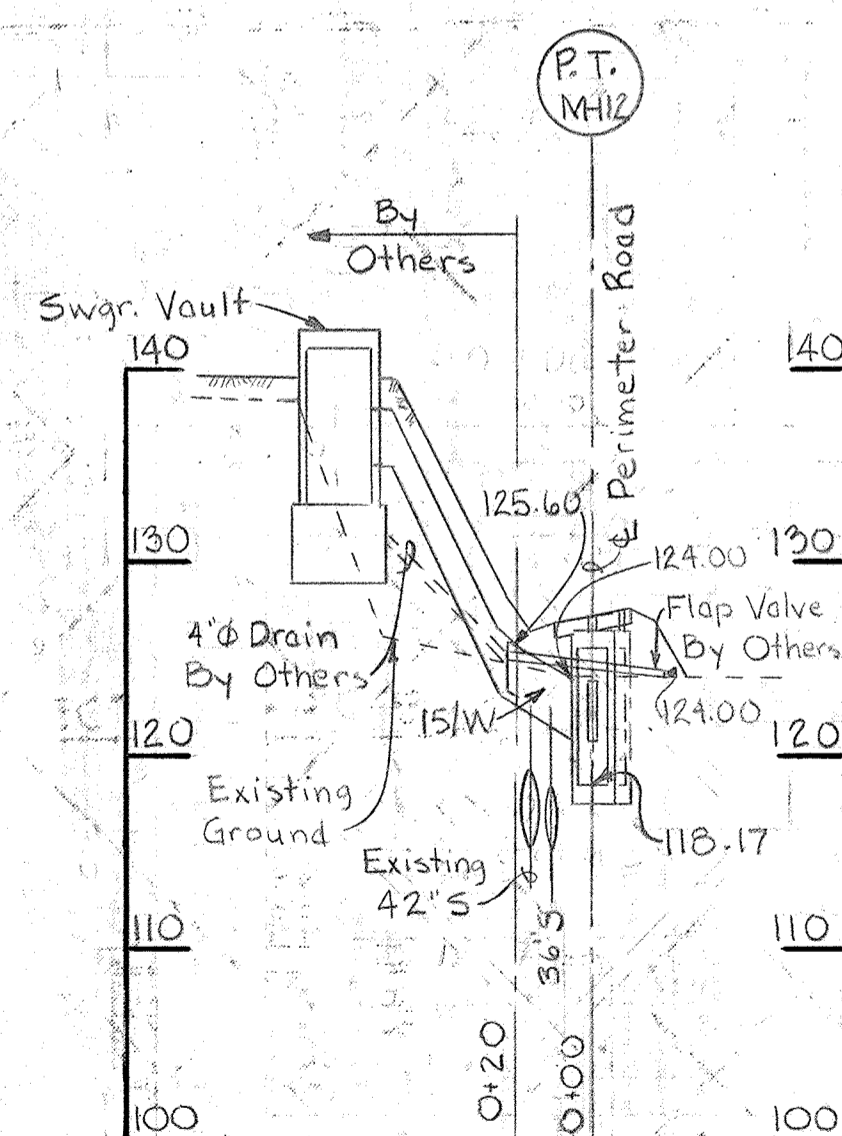
PROFILE - PERIMETER ROAD DUCTBANK



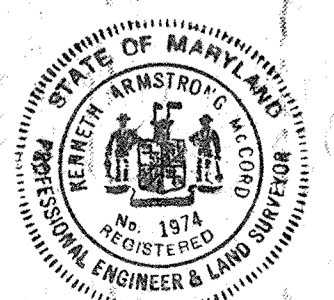
PROFILE - PERIMETER ROAD DUCTBANK



PROFILE - NITROGEN ROAD DUCTBANK



PROFILE "A"



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

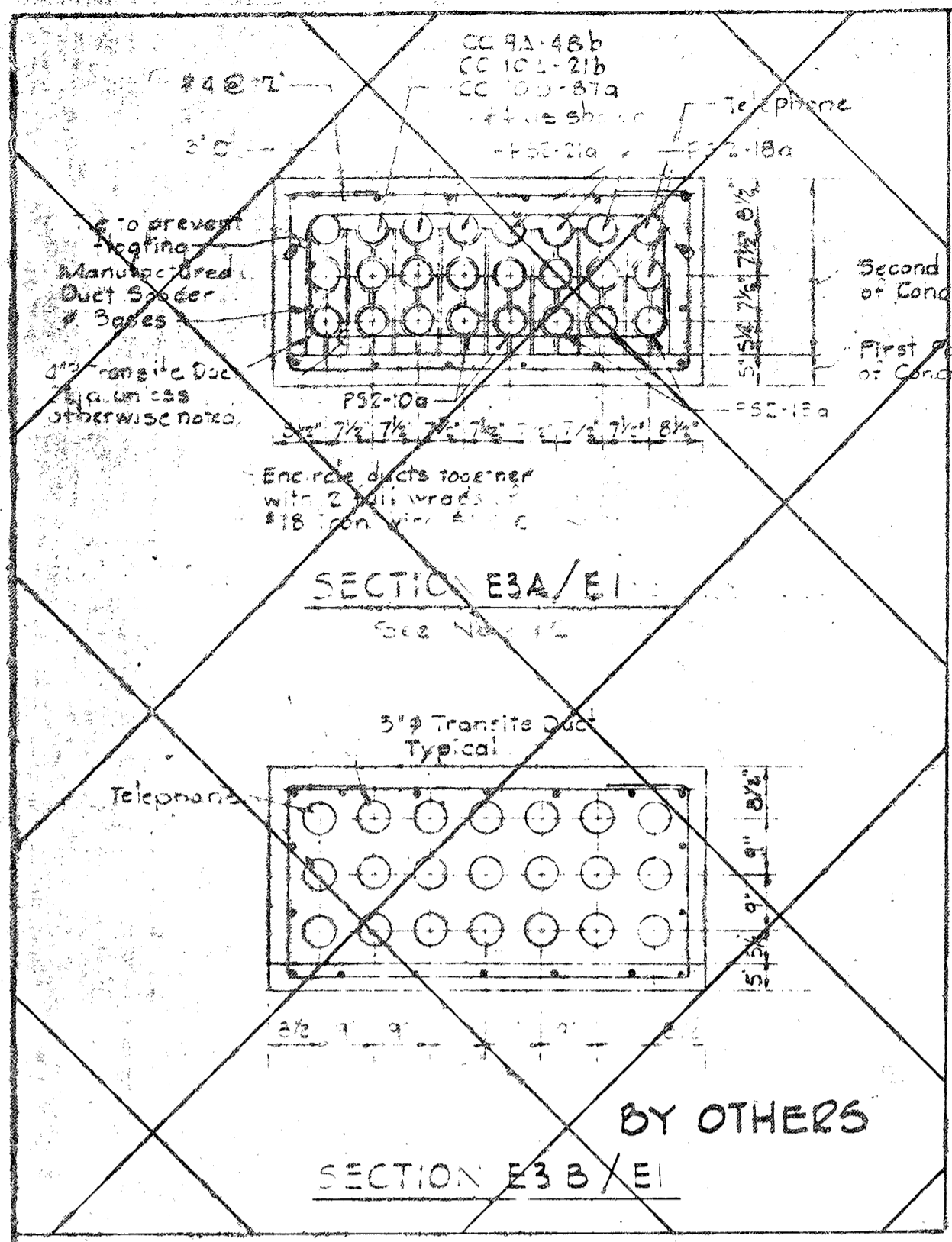
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CONTRACT NO. 504-S

DUCTBANK PROFILES

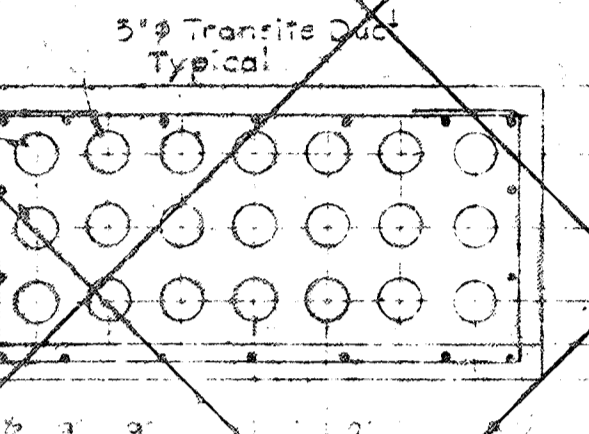
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.4

DRAWING NO. 12 OF 19
SCALE H: 1"=50'
V: 1"=10'



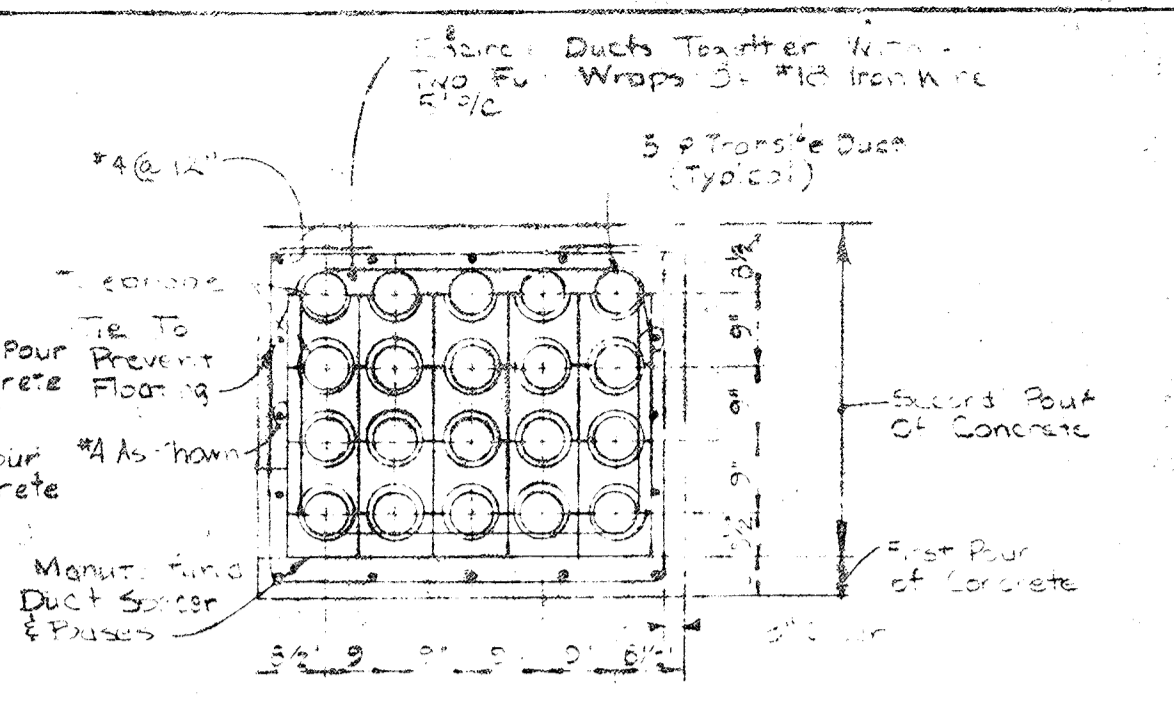
SECTION E3A/EI

See Note 12

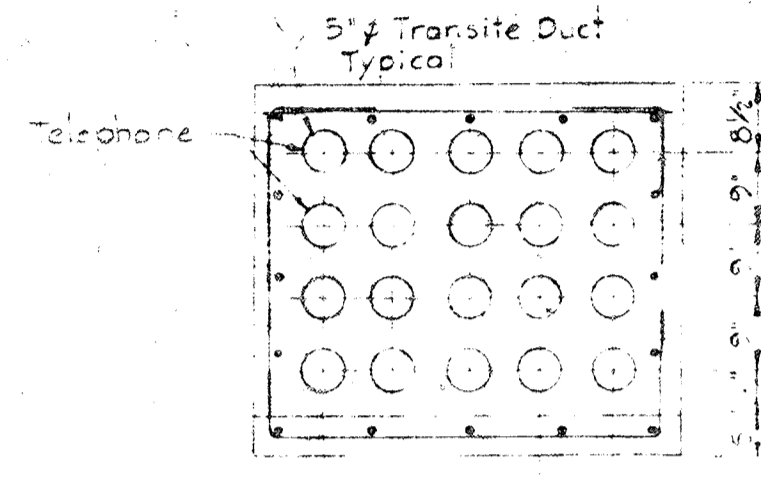


SECTION E3B/EI

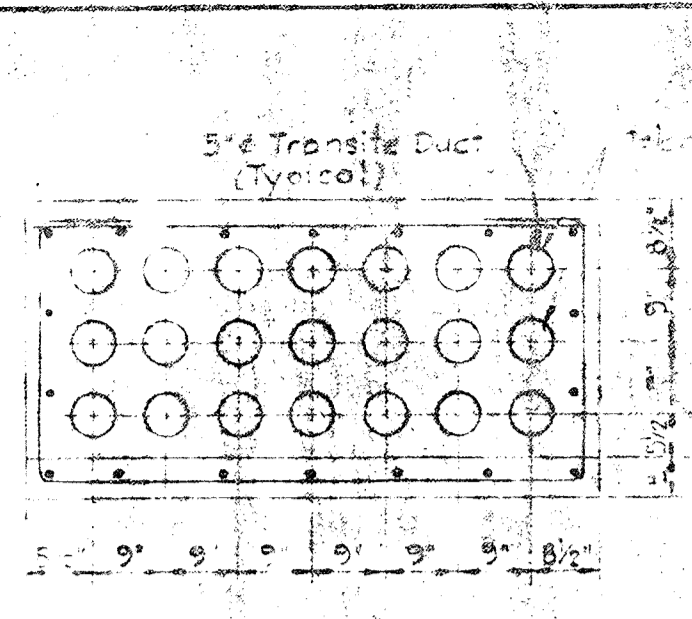
BY OTHERS



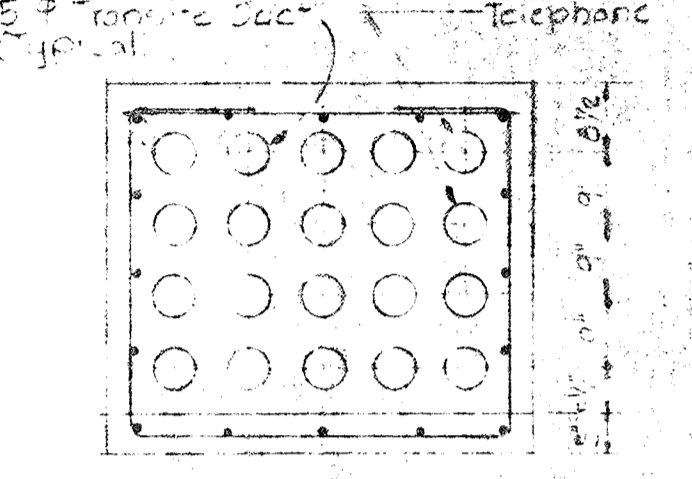
SECTION E3F/EI



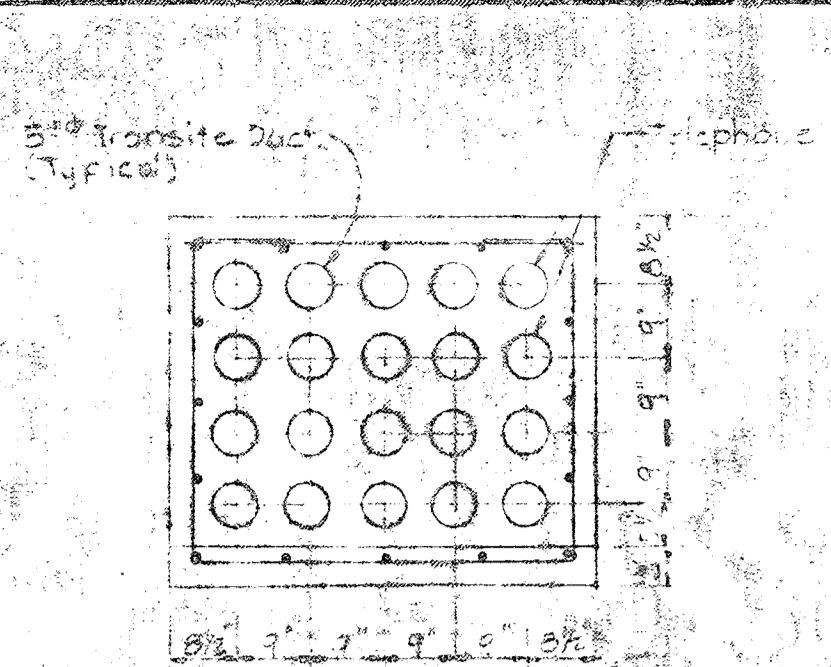
SECTION E3G/EI



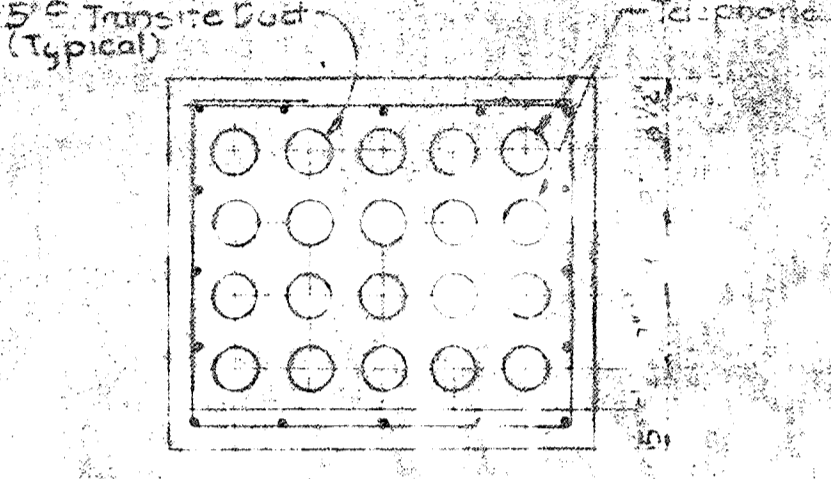
SECTION E3L/EI



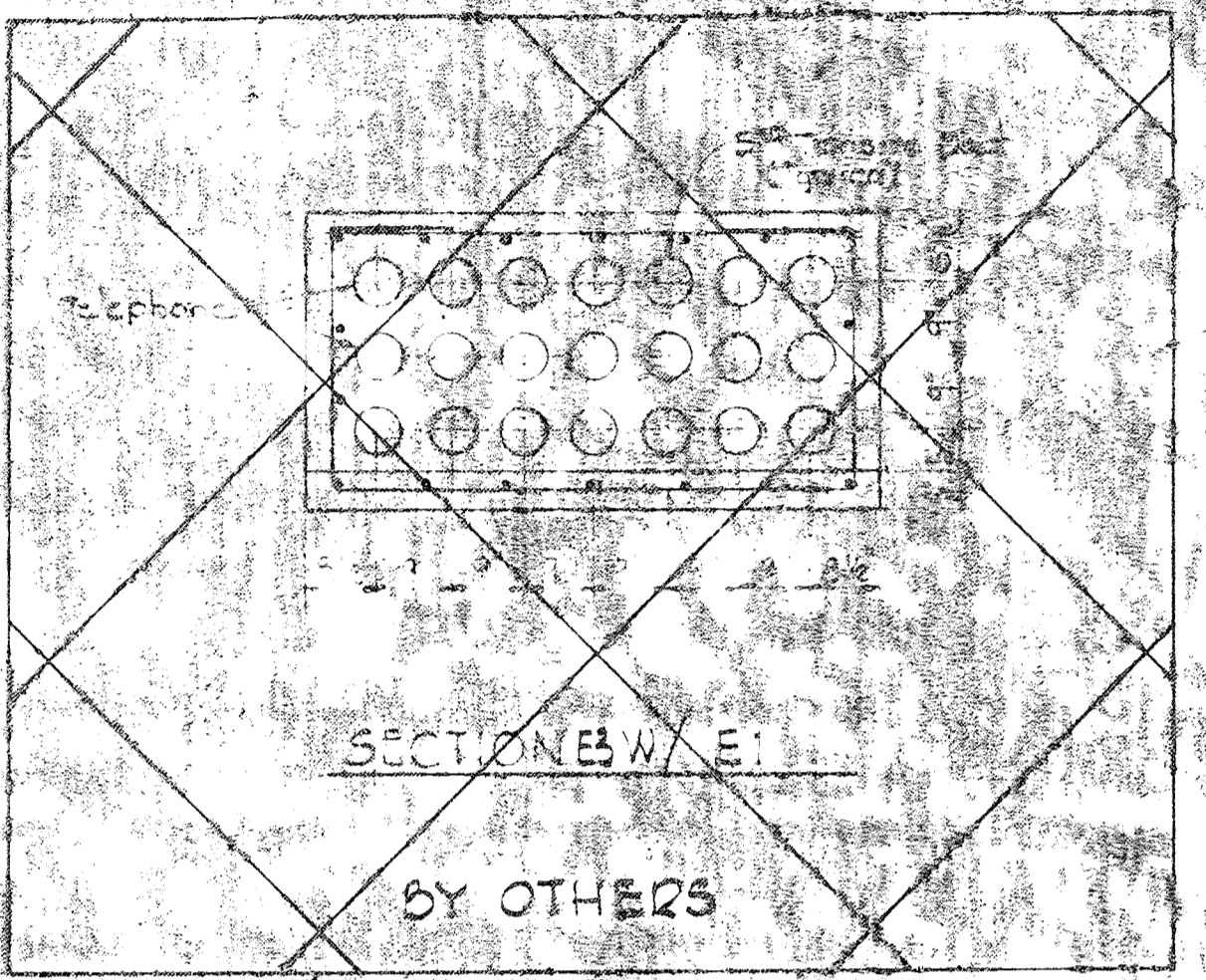
SECTION E3M/EI



SECTION E3R/EI

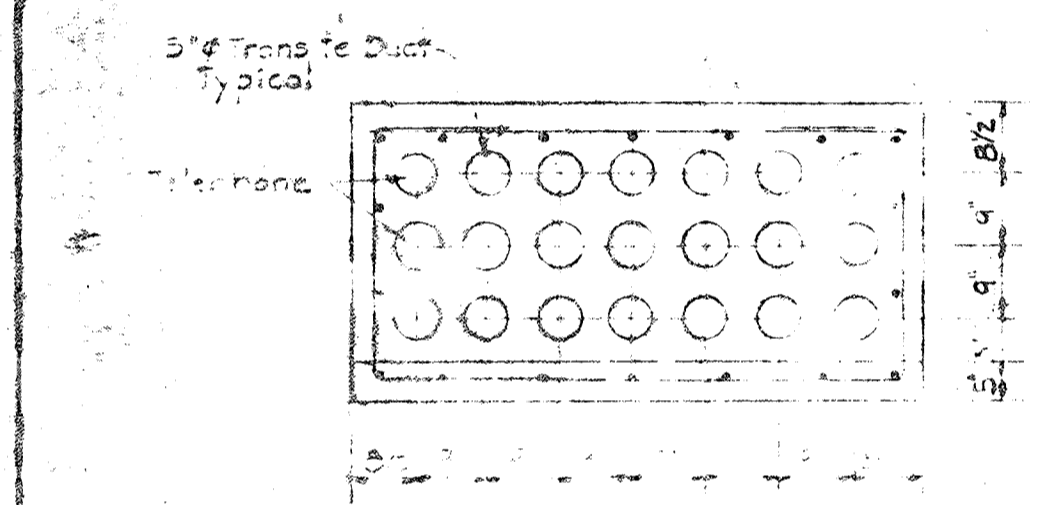


SECTION E3S/EI

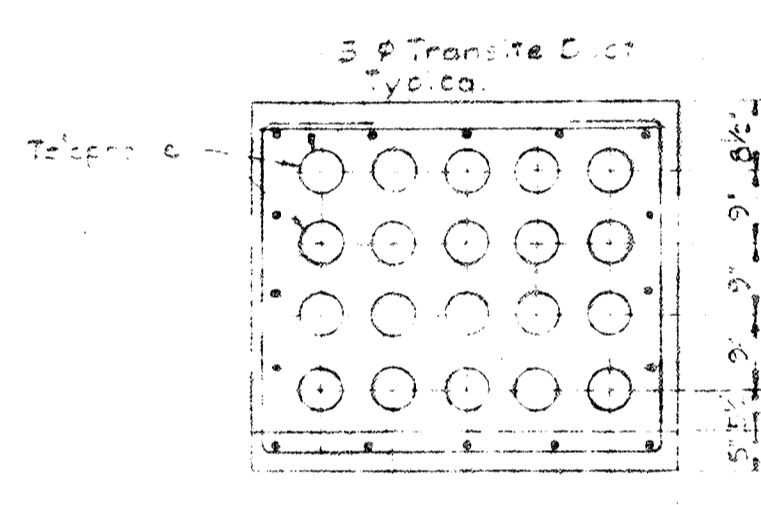


SECTION E3W/EI

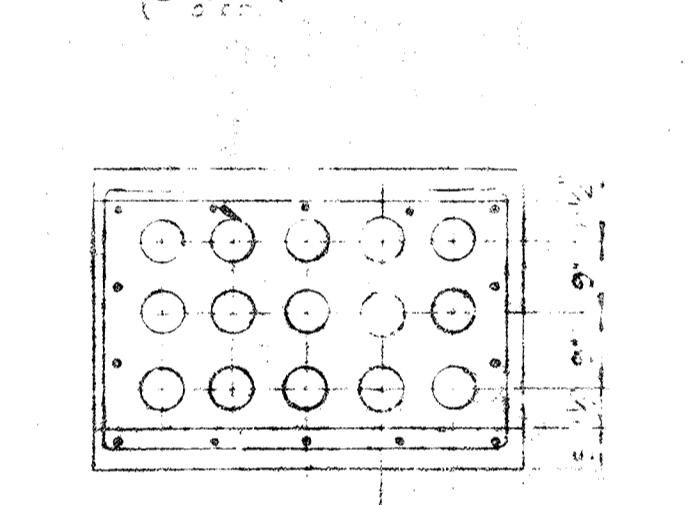
BY OTHERS



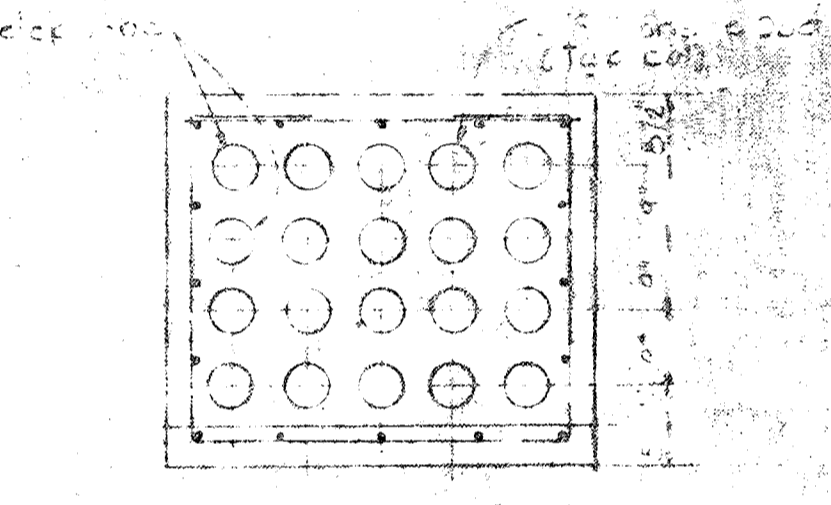
SECTION E3C/E



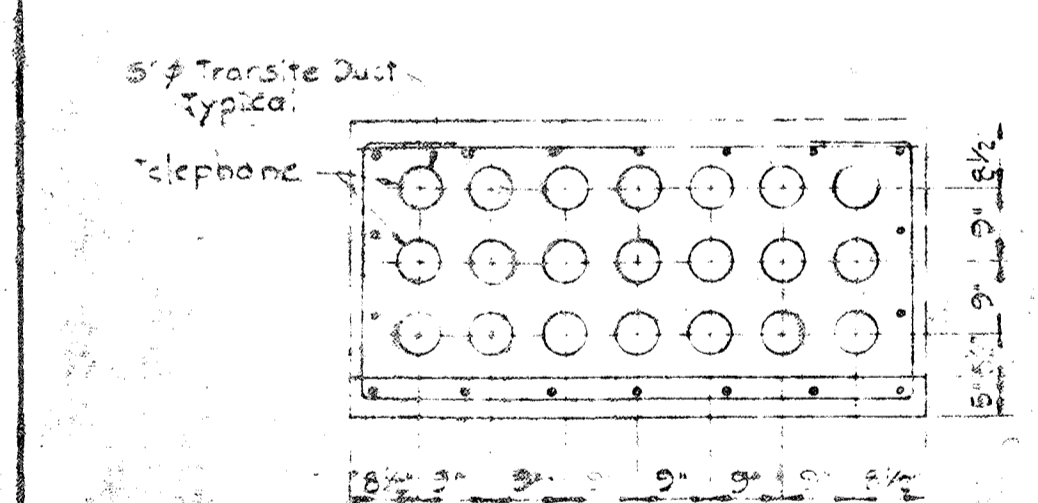
SECTION E3H/EI



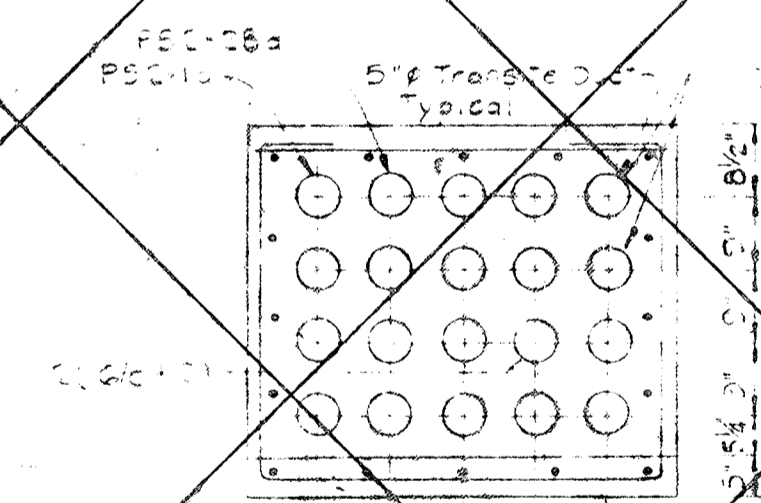
SECTION E3N/EI



SECTION E3T/EI

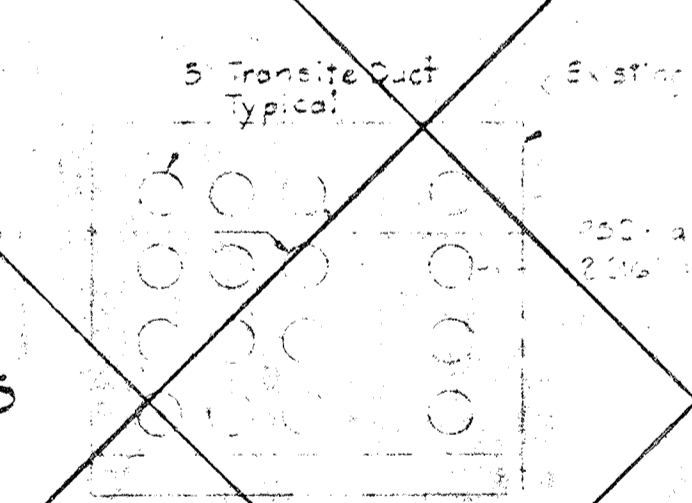


SECTION E3D/EI

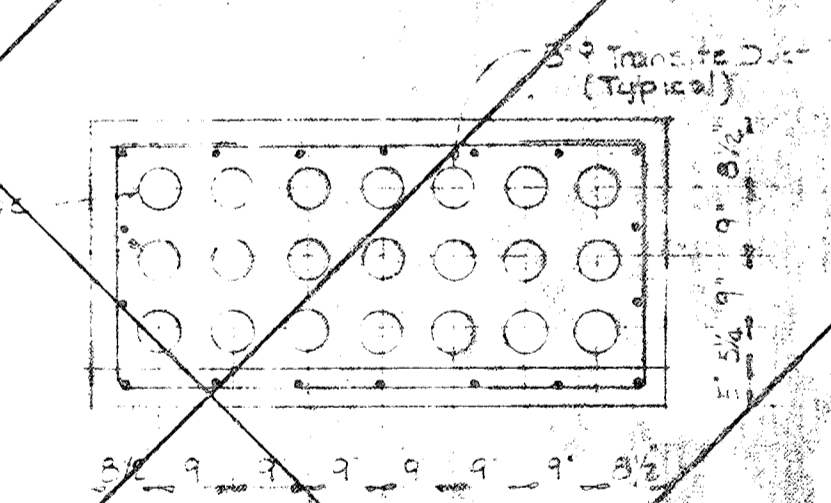


SECTION E3J/EI

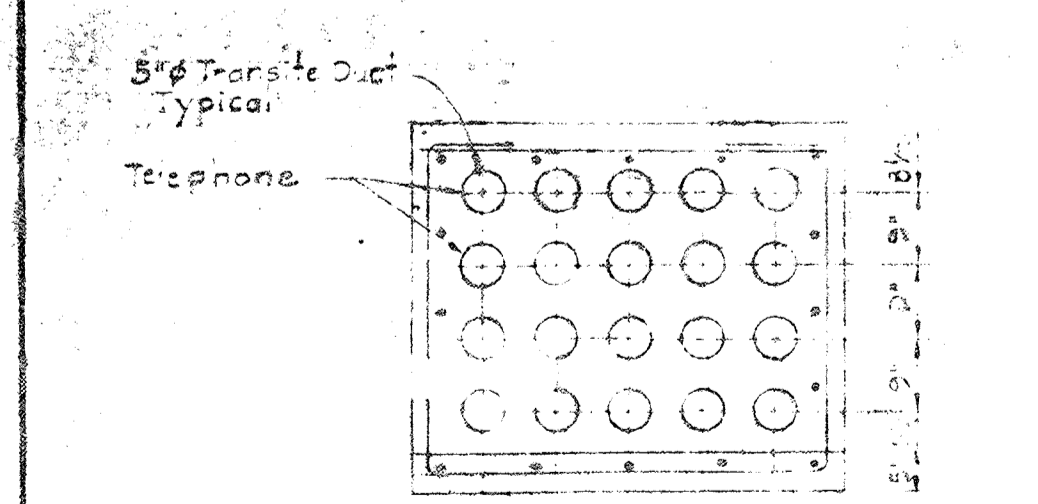
BY OTHERS



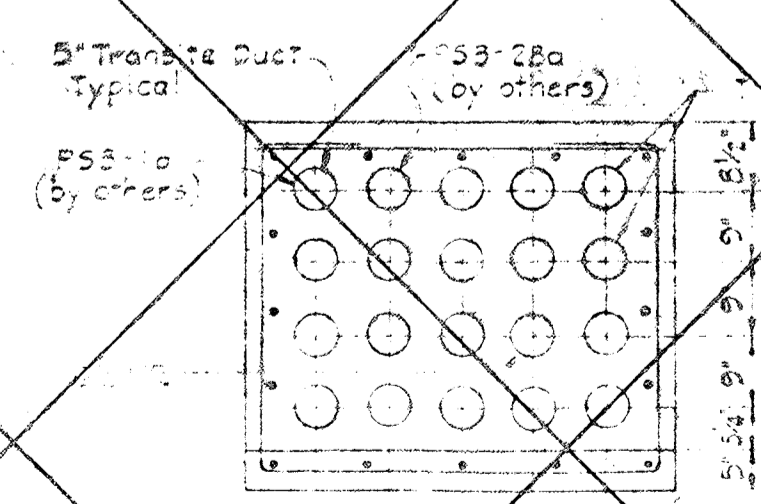
SECTION E3P/EI



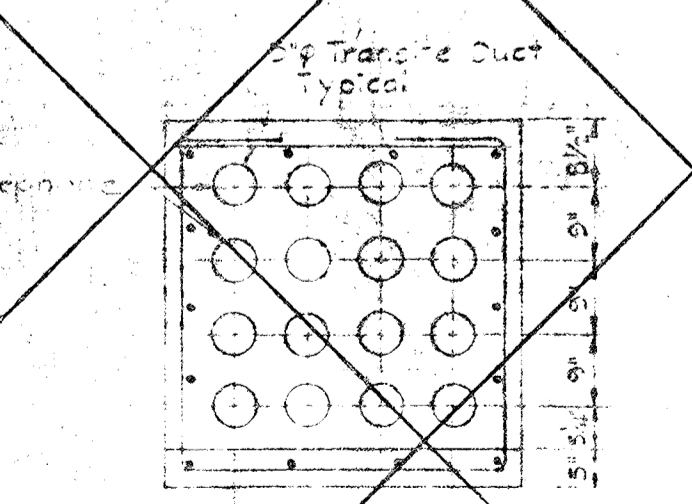
SECTION E3U/EI



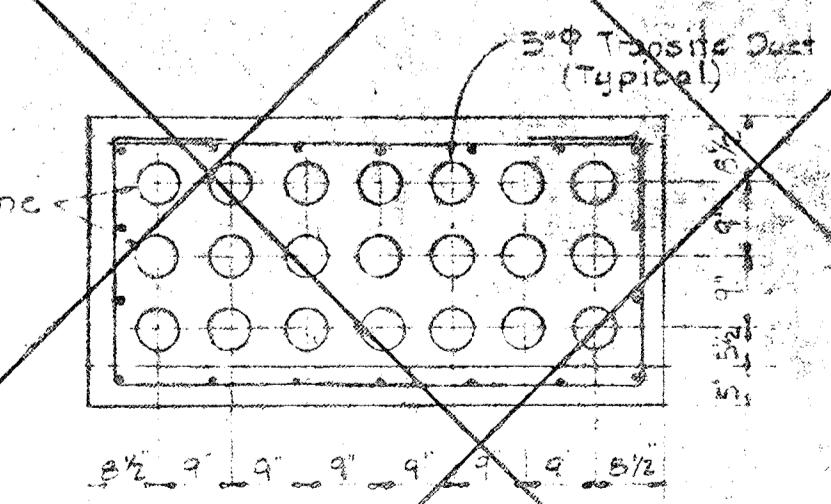
SECTION E3E/EI



SECTION E3K/EI



SECTION E3Q/EI



SECTION E3V/EI

NOTES:

1. All ducts shall be installed in accordance with the manufacturer's instructions and reinforced with concrete over and around a duct bank in all sections unless otherwise noted.



DRAWING NO. 13	SCALE 1/2"=1'-0"
OF 15	

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY MARYLAND
DATE 3/1/64
W. O. 7132-2

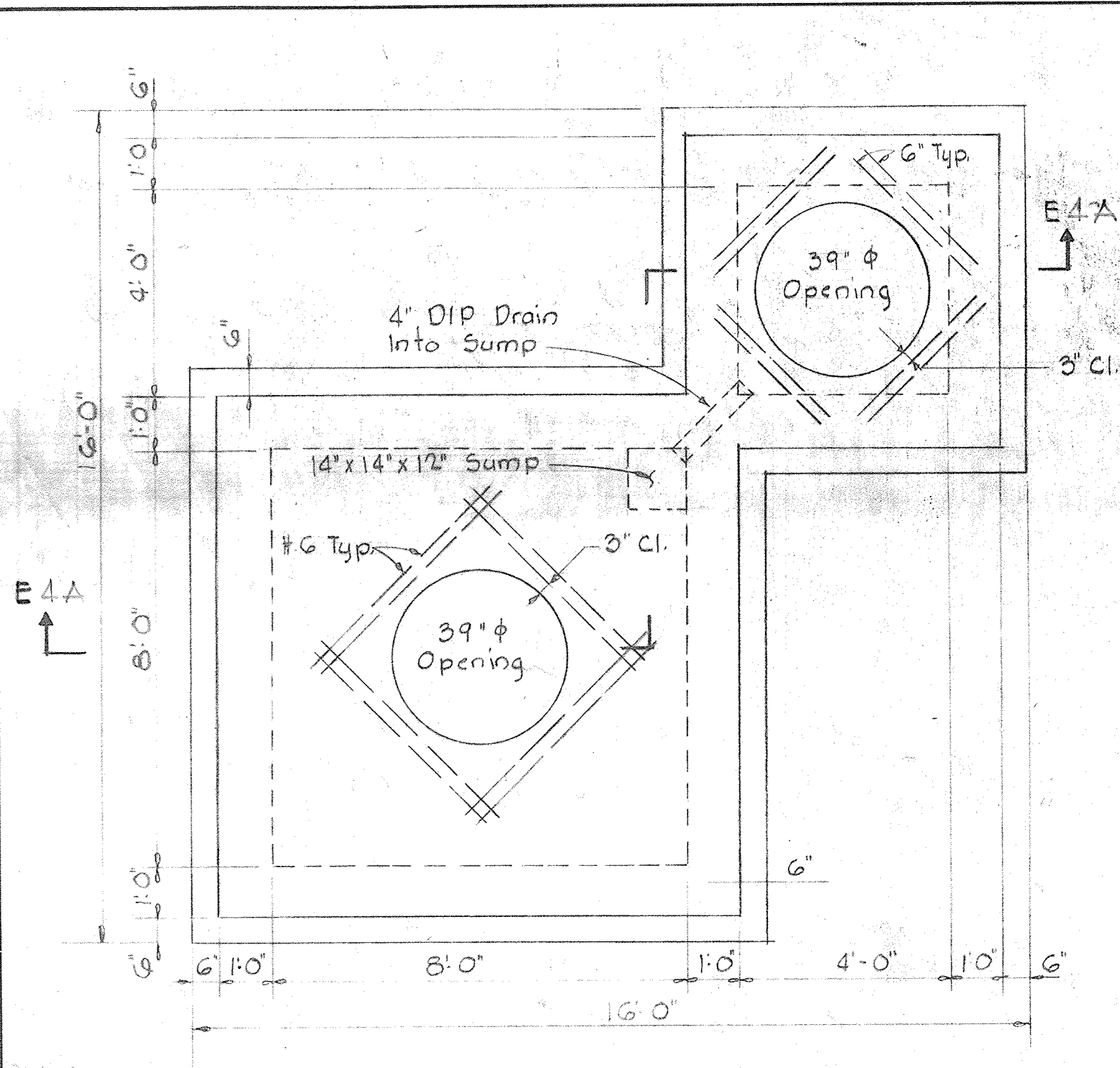
CONTRACT NO. 504-S

ELECTRICAL
MISCELLANEOUS
UNDERGROUND DUCTBANK DETAILS

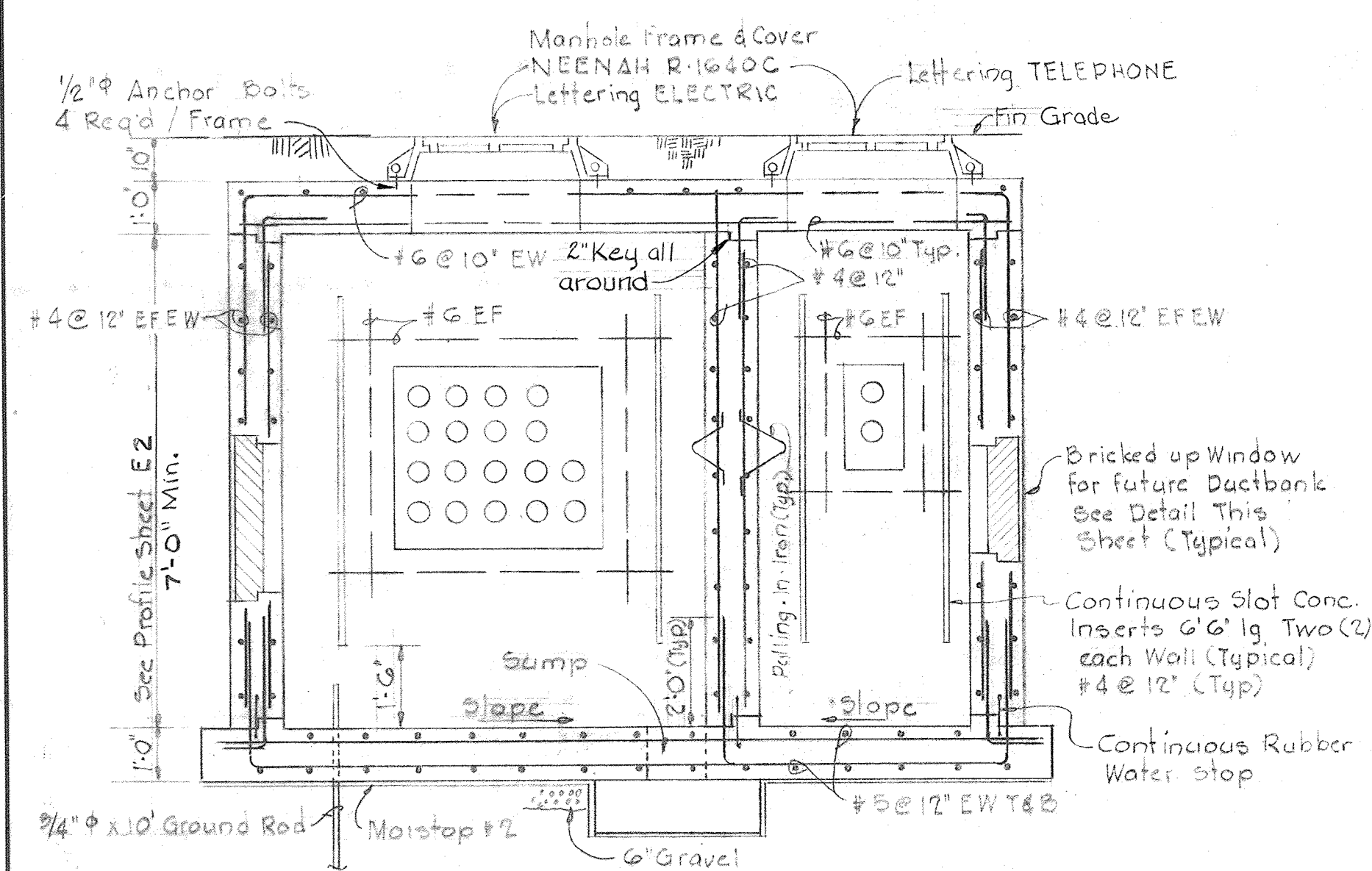
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

SHEET E-3

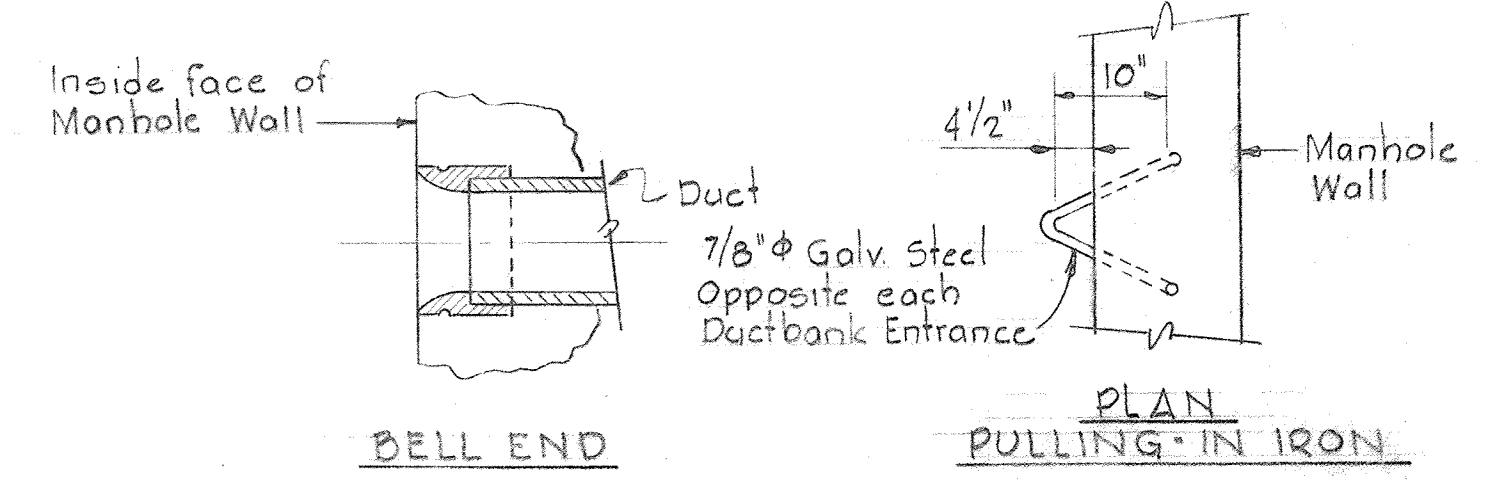
BRUNING 44510 18342



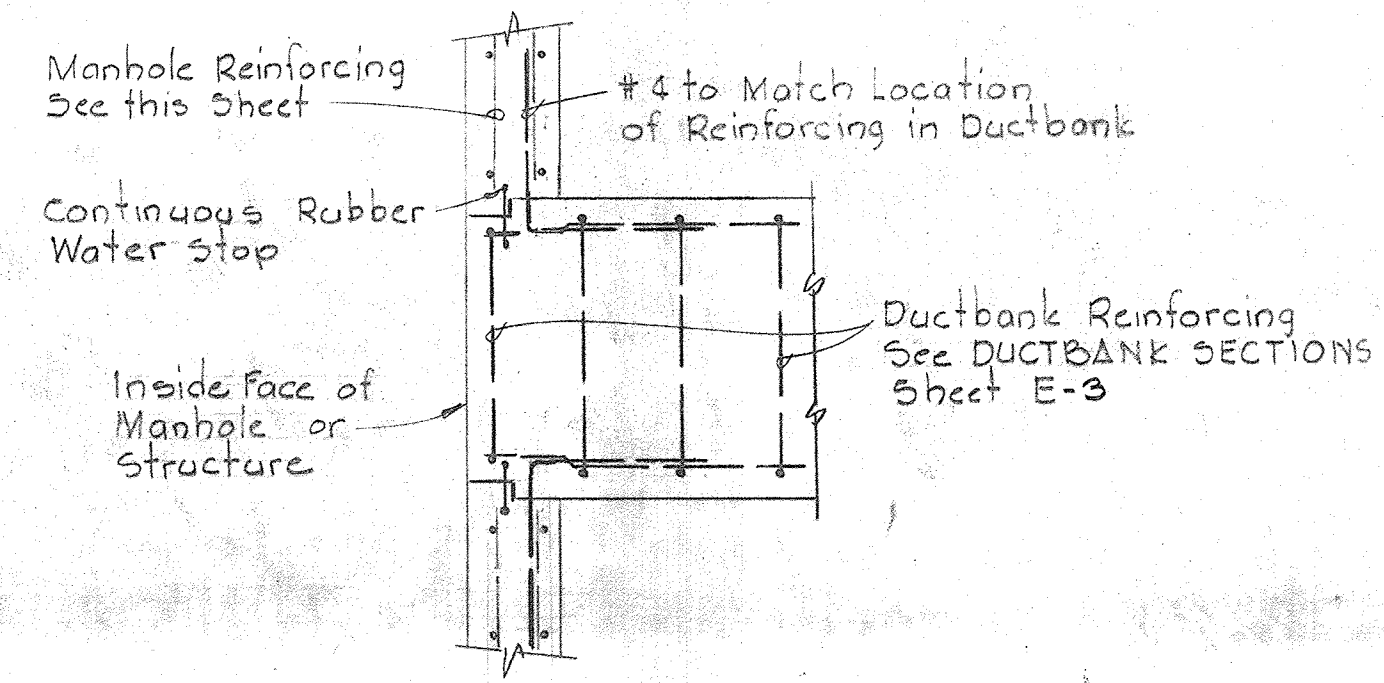
PLAN



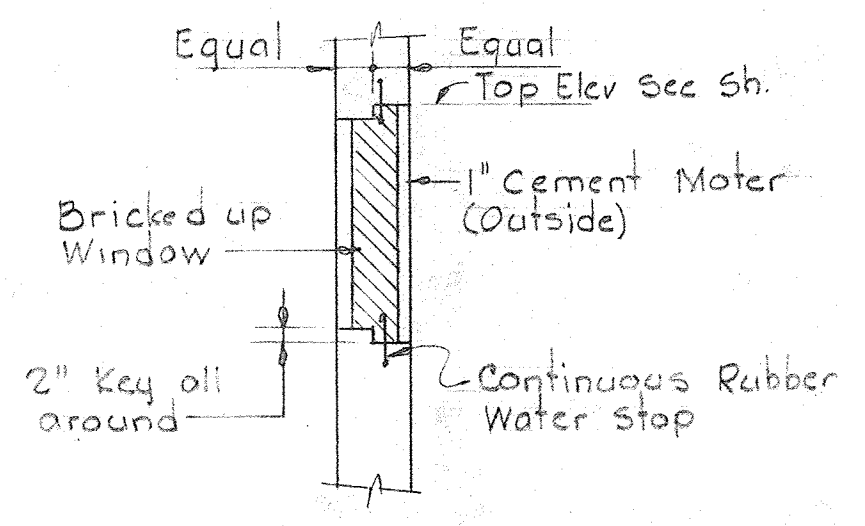
SECTION E4A/E4
TYPICAL POWER AND TELEPHONE MANHOLE
See Notes 2, 3, 4 & 5
Scale 3/8" = 1'-0"



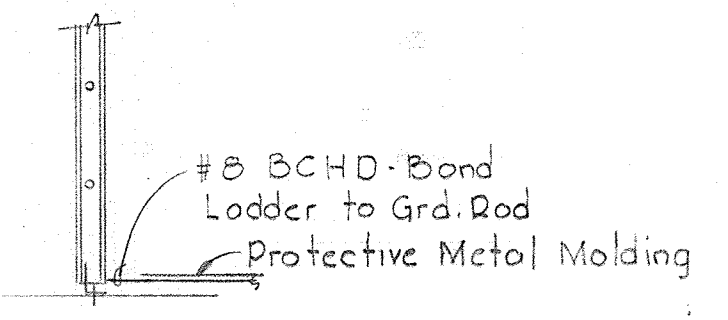
MISCELLANEOUS MANHOLE DETAILS
No Scale



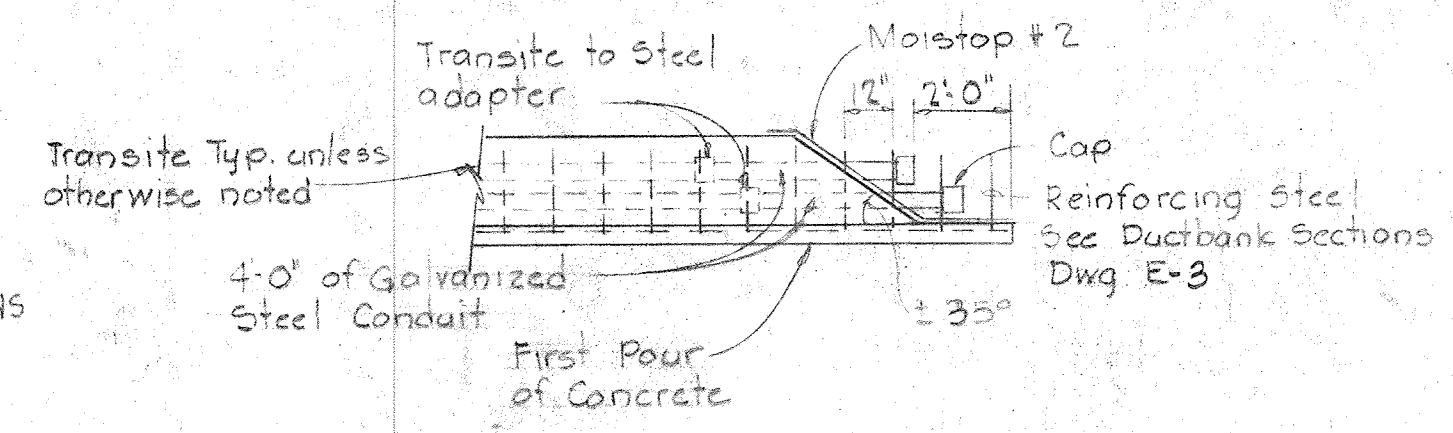
ARRANGEMENT OF DUCTBANK REINFORCEMENT
AT ENTRANCE TO MANHOLES & STRUCTURES
Scale 1/2" = 1'-0"



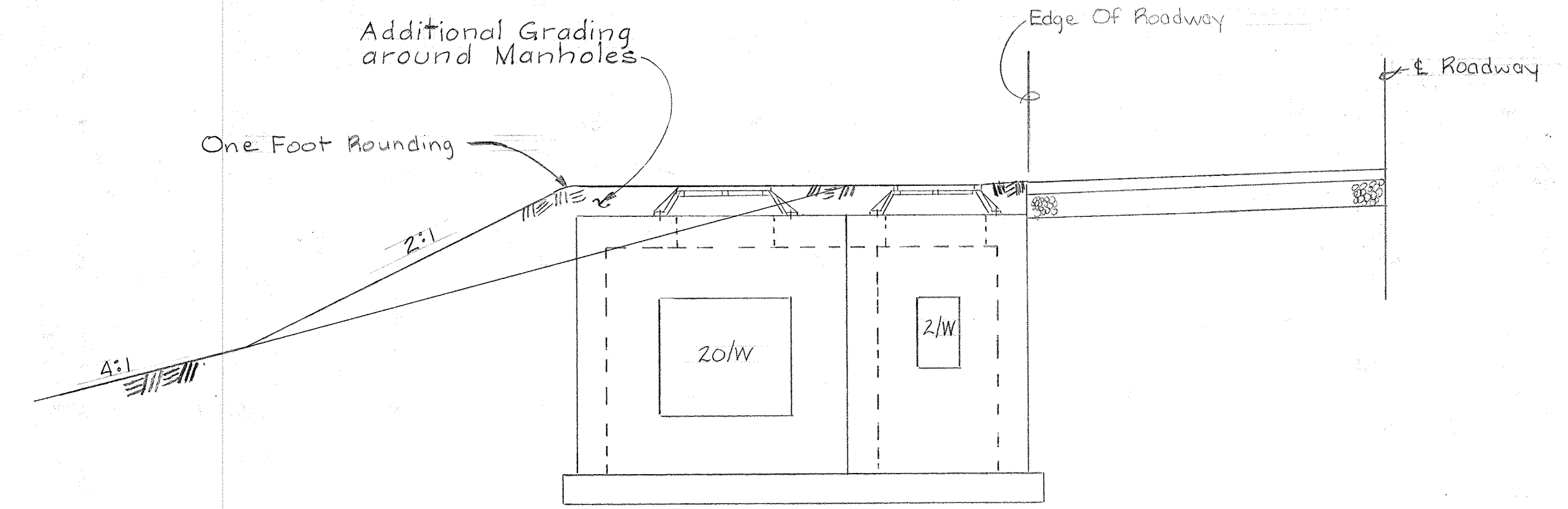
DETAIL OF BRICKED UP WINDOW
FOR FUTURE DUCTBANKS
Scale 3/8" = 1'-0"



DETAIL OF MANHOLE
LADDER GROUNDING
Scale 1/2" = 1'-0"



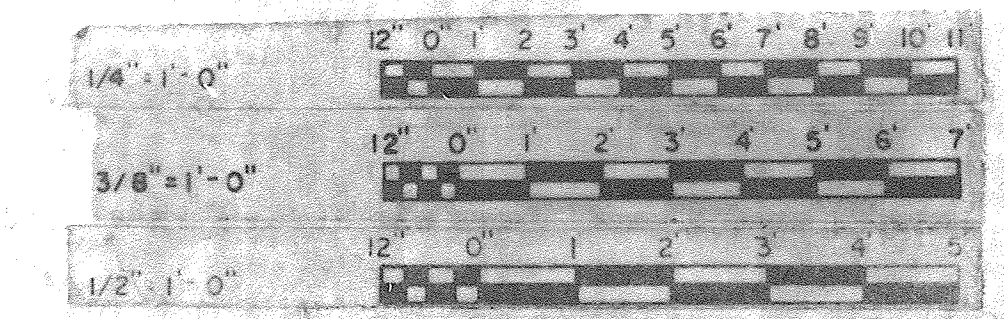
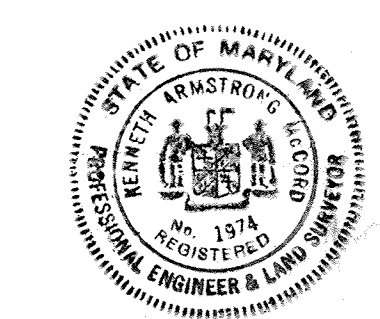
DETAIL
TEMPORARY TERMINATION
OF DUCTBANKS
Scale 1/4" = 1'-0"



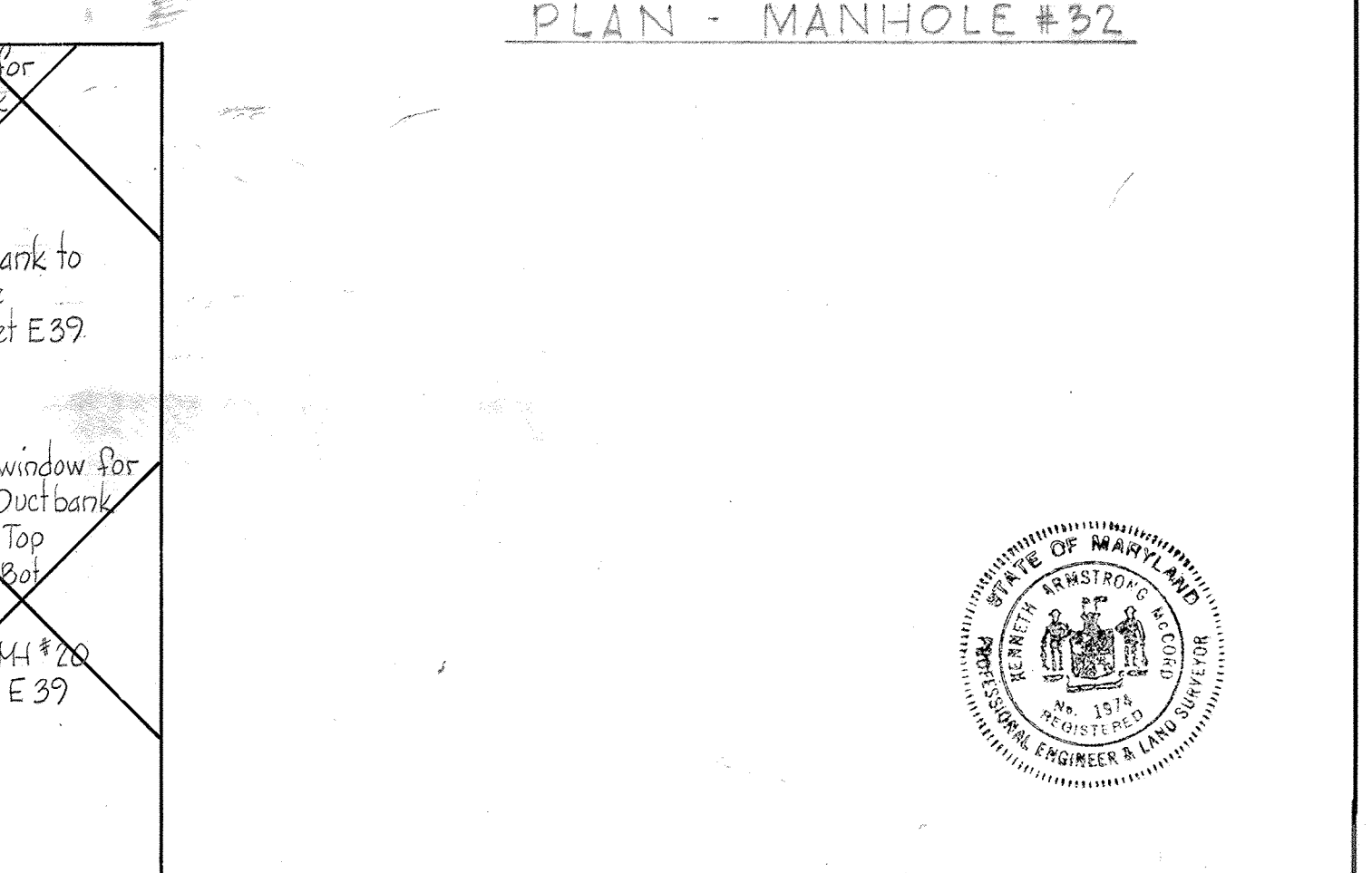
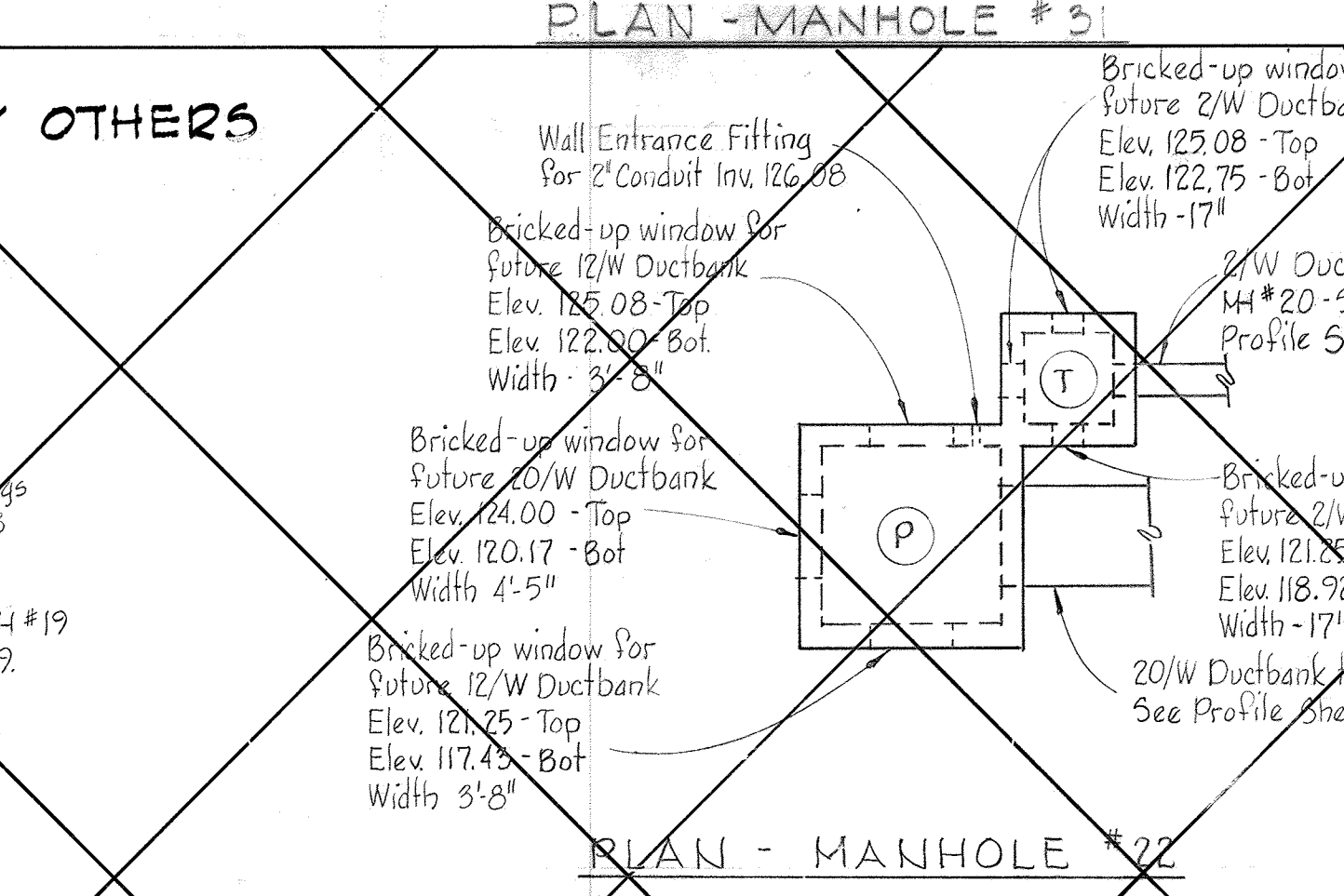
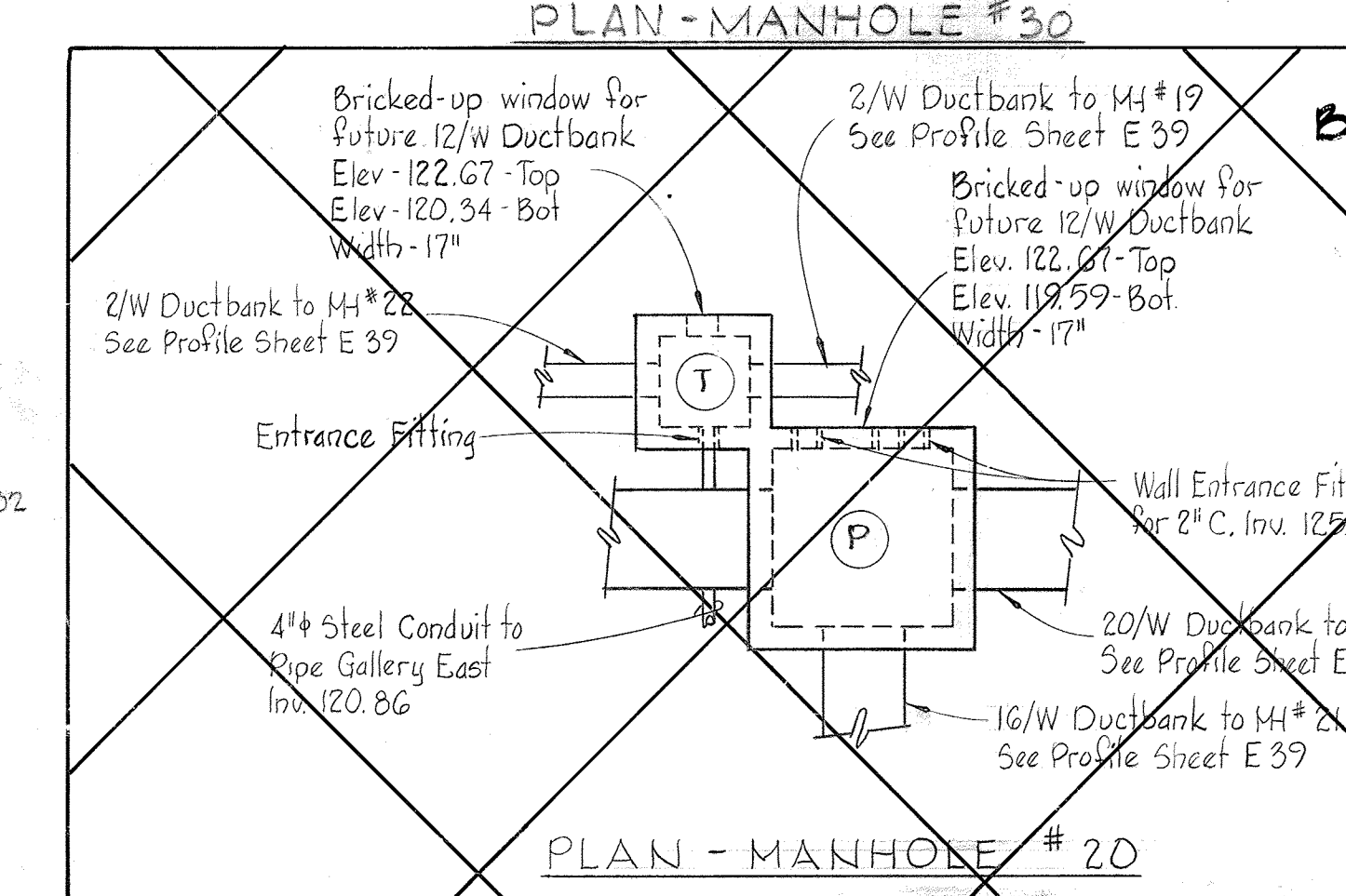
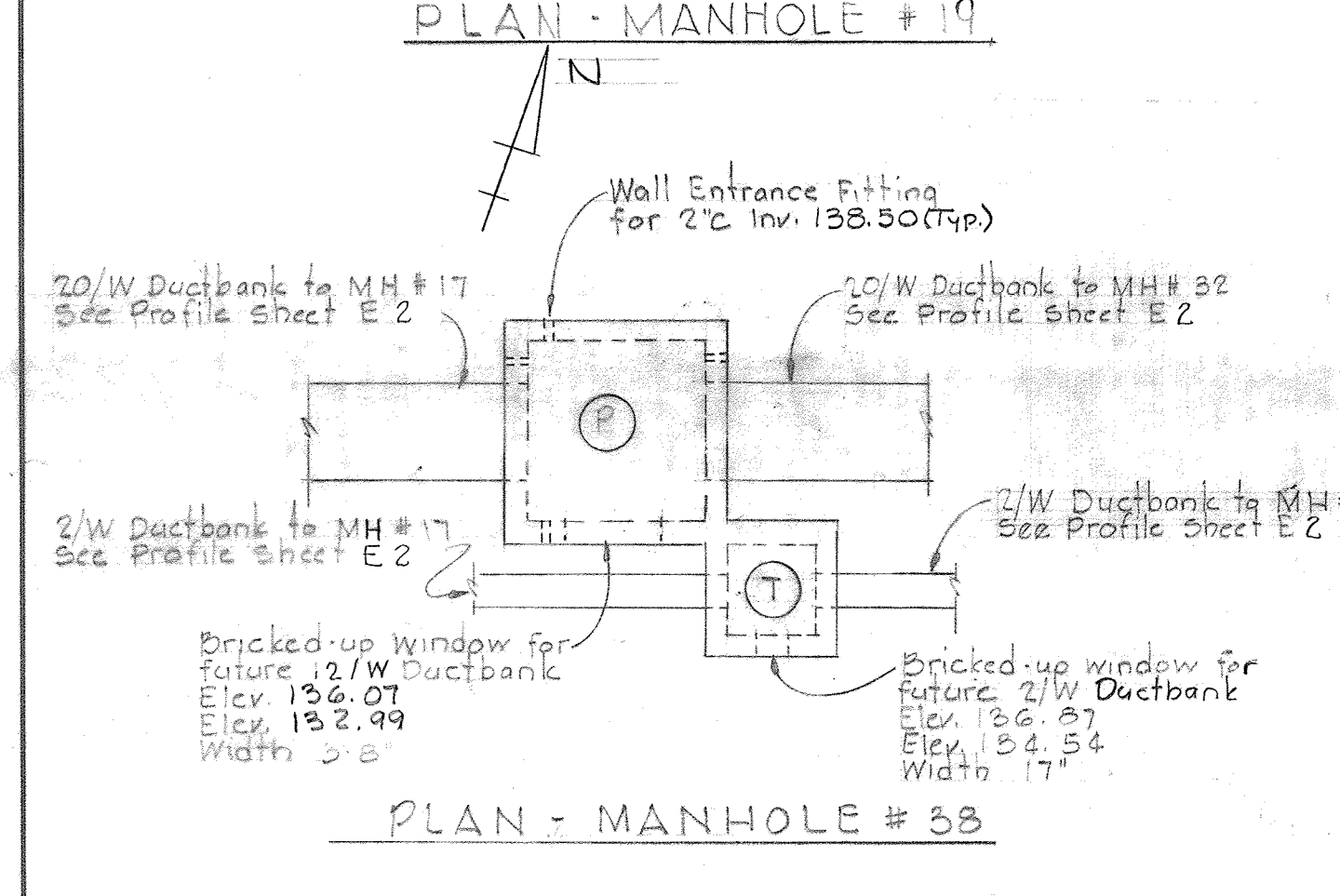
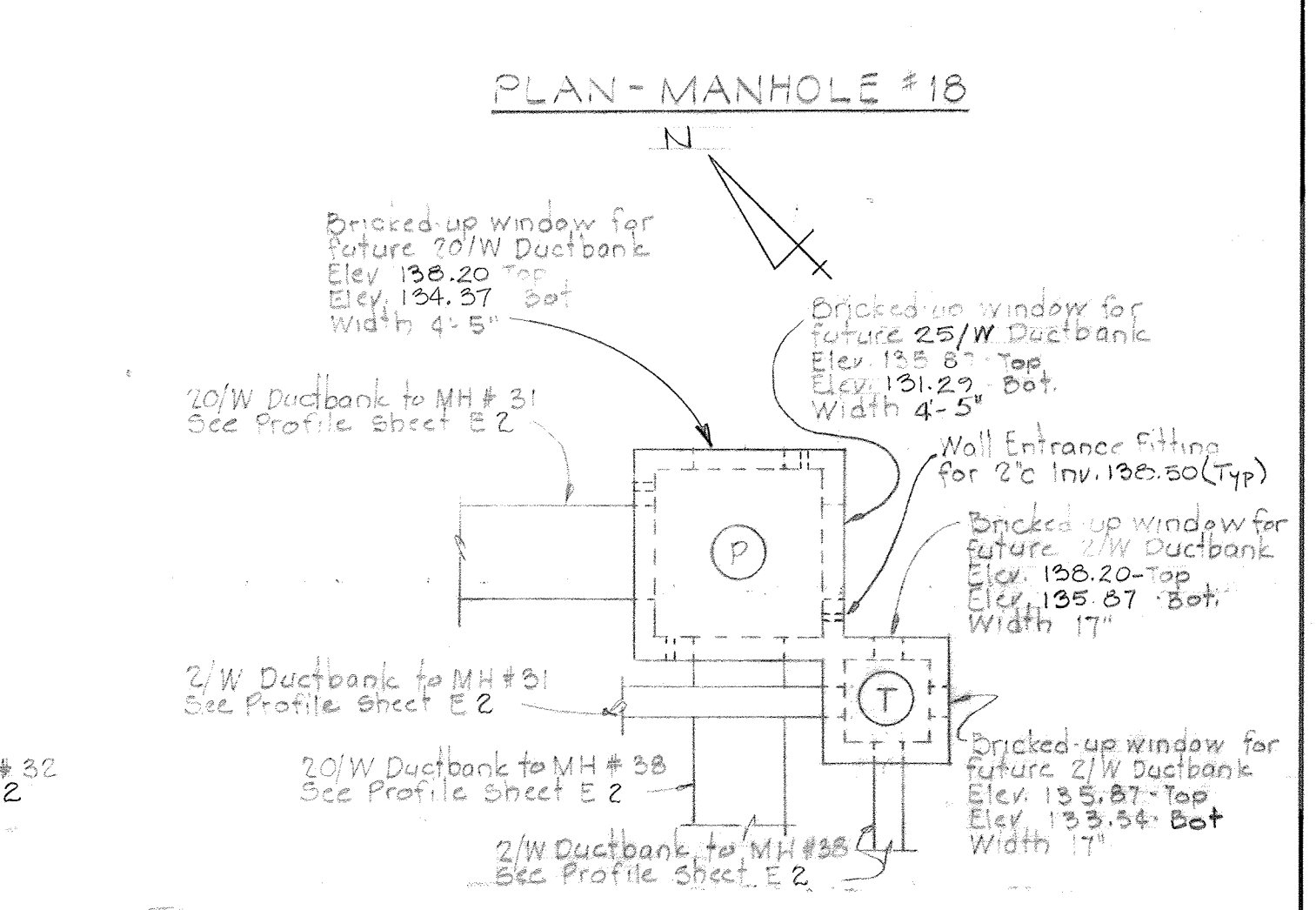
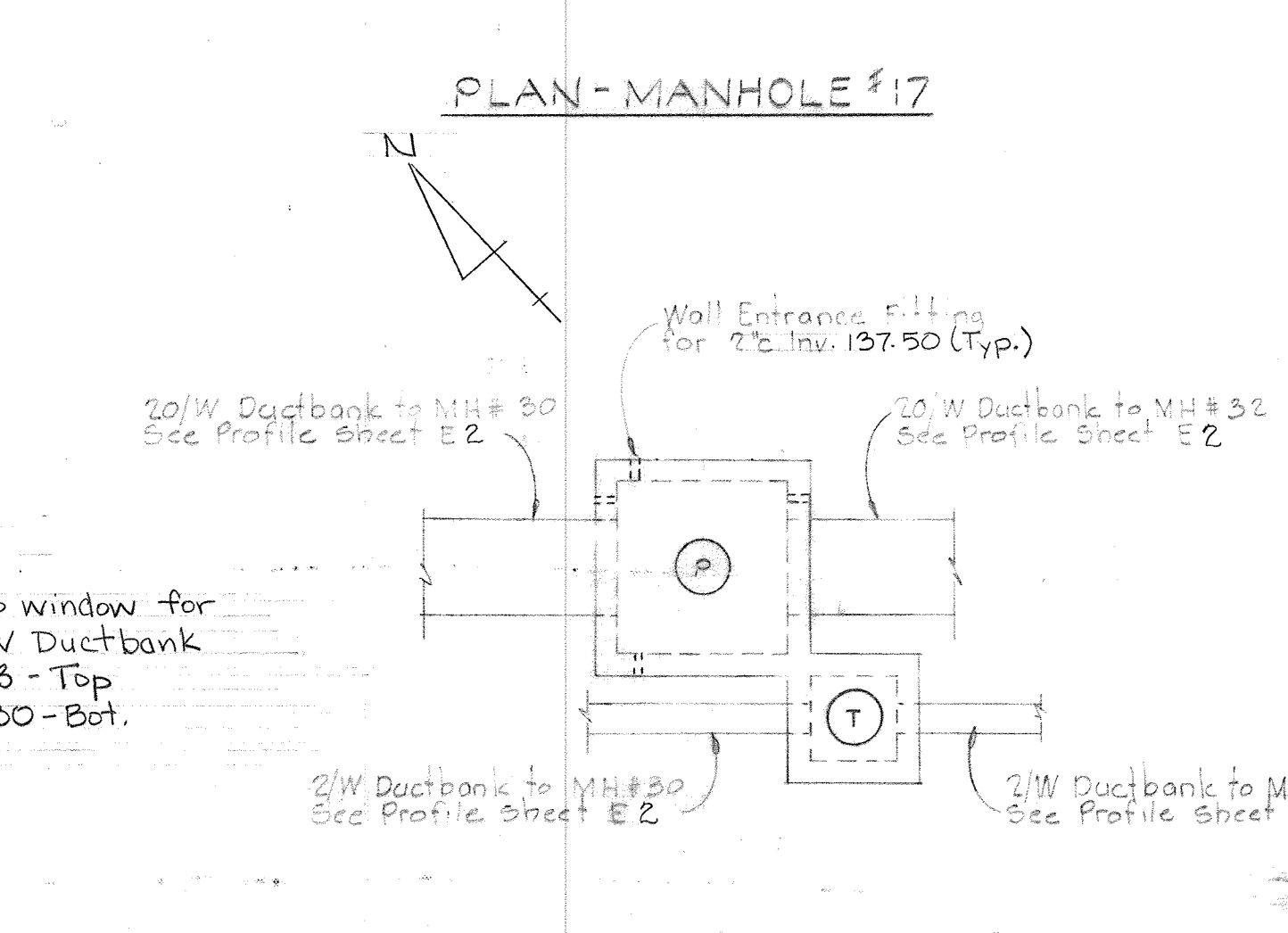
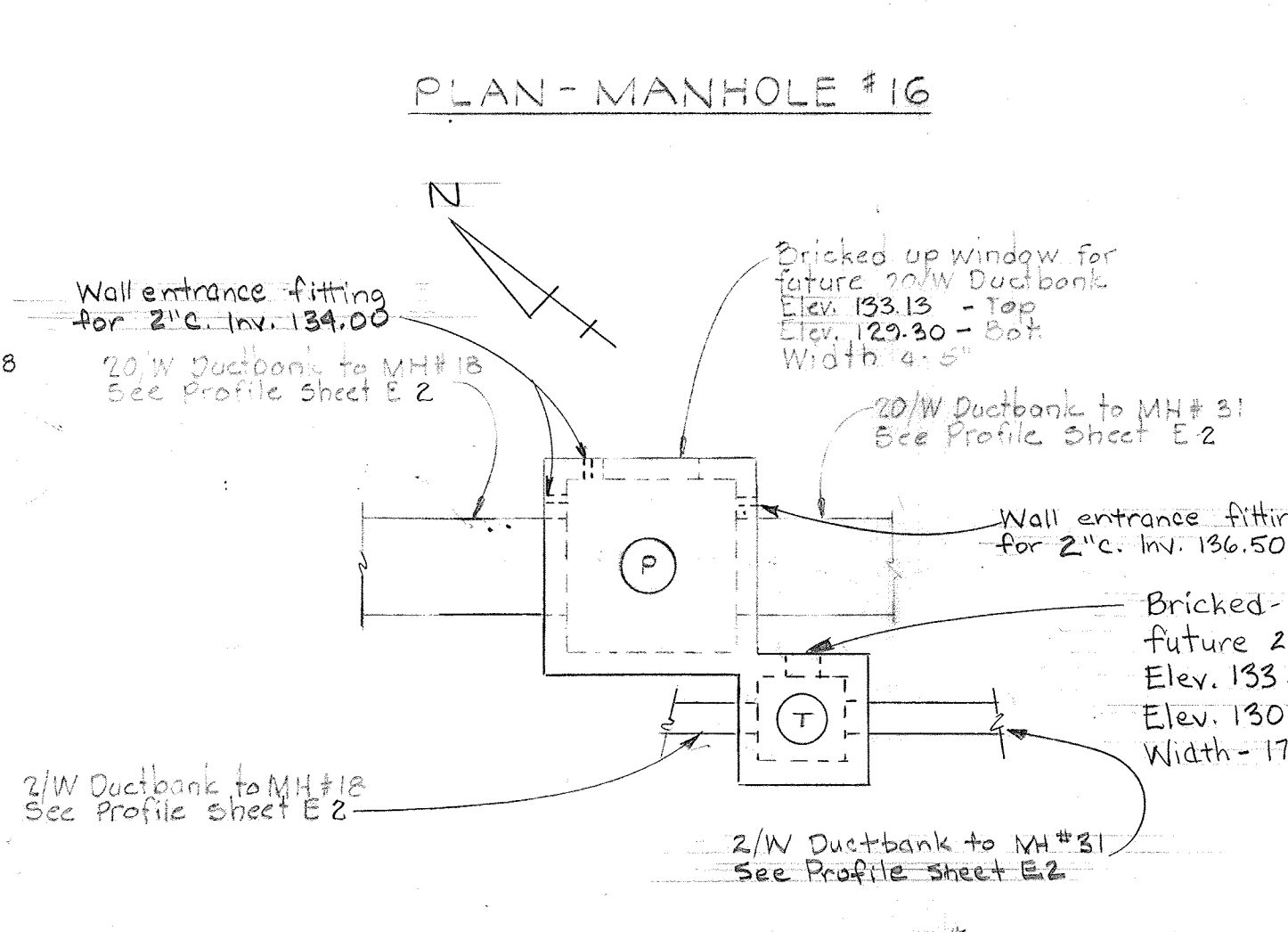
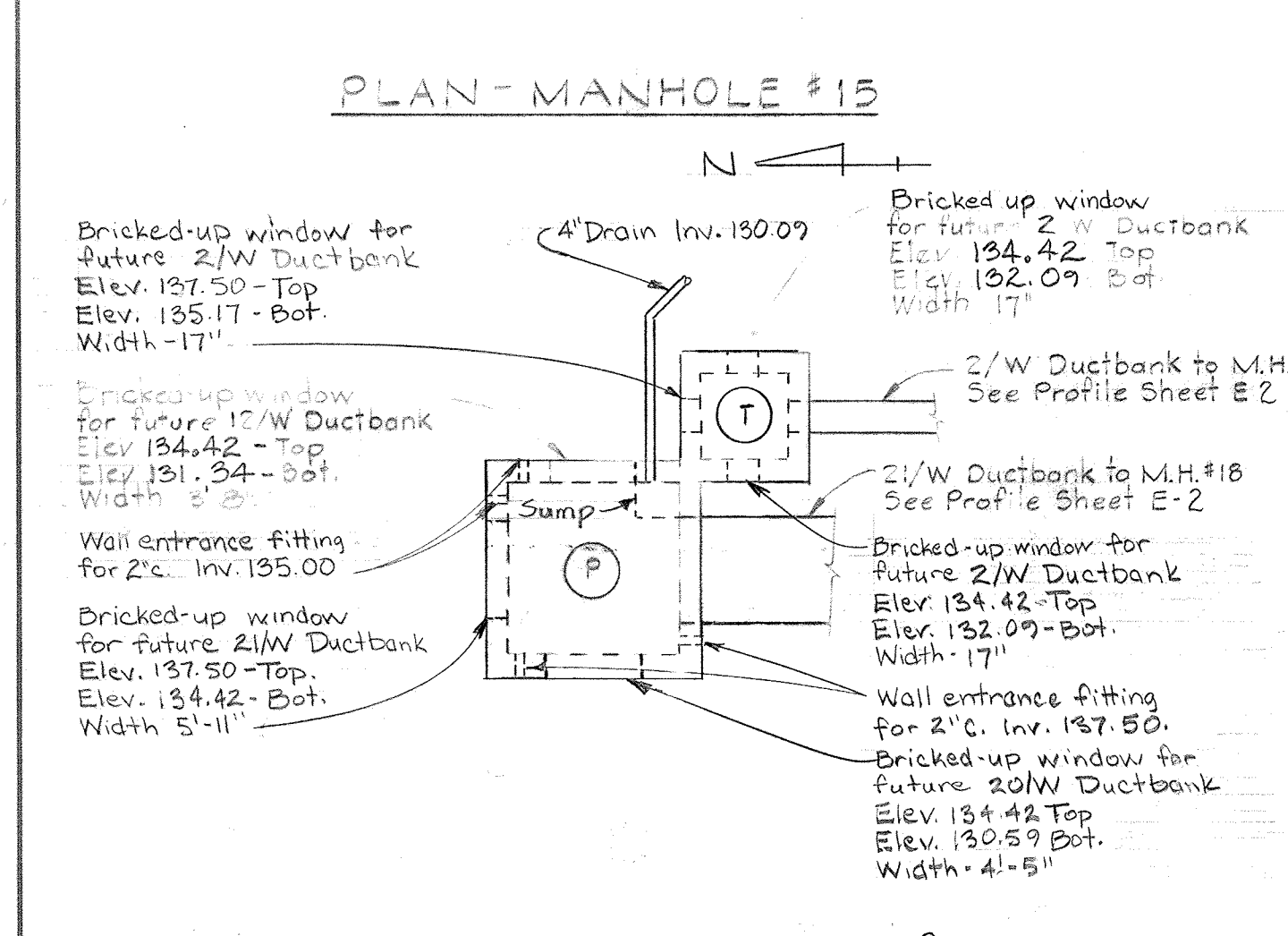
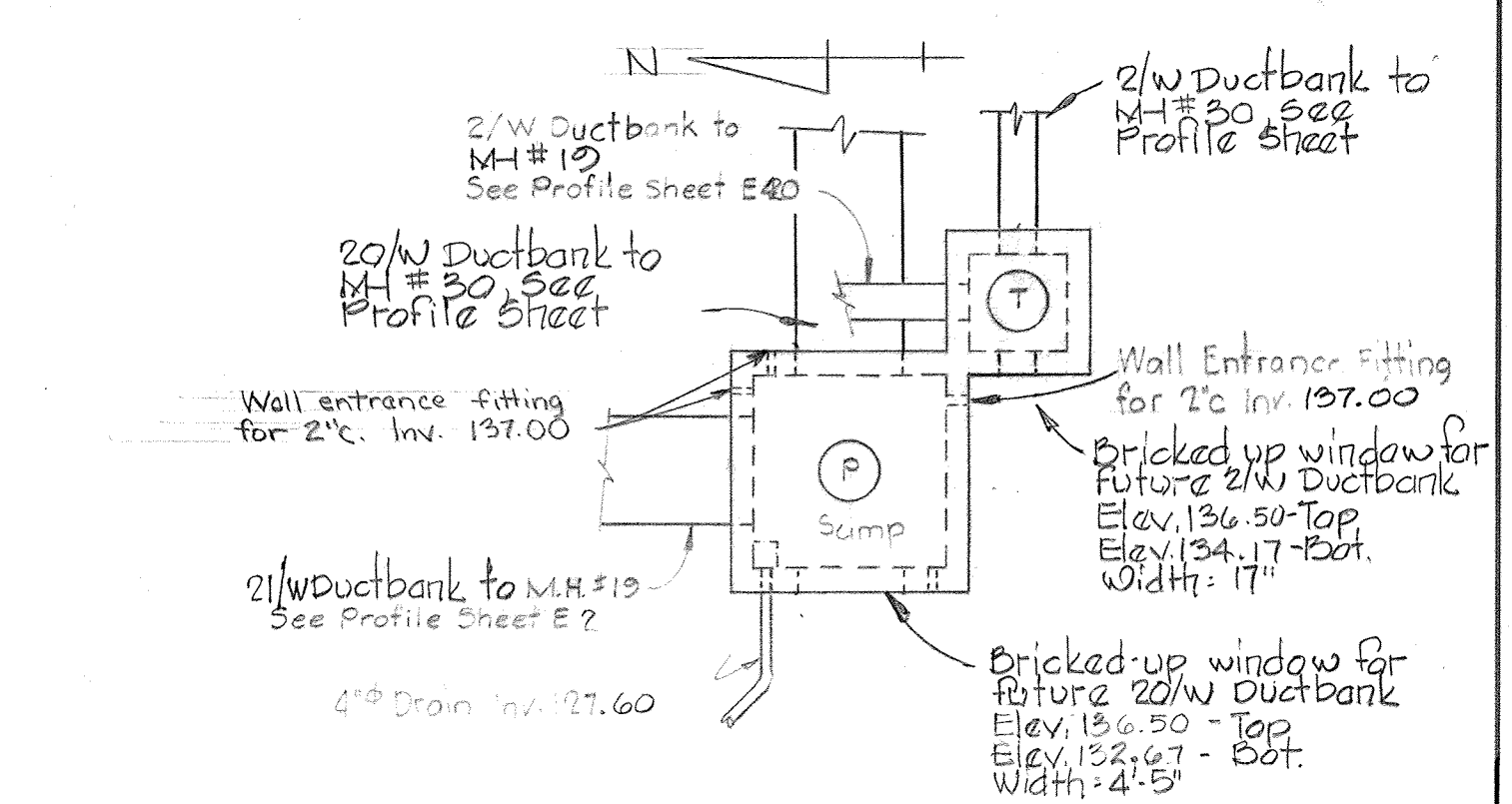
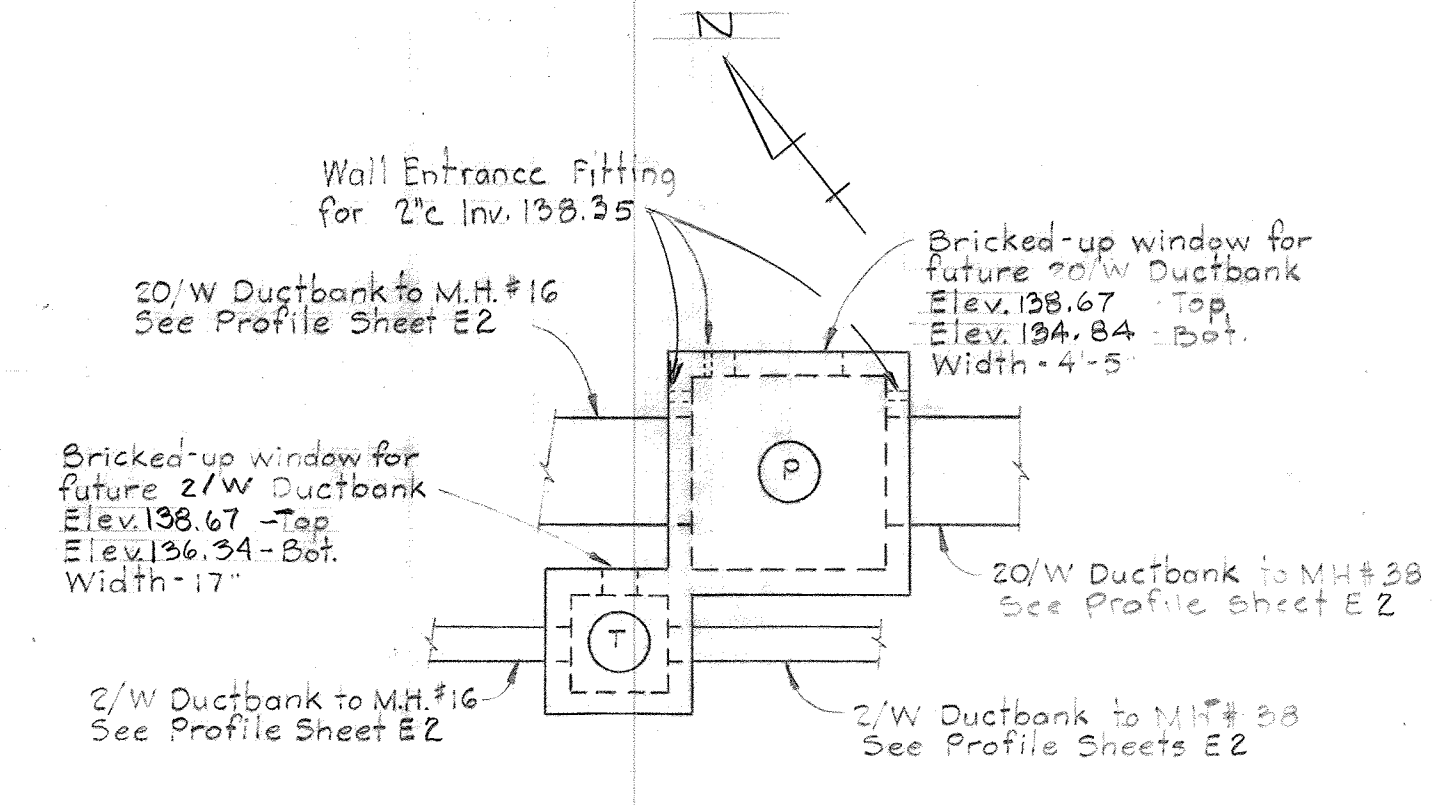
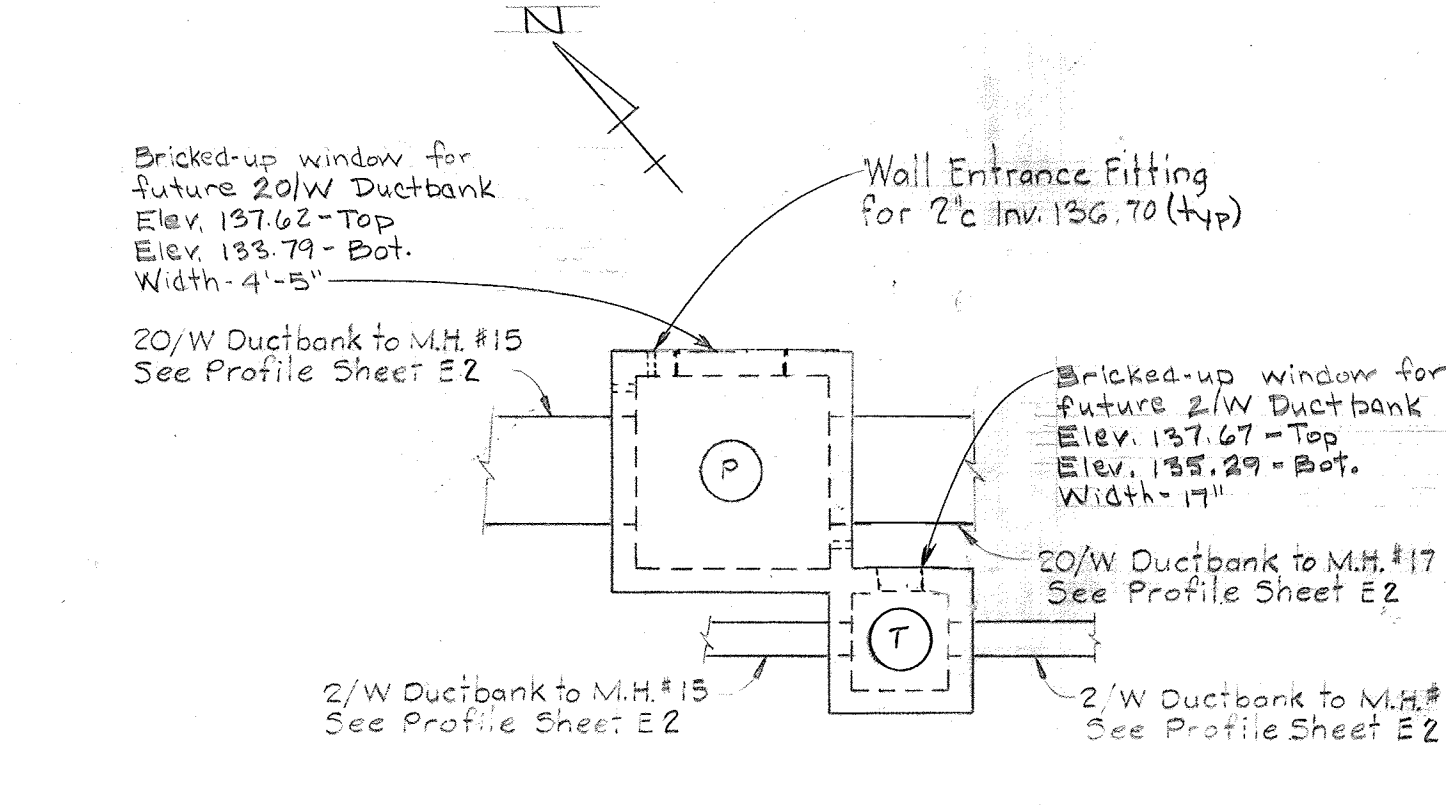
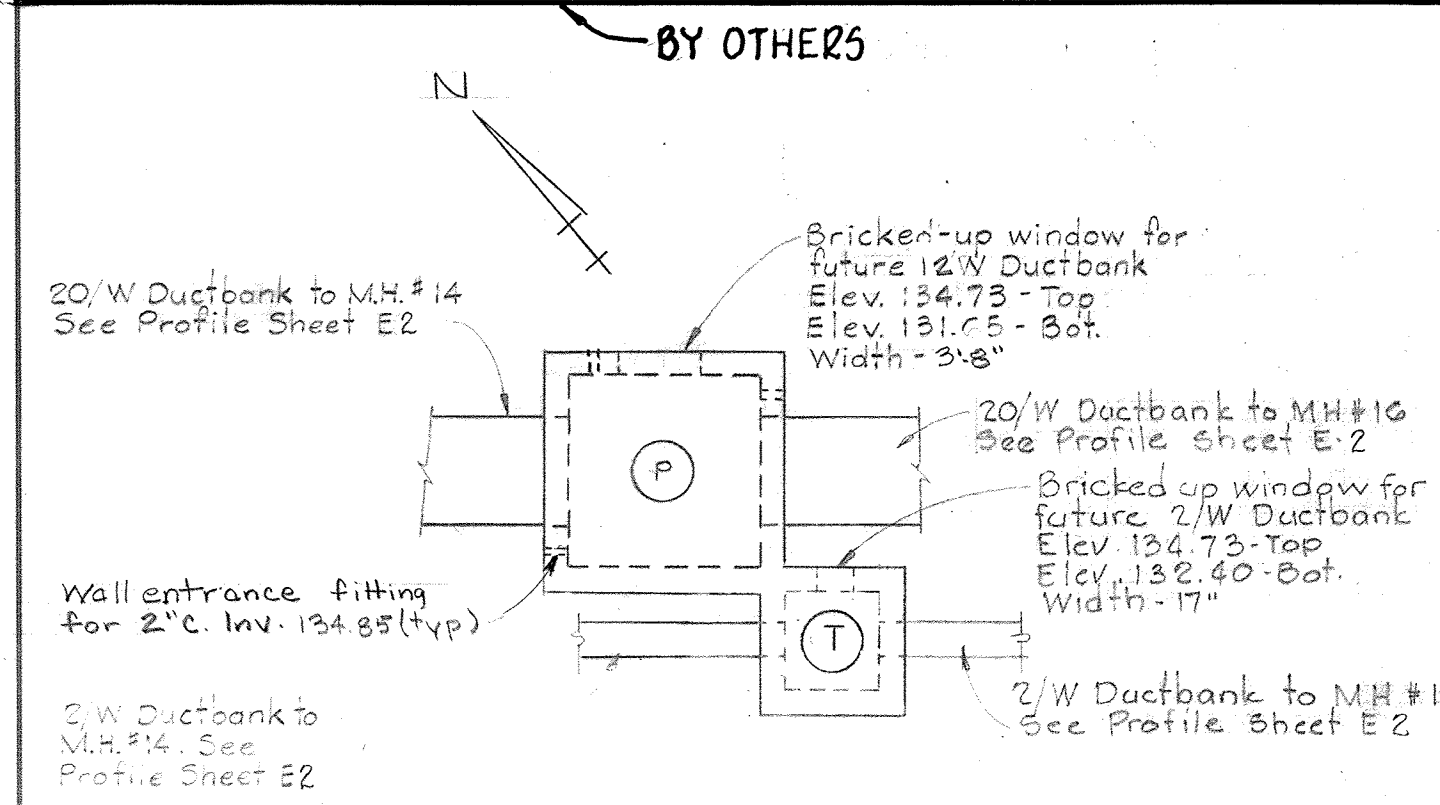
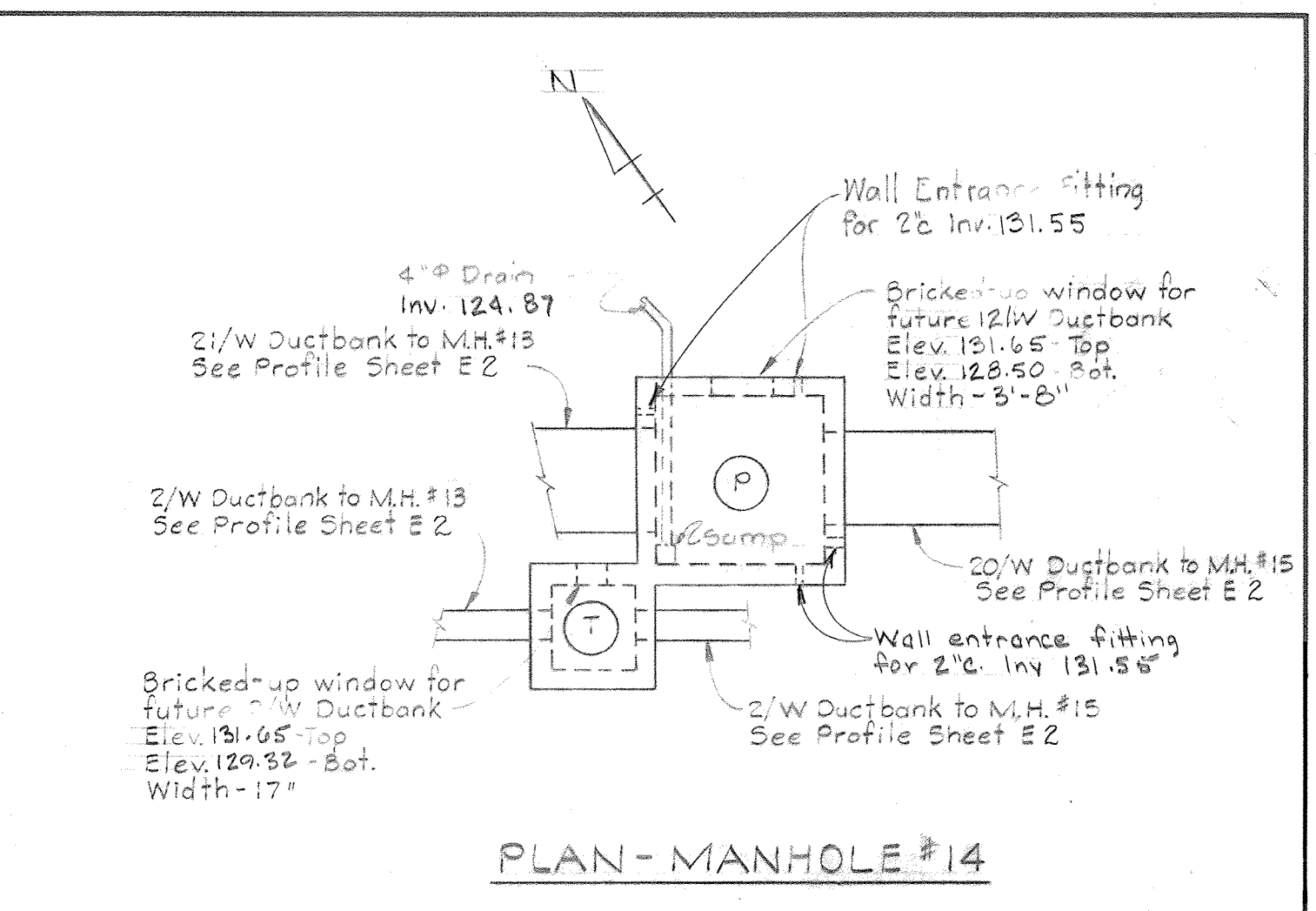
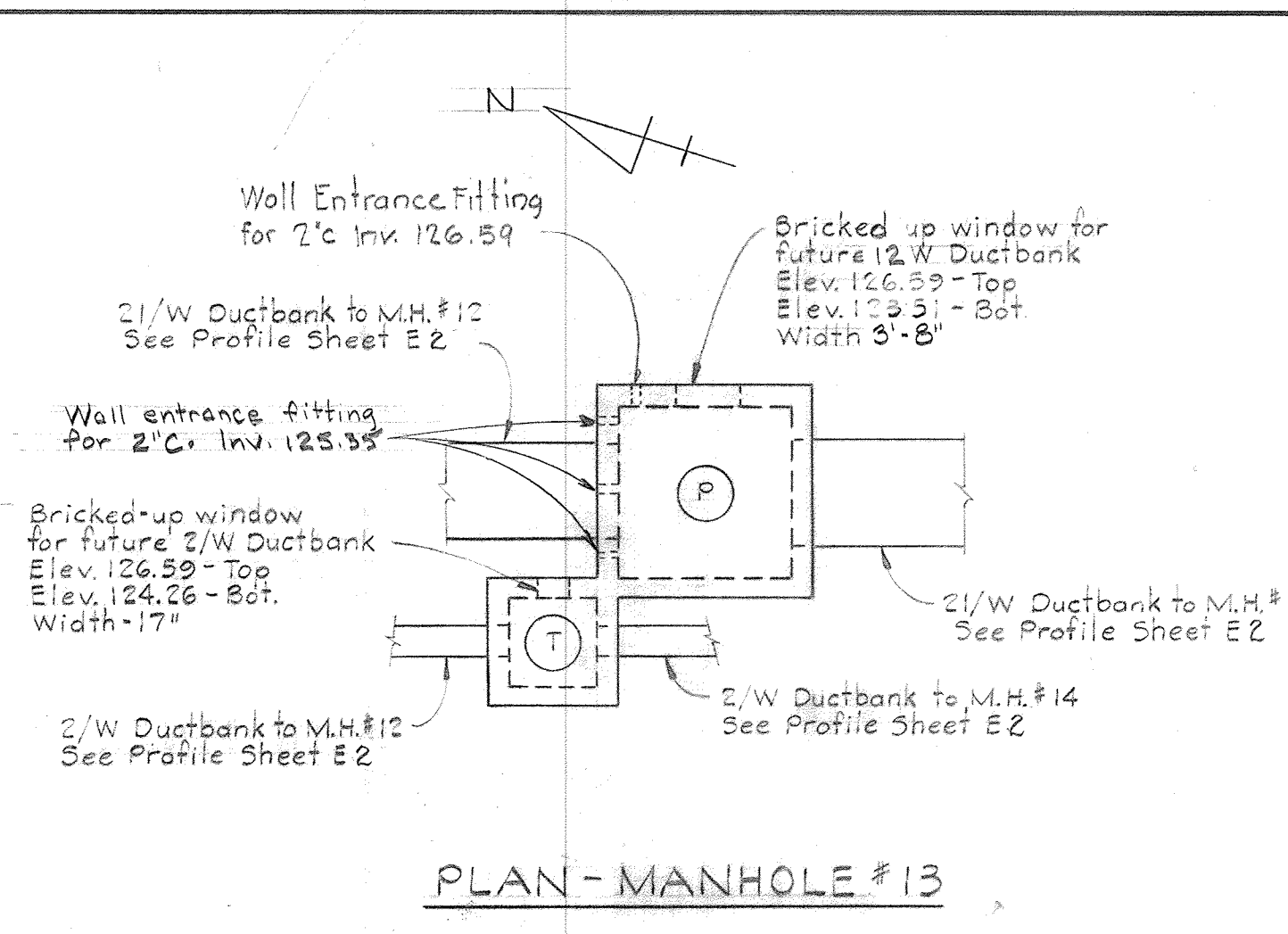
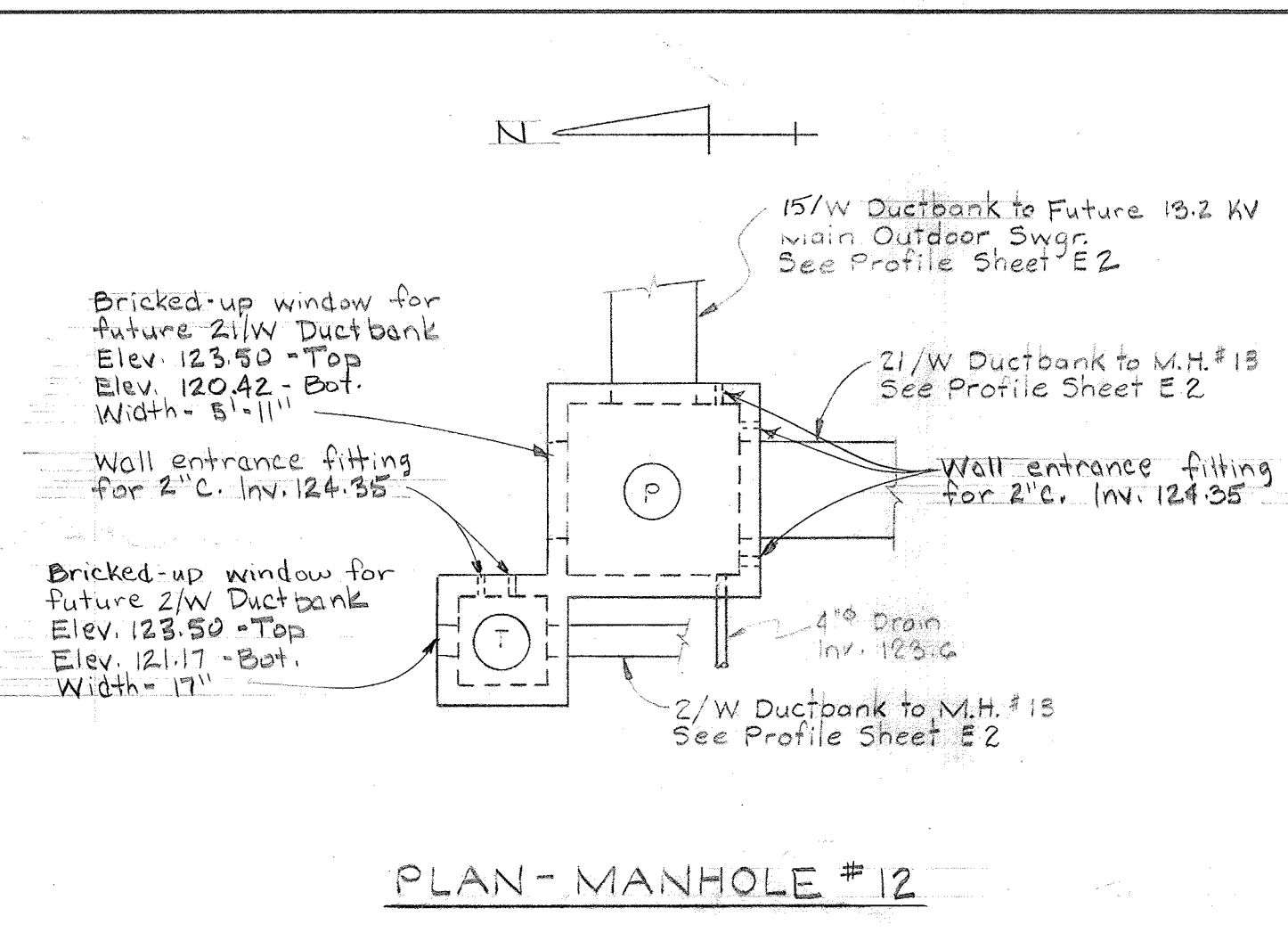
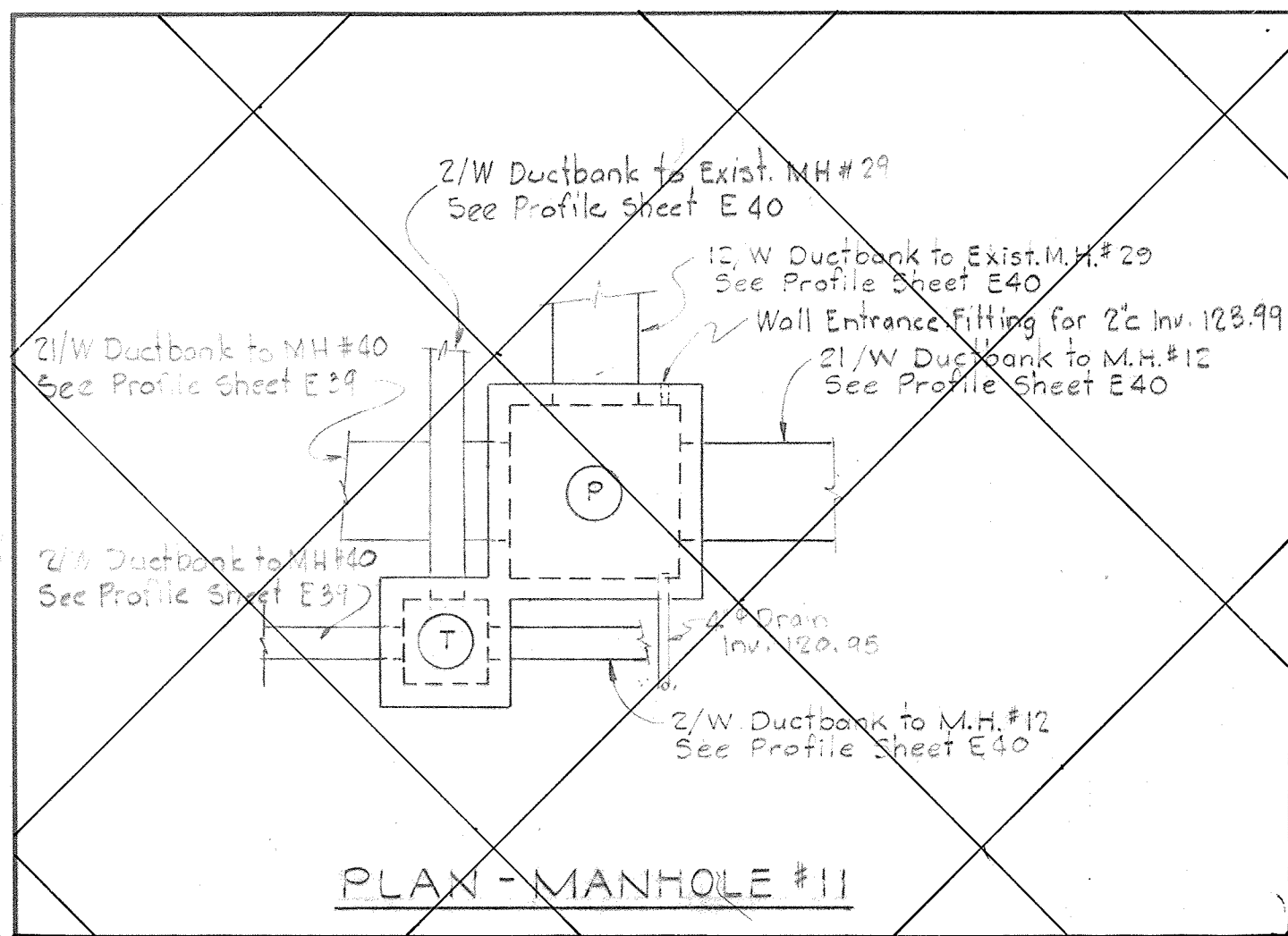
TYPICAL GRADING SECTION FOR MANHOLES
LOCATED IN SHOULDERS OF ROADWAYS
See Typical Road Sections On Sheet C-5
Scale: 1/4" = 1'-0"

NOTES

1. For General Electrical Notes and Legend see Sheet E-2
2. For Elevations of Ductbank see Profiles Sheet E-2
3. For Elevations and size of Bricked up Windows see Sheet E-5
4. For Plan orientation see Sheet E-1
5. For Ductbank Sections see Sheet E-3



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/30/75 DATE W. O. Gilbert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 504-S	ELECTRICAL MISCELLANEOUS UNDERGROUND MANHOLE DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 14 OF 19	SCALE AS NOTED
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WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3/30/75
 W.O. Falbert
 CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 504-S

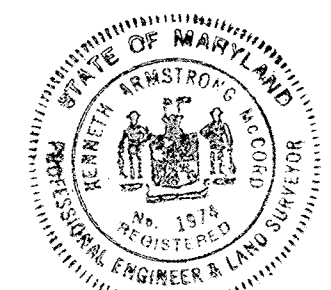
ELECTRICAL
 MISCELLANEOUS
 UNDERGROUND MANHOLE DETAILS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING
 NO. 15
 OF 19

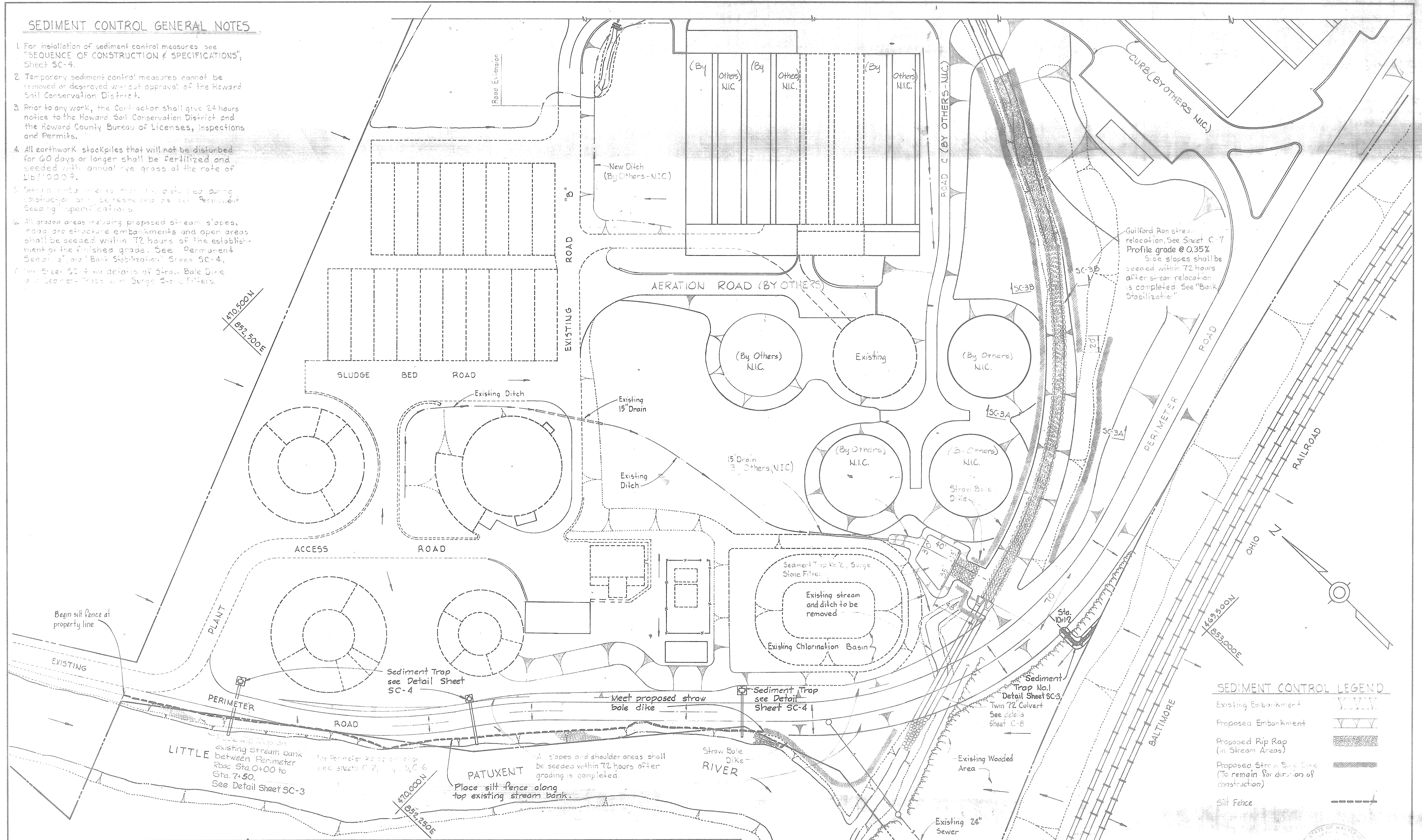
SCALE
 NO
 SCALE

SHEET E-5



SEDIMENT CONTROL GENERAL NOTES

1. For installation of sediment control measures see "SEQUENCE OF CONSTRUCTION & SPECIFICATIONS", Sheet SC-4.
2. Temporary sediment control measures cannot be removed or destroyed without approval of the Howard Soil Conservation District.
3. Prior to any work, the Contractor shall give 24 hours notice to the Howard Soil Conservation District and the Howard County Bureau of Licenses, Inspections and Permits.
4. All earthwork stockpiles that will not be disturbed for 60 days or longer shall be fertilized and seeded with annual rye grass at the rate of 1lb/1000 sq ft.
5. Seeded areas that are disturbed during construction shall be reseeded as per Permanent Seeding Specifications.
6. All graded areas including proposed stream slopes, road and structure embankments and open areas shall be seeded within 72 hours of the establishment of the finished grade. See "Permanent Seeding and Bank Stabilization" Sheet SC-4.
7. See Sheet SC-4 for details of Straw Bale Dike and Leaver Traps with Surge Stone Filters.



SEDIMENT CONTROL LEGEND

- Existing Embankment
- Proposed Embankment
- Proposed Rip Rap (in Stream Areas)
- Proposed Straw Bale Dike (To remain for duration of construction)
- Silt Fence

CERTIFICATION BY THE DEVELOPER
 I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviations from this plan will not be made unless authorized by the Howard Soil Conservation District.
 Signature of Developer: *[Signature]* Date: 3/20/75

CERTIFICATION BY THE ENGINEER
 I certify that this plan for Erosion and Sediment Control represents a practical and workable plan based upon my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: *[Signature]* Date: 3-19-75

Reviewed for Howard Soil Conservation District and meets technical requirements.
 Signature: *[Signature]* Date: 7/20/77
 U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *[Signature]* Date: 7-20-77
 APPROVED DATE
 Howard Soil Conservation District

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 3/20/75
 CHIEF BUREAU OF ENGINEERING

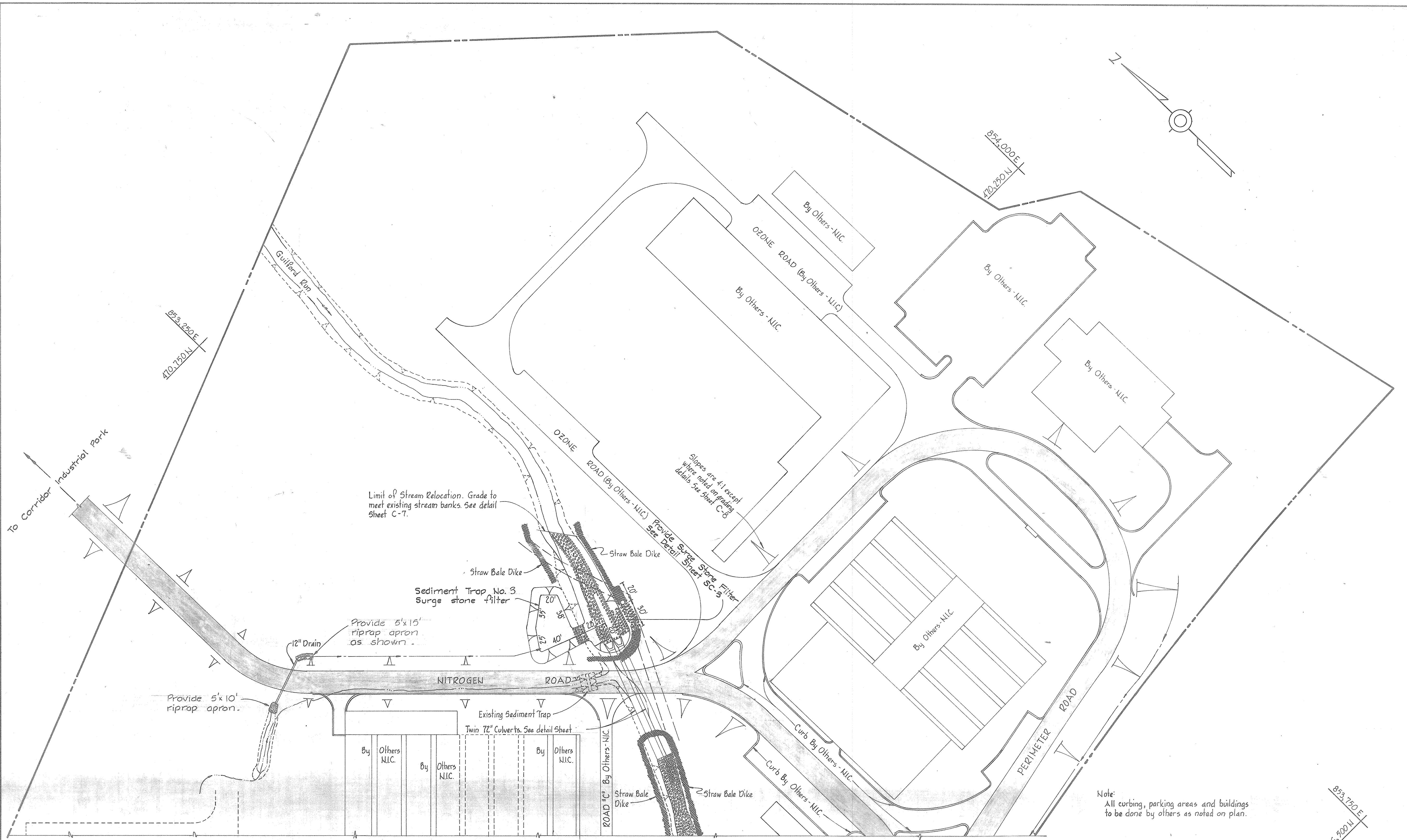
CONTRACT NO. 504-S

SOIL CONSERVATION PLAN

SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 16 OF 19

SCALE 1"=50'

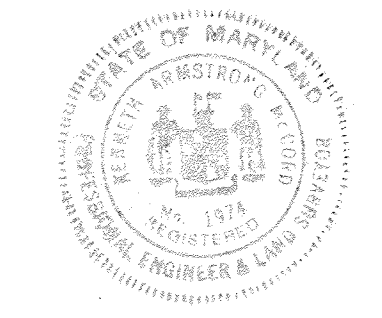


Note:
All curbing, parking areas and buildings
to be done by others as noted on plan.

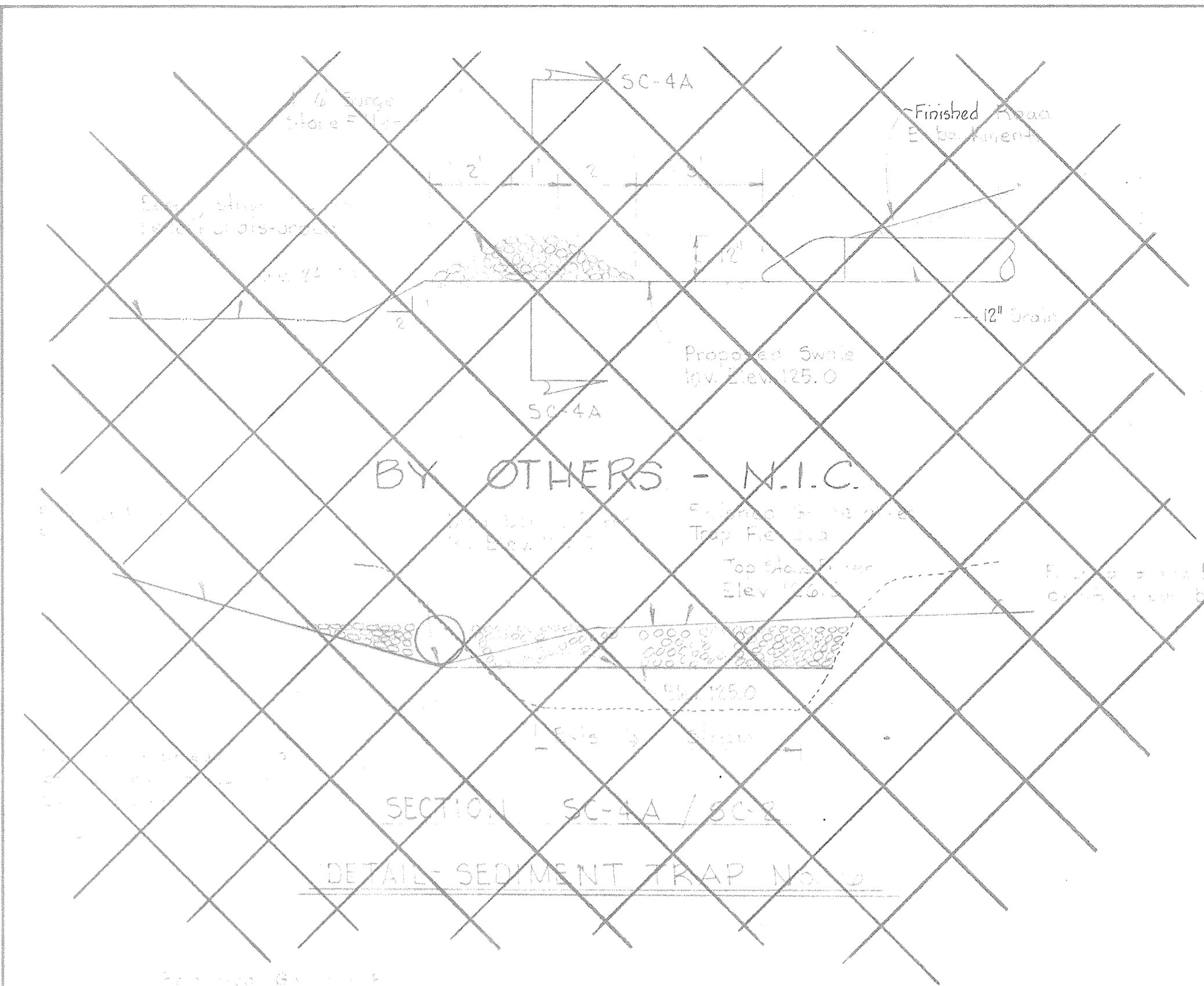
Reviewed for Howard S.C.D.
Name
and meets Technical Requirements
C. Wayne Ray Date 7/20/77
Signature
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED
FOR SOIL EROSION AND SEDIMENT
CONTROL BY THE HOWARD SOIL
CONSERVATION DISTRICT.

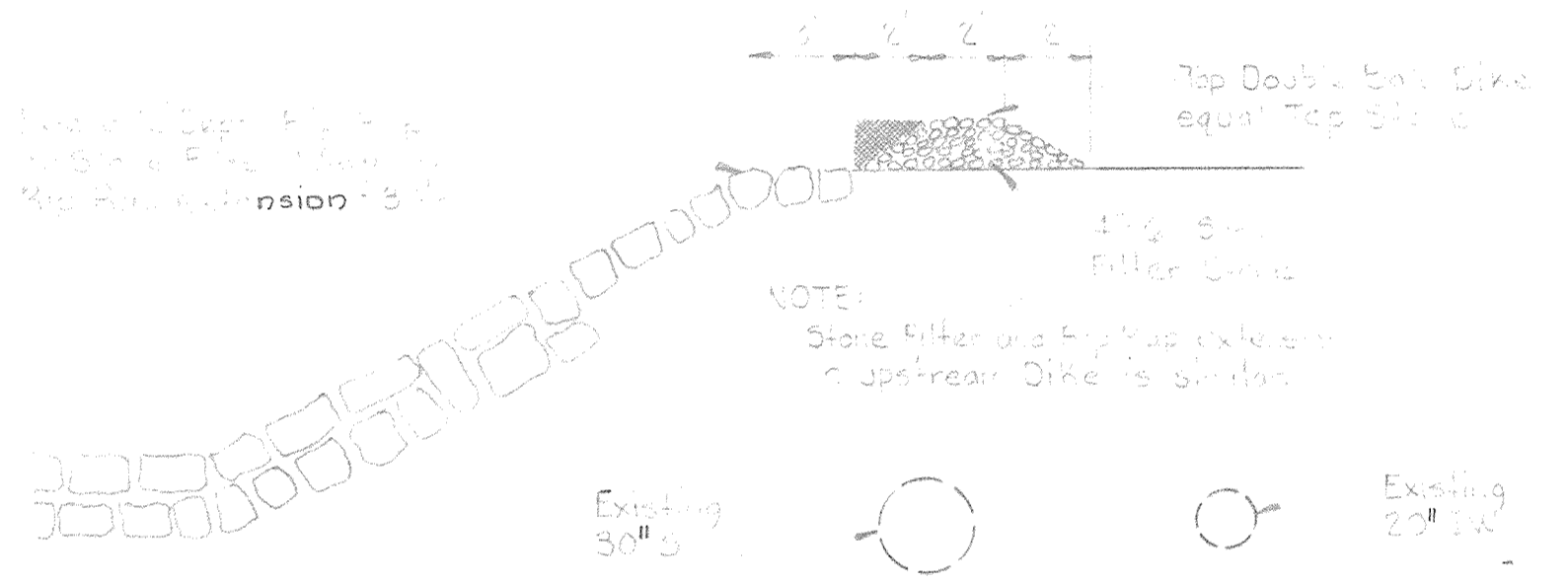
Approved John M. Myers Date 7-20-77
Howard S.C.D.



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE <u>7-27-77</u> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. <u>504-S</u>	SOIL CONSERVATION PLAN	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.4	DRAWING NO. <u>17</u> OF <u>19</u>	SCALE 1" = 50'
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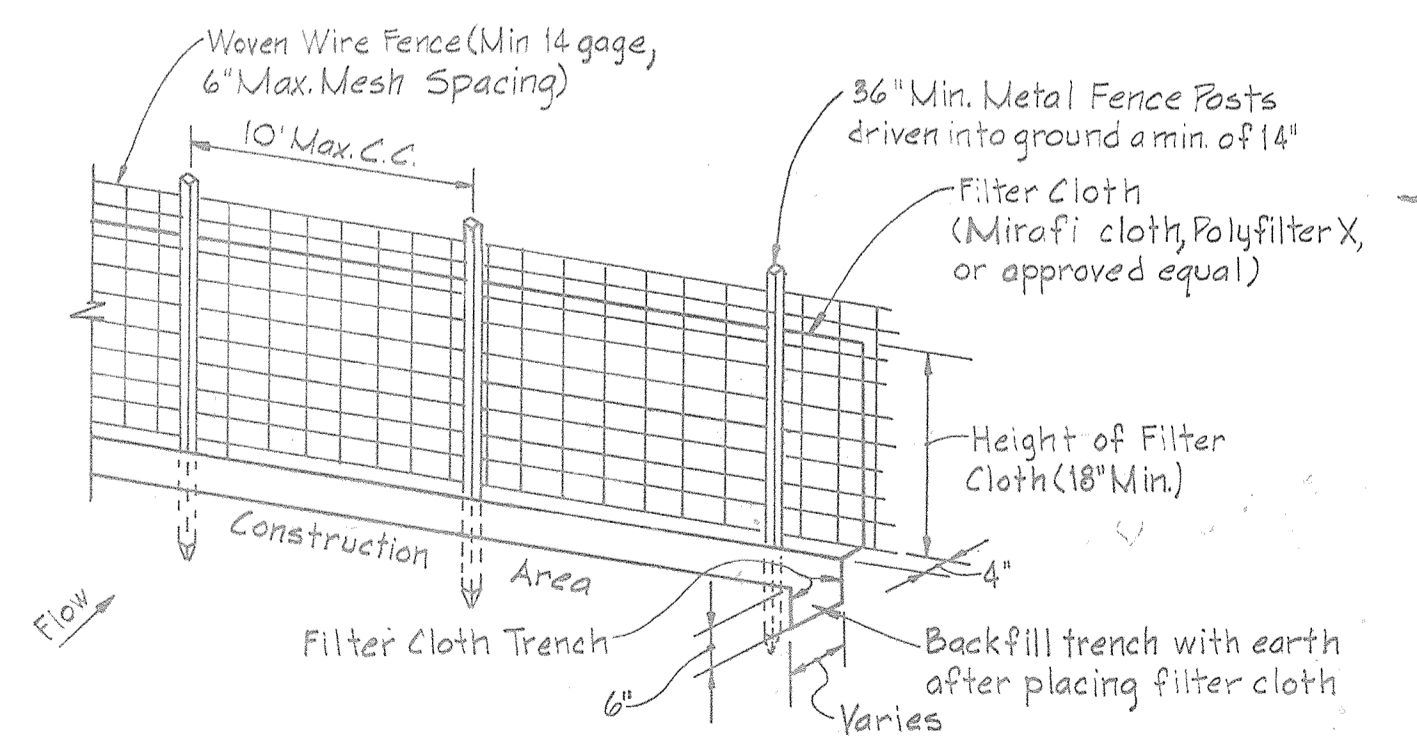


SECTION SC-4A / SC-2
DETAIL - SEDIMENT TRAP NO. 3



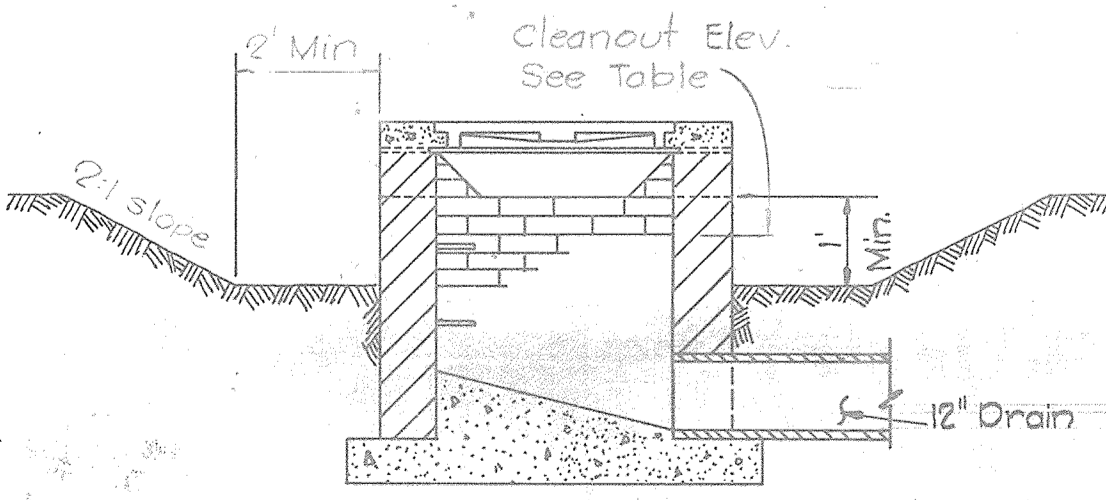
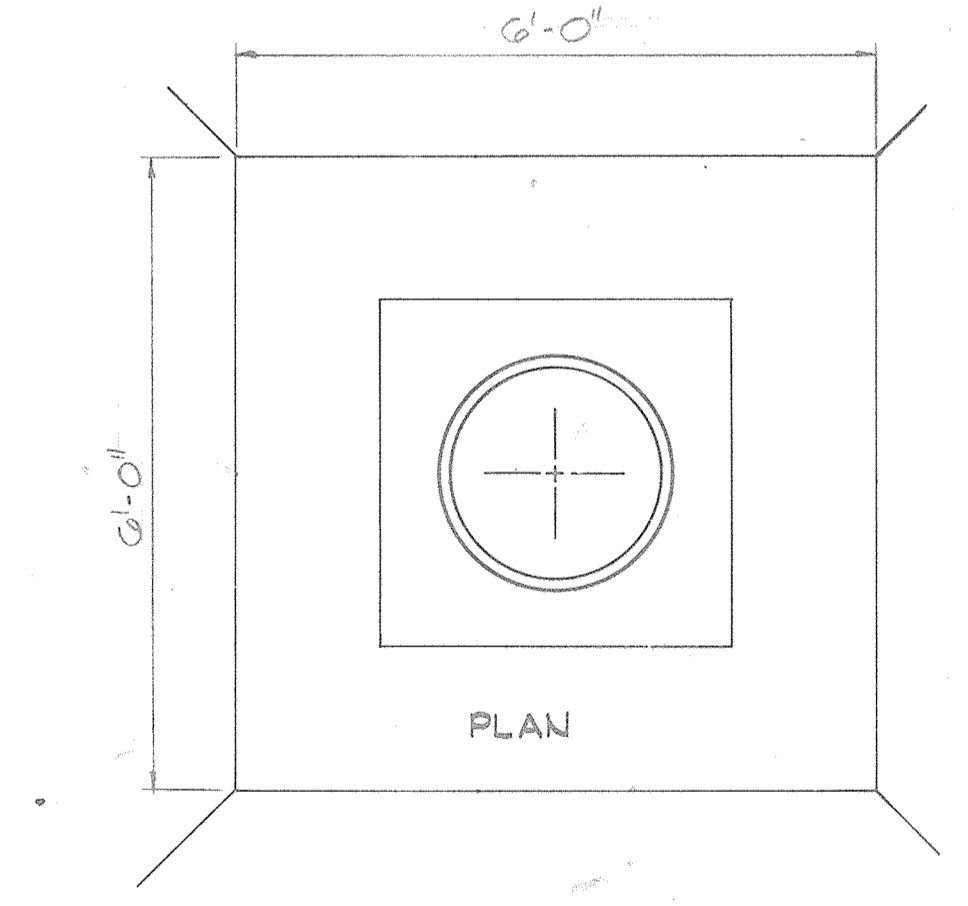
NOTE:
Stone filter and silt trap extension
upstream dike is similar.

DETAIL - STONE FILTER @ 72\"/>



- Notes:
1. Woven Wire fence to be fastened securely to fence posts by use of wire ties.
 2. Filter cloth to be fastened securely to woven wire fence by use of wire ties spaced every 24\"/>
 - 3. Silt fence to be placed in lieu of Straw Bales.

SILT FENCE DETAIL
No Scale



SECTION
DETAIL - YARD INLET SEDIMENT TRAP
No Scale

SEQUENCE OF CONSTRUCTION & SPECIFICATIONS

1. Obtain Grading Permit
2. All clearing and grubbing, temporary seeding, and relocation of Guilford Run shall be completed prior to all remaining work, including excavation of the new stream, existing stream, and stream diversion; grading, stabilization of the new stream, existing stream, and stream diversion; complete stabilization of the bottom and side slopes of the new stream; removal of material; the excavation, construction and backfill of the 72\"/>
- 3. The following Sediment Control Measures shall be provided prior to any Grading work:
 - a. After completion of Guilford Run and the 72\"/>
 - b. Remove the existing dike adjacent to the 72\"/>
 - c. Construct Sediment Trap No. 4 with Surge Stone Filter.
 - d. Construct Storm Drain Systems (Contract 504-5).
- 4. After the above mentioned Sediment Control Measures have been installed, construct the embankment, see detail Sheet C-7 (Contract 504-5). Open areas shall be seeded with grass and slopes shall be seeded with 72 hours after Final Grading is completed. See Permanent Seeding. If a silt fence is installed, it shall be placed facing the Road side in the Grading operation.
- 5. Construct Sediment Trap No. 6 with Surge Stone Filter.
- 6. Install utilities and construct Buildings under Contract 500-5 and 501-5 (to be done by others-N.I.C.)
- 7. Grade the Drainage Ditch and install Storm Drain (Contract 502-5 N.I.C.) with Surge Stone Filter. See B Ditch slopes, within 72 hours after construction is complete. See Permanent Seeding.
- 8. Grade embankment as required under Contract 502-5 (N.I.C.) and construct ditches within 72 hours after Finished Grade is established. See Permanent Seeding.
- 9. Install Utilities and Construct Buildings under Contract 502-5.
- 10. Grade embankment to its required under Contract 503-5 (N.I.C.) and construct ditches within 72 hours after Final Grade is established. See Permanent Seeding.
- 11. Install Ditches and Construct Buildings under Contract 503-5 (to be done by others N.I.C.)
- 12. All Sediment Traps, shall be cleaned out and maintained during the Construction Duration.
- 13. Remove the Temporary Sediment Traps, Surge Stone Filters and Silt, Silt Dikes after construction site is complete and grass has been established in the Contributing Drainage Area.
- 14. Re-Construct the Drainage Outlet Ditches (Sediment Inlet No. 2). Stabilize Ditch bottom and slopes.
- 15. Complete Storm Drain Outlet (Sediment Trap No. 4). Backfill embankment. See Permanent Seeding.
- 16. Backfill, Grade and Seed (Sediment Trap No. 4). See Permanent Seeding.
- 17. Remove Sediment from Guilford Run and the Confluence with the Patuxent River as required.

PERMANENT SEEDING

1. LIME:
 - a. 20 lbs/1000 sq. ft. (1 lb per 100 sq. ft.) Magnesium Oxide.
2. FERTILIZER:
 - a. 75 lbs/1000 sq. ft. (15-10-5)
 - b. 100 lbs/1000 sq. ft. (15-10-5)
3. SEED:
 - a. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
 - b. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
 - c. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
4. MULCH:
 - a. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
 - b. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
5. SOIL:
 - a. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
 - b. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)

BANK STABILIZATION

- LIME SEED MIXTURE:
1. SEED:
 - a. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)
 - b. 100 lbs/1000 sq. ft. (1 lb per 100 sq. ft.)

SITE ANALYSIS

1. Total Area	38.0 Ac	See Note Below
2. Disturbed Area	1.0 Ac	
3. Area to be Vegetated	5.0 Ac	
4. Area to be Impervious	1.0 Ac	

TEMPORARY SEEDING

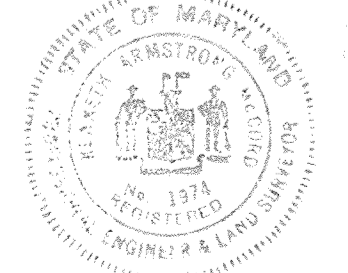
All cleared and grubbed areas to be hydroseeded with the following mixtures in one operation:
 Perennial Ryegrass - 90 lbs/Acre
 Wood Fiber Paper Mulch - 1500 lbs/Acre

Note:
 The above site analysis areas represent the effects of construction under Contract 504-5 only. Construction as noted (BY-OTHERS) will require additional sediment control measures.

Inlet No	Inlet Elev.	Cleanout Elev.
1-5	125.0	124.50
1-6	124.67	124.17
1-7	123.72	123.22

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Approved: *John Wilson* Date 2-20-77
 Howard S.C.D.

Reviewed for: *Howard* S.C.D.
 Name
 and meets Technical Requirements
G. Wayne Ray Date 1/26/77
 Signature
 U.S. Soil Conservation Service



BRUNING 44-510 1839Z