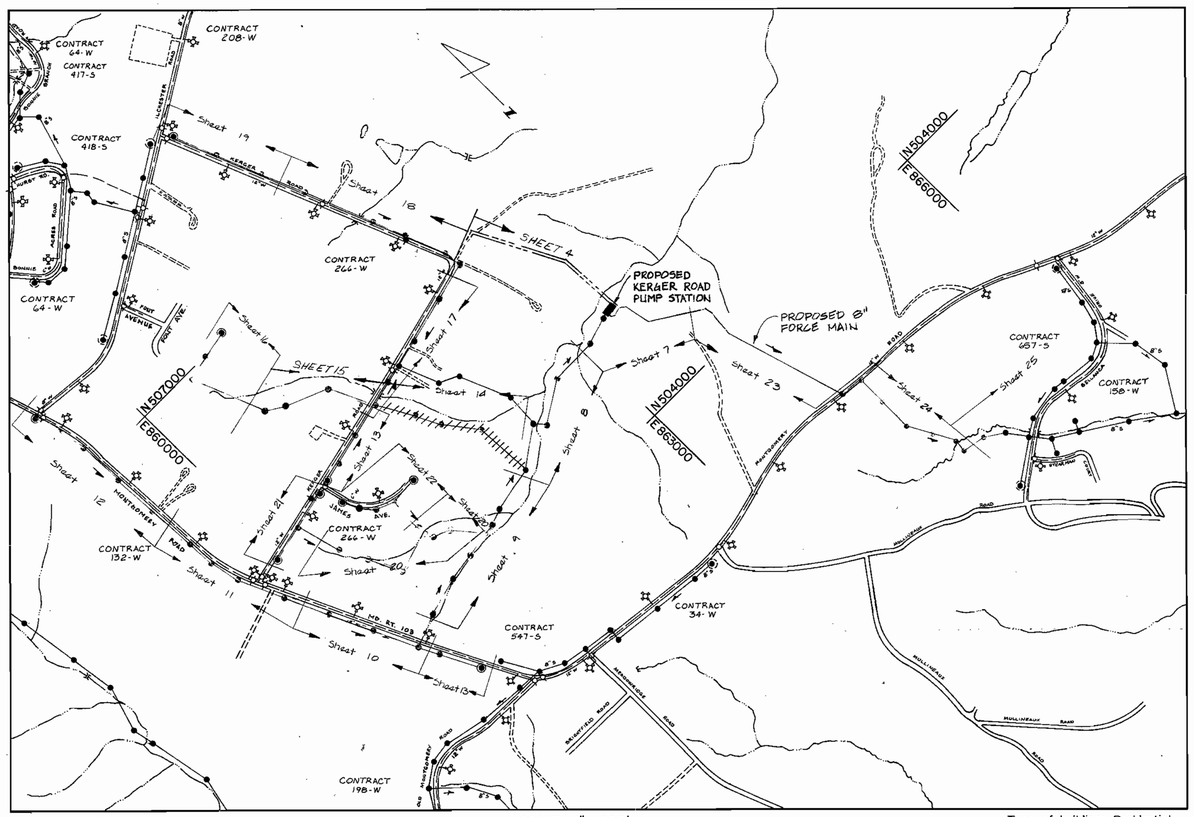
LIST OF DRAWINGS

SHEET	TITLE
1	Location Map
2	Site Development Plan
3	Grading and Sediment Control
4	Access Road Profile
5	Site Development Plan
6	Site Development Plan
7-25	Piping Plan and Profile
26	Pump Station Plan
27	Pump Station Plan
28	Pump Station Sections
29	Architectural Elevations
30	Architectural Plan
31	Architectural Details
32	Structural Details
33	Electrical Details
34	Electrical Details
35	Electrical / Mechanical Details
36	Electrical / Mechanical Details
37	Electrical / Mechanical Details
38	Miscellaneous Details

QUANTITIES			
ITEM	ESTIMATE	AS-BUILT	MATERIAL/SUPPLIER
6" Sewers	1,850		
8" Sewers	17,919		
10" Sewers	1,555		
12" Sewers	2,001		
Manholes	78		
8" F.M.	2,137		
Pump Sta. & Appurt.	1 L.S.		
Air/Vac. Valves	2		
Dewatering Valves	2		
8" Gate Valves	2		
2" WHC	1,650		
10" Gate Valve	1		



Number of SHC's 100
Drainage Area Patapsco

SCALE: 1" = 600'

VICINITY MAP

Type of buildings Residential
Number of parcels 120
Sewer code for County use only: Sewer No. _____

GENERAL NOTES

1. Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractors expense.
2. All horizontal controls are based on Maryland State Coordinates.
3. All vertical controls are based on U.S.G.S. data.
4. All pipe elevations shown are invert elevations.
5. Clear all utilities by a minimum of 6".
6. For details not shown on the drawings, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction. The Contractor shall have a copy of Volume IV on the job.
7. Where test pits have been made on existing utilities, they are noted by the symbol ■ at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the Contractor to his own satisfaction. Any damage to existing facilities due to the Contractor's negligence shall be repaired at the Contractor's expense.
8. Manholes designated W.T. in plan and profile shall have watertight frame and covers, Standard Detail G 5.52. Where watertight manhole frame and cover is used, set top of frame 1'-6" above finished grade only where noted on the drawings.
9. Manholes shown with 12" and 16" walls are brick manholes only.
10. Contractor shall notify the following utilities or agencies at least five working days before starting work shown on these plans:
    State Highway Administration - 531-5533
    Baltimore Gas & Electric Co. - Contractor Services 850-4620
    Baltimore Gas & Electric Co. Under Ground Damage Control - 859-9004
    Baltimore Gas & Electric Co. Trouble Shooting - 298-9001
    Miss Utility - 1-559-0100
    Colonial Pipeline Co. - 795-1390 C&P Telephone 1-800-257-7777
    Bureau of Utilities, Howard County Depart. of Public Works - 992-2366
11. Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the Contractor.
12. Contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.
13. All sewer main shall be C.S.P.X., R.C.S.P., V.C.P.X., A.C.P. Class 2400 or P.V.C. unless otherwise noted.
14. The Contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.
15. All manholes shall be 4'-0" inside diameter unless otherwise noted.
16. Force mains shall be D.I.P. only.
17. **All sediment control measures, including these measures not shown on these drawings, shall be implemented in accordance with Article 15 of the Howard County Design Manual and the 1983 STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.**
18. All House connections are to be installed by open cut.
19. All buried fittings shall be buttressed in accordance with Howard County Standard Details. △

CAPITAL PROJECT S-6089
CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
HOWARD COUNTY MARYLAND
DEPARTMENT OF PUBLIC WORKS

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROWNLEY — No. 11668 — PROFESSIONAL ENGINEER

DES: C.B.
DRN: C.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
C.B.	△	ADD NOTE NO. 19.	

LOCATION MAP
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
ELECTION DISTRICT NO. 1

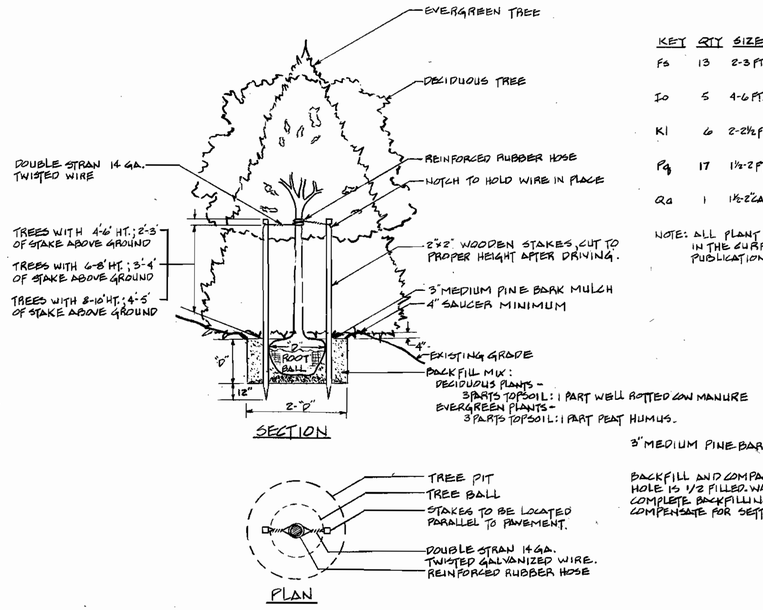
600' SCALE MAP NO. 31, 37 BLOCK NO. 14, 15, 20, 21, 22: 3, 4

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 1 OF 38 #2

AS-BUILT 9/6/89



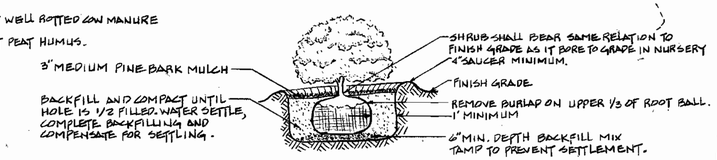
TREE PLANTING DETAIL

NOT TO SCALE

PLANTING SCHEDULE

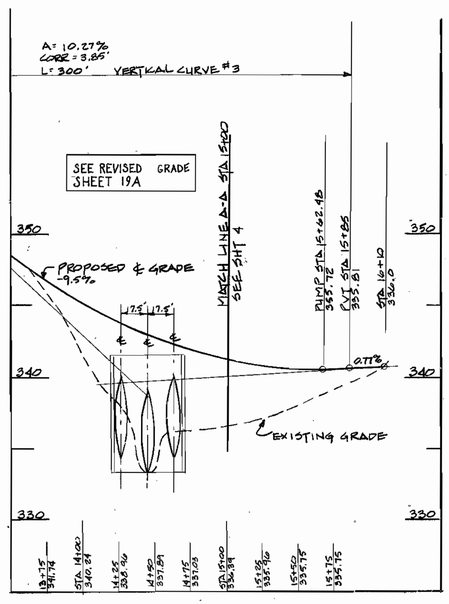
KEY	QTY	SIZE	BOTANICAL NAME	COMMON NAME	SPACING	ROOT
Fs	13	2-3 FT	Forsythia suspensa	WEEPING FORSYTHIA	5' O/C	B&B
Io	5	4-6 FT.	Ilex opaca	AMERICAN HOLLY	10' O/C	B&B
Kl	6	2-2½ FT.	Kalmia latifolia	MOUNTIAN LAUREL	5' O/C	B&B
Pq	17	1½-2 FT.	Parthenocissus quinquefolia	VIRGINIA CREEPER	5' O/C	B&B
Qa	1	1½-2" CAL.	Quercus alba	WHITE OAK	-	B&B

NOTE: ALL PLANT MATERIALS SHALL CONFORM TO THE SPECIFICATIONS SET FORTH IN THE CURRENT EDITION OF THE AMERICAN STANDARDS FOR NURSERY STOCK PUBLICATION BY THE AMERICAN ASSOCIATION OF NURSERYMEN.



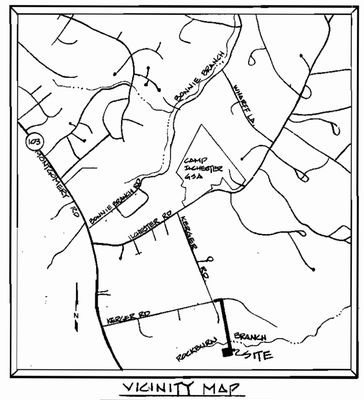
SHRUB PLANTING DETAIL

NOT TO SCALE



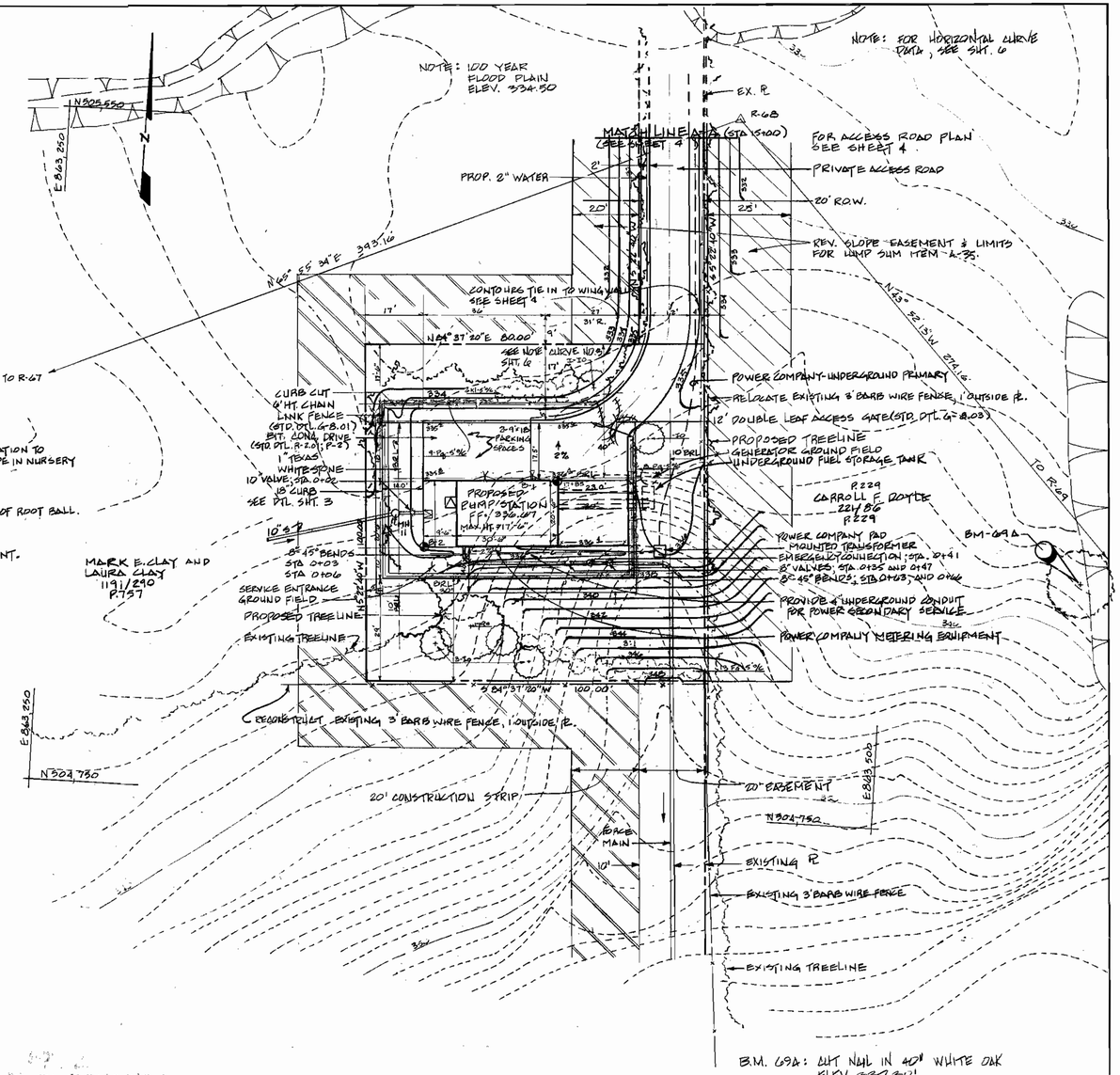
ENTRANCE ROAD PROFILE (CONT)

SCALE 1" = 50' HORIZ
1" = 5' VERT.



VICINITY MAP

SCALE 1" = 1000'



SITE DEVELOPMENT PLAN

SCALE: 1" = 20'

LEGEND

- FENCE
- PROPOSED TREELINE
- EXISTING TREELINE
- PROPOSED PLANTING
- EXISTING GRADE
- PROPOSED GRADE
- PROPERTY LINE

SITE ANALYSIS

AREA OF PARCEL = 0.95 ± AC.; 41,475 SQ. FT.
PRESENT ZONING R-20
FLOOR AREA = 625.25 SQ. FT.
NUMBER OF EMPLOYEES N/A
PARKING SPACES REQUIRED = 2
PARKING SPACES PROVIDED = 2

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL #
HOWARD CO. KERGER ROAD PUMP STATION			N/A	P. 244
PLAT # OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
784/107	21	R-20	31	1	6011
WATER CODE W-5			SEWER CODE S-5		

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
1191/270 P 757	5341 KERGER ROAD
221/86 P 229	5329 KERGER ROAD
P 244	5337 KERGER ROAD

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

ENGINEER'S CERTIFICATION

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

Date: 12/2/85
JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
Liber - 784, Folio - 107
Tax Map 31, Parcel 244
Zoned R-20

DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 3-16-87

DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

Reviewed for Howard County S.C.D. and meets technical requirements

Date: 3-30-87
U.S. SOIL CONSERVATION SERVICE

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.

Approved: Date: 3-27-87
HOWARD COUNTY S.C.D.

APPROVED: For Public Sewage Systems
HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER — DATE 3-27-87

APPROVED Howard County Office of Planning and Zoning
PLANNING DIRECTOR — DATE 3-31-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION — DATE 3-31-87

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 3-30-87
CHIEF, BUREAU OF ENGINEERING — DATE 3.25.87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROOKS — No. 13173 — REGISTERED PROFESSIONAL ENGINEER

DES: TJB			
DRN: TJB			
CHK: TJB			
DATE: 5/24/85	BY	NO.	REVISION	DATE

SITE DEVELOPMENT PLAN SHEET 1 OF 5
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

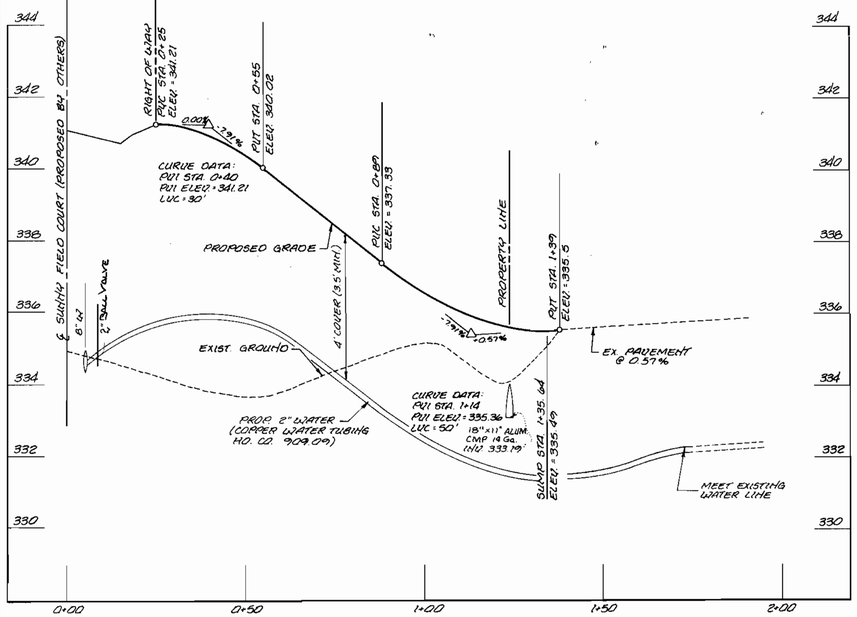
SCALE AS SHOWN

SHEET 2 OF 38
SEE 1 of 5

AS-BUILT 9/6/89

SDP-86-17

38950
OZALID



ENTRANCE ROAD PROFILE

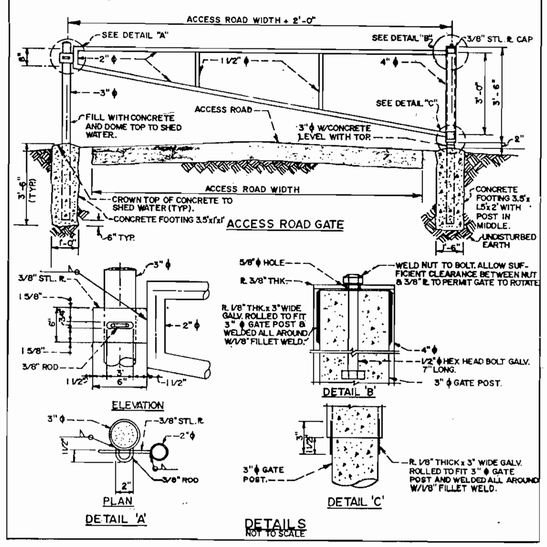
SCALE: 1" = 2' V.
1" = 20' H.

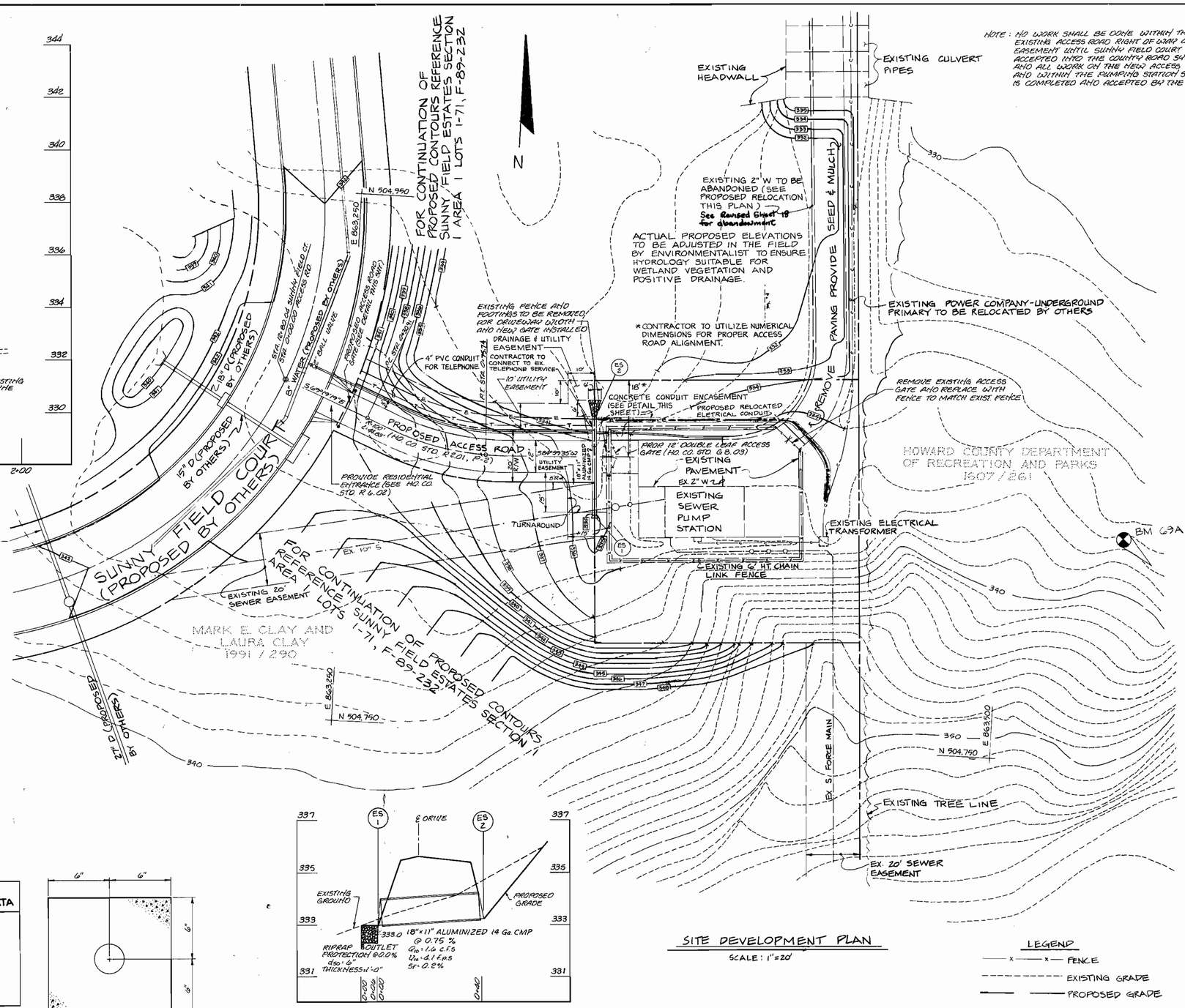
STRUCTURE SCHEDULE			
NO.	TYPE	LOCATION	REMARKS
ES 1	18"x11" CMP END SECTION	SEE PLAN	ALUMINIZED
ES 2	18"x11" CMP END SECTION	SEE PLAN	ALUMINIZED

ACCESS ROAD GATE DETAIL

NOTES

1. ALL METAL USED IN THE MANUFACTURE OF THE ACCESS ROAD GATE TO BE HOT DIP GALVANIZED. ALL WELDS & PIPE TO BE PAINTED & TOUCHED UP IN ACCORDANCE WITH STANDARD SPECIFICATION S and IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
3. ALL PIPE TO BE SCHEDULE 40 STEEL. DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
4. PADLOCK WILL BE FURNISHED BY Howard County.
5. CONTRACTOR SHALL PROVIDE AN ADDITIONAL 3" ϕ POST WITH 3/8" ROD. LOCATE TO HOLD GATE IN AN OPEN POSITION 90° FROM THAT SHOWN BELOW.
6. GATE TO SWING IN TOWARDS pumping station.
7. WIDTH OF GATE NOT TO EXCEED 16 FEET.

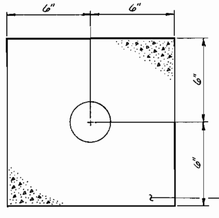




SITE DEVELOPMENT PLAN

SCALE: 1" = 20'

℄ ACCESS ROAD HORIZONTAL CURVE DATA
PC STA. 0+30.91
PT STA. 0+75.74
A 25°41'09"
R 100.00'
T 22.80'
E 2.57
Dc 57°17'45"
L 44.83'
CHD BRG S 82°09' 54" E
CHD DIST. 44.46'



TYPICAL CONDUIT CONCRETE ENCASEMENT DETAIL

N.T.S.

LEGEND

- —— x —— x —— FENCE
- ---------- EXISTING GRADE
- ———— PROPOSED GRADE

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
Liber - 784 , Folio - 107
Tax Map 31, Parcel 244
Zoned R-20

SUBDIVISION NAME: KERGER ROAD PUMP STATION			HOWARD CO.	SECT. / AREA N/A	LOT / PARCEL # P. 244
PLAT # OR L/F 784/107	BLOCK # 21	ZONE R-20	TAX/ZONE MAP 31	ELEC. DIST. 1	CENSUS TR. 6011
WATER CODE W-5			SEWER CODE S-5		

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5-28-92
CHIEF, BUREAU OF ENGINEERING — DATE 5-28-92
CHIEF, BUREAU OF UTILITIES — DATE 6-1-92
CHIEF, UTILITY DESIGN DIVISION — DATE 5-28-92

JOHN E. HARMS JR. AND ASSOCIATES INC.
CONSULTING ENGINEERS · PLANNERS · SURVEYORS
8808 CENTRE PARK DRIVE · SUITE 110
COLUMBIA, MARYLAND 21045
TELEPHONE (301) 740-5200

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16192 — REGISTERED PROFESSIONAL ENGINEER

LES TAB
CRN DGH
CHK RHV
DATE 5/22/92

BY	NO.	REVISION	DATE
TAB/DGH	1	RELOCATE PUMP STATION ENTRANCE ROAD	

600' SCALE MAP NO. 31 22

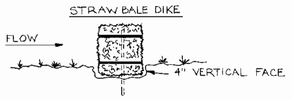
PUMPING STATION ACCESS ROAD RELOCATION

KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION

HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

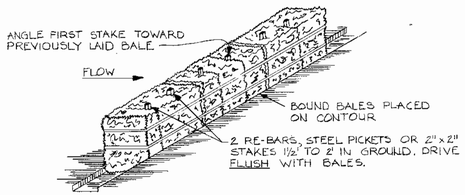
SCALE AS SHOWN

SHEET 2A OF 38



BEDDING DETAIL

STANDARD SYMBOL SBD



ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED INTO SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STRAW BAIL DIKE DETAIL

NOT TO SCALE

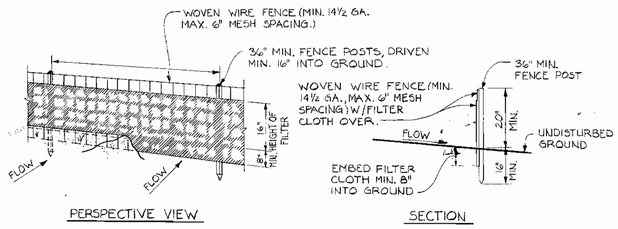
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MIDSECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD.

FENCE: WOVEN WIRE, 14 GA., 6" MAX. MESH OPENING.

FILTER CLOTH: FILTER X, MIRAFI 100X. STABILINKA T140N OR APPROVED EQUAL.

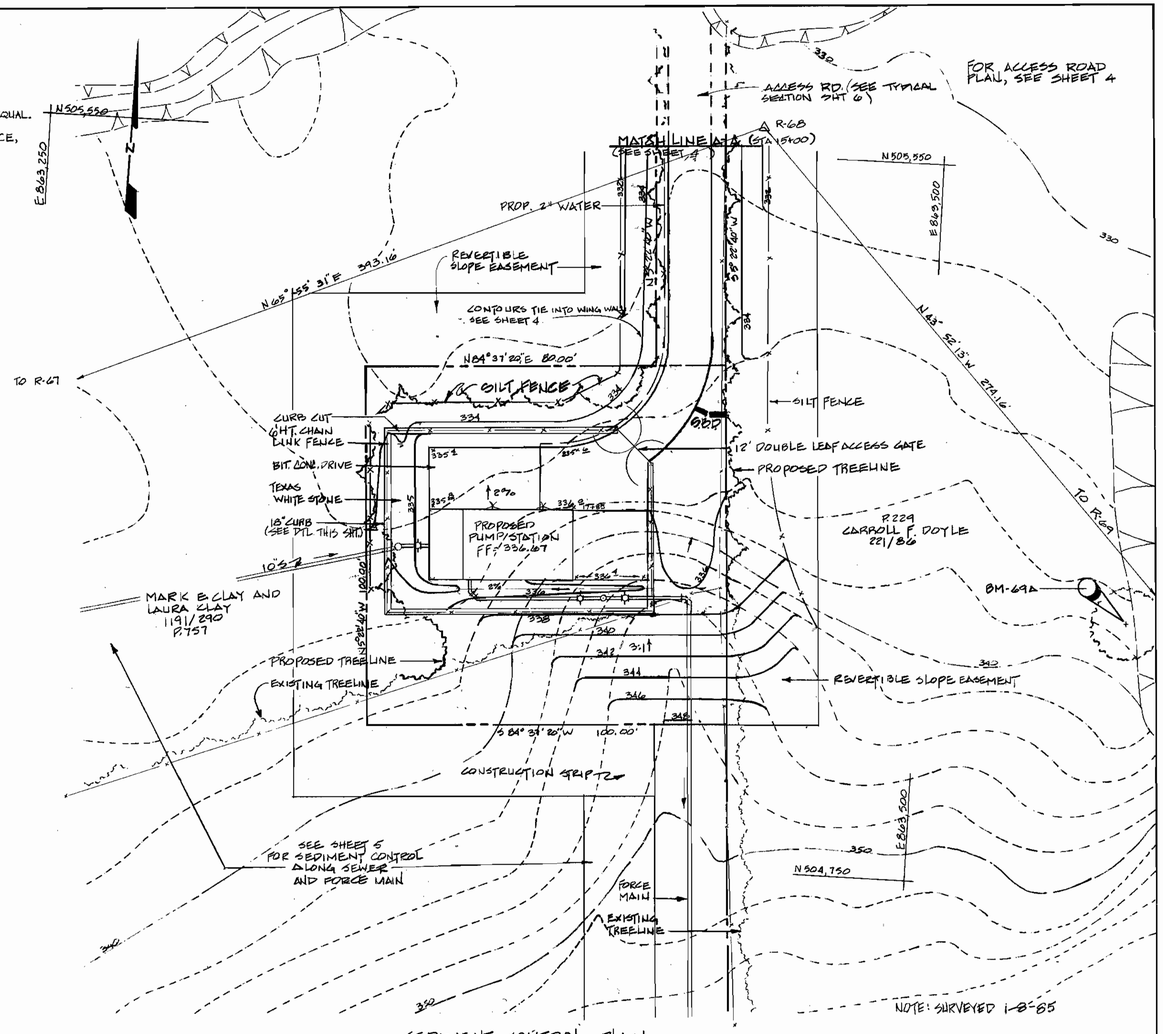
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.



PERSPECTIVE VIEW SECTION

SILT FENCE DTL.

NOT TO SCALE



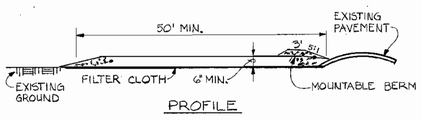
SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

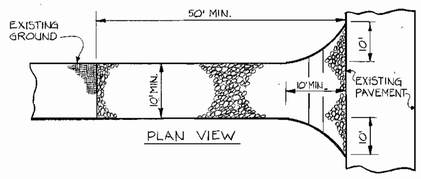
SEDIMENT CONTROL NOTES

1. THE DEVELOPER SHALL NOTIFY THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS AT LEAST 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION SHOWN HEREON (992-2433).
2. DIKES, SEDIMENT TRAPS, ETC. ARE TO BE CONSTRUCTED PRIOR TO ANY ONSITE GRADING OR DISTURBANCE TO ANY EXISTING SURFACE MATERIAL AND ARE TO BE STABILIZED AS SOON AS CONSTRUCTED.
3. ALL SEDIMENT STRUCTURES TO REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS (992-2433).
4. ACCESS ROAD SHALL BE GRAVEL SURFACED IMMEDIATELY AFTER GRADING TO PREVENT SOIL EROSION.
5. ALL AREAS DISTURBED BY GRADING SHALL BE SEEDED AND MULCHED.

STANDARD SYMBOL



PROFILE



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.)
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - WILL BE PLACED OVER ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER WILL NOT BE REQUIRED ON SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVISE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

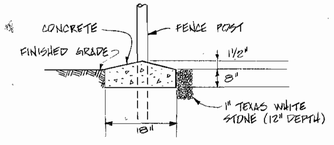
ENGINEER'S CERTIFICATION

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

Date: 12/2/85

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
DATE 3-16-87



CURB DETAIL
ALONG BOTTOM OF FENCE
(PRE-MOLDED EXPANSION JOINTS @ 10' %)

NOT TO SCALE

Reviewed for Howard County S.C.D. and meets technical requirements

Date: 3/30/87

U.S. SOIL CONSERVATION SERVICE

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.

Approved: Date: 3/27/87
HOWARD COUNTY S.C.D.

DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project.

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
Liber- 784 Folio- 107
Tax Map 31, Parcel 244
Zoned R-20

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL #
HOWARD CO. KERGER ROAD PUMP STATION			N/A	P. 244
PLAT # OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
784/107	21	R-20	31	1	6011
WATER CODE W-5			SEWER CODE S-5		

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

APPROVED For Public Sewage Systems
HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER — DATE 3-27-87

APPROVED Howard County Office of Planning and Zoning
PLANNING DIRECTOR — DATE 3-31-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION — DATE 3-31-87

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES E. BROMLEY — 13713 — REGISTERED PROFESSIONAL ENGINEER

DES: T.J.B.					
DRN: LF/WM					
CHK: T.J.B.					
DATE: 5/24/85	BY	NO.	REVISION	DATE	

SITE DEVELOPMENT PLAN SHEET 2 OF 5
GRADING AND SEDIMENT CONTROL
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 22

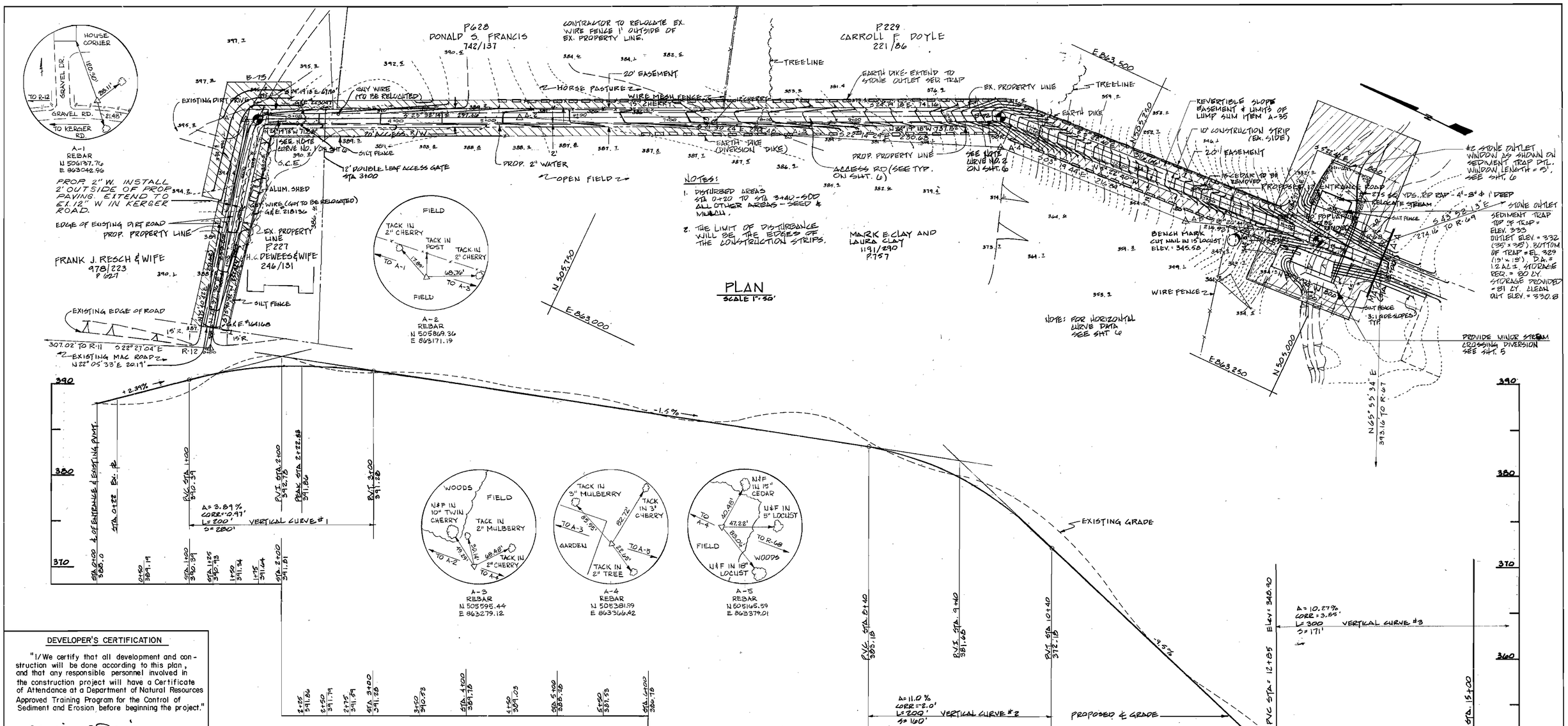
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION

HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 3 OF 38

SDP-86-17



DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

ENGINEER'S CERTIFICATION

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

Date: 12/2/85
JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

Reviewed for Howard County S.C.D. and meets technical requirements

Date: 2-20-87
U.S. SOIL CONSERVATION SERVICE

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.

Approved: Date: 3/27/87
HOWARD COUNTY S.C.D.

SUBDIVISION NAME			SECT./AREA	LOT/PARCEL #
HOWARD CO. KERGER ROAD PUMP STATION			N/A	P. 244
PLAT # OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR.
784/107	21	R-20	31	1	6011
WATER CODE			SEWER CODE	
W-5			S-5	

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
Liber 784, Folio 107
Tax Map 31, Parcel 244
Zoned R-20

APPROVED For Public Sewage Systems
HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER — DATE 3-27-87

APPROVED Howard County Office of Planning and Zoning
PLANNING DIRECTOR — DATE 3-31-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION — DATE 3-31-87

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROBERG — No. 12273 — REGISTERED PROFESSIONAL ENGINEER

DES: T. J.B.
DRN: T.J.B.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

SITE DEVELOPMENT PLAN SHEET 3 OF 5
ACCESS ROAD PROFILE
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION

HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

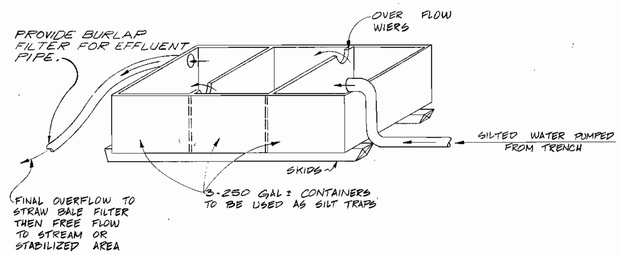
SHEET 4 OF 38

AS-BUILT 9/6/89

SDP-86-17

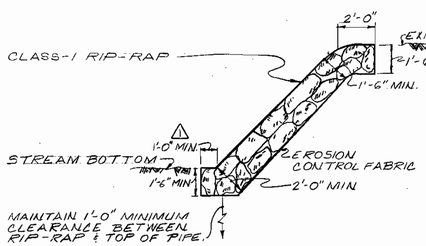
SOIL EROSION & SEDIMENT CONTROL NOTES

1. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THIS PROJECT SITE.
2. ALL EXCAVATED MATERIAL WILL BE PLACED ON THE HIGH SIDE OF THE TRENCH.
3. EROSION CONTROL MEASURES WILL INCLUDE SANDBAG FILTERS, GRAVEL FILTERS, STRAW MULCH, OR ANY OTHER APPLICABLE DEVICES WHICH WILL PREVENT EROSION AND SEDIMENT DAMAGE TO ADJACENT PROPERTIES, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. WHERE THE TRENCH LINE CROSSES THE NORMAL FLOW OF THE STREAM, TEMPORARY PIPES WILL BE PROVIDED, HEAD WALL WILL BE PROVIDED ON THE HIGHER SIDE TO DIVERT WATER TO THE PIPE. THIS MAY BE FORMED BY SANDBAGS COVERED BY A WEATHERPROOF COVERING. SANDBAGS WILL BE USED AT THE OUTFALL AS AN ENERGY DISSIPATOR. SEE "MINOR STREAM CROSSINGS DETAILS", THIS SHEET.
5. SOIL EROSION CONTROL MEASURES ARE TO BE IN ACCORDANCE WITH MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN URBANIZING AREAS.
6. RESTORATION SHALL PROCEED ON EACH SECTION OF THE RIGHT OF WAY AFTER EACH 1,000 LINEAR FEET OF PIPE INSTALLATION IF IT IS NOT THE PROPER SEEDING SEASON THEN A STRAW MULCH SHALL BE SPREAD OVER THE DISTURBED AREA UNTIL FINAL RESTORATION CAN BE PERFORMED.
   IF AS A RESULT OF LIMITED ACCESS A PORTION OF THE RIGHT OF WAY MUST BE USED AS AN ACCESS ROAD THEN THE DISTURBED AREAS ON EITHER SIDE OF THE ACCESS ROAD SHOULD BE RESTORED THE MAXIMUM WIDTH OF AN ACCESS ROAD SHALL BE 15 FEET. THE CONTRACTOR SHALL REGRADE AT COMPLETION OF PROJECT ALL SUCH AREAS TO CONFORM TO GENERAL TOPOGRAPHY OF THE AREA SO AS TO AVOID TRAPPING OF WATER. THE ACCESS ROAD SHALL BE VEGETATED WHEN IT IS NO LONGER USED.
7. ALL SWALES SHOULD BE EQUIPPED WITH A SEDIMENT RETENTION DEVICE TO TRAP SEDIMENT AND FILTER WATER LEAVING THE RIGHT OF WAY PRIOR TO ENTERING ANY RUNNING STREAMS.
8. A BUFFER STRIP OF UNDISTURBED GROUND SHALL BE LEFT BETWEEN THE STREAM BANK AND THE CONSTRUCTION AREA IN THOSE AREAS WHERE CONSTRUCTION COMES EXTREMELY CLOSE TO THE STREAM AND A STRAW BALE OR SANDBAG FILTER BERM SHALL BE PLACED ALONG THE TOP OF THE STREAM BANK.
9. RIP RAP - IMMEDIATLEY FOLLOWING COMPLETION OF CONSTRUCTION AT STREAM CROSSINGS, THE CONTRACTOR WILL CONSTRUCT THE RIP RAP WHERE INDICATED ON THE PLANS AND AS DETAILED.
10. SEDIMENT REMOVAL - ALL TRAPPED SEDIMENT IS TO BE REMOVED AND DISPOSED OF AT THE AUTHORIZED LAND FILLS PRIOR TO REMOVAL OF SEDIMENT CONTROL STRUCTURES.
11. ALL TREE REMOVAL AND REPAIR WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE STATE OF MARYLAND, DEPARTMENT OF FOREST AND PARKS.
12. ROADSIDE DITCHES AND DRAINAGE PIPES TO BE RETURNED TO ORIGINAL CONDITION FOLLOWING COMPLETION OF CONSTRUCTION.
13. ALL EXISTING INLETS SHALL BE PROTECTED BY STRAW BALES TO PREVENT TRANSPORT OF SILT INTO STORM DRAIN SYSTEMS.



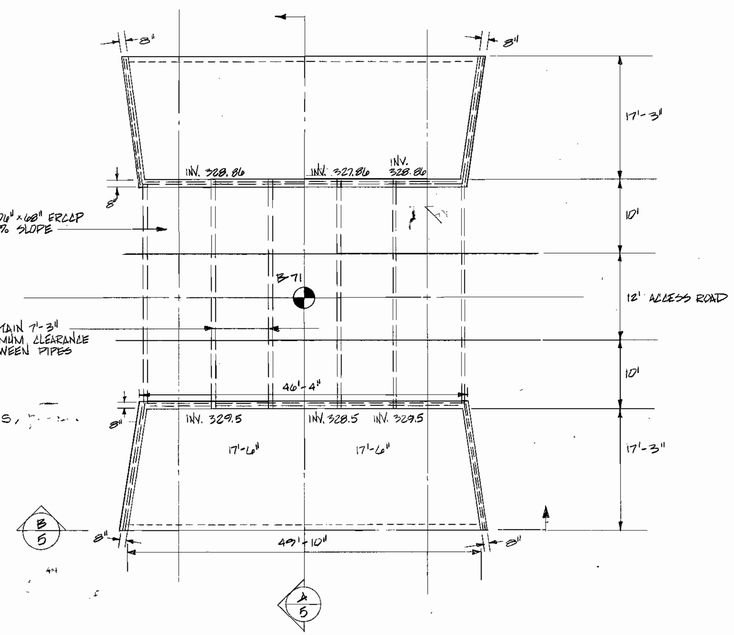
DETAIL OF MOVEABLE SILT BASIN

MAY BE USED IN LIEU OF EXCAVATED SILT BASIN
NOT TO SCALE



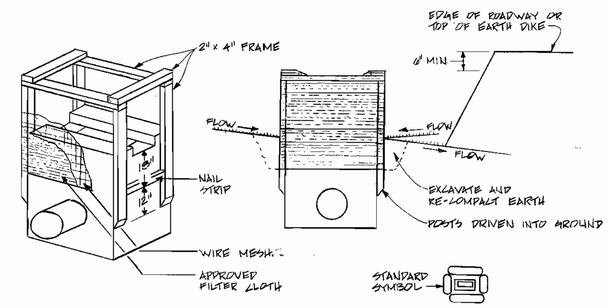
NOTES:
1. EROSION CONTROL FABRIC SHALL BE POLY-FILTER-X AS MANUFACTURED BY CARTHAGE MILLS, INC., EROSION CONTROL DIVISION, 124 WEST 66TH STREET, CINCINNATI, OHIO; LAUREL EROSION CONTROL CLOTH AS MANUFACTURED BY LAUREL PLASTICS INC, MADISON, MAINE, OR EQUAL.
2. RIP-RAP SHALL BE PLACED 6' EACH SIDE ℄ SEWER OR AS SHOWN. ANY DISTURBANCE TO STREAM BANKS BEYOND THESE LIMITS SHALL BE PROTECTED WITH RIP-RAP AT CONTRACTORS EXPENSE.
3. GABIONS MAY BE USED IN LIEU OF RIP-RAP.

RIP-RAP DETAIL



PLAN VIEW OF HEADWALL

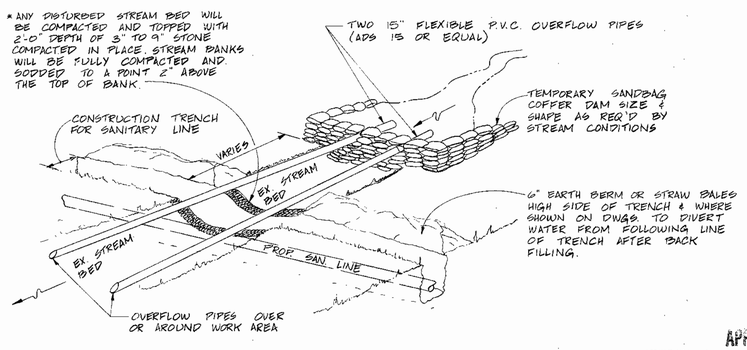
SCALE: 1" = 10'-0"



SWALE INLET PROTECTION DETAIL

NOT TO SCALE

* ANY DISTURBED STREAM BED WILL BE COMPACTED AND TOPPED WITH 2'-0" DEPTH OF 3" TO 9" STONE COMPACTED IN PLACE. STREAM BANKS WILL BE FULLY COMPACTED AND SODDED TO A POINT 2' ABOVE THE TOP OF BANK.



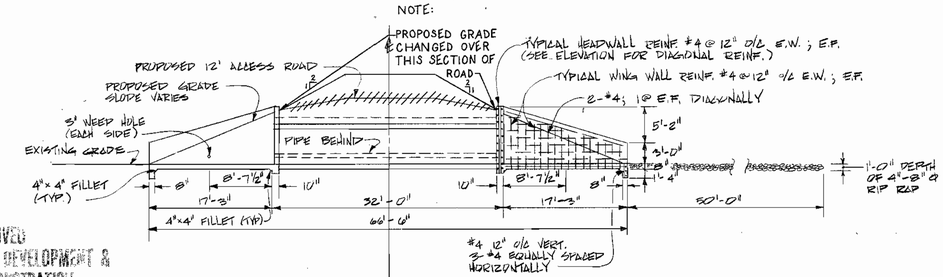
MINOR STREAM CROSSING DETAIL

NOT TO SCALE

* ALL EXCAVATION AT STREAM CROSSINGS SHALL BE BACKFILLED WITH STONE MEETING SHA SPECIFICATION 20.03-2

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 3-16-87

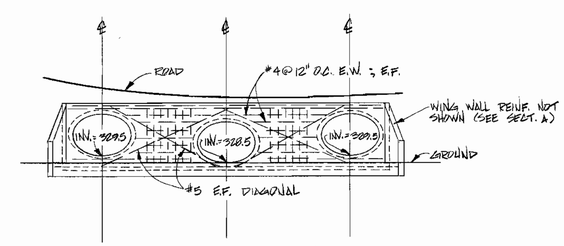
NOTE:



SECTION

SCALE: 1" = 10'-0" (A 5)

NOTES: HEADWALL PARALLEL TO ROADWAY
STEEL SHALL BE 2" CLEAR
CHAMFER ALL EXPOSED EDGES 1" x 1"



HEADWALL ELEVATION

SCALE: 1" = 10'-0" (B 5)

APPROVED: For Public Sewage Systems
HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER — DATE 3-27-87

APPROVED: Howard County Office of Planning and Zoning
PLANNING DIRECTOR — DATE 3-31-87
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION — DATE 3-31-87

Reviewed for Howard County S.C.D. and meets technical requirements
U.S. SOIL CONSERVATION SERVICE — Date 3-30-87

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.
Approved: HOWARD COUNTY S.C.D. — Date 3-30-87

DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

ENGINEER'S CERTIFICATION

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

Date: 12/2/85
JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
Liber - 784, Folio - 107
Tax Map 31, Parcel 244
Zoned R-20

SUBDIVISION NAME HOWARD CO. KERGER ROAD PUMP STATION			SECT./AREA N/A		LOT/PARCEL # P. 244
PLAT # OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR
784/107	21	R-20	31	1	6011
WATER CODE W-5			SEWER CODE S-5		

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-26-87
CHIEF, BUREAU OF UTILITIES — DATE 3-26-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROADDUS — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: L.A.F.
CHK: C.B.
DATE: 5/31/85

BY	NO.	REVISION	DATE

SITE DEVELOPMENT PLAN SHEET 4 OF 5
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN
SHEET 5 OF 38
SDP-4 of 5

AS-BUILT 9/6/89
SDP-86-17

DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

SITE PREPARATION

1. TEMPORARY PERIMETER DIKES AND SILT TRAPS, ETC., ARE TO BE PROVIDED AS PER THIS PLAN PRIOR TO GRADING OPERATIONS WITH LOCATION ADJUSTMENTS TO BE MADE IN THE FIELD AS NECESSARY AND TO BE MAINTAINED AT THE END OF WORKING DAY. THE MINIMUM AREA PRACTICAL SHALL BE DISTURBED FOR THE MINIMUM AMOUNT OF TIME POSSIBLE.

2. PERMANENT SEEDING

   A. SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3". THE TOP LAYER SHALL BE LOOSENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. IN LIEU OF SOIL TEST RESULTS, APPLY 50 LBS. OF DOLOMITIC LIMESTONE AND 25 LBS. OF 10-10-10 FERTILIZER PER 1,000 SQUARE FEET. HARROW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3" ON SLOPES FLATTER THAN 3:1. NO ATTEMPT SHOULD BE MADE TO DRAG ANY DISKED AREA TO MAKE THE SOIL SURFACE SMOOTH AFTER DISKING.

   B. SEEDING: APPLY 5-6 LBS. PER 1,000 SQUARE FEET OF KENTUCKY 31 TALL FESCUE BETWEEN FEBRUARY 1 AND APRIL 30, OR BETWEEN AUGUST 15 AND OCTOBER 31. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDED DRILL, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY) ON A MOIST, FIRM SEEDBED. MAXIMUM SEED DEPTH SHOULD BE 1/4" IN CLAYEY SOILS AND 1/2" IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE IF SOIL MOISTURE IS DEFICIENT TO SUPPORT ADEQUATE GROWTH, UNTIL VEGETATION IS FIRMLY ESTABLISHED.

   C. MULCHING: MULCH SHALL BE UNCHOPPED, UNROTTED, SMALL GRAIN STRAW APPLIED AT A RATE OF 70 TO 90 LBS. PER 1,000 SQUARE FEET. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITED NOXIOUS WEEDS WHICH ARE: CANADA THISTLE, JOHNSONGRASS, AND QUACKGRASS. SPREAD MULCH MECHANICALLY OR UNIFORMLY BY HAND; MULCH ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER MULCH PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY PEG AND TWINE METHOD, MULCH ANCHORING TOOL, NETTING OR LIQUID MULCH BINDERS.

3. TEMPORARY SEEDING

   LIME: 50 LBS. OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET
   FERTILIZER: 15 LBS. OF 10-10-10 PER 1,000 SQUARE FEET
   SEED: PERENNIAL RYE, ITALIAN RYE - 0.92 LBS. PER 1000 SQUARE FEET (FEB. 1 THROUGH APRIL 30 OR AUG. 15 THROUGH NOV. 1)
   MILLET - 0.92 LBS. PER 1000 SQUARE FEET (MAY 1 - AUGUST 15)
   MULCH: SAME AS ABOVE (NOV. 2 THROUGH JAN. 31, USE MULCH ONLY)

4. NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EA. LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8". ALL FILL IN ROADWAYS AND PARKING AREAS IS TO BE CLASSIFIED TYPE 2 AS PER ANNE ARUNDEL GRADING ORDINANCE, SECTION 12-2027, AND COMPACTED TO 90% DENSITY; COMPACTION TO BE DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). ANY FILL WITHIN BUILDING AREA TO BE COMPACTED TO A MINIMUM OF 95% AS DETERMINED BY METHODS PREVIOUSLY MENTIONED. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.

5. PERMANENT SOD

   PERMANENT SOD IS TO BE KENTUCKY 31 TALL FESCUE STATE APPROVED SOD; LIME AND FERTILIZE PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES GREATER THAN 3 TO 1, AS SHOWN, ARE TO BE PERMANENTLY SODDED. ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE APPLIED ON FROZEN GROUND.

NOTES: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS."

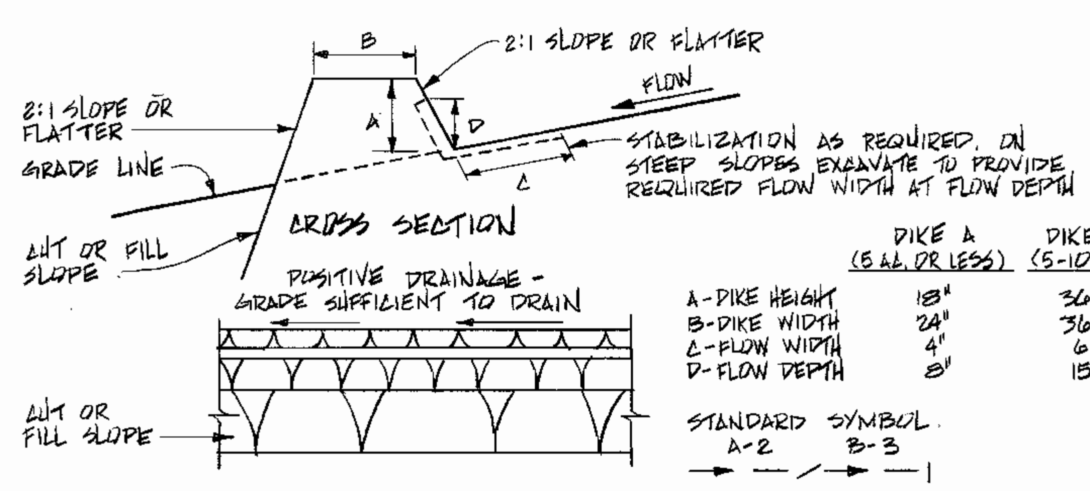
ANY HYDROSEEDING FOR PURPOSES OF STABILIZATION SHALL BE STRAW MULCHED IMMEDIATELY.

℄ ACCESS ROAD - HORIZONTAL CURVE DATA

	CURVE NO. 1	CURVE NO. 2	CURVE NO. 3
FROM P.C.	STA. 2+38.22	STA. 10+53.64	STA. 15+52.50
TO P.T.	STA. 2+66.15	STA. 10+70.20	STA. 15+81.56
Δ	79° 59' 58"	18° 58' 40"	45° 00' 00"
R	20.00'	50.00'	37.00'
T	16.78'	8.36'	15.33'
E	6.11'	0.69'	3.05'
Dc	286° 28' 44"	114° 35' 30"	154° 51' 12"
L	27.93'	16.56'	29.06'
CHD. BRG.	S 64° 19' 19" E	S 14° 50' 00" E	S 17° 09' 22" W
CHD. DIST.	25.71'	16.59'	28.32'

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT FOR OVERALL PROJECT. CONSTRUCT PIPELINES AND PUMP STATION CONCURRENTLY. SEE SHT. 6 REGARDING SCHEDULE OF CONSTRUCTION PHASING FOR THE PUMP STATION.
2. GRAVITY SEWER CONSTRUCTION SHALL PROCEED IN AN UPHILL FASHION BEGINNING IN THE VICINITY OF THE PUMP STATION.
3. INSTALL SEDIMENT CONTROL MEASURES DOWN GRADE OF CONSTRUCTION. EXCAVATE TRENCH AND PLACE MATERIAL ON UPSTREAM SIDE OF TRENCH.
4. IMMEDIATELY FOLLOWING PIPE INSTALLATION THE TRENCH SHALL BE BACKFILLED AND COMPACTED. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH REQUIREMENTS SET FORTH ON SHEETS 5 AND 6 HEREIN.
5. TEMPORARY STRAW BALE DIKES SHALL BE PLACED IMMEDIATELY DOWN HILL OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE WORKING DAY.
6. THE CONTRACTOR SHALL DISTURB AND OPEN TRENCH THE MIN. PRACTICAL AREA REQUIRED TO ACCOMPLISH THE WORK DESIGNATED FOR EACH DAY.
7. THE FORCE MAIN WILL NOT BE CONSTRUCTED UNDER THE SITE DEVELOPMENT PLAN; IT WILL BE CONSTRUCTED UNDER THE CONTRACT PLANS.



EARTH DIKE
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

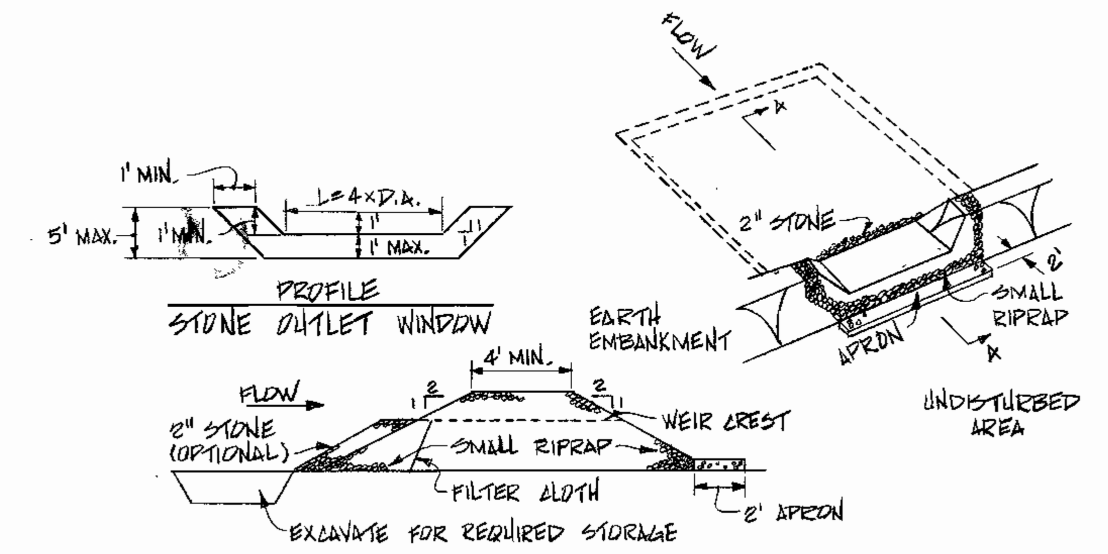
TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.

B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.

C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



OPTION: A ONE FOOT LAYER OF 2" STONE MAY BE PLACED ON THE UPSTREAM SIDE OF THE RIPRAP IN PLACE OF THE EMBEDDED FILTER CLOTH.

STONE OUTLET SEDIMENT TRAP V
NOT TO SCALE

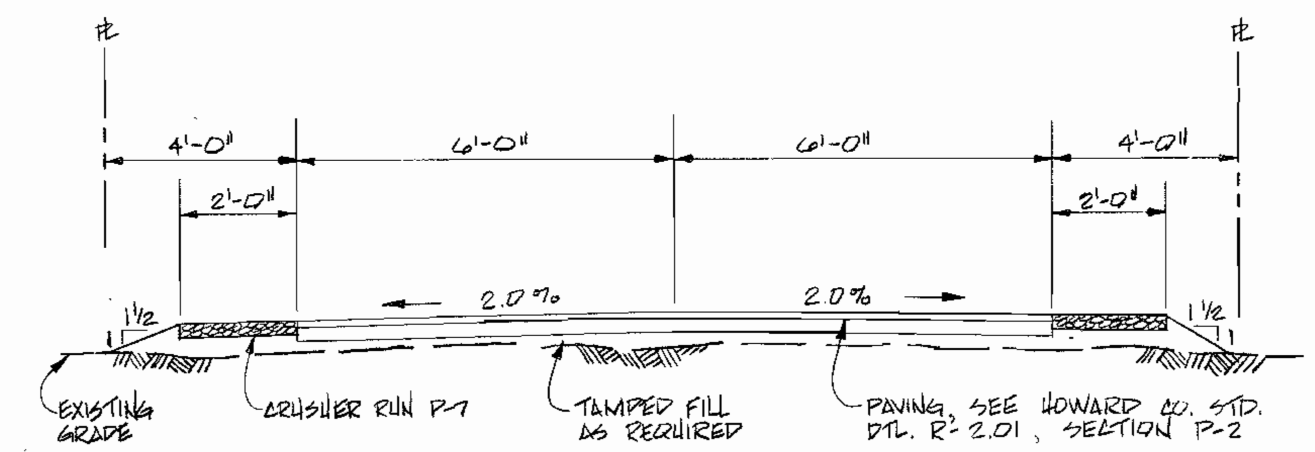
CONSTRUCTION SPECIFICATIONS FOR ST-V

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONAL MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. THE STONE USED IN THE OUTLET SHALL BE SMALL RIPRAP 4"-8" ALONG WITH A 1' THICKNESS OF 2" AGGREGATE PLACED ON THE UP-GRADE SIDE ON THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP.
5. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
6. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
7. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
8. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

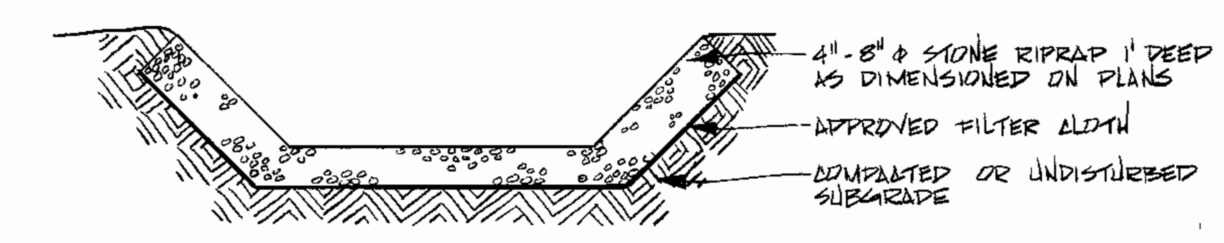
SCHEDULE OF CONSTRUCTION PHASING - PUMP STATION

1. CLEAR SUFFICIENT AREA TO INSTALL STONE OUTLET SEDIMENT TRAP, STONE OUTLET WINDOW, RIPRAP, DIKES AND OTHER SEDIMENT CONTROL DEVICES FROM STATION 0+00 TO STATION 14+25-(1 WEEK).
2. CLEAR, GRUB, GRADE, INSTALL AND STABILIZE ACCESS ROAD TO STATION 14+00 ± (2 WEEKS).
3. CLOSE OUT STONE OUTLET SEDIMENT TRAP AT STATION 14+25 WHEN UPSTREAM DRAINAGE AREA HAS BEEN STABILIZED. INSTALL ADDITIONAL SEDIMENT CONTROL DEVICES UP TO STA. 16+00 AND INSTALL MINOR STREAM CROSSING DIVERSION - (1 WEEK).
4. GRADE AND INSTALL CULVERT, HEADWALLS, RIP RAP APRON. REMOVE MINOR STREAM CROSSING DIVERSION WHEN PREVIOUS ITEMS ARE COMPLETE. GRADE AND INSTALL ACCESS ROAD TO STATION 16+00 ±. ALL SEDIMENT CONTROL DEVICES EXCEPT STONE OUTLET WINDOW AND RIPRAP MAY BE REMOVED UP TO STA 16+00 AFTER STABILIZATION WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR-(3 WEEKS).
5. INSTALL REMAINING SEDIMENT CONTROL DEVICES AS SHOWN ON PUMP STATION SITE DEVELOPMENT PLAN-(1 WEEK).
6. EXCAVATE & CONSTRUCT BUILDING, FORM & POUR FOOTING & BOTTOM SLAB-(13 WEEKS).
7. CONSTRUCT ALL U.G. PIPING, FORM AND POUR BUILDING WALLS AND TOP SLABS-(2 WEEKS).
8. CONSTRUCT ALL U.G. ELECTRIC LINES AND COMPLETE OTHER U.G. PIPING. CONSTRUCT BUILDING, BACKFILL AND COMPACT EARTH AS REQUIRED-(3 WEEKS).
9. SET GENERATOR AND INSTALL ALL OTHER PUMPING STATION EQUIPMENT. COMPLETE BUILDING - (6 WEEKS).
10. CONSTRUCT PAVED DRIVE AND FENCE. PLACE VEGETATIVE STABILIZATION-(2 WEEKS).
11. LANDSCAPING. REMOVAL OF SEDIMENT CONTROL MEASURES. COMPLETE MISC. APPURTENENT WORK. CONNECT REMAINING PIPING TO PUMPING STATION-(2 WEEKS).

NOTE: ALL SEDIMENT CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED AFTER EACH RAIN AND THROUGHOUT CONSTRUCTION. ALL NECESSARY REPAIRS SHALL BE MADE PROMPTLY.
REFER TO CONSTRUCTION SEQUENCE ADJACENT.



TYPICAL PAVING SECTION
NOT TO SCALE



RIPRAP OUTLET PROTECTION DETAIL
NOT TO SCALE

ENGINEER'S CERTIFICATION

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

[signature] Date: 12/2/85
JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

[signature]
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

APPROVED Howard County Office of Planning and Zoning
[signature] PLANNING DIRECTOR — 3-31-87 DATE
[signature] CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION — 3-31-87 DATE

APPROVED: For Public Sewage Systems
HOWARD COUNTY HEALTH DEPARTMENT
[signature] COUNTY HEALTH OFFICER — 3-27-87 DATE

SUBDIVISION NAME HOWARD CO. KERGER ROAD PUMP STATION			SECT./AREA N/A		LOT/PARCEL # P. 244
PLAT OR L/F 784/107	BLOCK # 21	ZONE R-20	TAX/ZONE MAP 31	ELEC. DIST. 1	CENSUS TR 6011
WATER CODE W-5			SEWER CODE S-5		

Reviewed for Howard County S.C.D. and meets technical requirements
[signature] Date: 3-30-87
U.S. SOIL CONSERVATION SERVICE

This development plan is approved for soil erosion and sediment control by the Howard County Soil Conservation District.
Approved: [signature] Date: 3/27/87
HOWARD COUNTY S.C.D.

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
Liber - 784, Folio - 107
Tax Map 31, Parcel 244
Zoned R-20

APPROVED
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 3-16-87
[signature]

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
[signature] 3-26-87 DIRECTOR OF PUBLIC WORKS — DATE
[signature] 3-25-87 CHIEF, BUREAU OF ENGINEERING — DATE
[signature] 3-26-87 CHIEF, BUREAU OF UTILITIES — DATE
[signature] 3/25/87 CHIEF, UTILITY DIVISION — DATE

JOHN E. HARMS JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROMLEY — No. 13713 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: L.A.F.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

SITE DEVELOPMENT PLAN SHEET 5 OF 5
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN
SHEET 6 OF 38
SDP-5 of 5

SDP-86-17

36950
OZALID

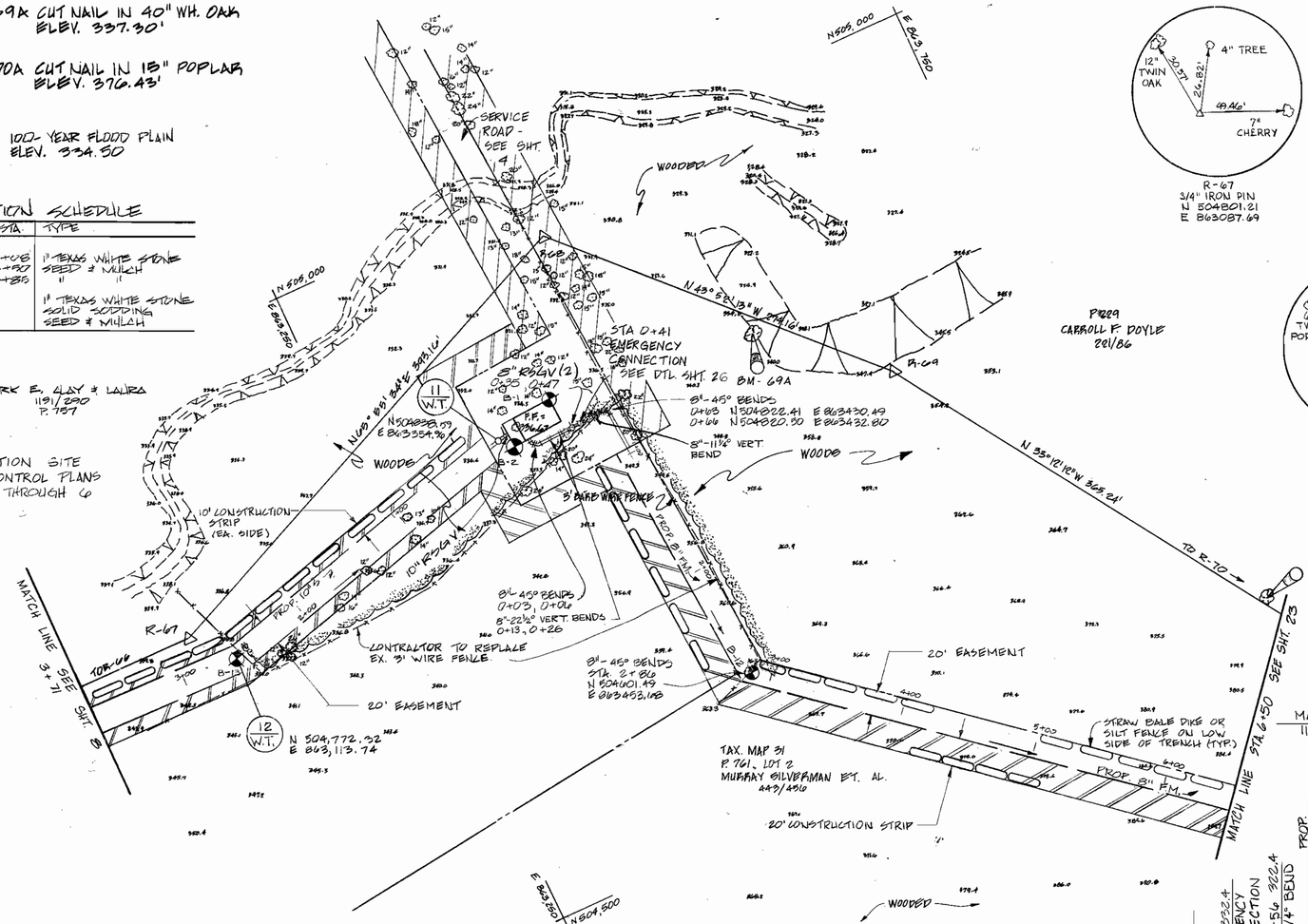
B.M. 69A CUT NAIL IN 40" WH. OAK
ELEV. 337.30'

B.M. 70A CUT NAIL IN 15" POPLAR
ELEV. 376.43'

NOTE: 100-YEAR FLOOD PLAIN
ELEV. 334.50

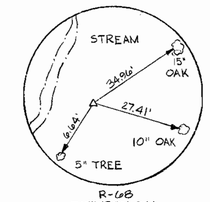
RESTORATION SCHEDULE

MH	TO	MH	STA	TO STA.	TYPE
SEWER					
P.S.		11	0+00	0+08	1" TEXAS WHITE STONE
11		12	0+00	2+50	SEED & MULCH
12		13	0+00	3+85	" "
FORCE		MAIN			
P.S.		0+53			1" TEXAS WHITE STONE
0+53		0+98			SOLID SODDING
0+98		6+50			SEED & MULCH

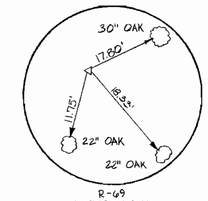


PLAN
SCALE: 1" = 50'-0"

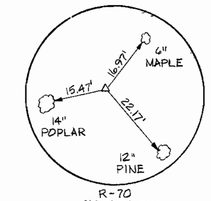
R-67
3/4" IRON PIN
N 504801.21
E 863087.69



R-68
5/8" IRON PIN
N 504961.58
E 863466.66

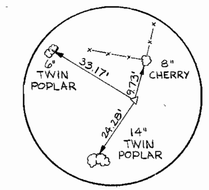


R-69
3/4" IRON PIN
N 504763.94
E 863636.66

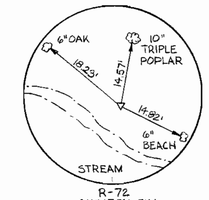


R-70
3/4" IRON PIN
N 504458.33
E 863836.67

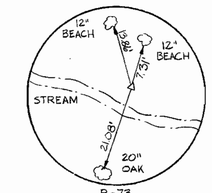
FOR PLAN LOCATION OF R-70 TO R-76 SEE SHT. 23.



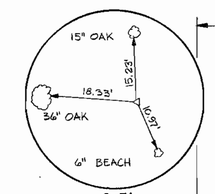
R-71
3/4" IRON PIN
N 504374.50
E 863917.43



R-72
3/4" IRON PIN
N 504255.80
E 864117.84



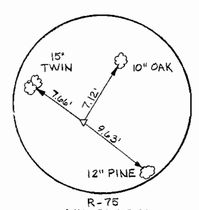
R-73
3/4" IRON PIN
N 504028.66
E 864066.55



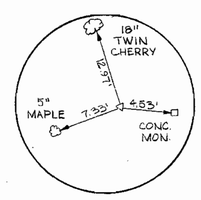
R-74
3/4" IRON PIN
N 503662.01
E 863996.14

M. SILVERMAN
508/375 P. 761

MARK & LAURA CLAY
1191/290 P. 757



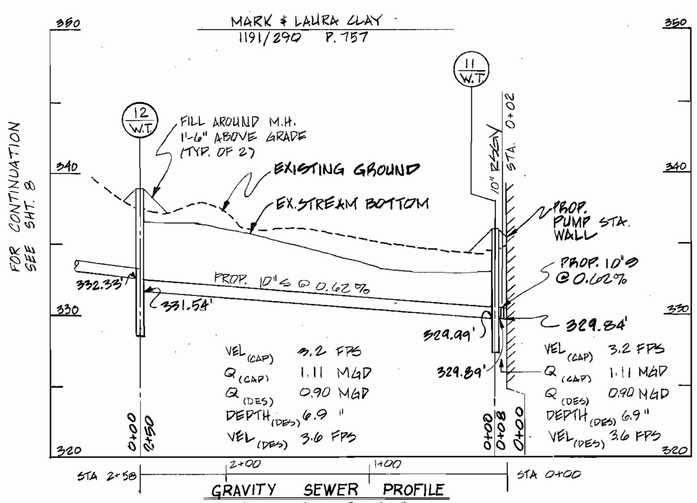
R-75
3/4" IRON PIN
N 503454.76
E 863906.78



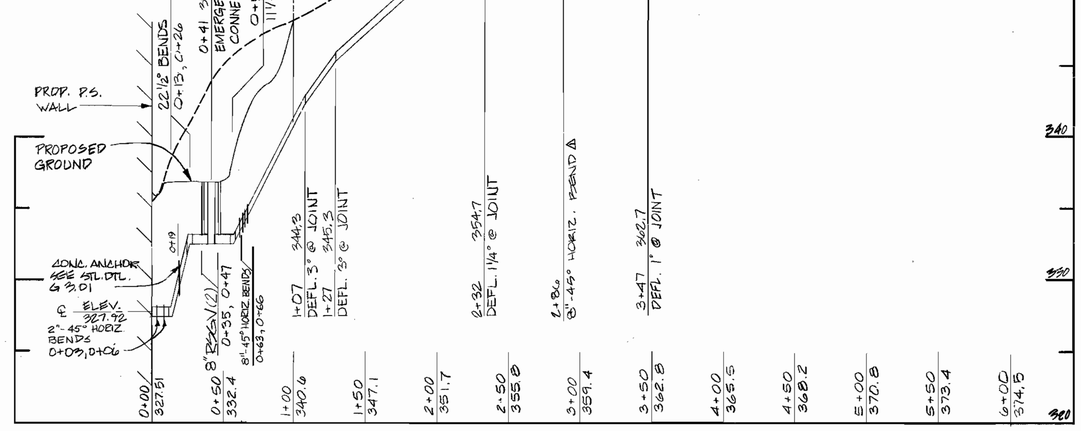
R-76
3/4" IRON PIN
N 503329.72
E 863809.03

NOTE 1: ALL DIRECT BURIED VALVES SHALL BE PROVIDED WITH STANDARD ADJUSTABLE VALVE BOX AND COVER INDICATING "SEWER." OPERATING STEMS SHALL BE PROVIDED WITH A CAP ENGRAVED WITH A TURNING DIRECTION ARROW, AND WITH THE LETTER "S" IN PLAN VIEW. THE STEM SHALL BE EXTENDED TO 6" BELOW FINISHED GRADE. THE VALVES SHALL OPEN LEFT.

NOTE: SURVEY DATE 10/29/84



GRAVITY SEWER PROFILE
SCALE: HORIZ. 1" = 50'-0"
VERT. 1" = 5'-0"



FORCE MAIN PROFILE
SCALE: HORIZ. 1" = 50'-0"
VERT. 1" = 5'-0"

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROOKS — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: C.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
CB	1	ADD 45° HORIZ. BEND IN PROFILE	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

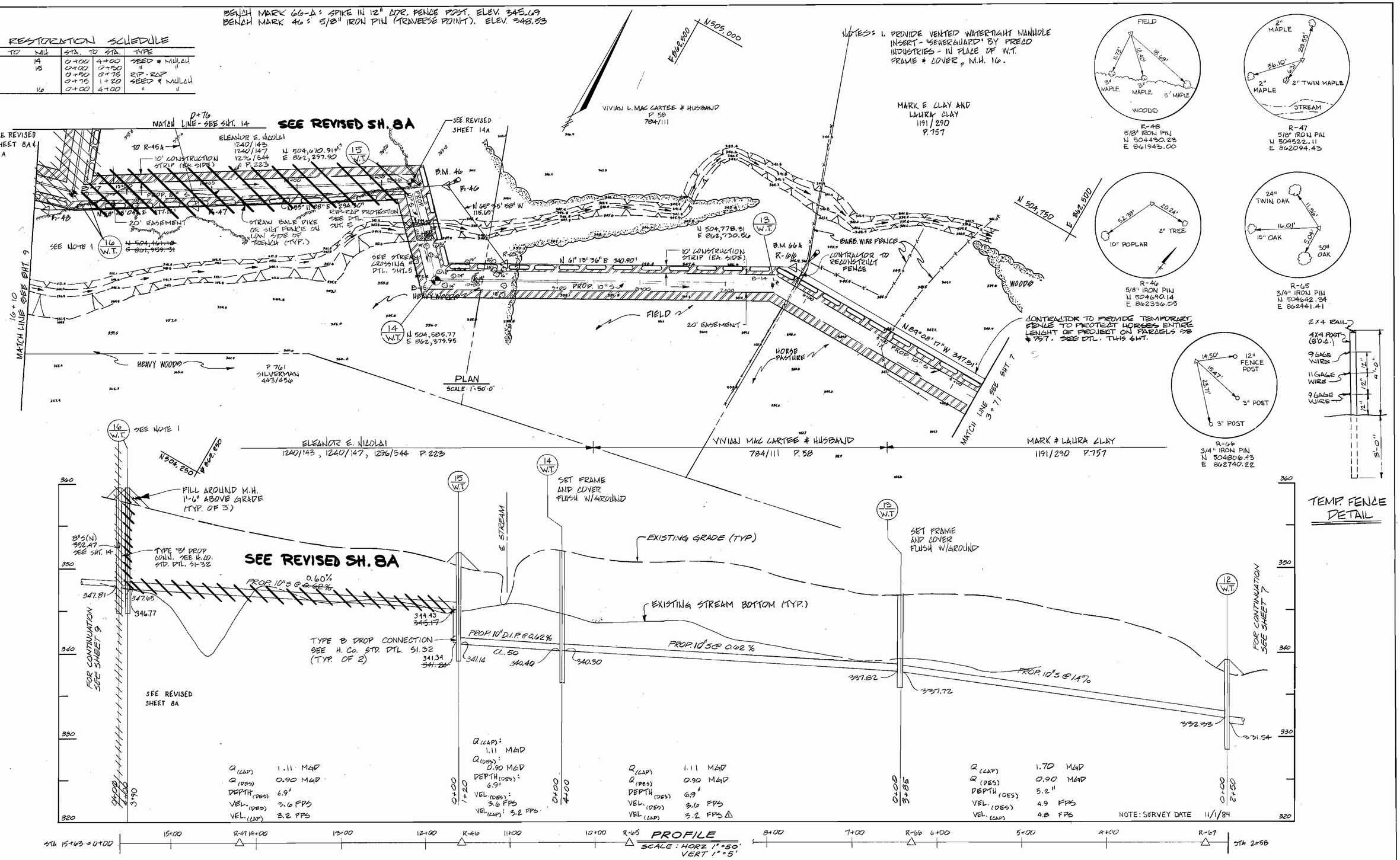
SHEET 7 OF 38

BENCH MARK 66-A: SPIKE IN 12" COR. FENCE POST. ELEV. 345.69
BENCH MARK 46: 5/8" IRON PIN (TRAVERSE POINT). ELEV. 348.53

RESTORATION SCHEDULE

MH	TO	MH	STA.	TO STA.	TYPE
13		14	0+00	4+00	SEED & MULCH
14		15	0+00	0+50	" "
			0+50	0+75	RIP-RAP
			0+75	1+20	SEED & MULCH
15		16	0+00	4+00	" "

NOTES: 1. PROVIDE VENTED WATERTIGHT MANHOLE INSERT - "SEWERGUARD" BY PRECO INDUSTRIES - IN PLACE OF W.T. FRAME & COVER, M.H. 16.



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

George F. Nemeyer 3-26-87 — DIRECTOR OF PUBLIC WORKS, DATE
Wilson S. Riley 3.25-87 — CHIEF, BUREAU OF ENGINEERING, DATE
Robert L. Bennyer 3-25-87 — CHIEF, BUREAU OF UTILITIES, DATE
Ronald B. Lepson 3/25/87 — CHIEF, UTILITY DIVISION, DATE

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROWN, JR. — No. 13713 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: R.N.T.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
CB	1	REVISE FLOW DATA	

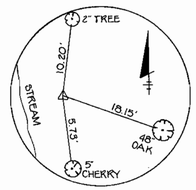
PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

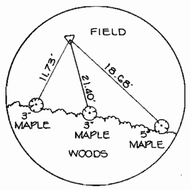
SCALE AS SHOWN
SHEET 8 OF 38

AS-BUILT 9/6/89

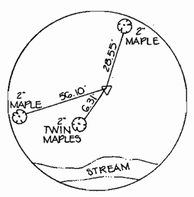
RESTORATION SCHEDULE				
MH TO	MH	STA TO STA		TYPE
15	16	0+00	3+00	SEED & MULCH
16	16A	0+00	1+57	" "
16A	17	0+00	2+54	" "



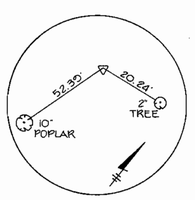
R-49
3/4" IRON PIN
N504,310.15
E861,591.50



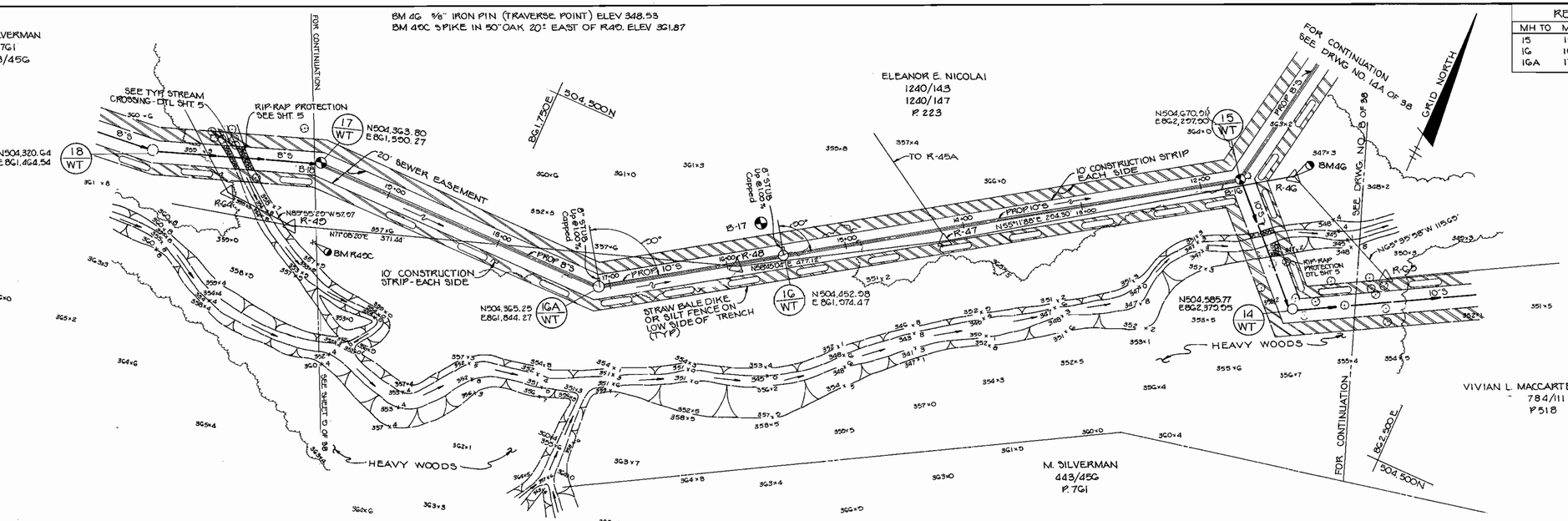
R-48
5/8" IRON PIN
N504,430.23
E861,343.00



R-47
5/8" IRON PIN
N504,522.11
E862,004.43

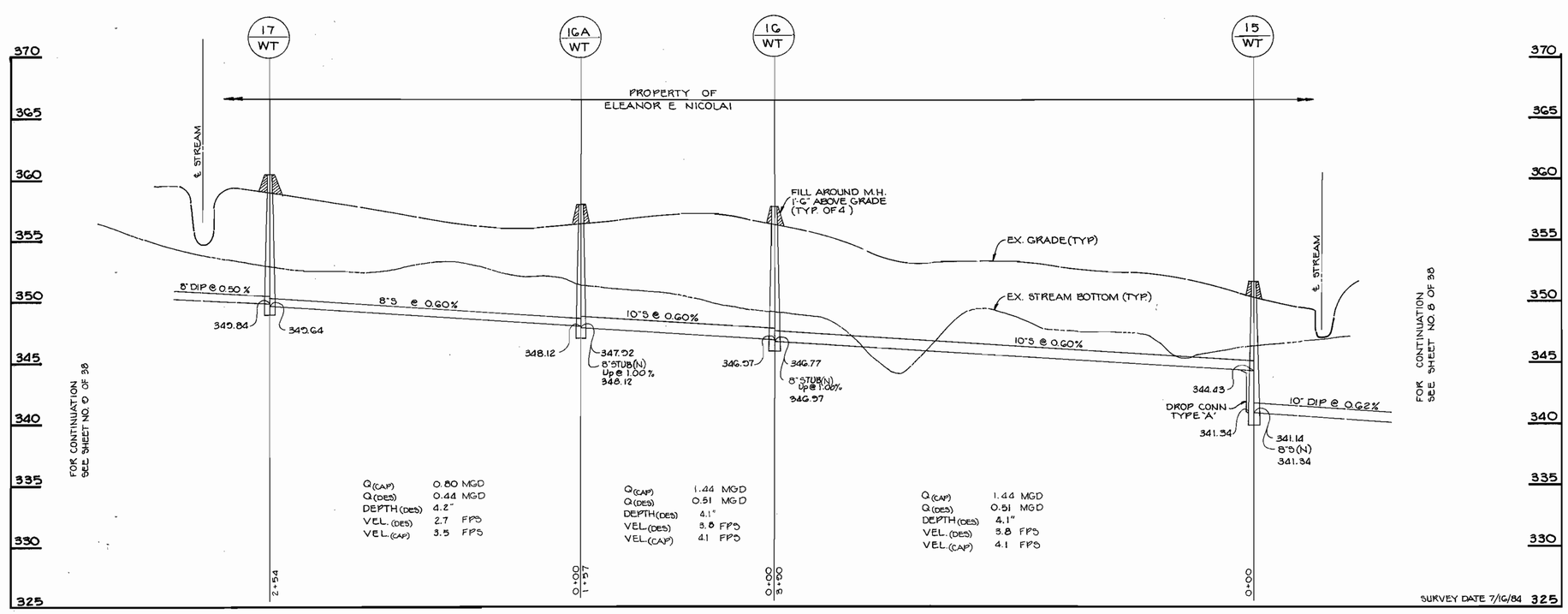


R-46
5/8" IRON PIN
N504,690.14
E862,336.05



PLAN

SCALE 1" = 50'



PROFILE

SCALE: H: 1" = 50' V: 1" = 5'

CAPITAL PROJECT S-6080

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	TRACY, SCHULTE & ASSOCIATES INC planning architecture engineering 8480 Baltimore National Pike Suite 418 Ellicott City, Maryland 21043	DES: RJW DRN: SAB CHK: JKT DATE: 4-22-88	BY / NO. / REVISION / DATE	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 21	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 8A OF 38

DIRECTOR OF PUBLIC WORKS — DATE 4/26/88
CHIEF, BUREAU OF ENGINEERING — DATE 4-26-88
CHIEF, BUREAU OF UTILITIES — DATE 4-26-88
CHIEF, UTILITY DIVISION — DATE 4/26/88

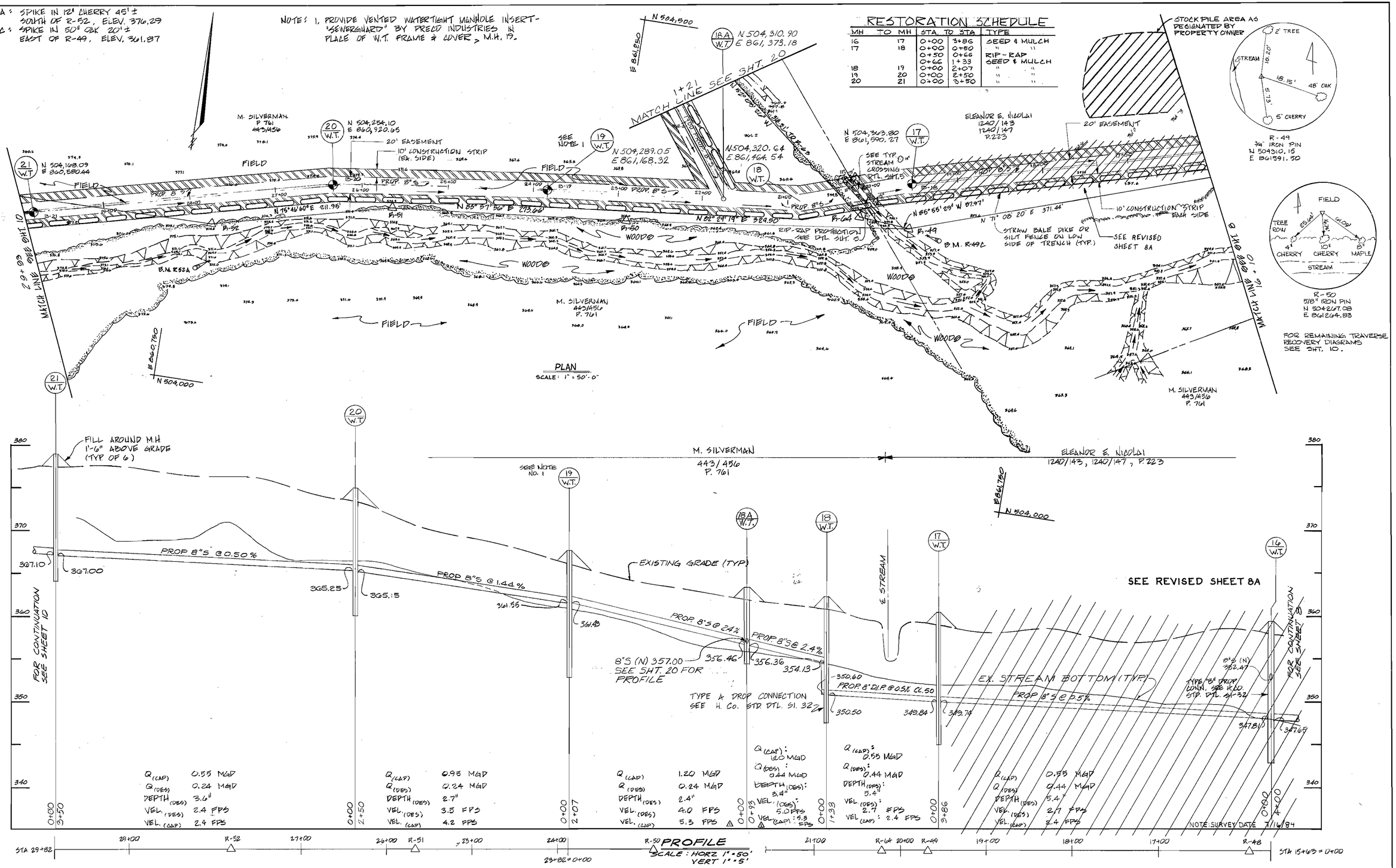
BRUNING 69150

B.M. R-52A: SPIKE IN 12" CHERRY 45'± SOUTH OF R-52, ELEV. 376.29
B.M. R-49C: SPIKE IN 50" OAK 20'± EAST OF R-49, ELEV. 361.87

NOTE: 1. PROVIDE VENTED WATERTIGHT MANHOLE INSERT - "SEWERGUARD" BY PRECO INDUSTRIES IN PLACE OF W.T. FRAME & COVER, M.H. 19.

RESTORATION SCHEDULE

MH	TO	MH	STA.	TO STA	TYPE
16	17		0+00	3+86	SEED & MULCH
17	18		0+00	0+80	" "
			0+50	0+66	RIP-RAP
			0+66	1+33	SEED & MULCH
18	19		0+00	2+07	" "
19	20		0+00	2+50	" "
20	21		0+00	3+50	" "



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES E. BROCKETT — No. 13713 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
LB	1	REVISE FLOW DATA	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN
SHEET 9 OF 38

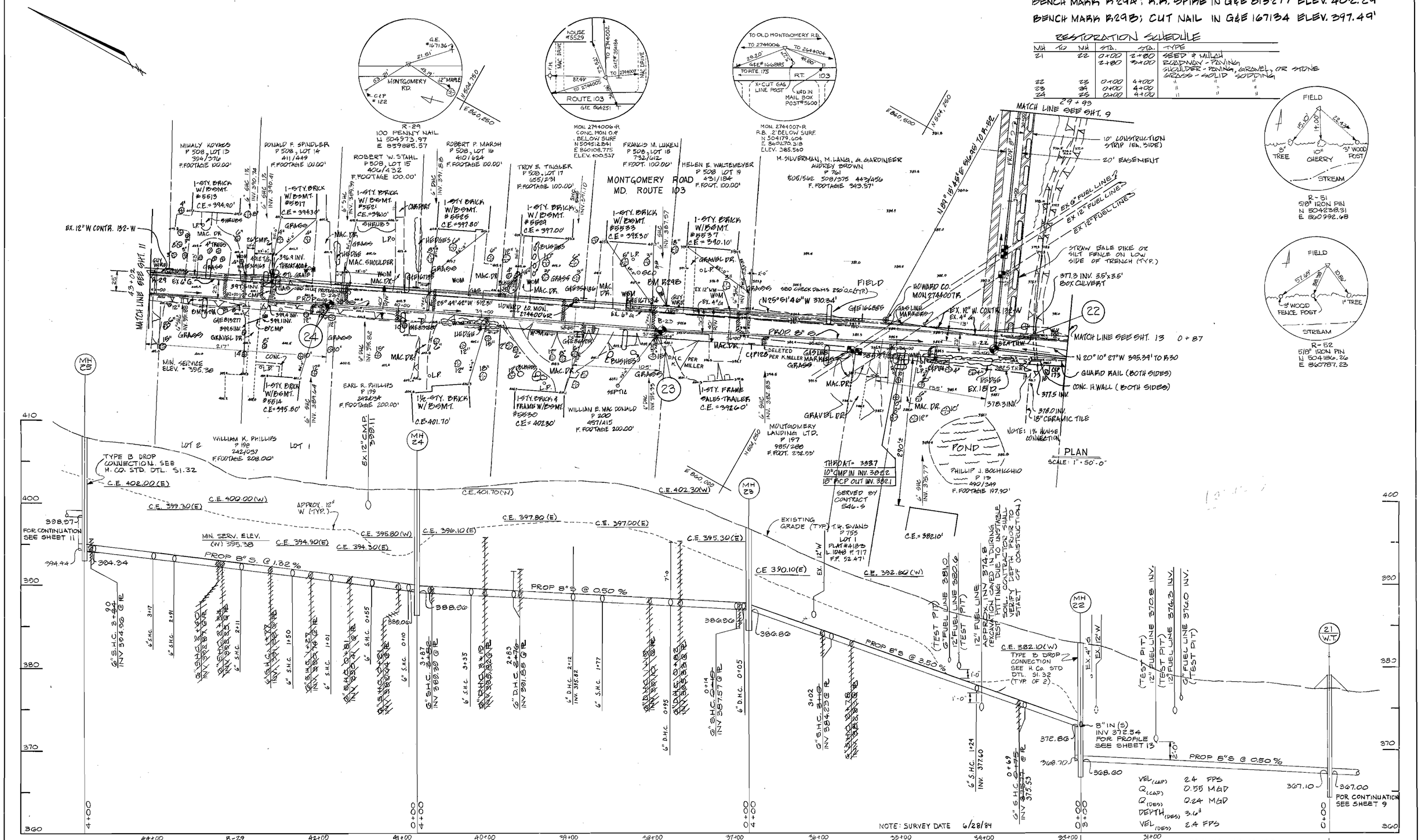
AS-BUILT 9/6/89

BENCH MARK R29A; R.R. SPIKE IN G&E 813277 ELEV. 402.29'

BENCH MARK R29B; CUT NAIL IN G&E 167134 ELEV. 397.49'

RESTORATION SCHEDULE

MH	TO	MH	STA.	STA.	TYPE
21		22	0+00	2+80	SEED & MULCH
			2+80	3+00	ROADWAY - PAVING
					SHOULDER - PAVING, GRAVEL, OR STONE
22		23	0+00	4+00	GRASS - SOLID SODDING
23		24	0+00	4+00	" " "
24		25	0+00	4+00	" " "



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES B. BROWLEY — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 20.21

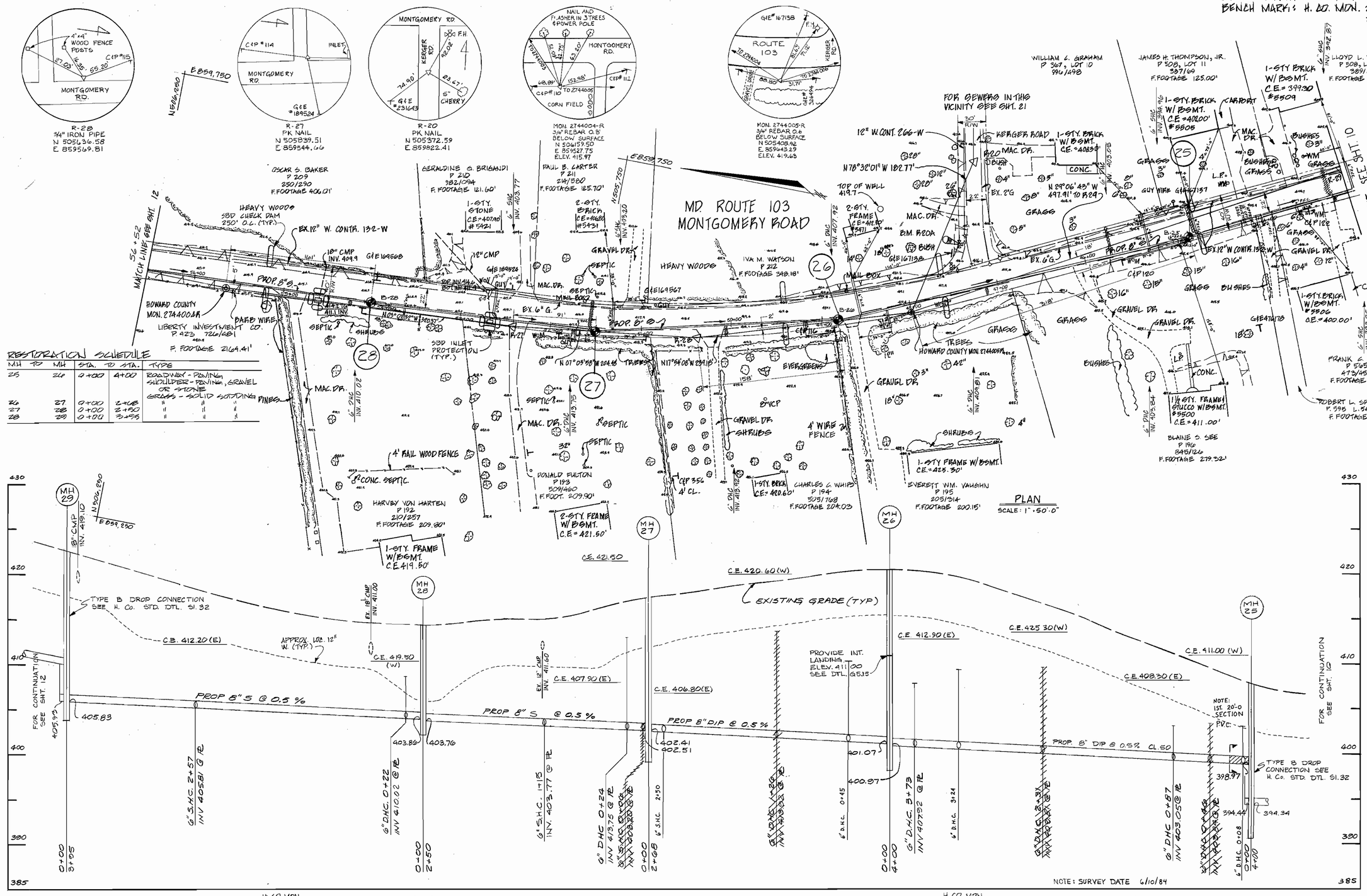
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 10 OF 38

AS-BUILT 9/6/89

BENCH MARK B20A; KEY NUT F.H. ELEV. 419.29'
BENCH MARK: H. CO. MON. 2744004-R ELEV. 415.97
2744005-R ELEV. 419.63



RESTORATION SCHEDULE

MH	TO	MH	STA.	TO STA.	TYPE
25	26	0+00	4+00		ROADWAY - PAVING SHOULDER - PAVING, GRAVEL OR STONE GRASS - SOLID SODDING
26	27	0+00	2+48		"
27	28	0+00	2+50		"
28	29	0+00	3+96		"

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B. DRN: W.M.M. CHK: C.B. DATE: 5/24/85	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3.25.87 CHIEF, BUREAU OF UTILITIES — DATE 3-25-87 CHIEF, UTILITY DIVISION — DATE 3/25/87		BY / NO. / REVISION / DATE	600' SCALE MAP NO. 31 BLOCK NO. 20

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

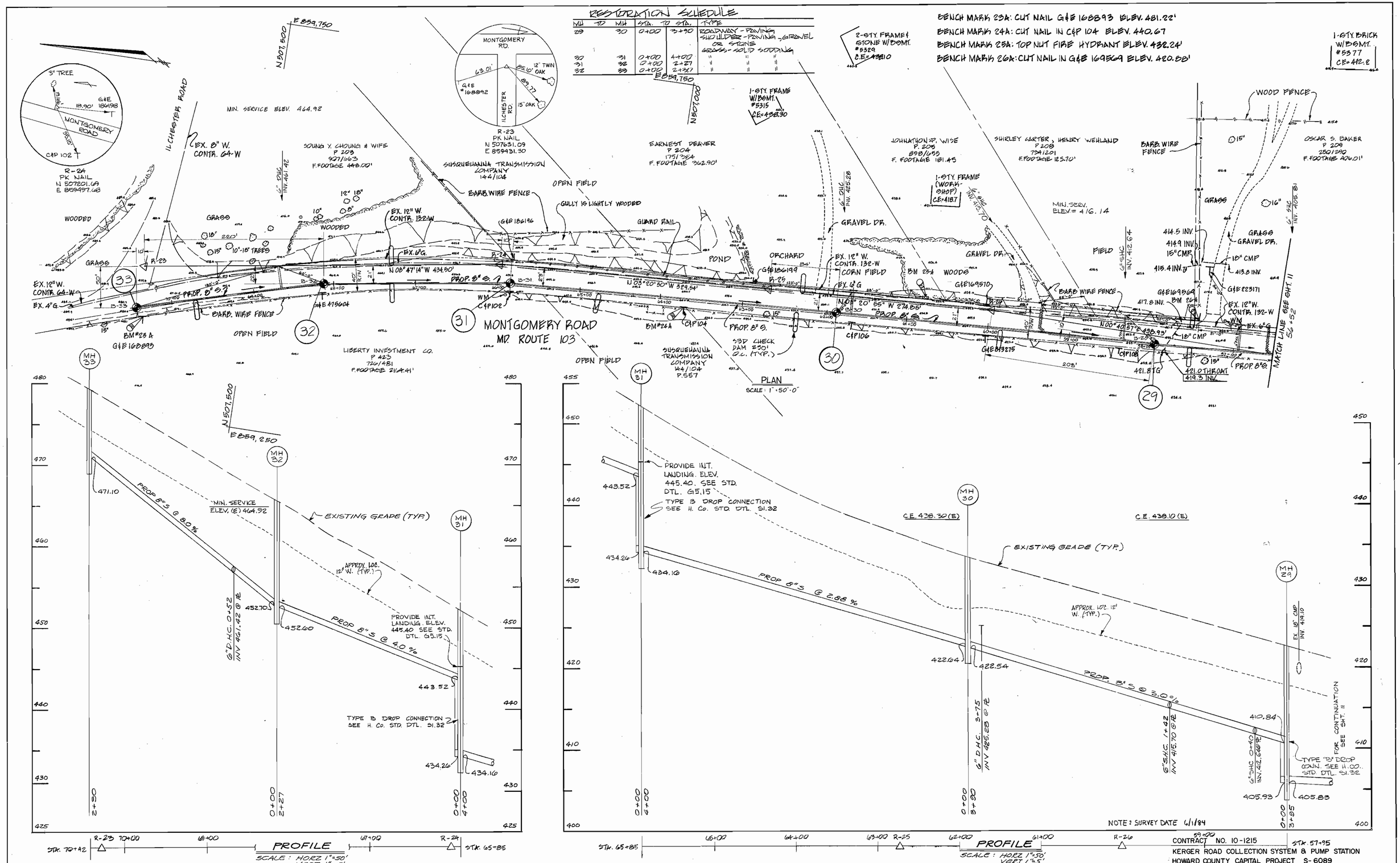
SCALE AS SHOWN
SHEET 11 OF 38

AS-BUILT 9/6/89

RESTORATION SCHEDULE

MH	TO	MH	STA.	TO STA.	TYPE
29		30	0+00	3+90	ROADWAY - PAVING, SHOULDER - PAVING, GRAVEL OR STONE, GRASS - SOLID SODDING
30		31	0+00	4+00	" " "
31		32	0+00	2+27	" " "
32		33	0+00	2+30	" " "

BENCH MARK 23A: CUT NAIL G&E 168893 ELEV. 481.22'
BENCH MARK 24A: CUT NAIL IN C&P 104 ELEV. 440.67
BENCH MARK 25A: TOP NUT FIRE HYDRANT ELEV. 432.24'
BENCH MARK 26A: CUT NAIL IN G&E 169569 ELEV. 420.88'

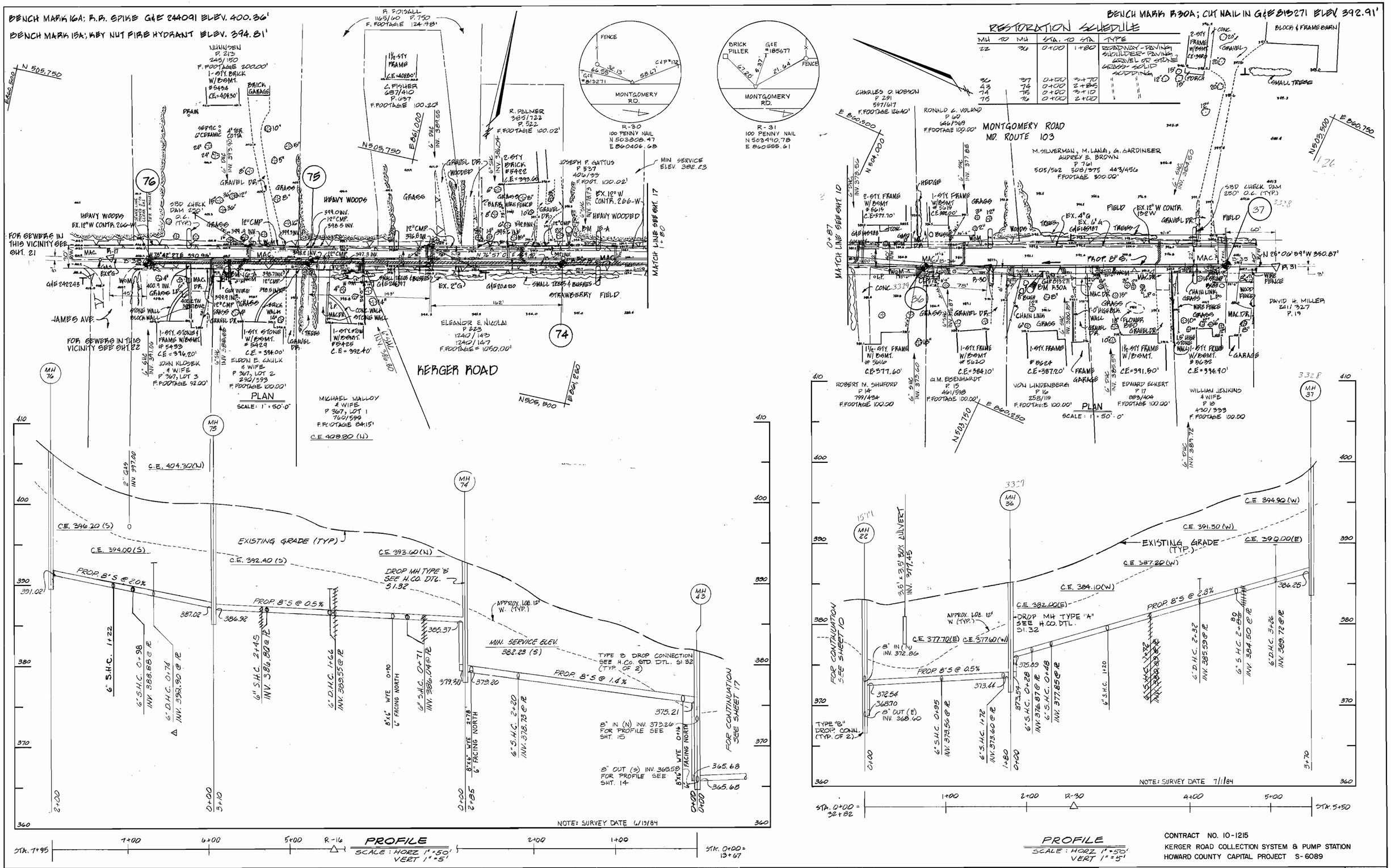


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B. / DRN: W.M.M. / CHK: C.B. / DATE: 5/24/85	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN
DIRECTOR OF PUBLIC WORKS — DATE 3-26-87		BY / NO. / REVISION / DATE	600' SCALE MAP NO. 31 BLOCK NO. 14,20		SHEET 12 OF 38
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87					
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87					
CHIEF, UTILITY DIVISION — DATE 3/25/87					

BENCH MARK 16A; R.R. SPIKE G&E 244091 ELEV. 400.36'

BENCH MARK 15A; HEX NUT FIRE HYDRANT ELEV. 394.81'

BENCH MARK 130A; CUT NAIL IN G&E 813271 ELEV. 392.91'



RESTORATION SCHEDULE				
MH	TO	MH	STA. TO STA.	TYPE
22		36	0+00	1+80	BROADWAY-PAVING SHOULDER-PAVING GRAVEL OR STONE GRASS-SOLID SODDING
36		37	0+00	3+70	"
43		74	0+00	2+85	"
74		75	0+00	3+10	"
75		76	0+00	2+00	"

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
CB	1	REVISE ELEV. OF DROP HOUSE CONNECTION	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31:37 BLOCK NO. 21:3

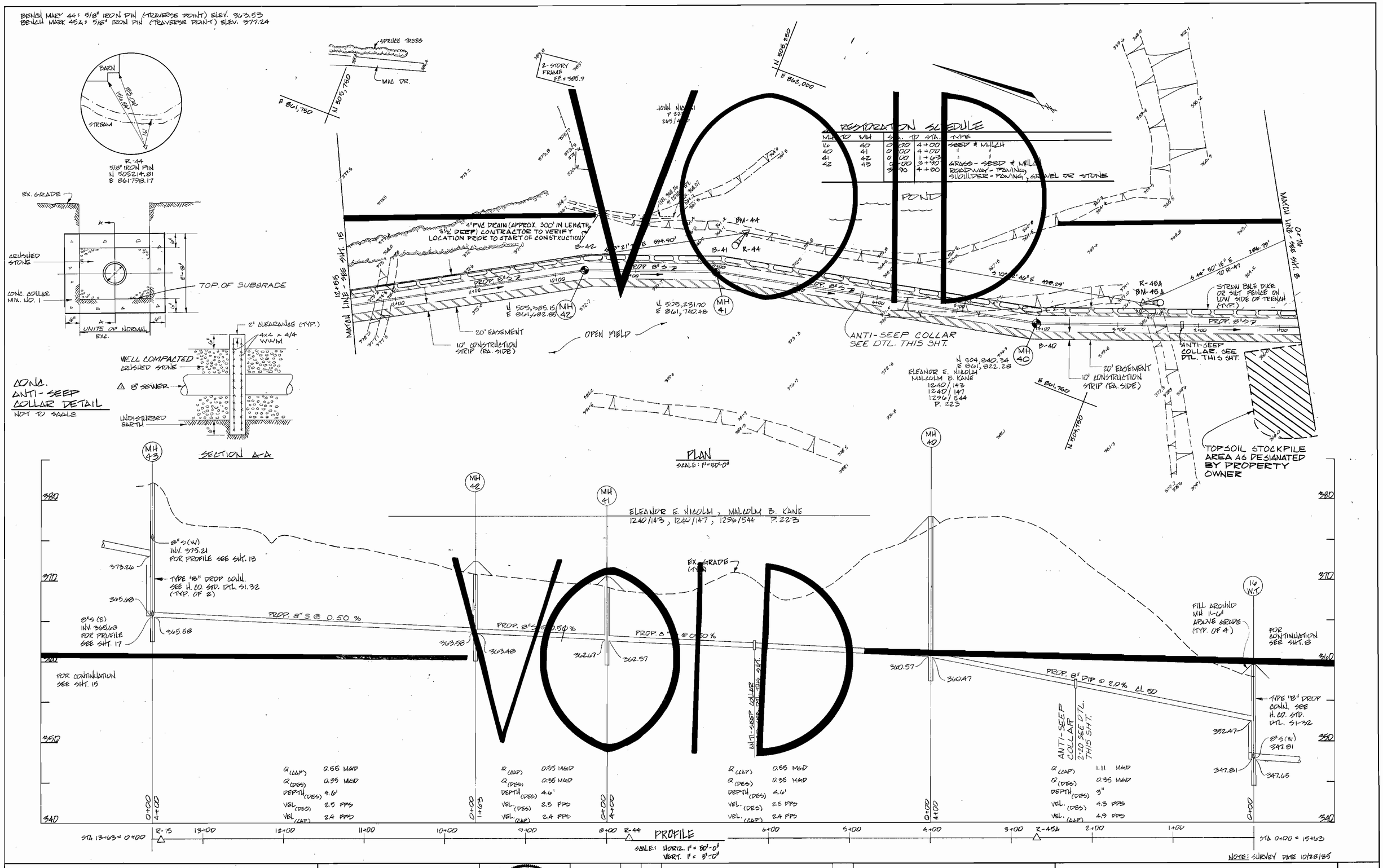
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 13 OF 38

AS-BUILT 9/6/89

BENCH MARK 44: 5/8" IRON PIN (TRAVERSE POINT) ELEV. 363.53
BENCH MARK 45A: 5/8" IRON PIN (TRAVERSE POINT) ELEV. 377.24

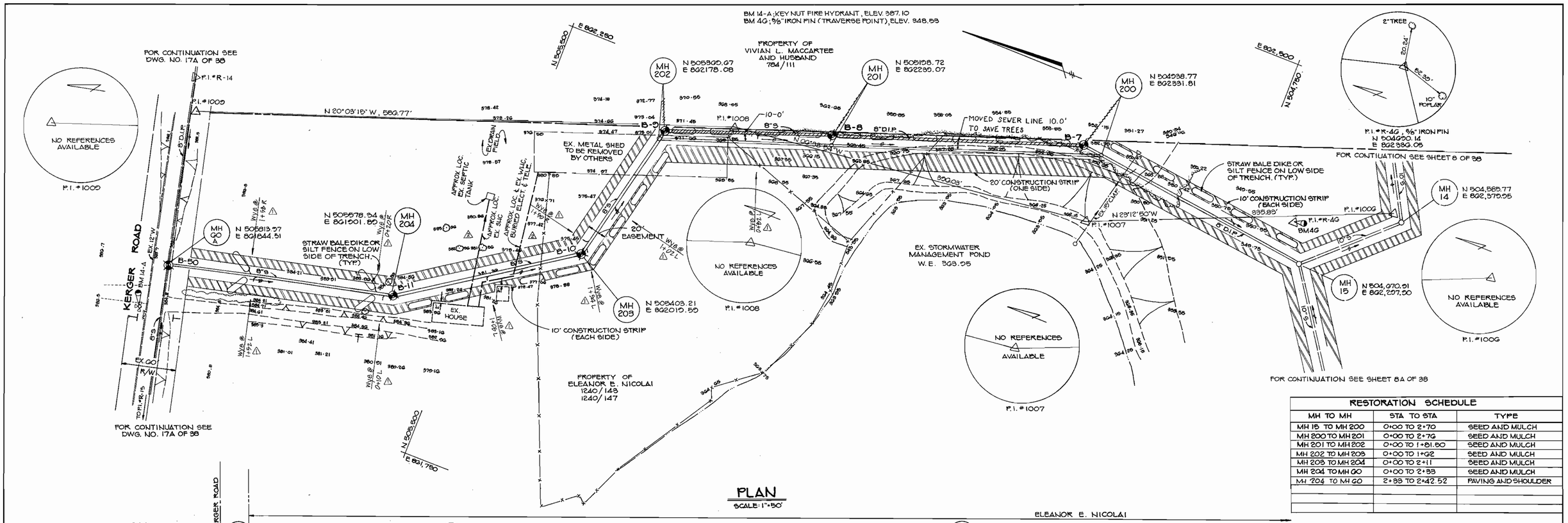


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87 CHIEF, BUREAU OF UTILITIES — DATE 3-25-87 CHIEF, UTILITY DIVISION — 3/25/87	JOHN E. HARMS, JR. & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B. DRN: L.F. CHK: C.B. DATE: 5/11/85	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 14 OF 38		

BY	NO.	REVISION	DATE
CB	1	REVISE ANTI-SEEP COLLAR DETAIL	

600' SCALE MAP NO. 31 BLOCK NO. 21

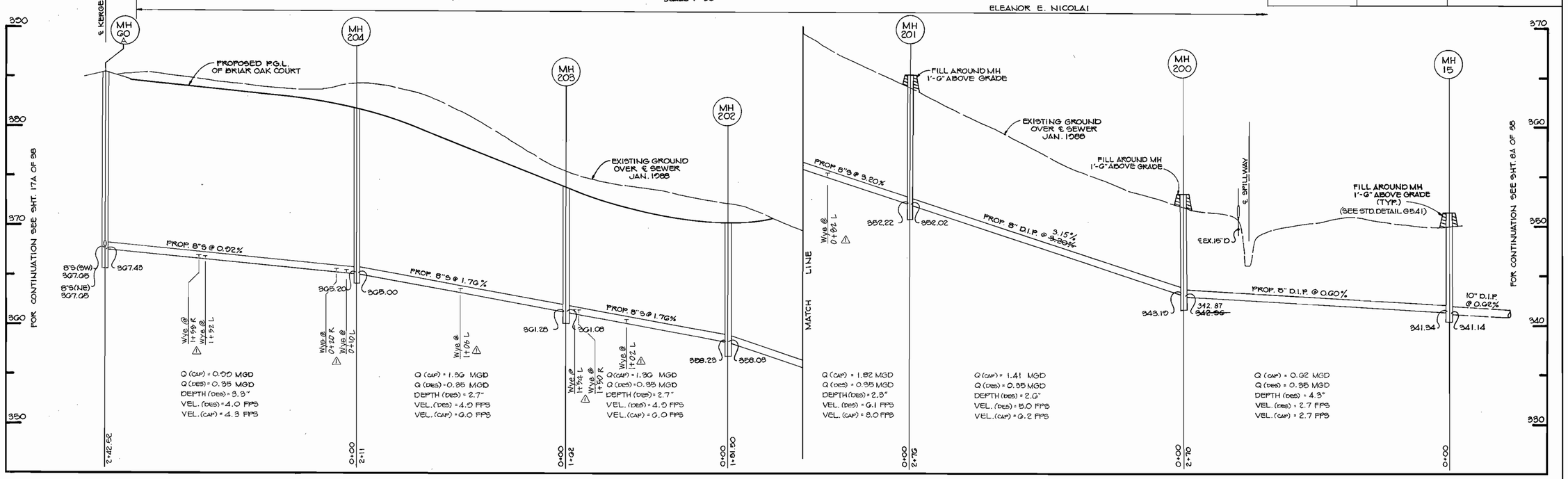
AS-BUILT 9/6/89



PLAN

SCALE: 1" = 50'

RESTORATION SCHEDULE		
MH TO MH	STA TO STA	TYPE
MH 15 TO MH 200	0+00 TO 2+70	SEED AND MULCH
MH 200 TO MH 201	0+00 TO 2+76	SEED AND MULCH
MH 201 TO MH 202	0+00 TO 1+81.80	SEED AND MULCH
MH 202 TO MH 203	0+00 TO 1+62	SEED AND MULCH
MH 203 TO MH 204	0+00 TO 2+11	SEED AND MULCH
MH 204 TO MH GO	0+00 TO 2+33	SEED AND MULCH
MH 204 TO MH GO	2+33 TO 2+42.52	PAVING AND SHOULDER



PROFILE

SCALE: HORIZ. 1" = 50' VERT. 1" = 5'

CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5/10/88
CHIEF, BUREAU OF ENGINEERING — DATE 5/10/88
CHIEF, BUREAU OF UTILITIES — DATE 5-10-88
CHIEF, UTILITY DIVISION — DATE 5/10/88

TRACY, SCHULTE & ASSOCIATES INC.
planning architecture engineering
8480 Baltimore National Pike Suite 418
Ellicott City, Maryland 21043

DES: J.L.R.
DRN: J.L.R.
CHK: R.J.W.
DATE: 5-2-88

BY	NO.	REVISION	DATE
	2	ADDED EX. SHC & EX. WHC INFO.	JULY 1988
Y.P.	1	APP. WVB (BY C.I.P.)	6/3/88

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 14A OF 38

AS-BUILT 9/6/89

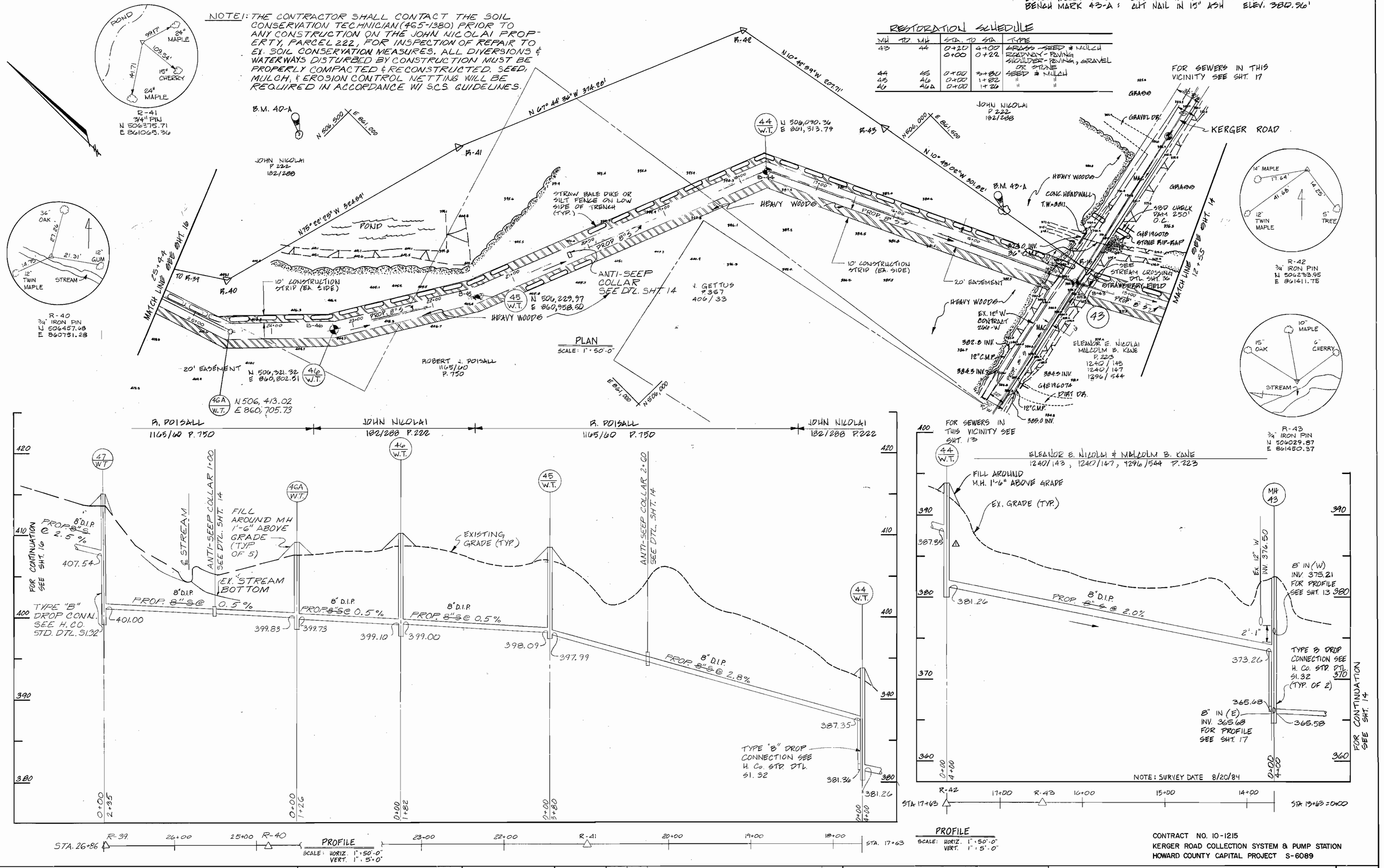
69150 BRUNING

BENCH MARK 40-A : CUT NAIL IN 18" MAPLE ELEV. 403.26'
BENCH MARK 43-A : CUT NAIL IN 15" ASH ELEV. 380.96'

NOTE 1: THE CONTRACTOR SHALL CONTACT THE SOIL CONSERVATION TECHNICIAN (465-1380) PRIOR TO ANY CONSTRUCTION ON THE JOHN NICOLAI PROPERTY, PARCEL 222, FOR INSPECTION OF REPAIR TO EX. SOIL CONSERVATION MEASURES. ALL DIVERSIONS & WATERWAYS DISTURBED BY CONSTRUCTION MUST BE PROPERLY COMPACTED & RECONSTRUCTED. SEED, MULCH, & EROSION CONTROL NETTING WILL BE REQUIRED IN ACCORDANCE W/ S.C.S. GUIDELINES.

RESTORATION SCHEDULE

NW	TO NW	STA.	TO STA	TYPE
43	44	0+20	4+00	GRADE & SEED & MULCH
		0+00	0+22	ROADWAY - PAVING SHOULDER - PAVING, GRAVEL OR STONE
44	45	0+00	3+80	SEED & MULCH
45	46	0+00	1+82	" "
46	46A	0+00	1+20	" "



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROOKS — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: C.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
LB	1	REVISE INV. ELEV. @ MH A4	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 2

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 15 OF 38

AS-BUILT 9/6/89

OZALID

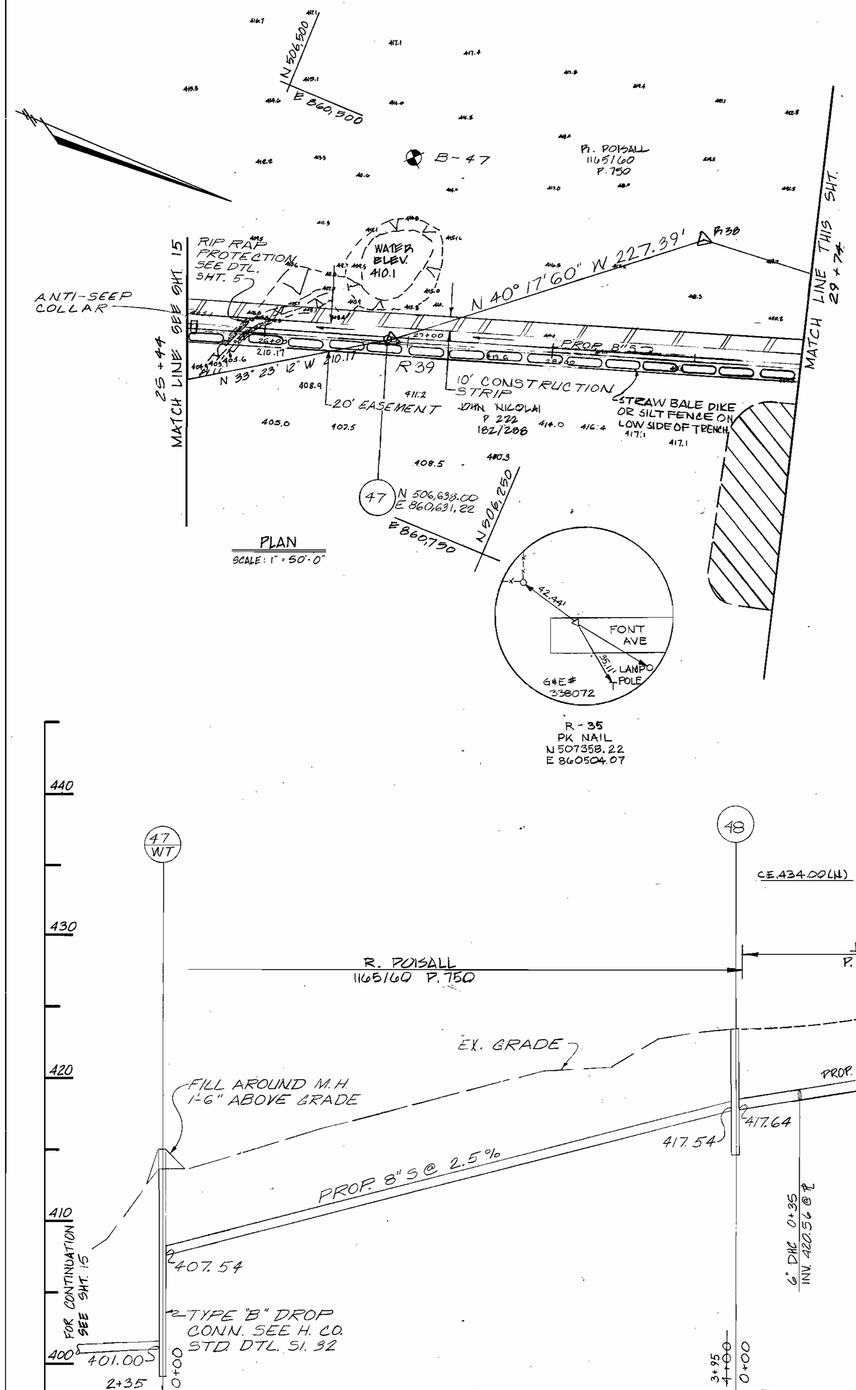
BENCH MARK B37A; CUT NAIL IN 8" CHERRY ELEV. 427.85'

BENCH MARK B36A; CUT NAIL IN 4" OAK ELEV. 442.42'

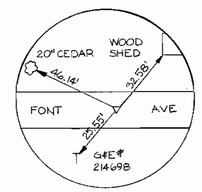
RESTORATION SCHEDULE

MH	TO : MH	STA.	TO STA.	TYPE
46A	47	0+00	2+95	SEED & MULCH
47	48	0+00	4+00	" "
48	49	0+00	2+35	" "
49	50	0+00	2+25	" "

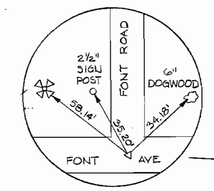
SEE NOTE 1, SHT. 15



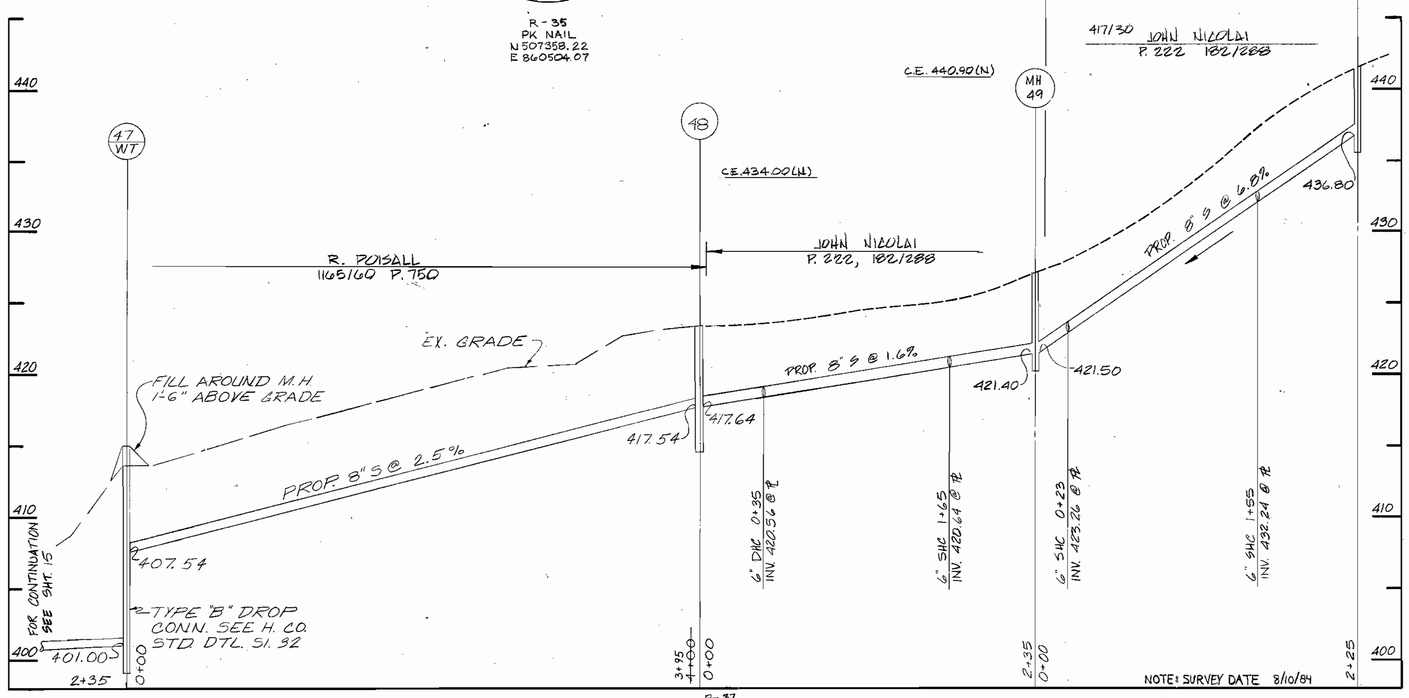
PLAN
SCALE: 1" = 50'-0"



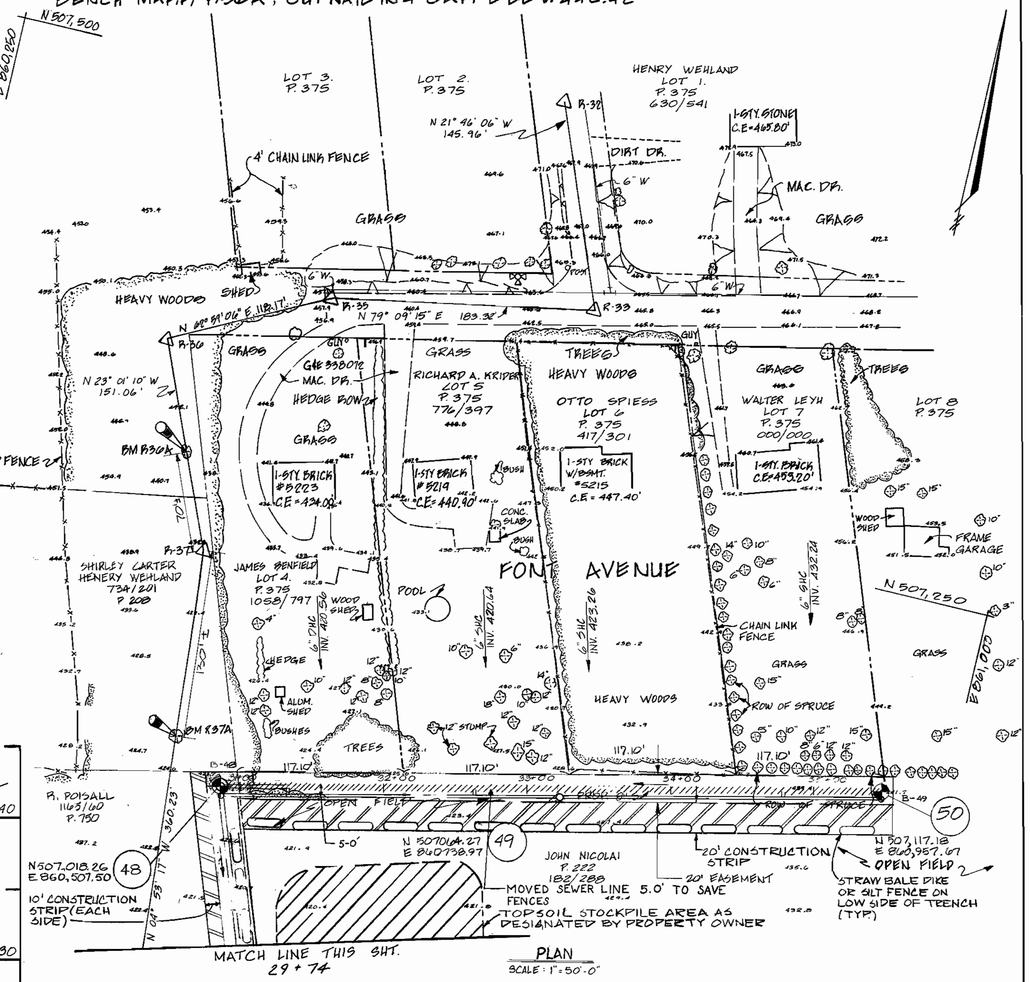
R-32
PK NAIL
N 507528.26
E 860629.59



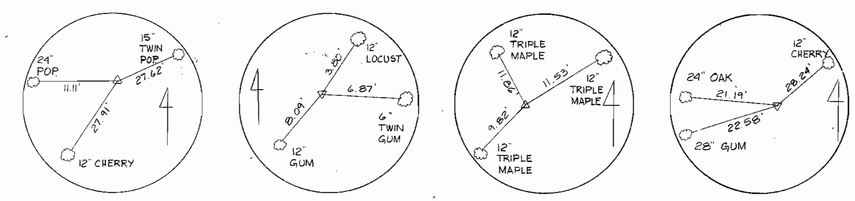
R-33
PK NAIL
N 507592.71
E 860684.12



PROFILE
SCALE: HORIZ. 1" = 50'-0"
VERT. 1" = 5'-0"



PLAN
SCALE: 1" = 50'-0"



R-36 ¾" IRON PIN N 507304.54 E 860398.79

R-37 ¾" IRON PIN N 507165.51 E 860457.86

R-38 ¾" IRON PIN N 506800.59 E 860498.56

R-39 ¾" IRON PIN N 506653.17 E 860635.63

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87 CHIEF, BUREAU OF UTILITIES — DATE 3-25-87 CHIEF, UTILITY DIVISION — DATE 3/25/87	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B. DRN: C.M. CHK: C.B. DATE: 5/24/85	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 16 OF 38		

BY	NO.	REVISION	DATE

600' SCALE MAP NO. 31 BLOCK NO. 15, 21

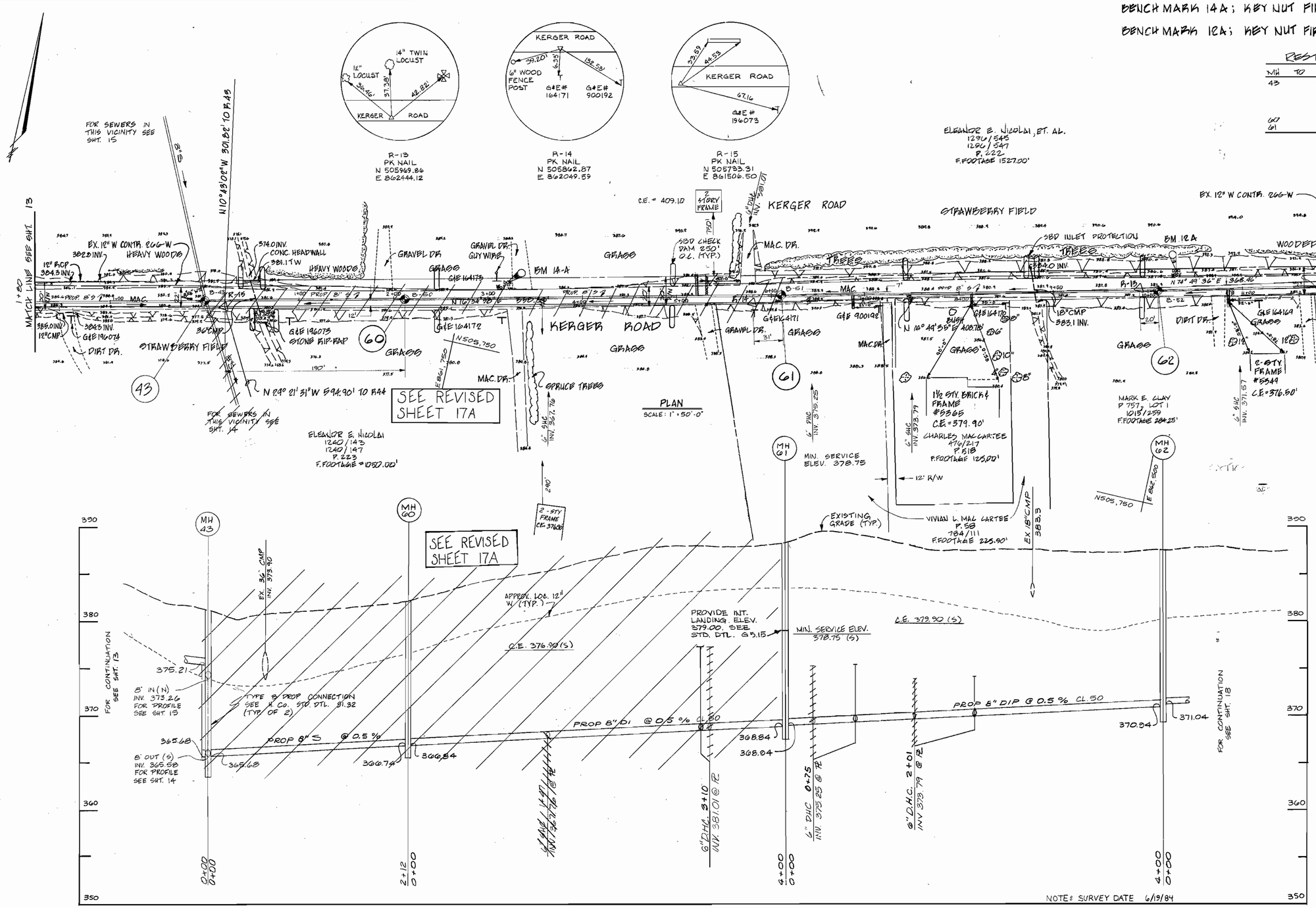
AS-BUILT 9/6/89

BENCH MARK 14A; KEY NUT FIRE HYDRANT ELEV. 387.10'

BENCH MARK 12A; KEY NUT FIRE HYDRANT ELEV. 390.10'

RESTORATION SCHEDULE

MH	TO	MH	STA.	TO STA.	TYPE
43		60	0+00	2+12	ROADWAY-PAVING SHOULDER-PAVING GRAVEL OR STONE GRASS-SOLID SODDING
60		61	0+00	4+00	" " "
61		62	0+00	4+00	" " "



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-26-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROKER — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

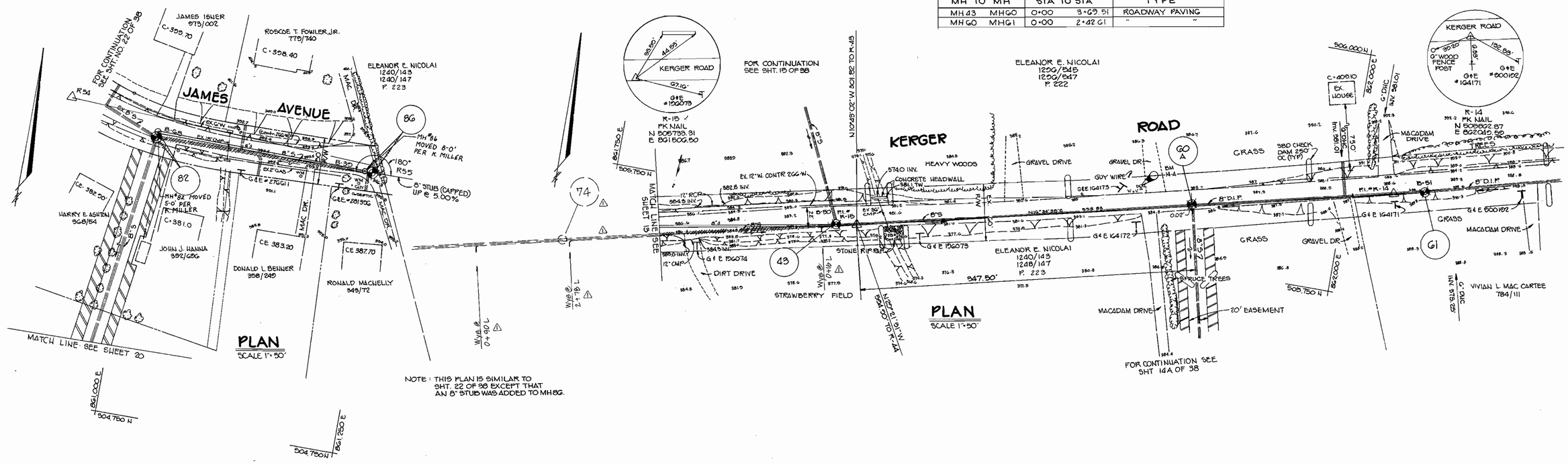
SCALE AS SHOWN

SHEET 17 OF 38

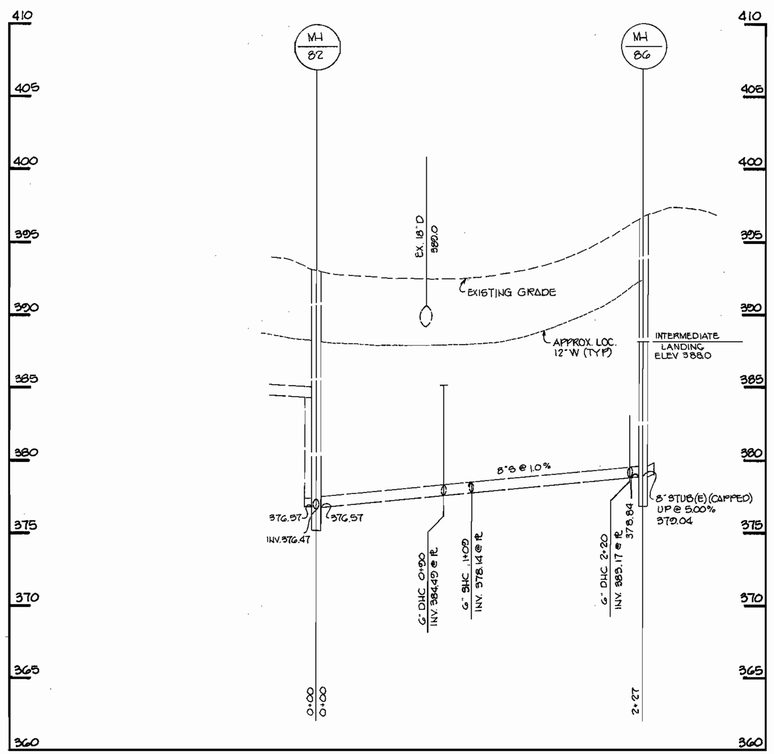
AS-BUILT 9/6/89

RESTORATION SCHEDULE				
MH TO MH		STA TO STA		TYPE
MH 43	MH 60	0+00	3+69.51	ROADWAY PAVING
MH 60	MH 61	0+00	2+42.61	" "

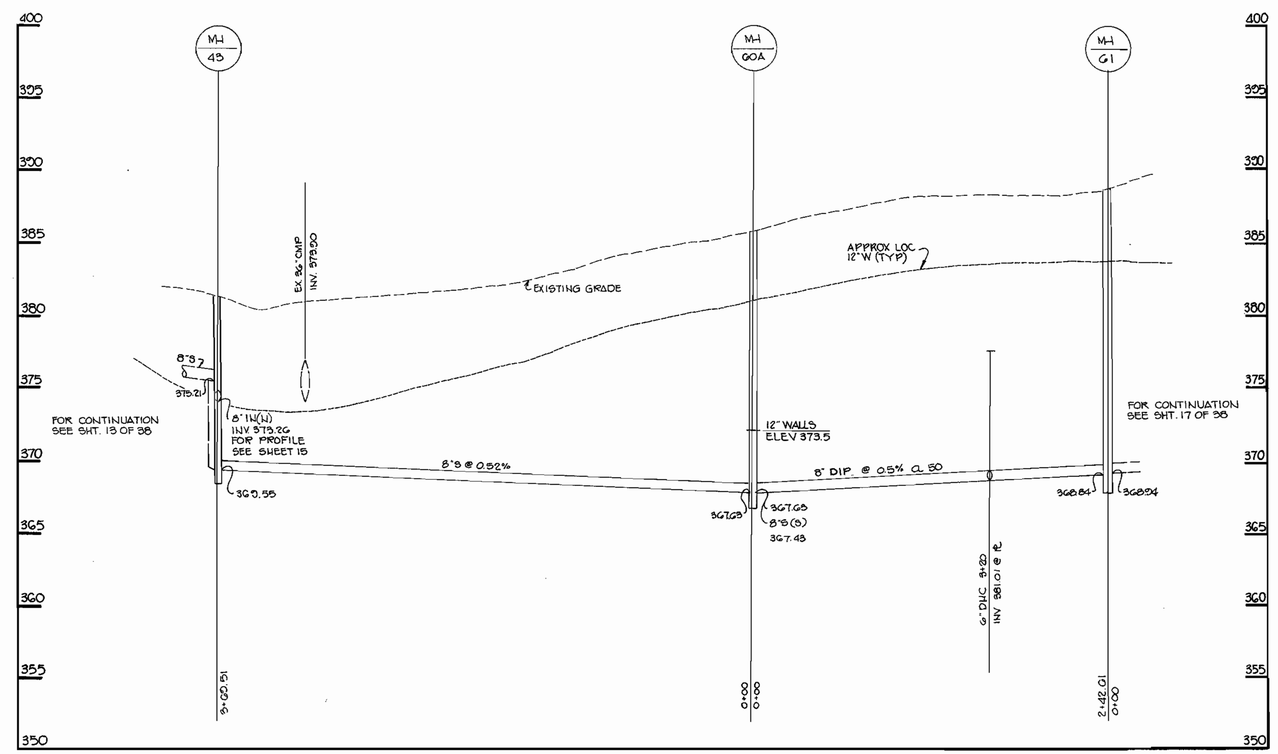
BENCHMARK 14A ; KEY NUT FIRE HYDRANT ELEV 387.10'



PLAN
SCALE 1" = 50'



PROFILE
SCALE H-1" = 50' V-1" = 5'



PROFILE
SCALE H-1" = 50' V-1" = 5'

CAPITOL PROJECT S-6080

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 5/10/88
CHIEF, BUREAU OF ENGINEERING — DATE 5/10/88
CHIEF, BUREAU OF UTILITIES — DATE 5-10-88
CHIEF, UTILITY DIVISION — DATE 5/10/88

TRACY, SCHULTE & ASSOCIATES INC.
planning architecture engineering
8480 Baltimore National Pike Suite 418
Ellicott City, Maryland 21043

DES: J.L.R.
DRN: J.L.R.
CHK: R.J.W.
DATE: 5-4-88

BY	NO.	REVISION	DATE
Y.P.	1	ADD. WYE AND M.H. 74 (BY C.I.D)	6/13/88

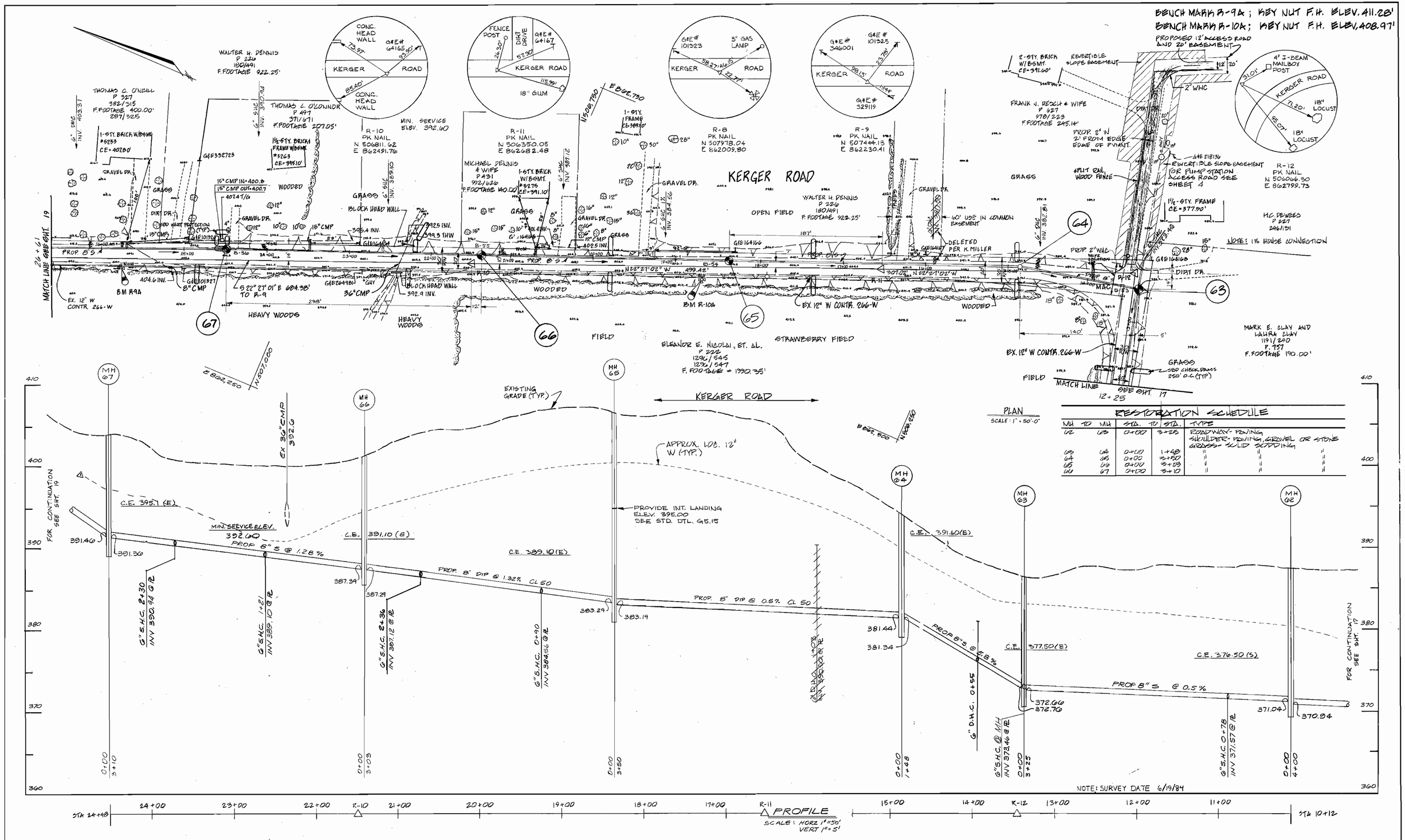
PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN
SHEET 17A OF 38

AS-BUILT 9/6/89

69150
BRUNING



RESTORATION SCHEDULE

MH TO MH		STA. TO STA.	TYPE
G2	G3	0+00	3+25	ROADWAY - PAVING SHOULDER - PAVING, GRAVEL OR STONE GRASS - SOLID SODDING
G3	G4	0+00	1+48	" " "
G4	G5	0+00	3+50	" " "
G5	G6	0+00	3+03	" " "
G6	G7	0+00	3+10	" " "

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
LB	1	REVISE PROFILE OF EX. 12" WATER LINE	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 15.21

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

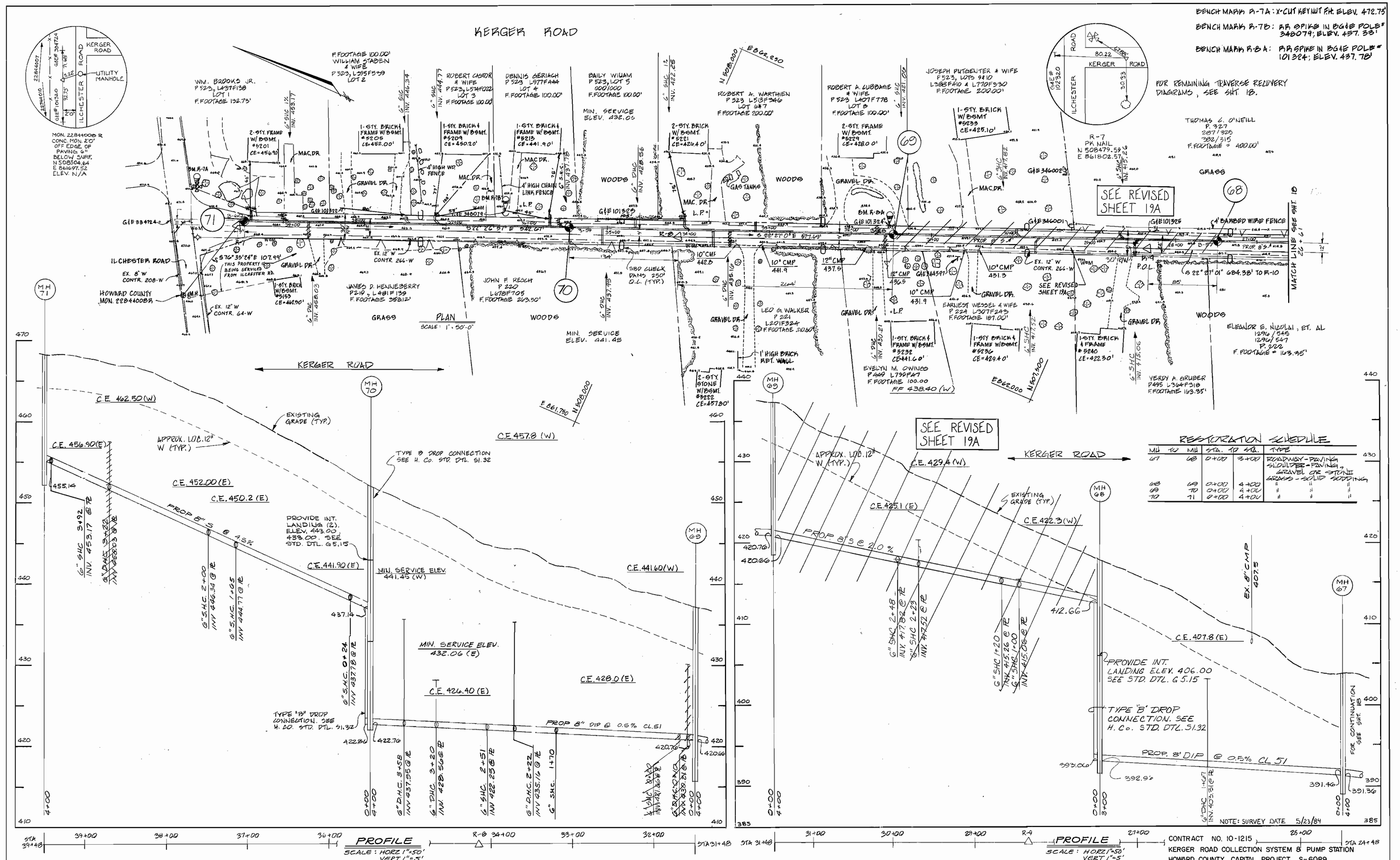
SHEET 18 OF 38

AS-BUILT 9/6/89

BENCH MARK B-7A: X-CUT KEY NUT F.H. ELEV. 472.75

BENCH MARK B-7B: RR SPIKE IN BG&E POLE# 348079; ELEV. 457.33'

BENCH MARK B-8A: RR SPIKE IN BG&E POLE# 101324; ELEV. 437.78'



RESTORATION SCHEDULE

MH TO MH	STA. TO STA.	TYPE
67 68	0+00 3+00	ROADWAY - PAVING, SHOULDER - PAVING, GRAVEL OR STONE, GRASS - SOLID SODDING
68 69	0+00 4+00	" " "
69 70	0+00 4+00	" " "
70 71	0+00 4+00	" " "

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES B. BROWN — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 15

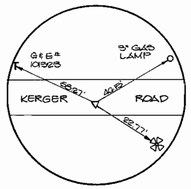
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

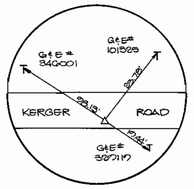
SHEET 19 OF 38

AS-BUILT 9/6/89

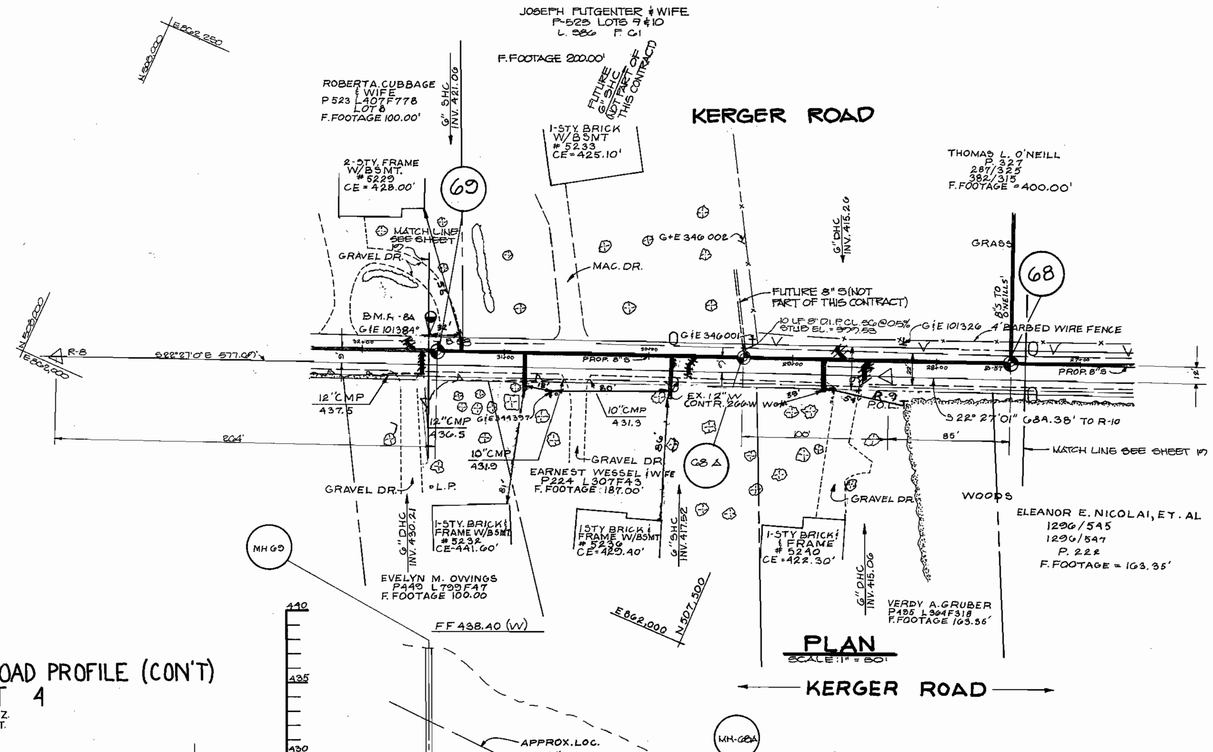
BENCH MARK R-8A
RR SPIKE IN BGE&E POLE #101824 ; ELEV. 487.78



R-8
PK NAIL
N 607778.04
E 802,007.80

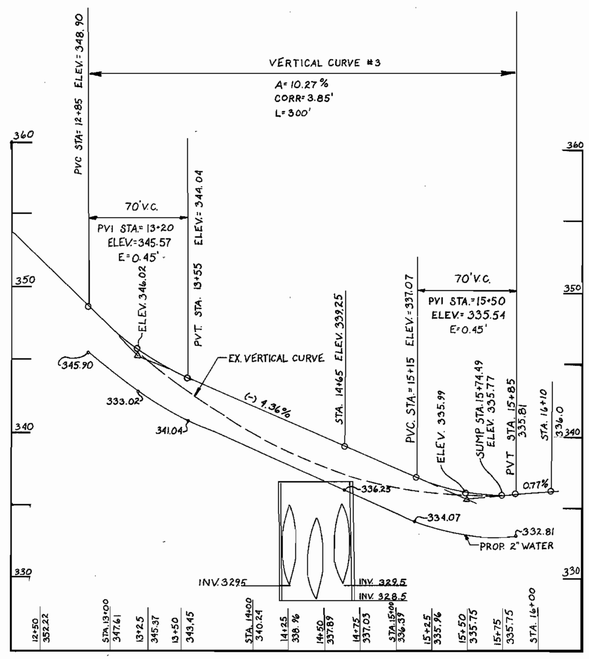


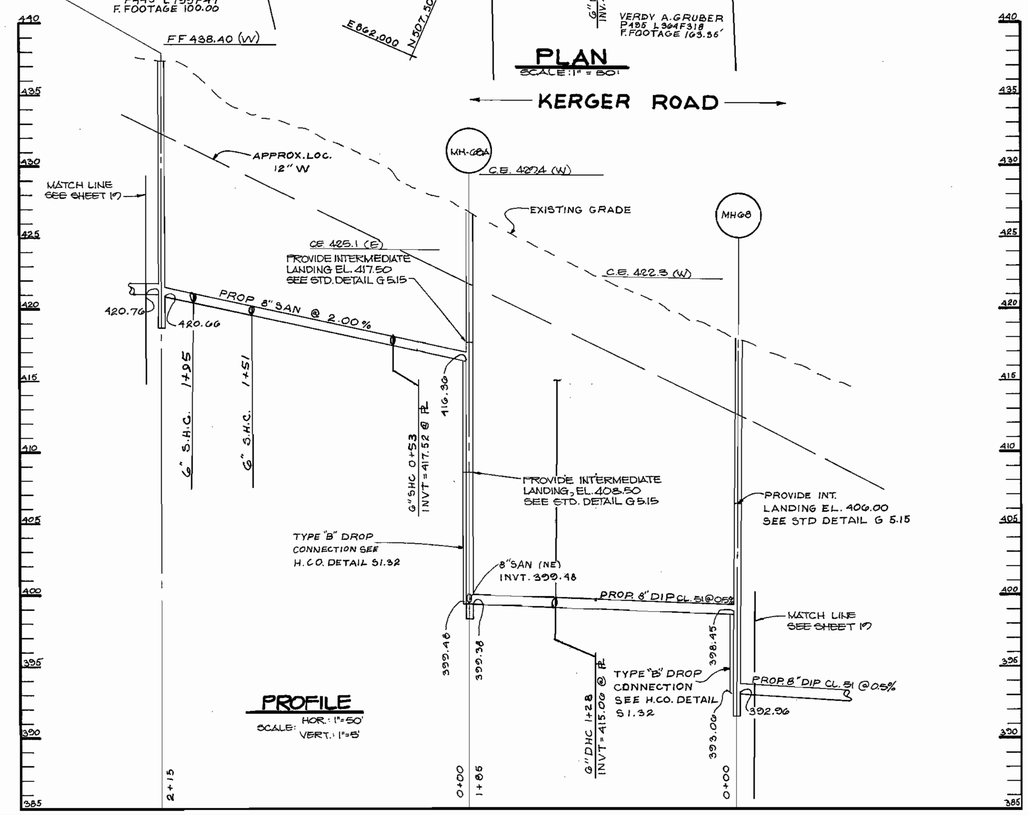
R-9
PK NAIL
N 607444.18
E 802230.41



REVISED ENTRANCE ROAD PROFILE (CON'T)
SEE SHEET 4

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.





DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	THE RIEMER GROUP INC. 3105 NORTH RIDGE ROAD ELLICOTT CITY, MARYLAND (301)-461-2690	DES: M.C.M. DRN: K.L.M. CHK: J.J.B. DATE: 9-16-88	BY / NO. / REVISION / DATE	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 15	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 18 OF 36

DIRECTOR OF PUBLIC WORKS — DATE 9/28/88
CHIEF, BUREAU OF ENGINEERING — DATE 9-28-88
CHIEF, BUREAU OF UTILITIES — DATE 9-28-88
CHIEF, UTILITY DESIGN DIVISION — DATE 9-28-88

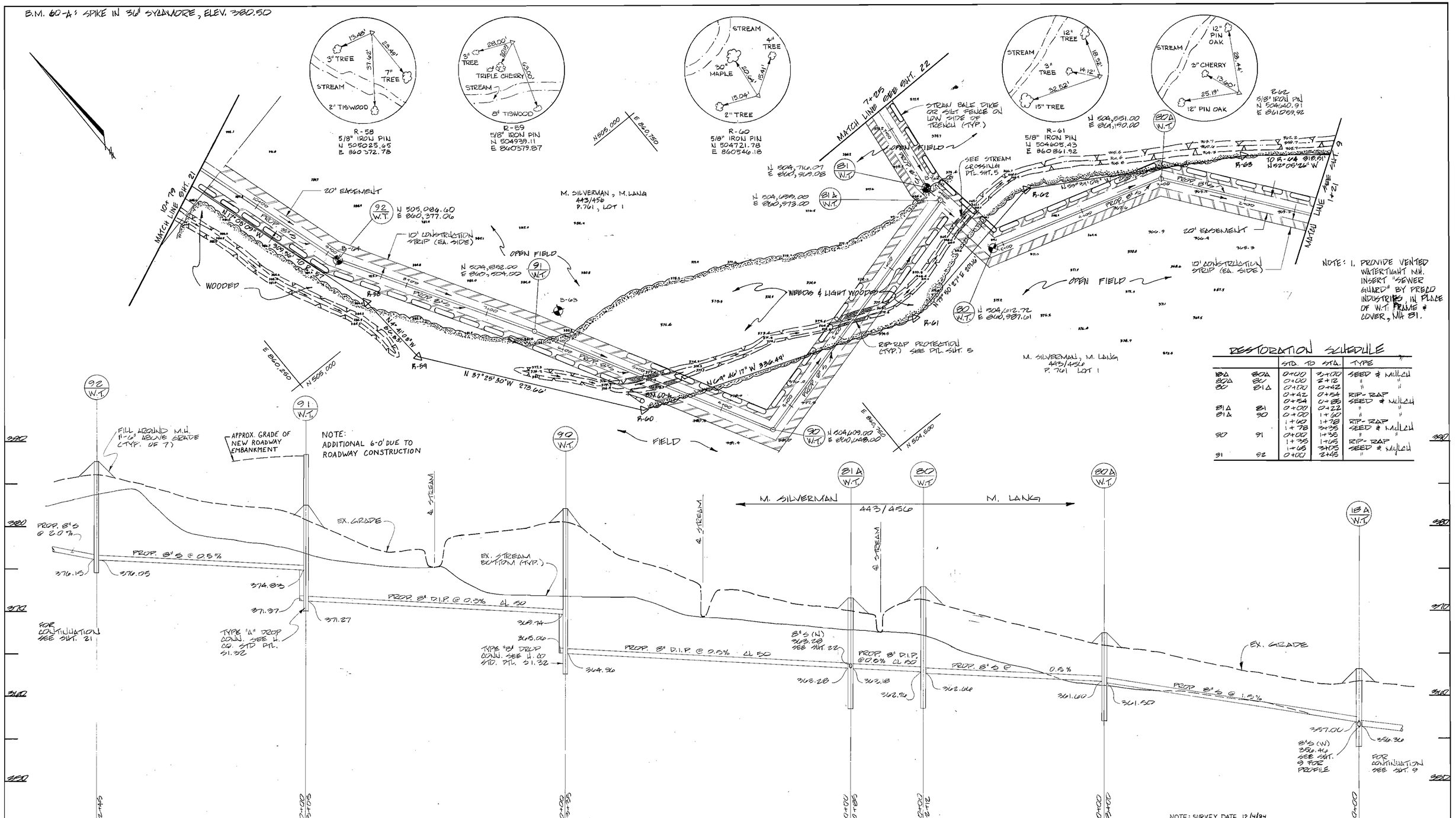
STATE OF MARYLAND — JAMES J. BURKHARDT — NO. 8761 — REGISTERED PROFESSIONAL ENGINEER

BRUNING 44.132 69150

9/6/89

43303

B.M. 60-A: SPIKE IN 36" SYCAMORE, ELEV. 380.50



RESTORATION SCHEDULE

		STA. TO STA.		TYPE
18Δ	80Δ	0+00	2+00	SEED & MULCH
80Δ	80	0+00	2+12	" "
80	81Δ	0+00	0+42	" "
		0+42	0+54	RIP-RAP
		0+54	0+85	SEED & MULCH
81Δ	81	0+00	0+22	" "
81Δ	90	0+00	1+60	" "
		1+60	1+78	RIP-RAP
		1+78	3+35	SEED & MULCH
90	91	0+00	1+35	" "
		1+35	1+65	RIP-RAP
		1+65	3+05	SEED & MULCH
91	92	0+00	2+45	" "

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-26-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BRUCE HARMS — No. 7371 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 21

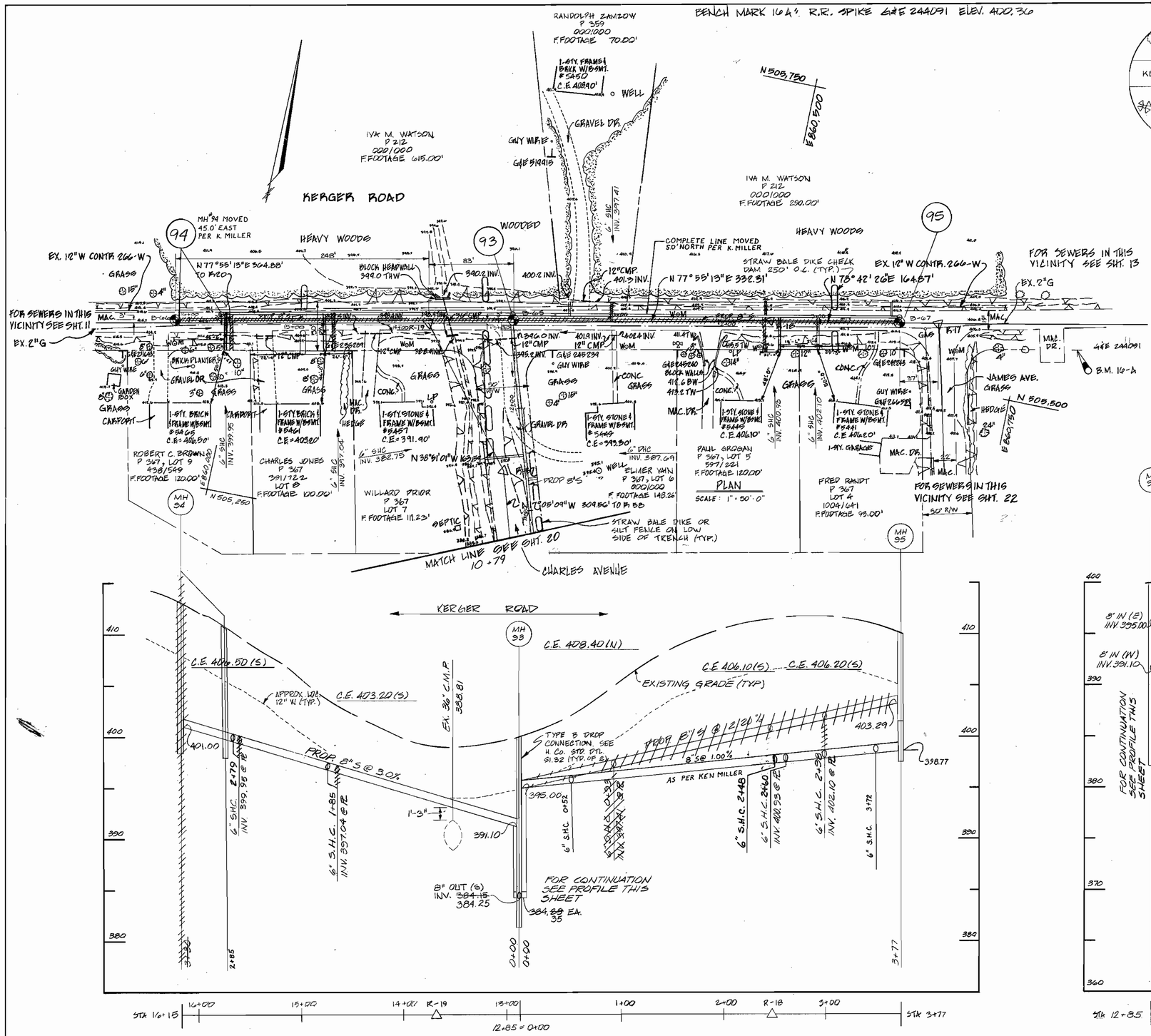
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

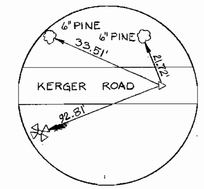
SCALE AS SHOWN

SHEET 20 OF 38

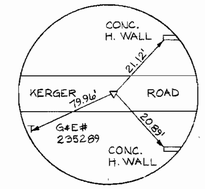
AS-BUILT 9/6/89

30690
OZALID

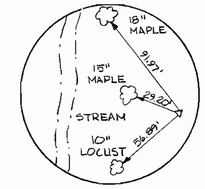




R-18
PK NAIL
N 505518.49
E 860504.16



R-19
PK NAIL
N 505448.95
E 860179.21

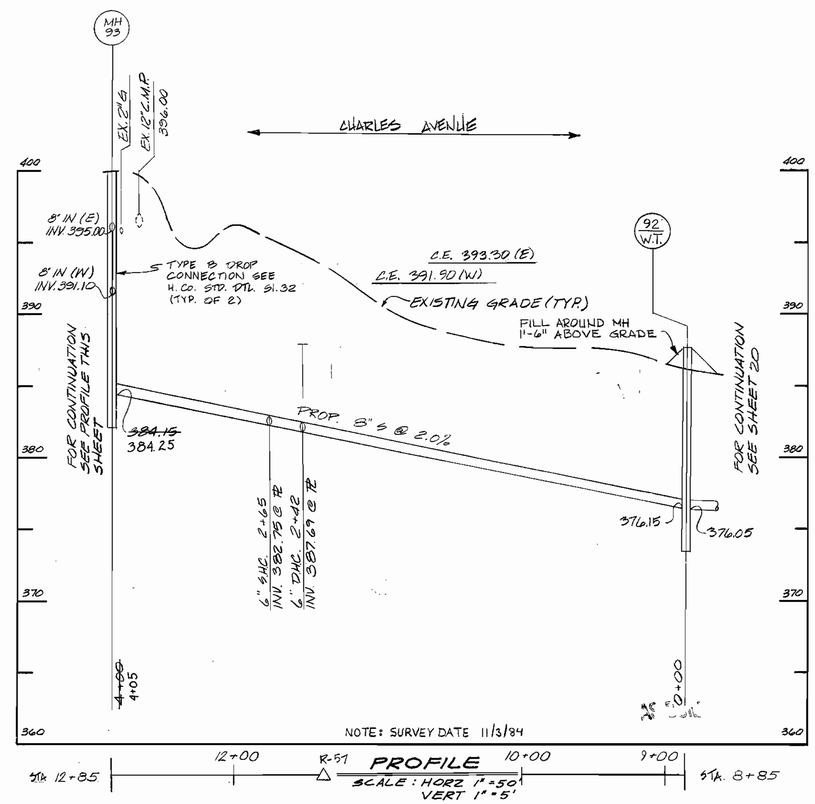


R-57
5/8" IRON PIN
N 505321.55
E 860281.83

RESTORATION SCHEDULE

MH	TO	MH	STA.	TO	STA.	TYPE
92		93	0+00	1+73		SEED & MULCH
			1+73	3+90		SOLID SODDING
			3+90	4+00		ROADWAY - PAVING, GRAVEL OR STONE
93		94	0+00	3+30		GRASS - SOLID SODDING
93		95	0+00	3+77		" " "

PROFILE
SCALE: HORZ 1" = 50'
VERT 1" = 5'



NOTE: SURVEY DATE 11/3/84

PROFILE
SCALE: HORZ 1" = 50'
VERT 1" = 5'

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROMLEY — No. 13713 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 21 OF 38

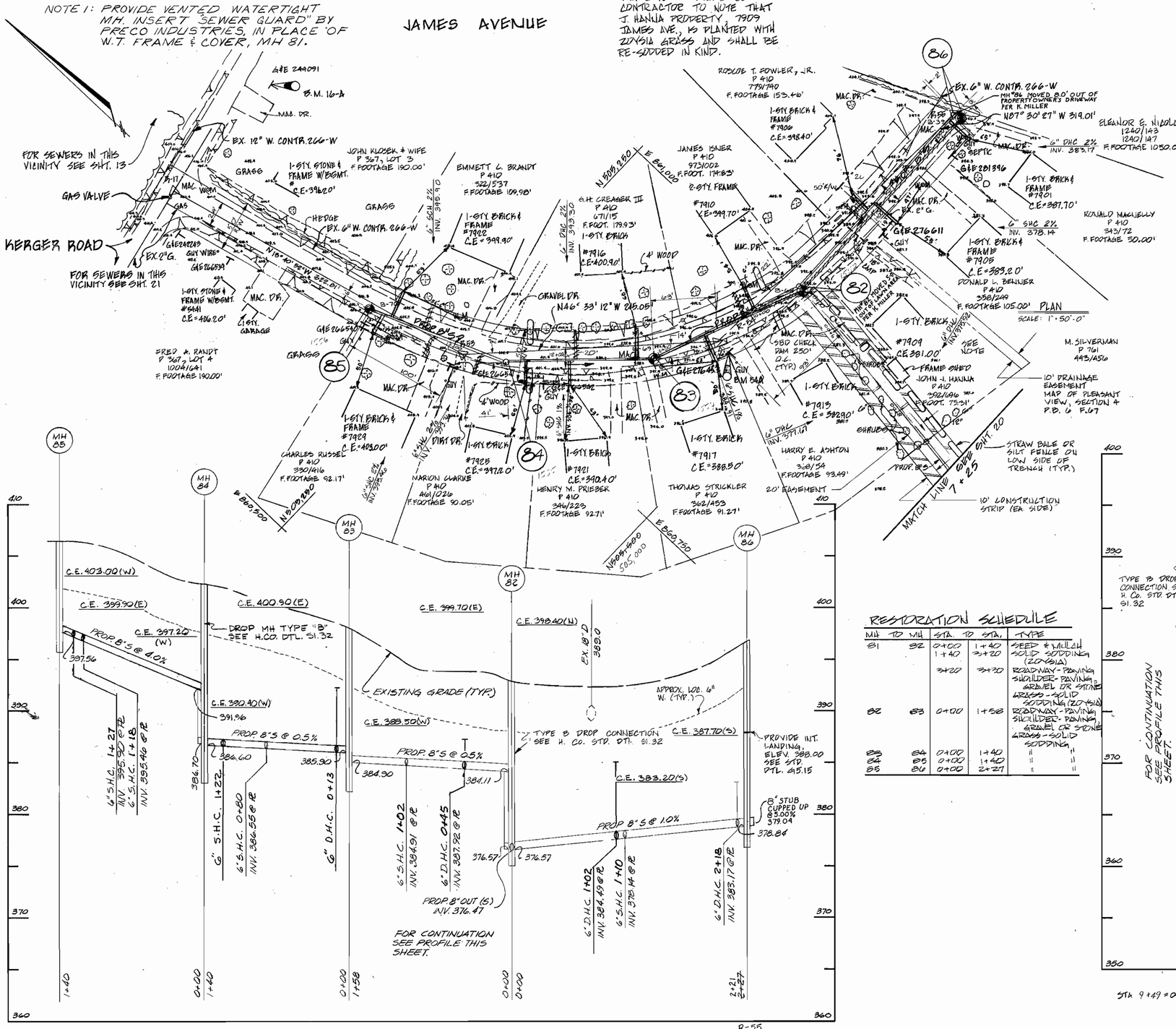
AS-BUILT 9/6/89

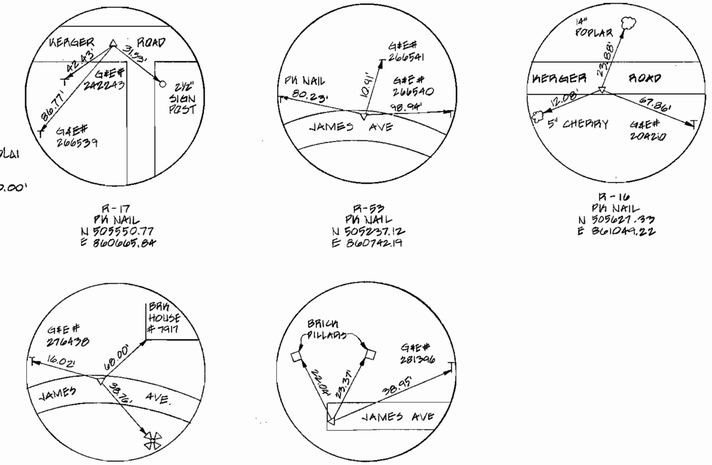
36950
OZALID

BENCH MARK 16-A: SPIKE G&E 244091 ELEV. 410.36'
BENCH MARK 54-A: SPIKE G&E 276438 ELEV. 396.34'

NOTE 1: PROVIDE VENTED WATERTIGHT MH. INSERT "SEWER GUARD" BY PRECO INDUSTRIES, IN PLACE OF W.T. FRAME & COVER, MH 81.

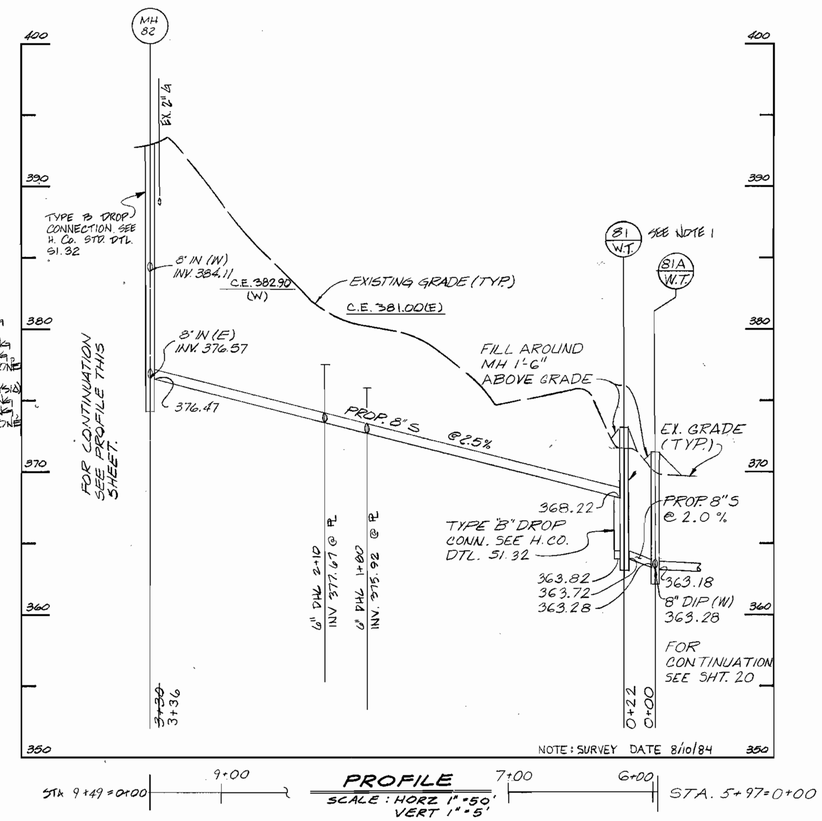
NOTE: SOD ALL DISTURBED AREAS, STA. 6+15 TO STA. 8+00. CONTRACTOR TO NOTE THAT J. HANNA PROPERTY, 7909 JAMES AVE., IS PLANTED WITH ZOYSIA GRASS AND SHALL BE RE-SODDED IN KIND.





RESTORATION SCHEDULE

MH	TO MH	STA.	TO STA.	TYPE
81	82	0+00	1+40	SEED & MULCH
		1+40	3+20	SOLID SODDING (ZOYSIA)
		3+20	3+30	ROADWAY - PAVING SHOULDER - PAVING GRAVEL OR STONE
82	83	0+00	1+58	CROSS - SOLID SODDING (ZOYSIA) ROADWAY - PAVING SHOULDER - PAVING GRAVEL OR STONE
83	84	0+00	1+40	CROSS - SOLID SODDING " "
84	85	0+00	1+40	" "
85	86	0+00	2+27	" "



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROMLEY — No. 13125 REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 21

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 22 OF 38

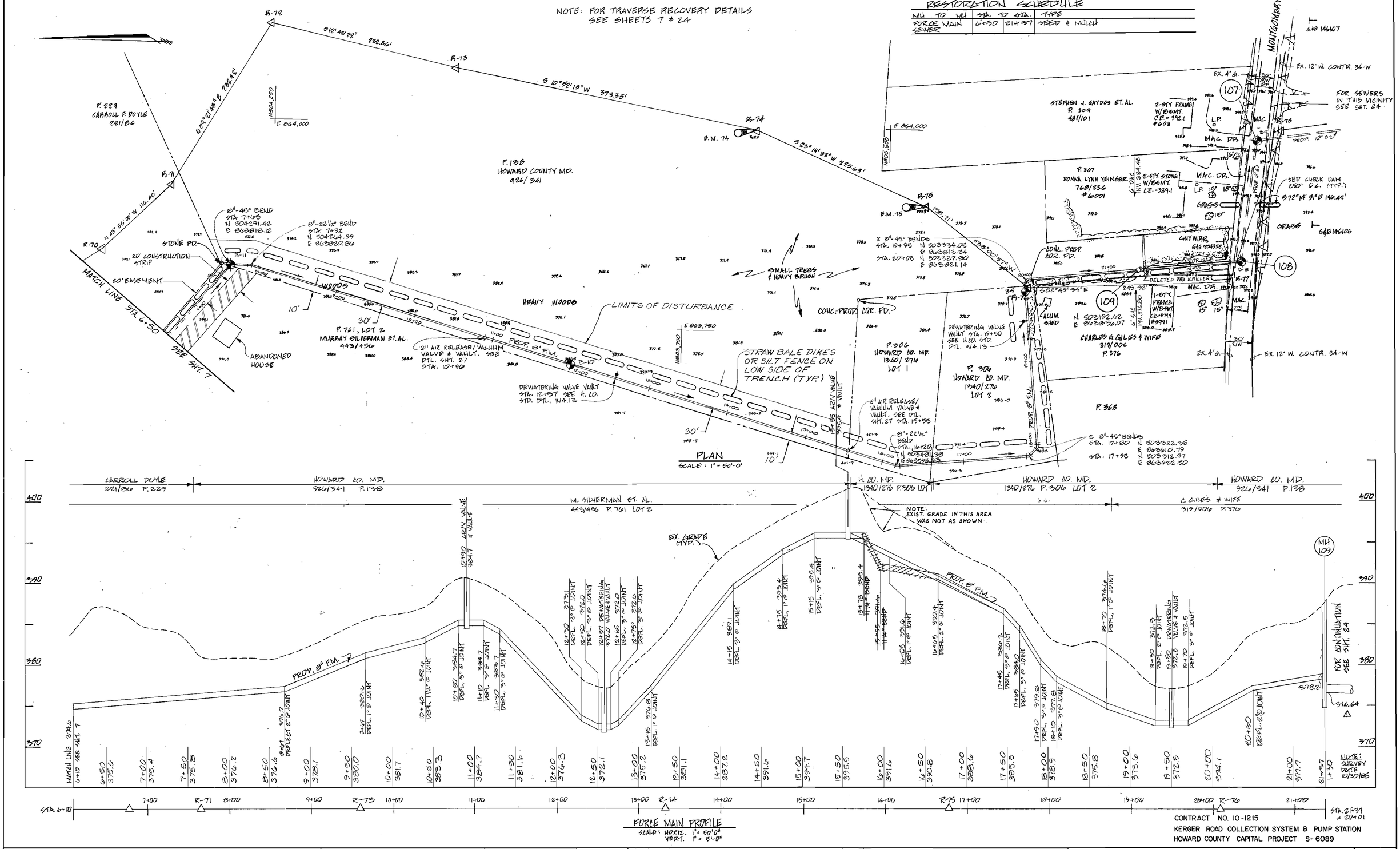
AS-BUILT 9/6/89

B.M. 74: 5/8" IRON PIN (TRAVERSE POINT) ELEV. 369.00
B.M. 75: 5/8" IRON PIN (TRAVERSE POINT) ELEV. 377.26

RESTORATION SCHEDULE

MH TO MH	STA. TO STA.	TYPE
FORCE MAIN SEWER	6+50 21+37	SEED & MULCH

NOTE: FOR TRAVERSE RECOVERY DETAILS SEE SHEETS 7 & 24



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3.25.87
CHIEF, BUREAU OF UTILITIES — DATE
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROWLEY — No. 13713 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: W.M.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
CB	1	REVISE PIPE ELEVATIONS AT MH 109	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
600' SCALE MAP NO. 31, 37 BLOCK NO. 22, 3

KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN
SHEET 23 OF 38

AS-BUILT 9/6/89

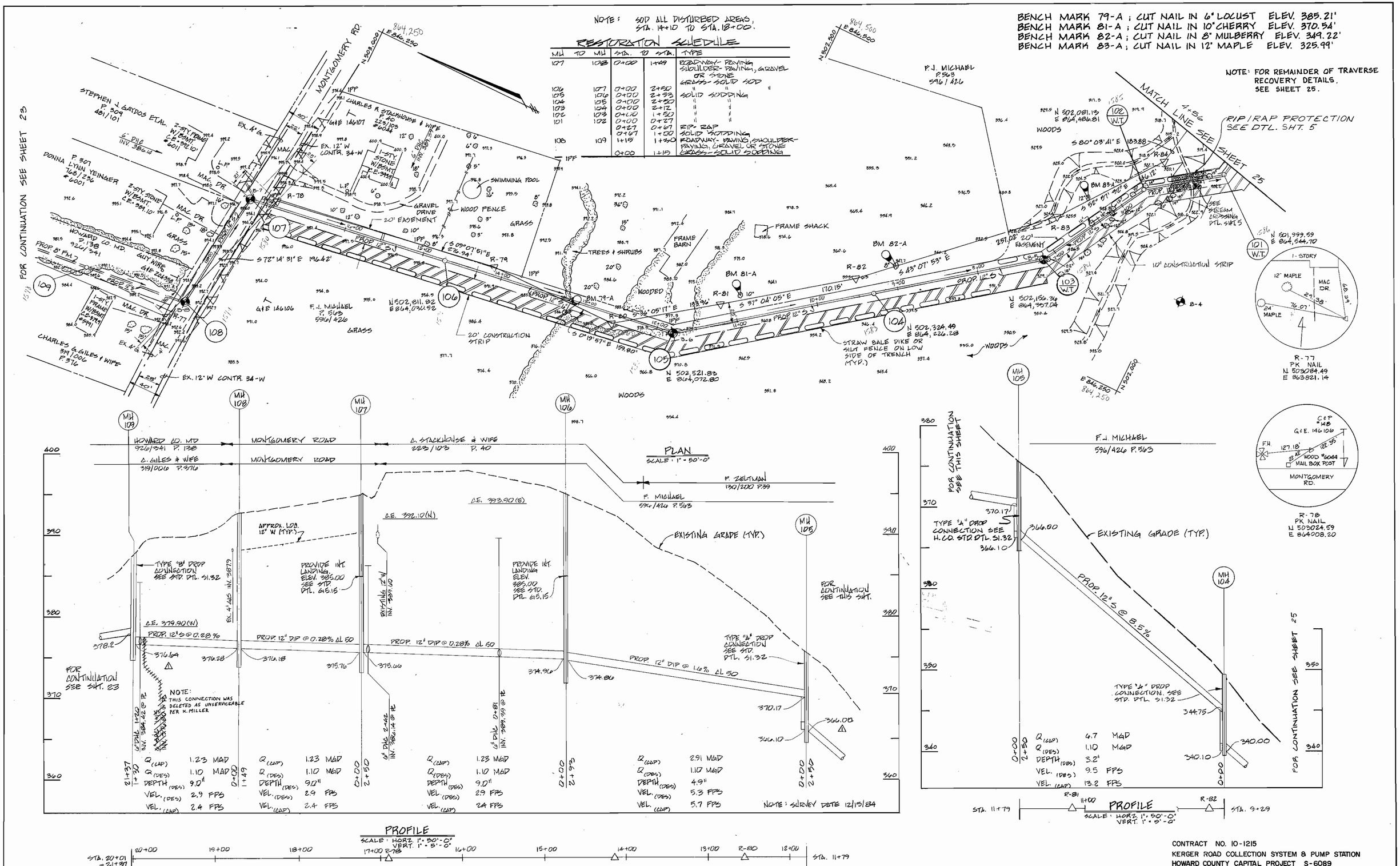
NOTE: SOD ALL DISTURBED AREAS, STA. 14+10 TO STA. 18+00.

RESTORATION SCHEDULE

MH	TO MH	STA.	TO STA.	TYPE
107	108	0+00	1+49	ROADWAY- PAVING SHOULDER- PAVING, GRAVEL OR STONE GRASS- SOLID SOD
106	107	0+00	2+50	" " "
105	106	0+00	2+93	SOLID SODDING
104	105	0+00	2+50	" "
103	104	0+00	2+12	" "
102	103	0+00	1+50	" "
101	102	0+00	0+27	" "
		0+27	0+67	RIP- RAP
		0+67	1+00	SOLID SODDING
108	109	1+19	1+30	ROADWAY- PAVING, SHOULDER- PAVING, GRAVEL OR STONE
		0+00	1+19	GRASS- SOLID SODDING

BENCH MARK 79-A ; CUT NAIL IN 6" LOCUST ELEV. 385.21'
BENCH MARK 81-A ; CUT NAIL IN 10" CHERRY ELEV. 370.54'
BENCH MARK 82-A ; CUT NAIL IN 8" MULBERRY ELEV. 349.22'
BENCH MARK 83-A ; CUT NAIL IN 12" MAPLE ELEV. 325.99'

NOTE: FOR REMAINDER OF TRAVERSE RECOVERY DETAILS, SEE SHEET 25.



CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

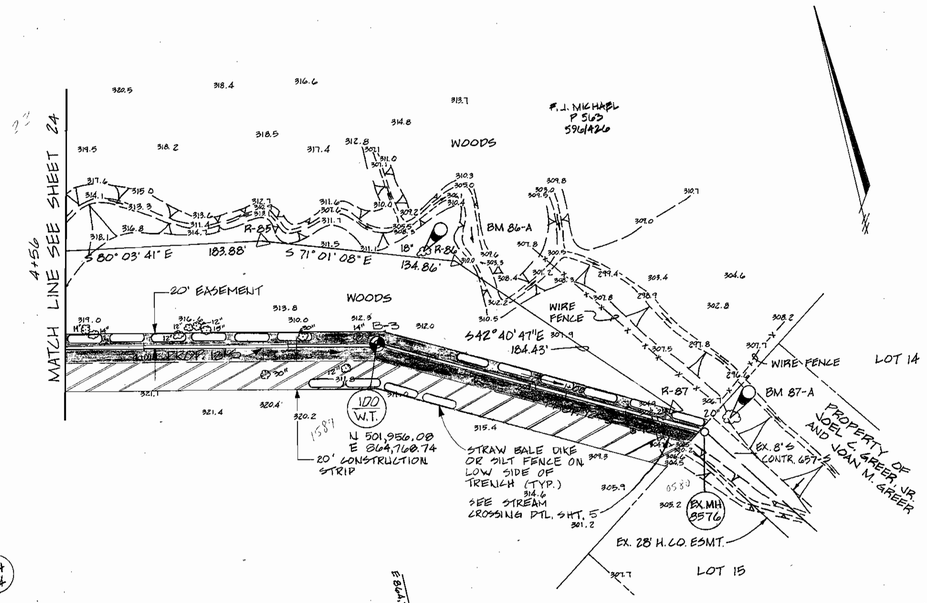
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3.25.87 CHIEF, BUREAU OF UTILITIES — DATE CHIEF, UTILITY DIVISION — DATE 3/25/87	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND CHARLES E. BUSLEY REGISTERED PROFESSIONAL ENGINEER	DES: R.N.T. DRN: R.N.T. CHK: C.B. DATE: 5/24/85	BY / NO. / REVISION / DATE CBB / 1 / REVISE INV. ELEVATIONS	PIPING PLAN AND PROFILE KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 37 BLOCK NO. 4	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 24 OF 38

AS-BUILT 9/6/89

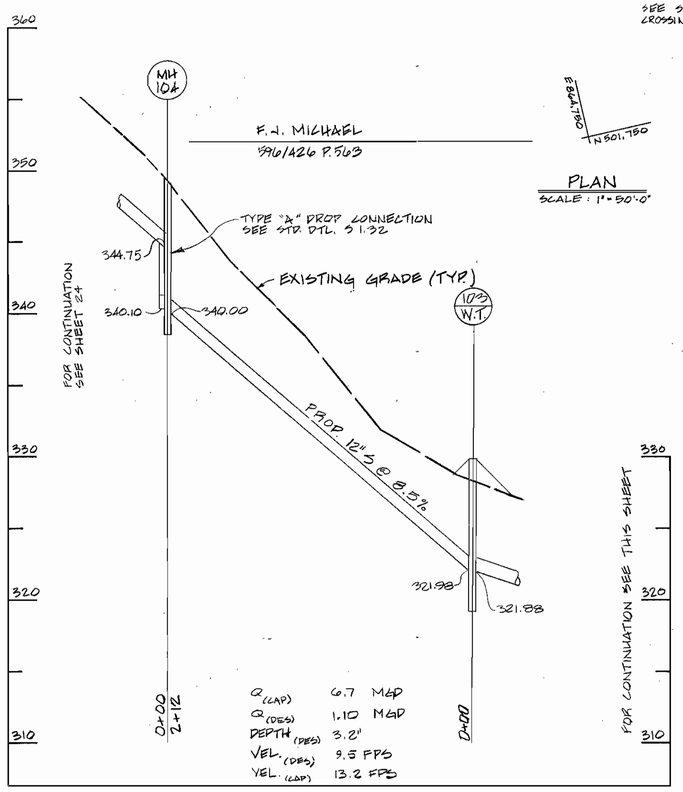
RESTORATION SCHEDULE

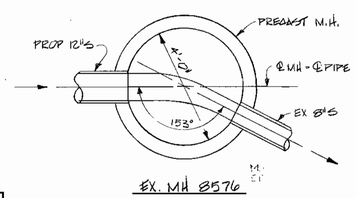
MH	TO	MH	STA	TO	STA	TYPE
100		101	0+00		2+30	SOLID SODDING
8576		100	0+00		2+37	" "

BENCH MARK 86-A ; CUT NAIL IN 18" POPLAR ELEV. 311.46'
BENCH MARK 87-A ; CUT NAIL IN 20" POPLAR ELEV. 306.38'



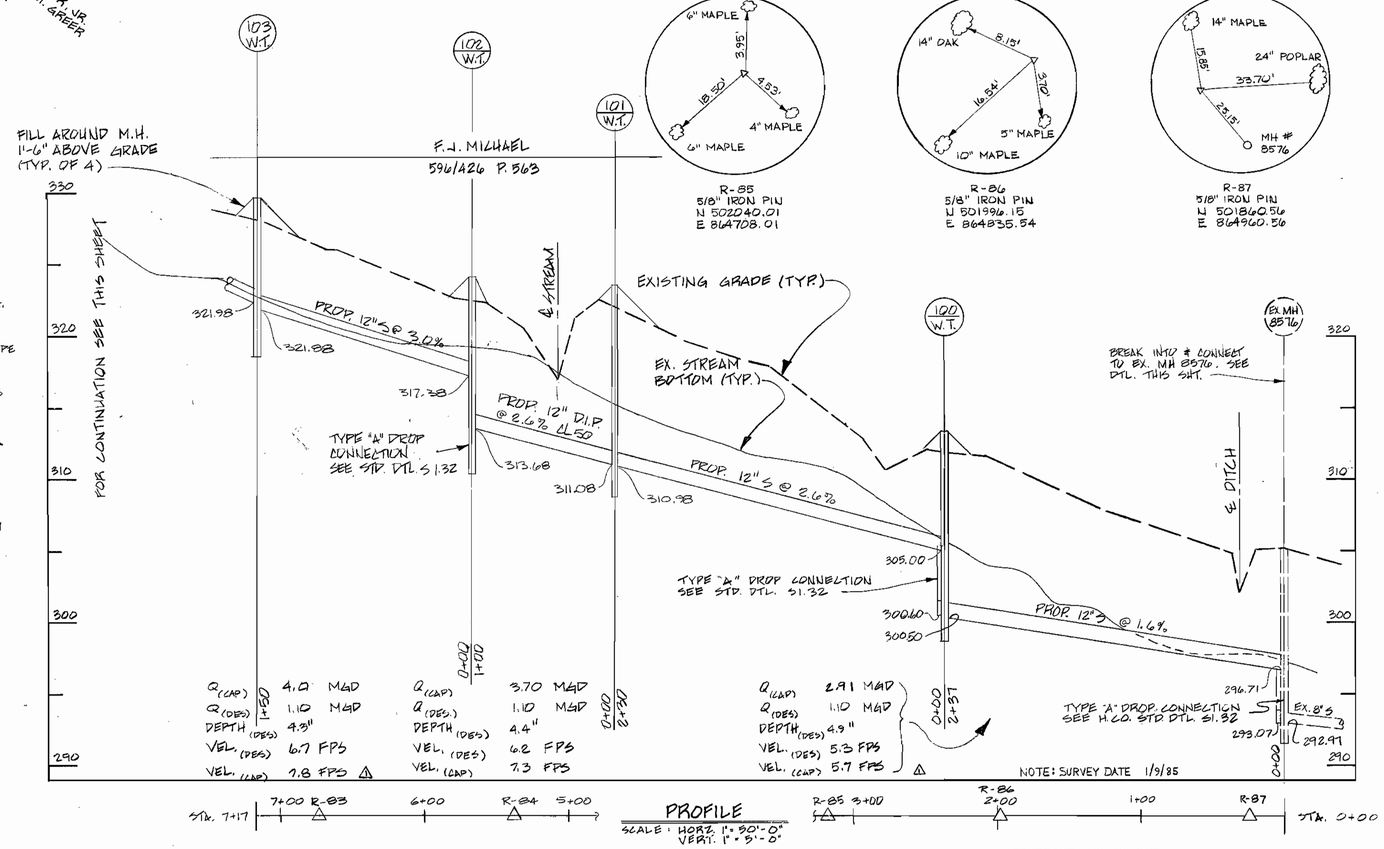
PLAN
SCALE : 1" = 50'-0"

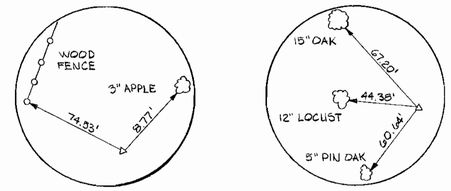




EX. MH 8576

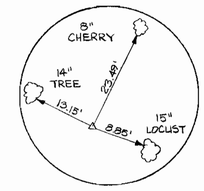
REQUIRED AS REQUIRED TO PROVIDE SMOOTH HYDRAULIC TRANSITION BETWEEN PIPES. CHANNEL LININGS SHALL BE FORMED USING SEWER BRICK (ASTM C-32, GRADE SS, SIZE NO. 1).



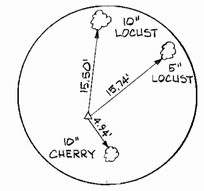


R-79
5/8" IRON PIN
N 502751.16
E 864052.14

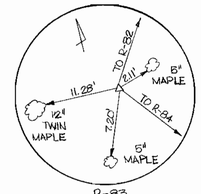
R-80
5/8" IRON PIN
N 502591.36
E 864053.07



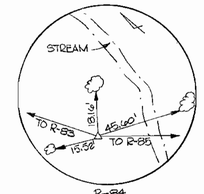
R-81
5/8" IRON PIN
N 502483.10
E 864131.98



R-82
5/8" IRON PIN
N 502547.34
E 864234.54



R-83
5/8" IRON PIN
N 502159.77
E 864410.26



R-84
5/8" IRON PIN
N 502071.75
E 864326.89

R-85
5/8" IRON PIN
N 502040.01
E 864708.01

R-86
5/8" IRON PIN
N 501996.15
E 864835.54

R-87
5/8" IRON PIN
N 501860.56
E 864960.56

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

DES: R.N.T.
DRN: R.N.T.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
CB	1	REVISE FLOW DATA	

PIPING PLAN AND PROFILE
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 37 BLOCK NO. 4

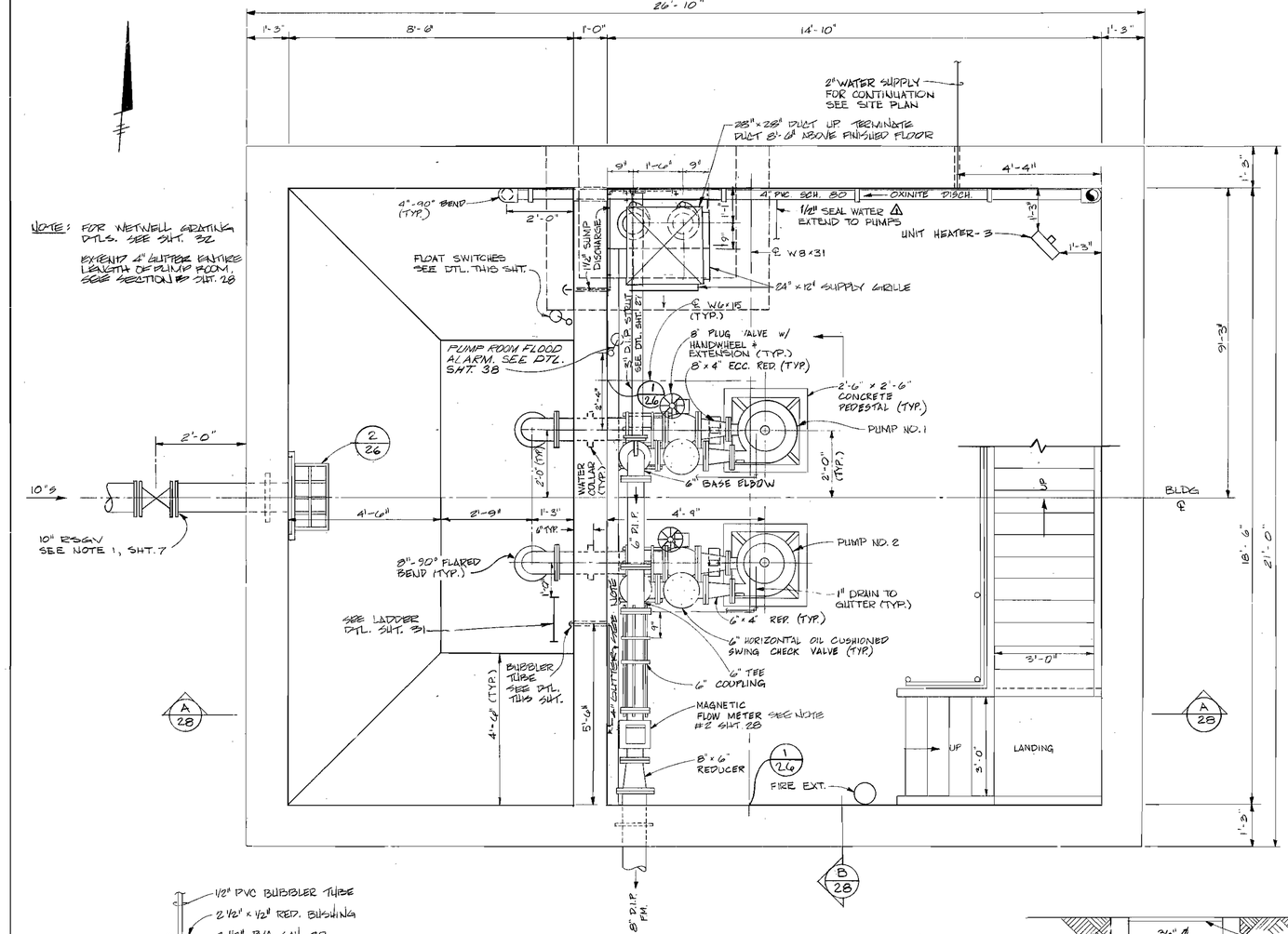
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

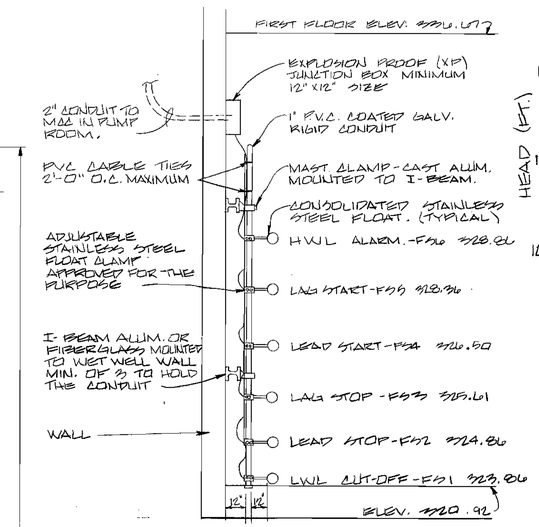
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

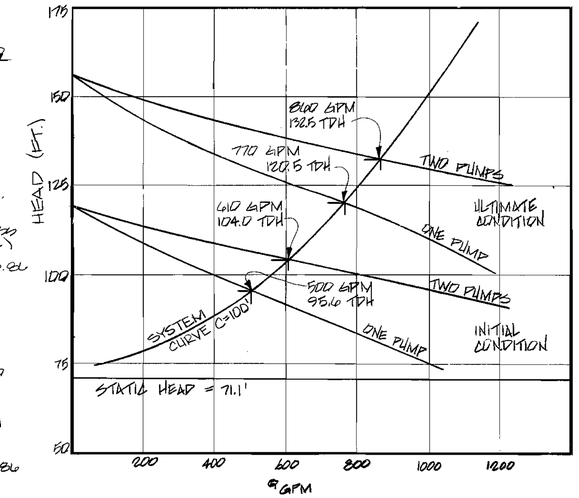
SHEET 25 OF 38

OZALID



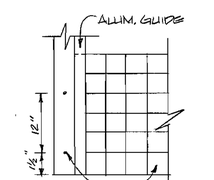


FLOAT SCHEMATIC DIAGRAM
NOT TO SCALE

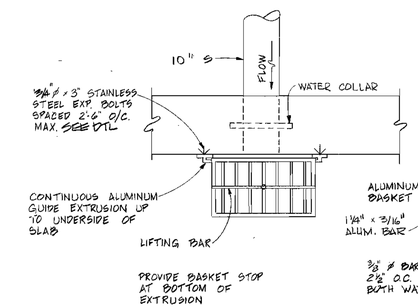


HEAD-CAPACITY CURVE

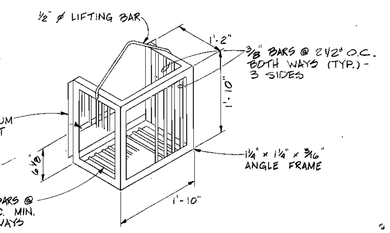
INITIAL: 500 GPM 95.6' TDH, 25 HP, 61% EFF., 1750 RPM
ULTIMATE: 770 GPM 120.5' TDH, 40 HP, 68% EFF., 1750 RPM
(BY OTHERS)



GUIDE DETAIL
NOT TO SCALE

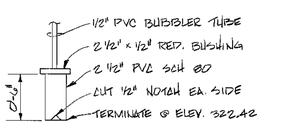


NOTE: MATERIAL SHALL BE GRADE 6063-T5 ALUMINUM THROUGHOUT



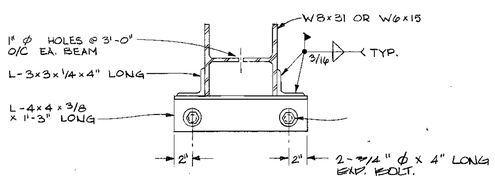
PLAN DEBRIS BASKET DETAIL
NOT TO SCALE

(2/26) ISOMETRIC DEBRIS SCREENING BASKET DETAIL
NOT TO SCALE

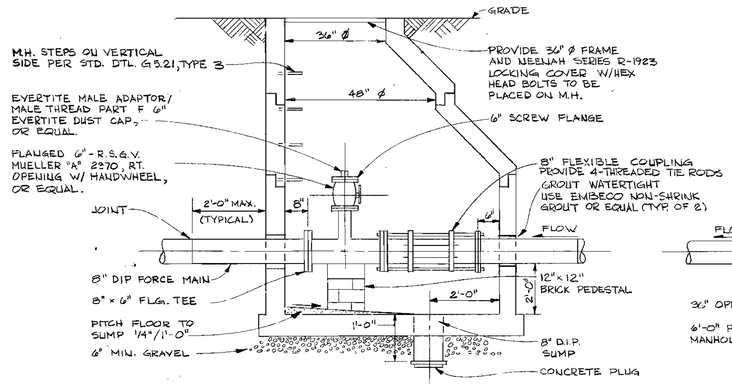


BUBBLER TUBE DETAIL
NOT TO SCALE

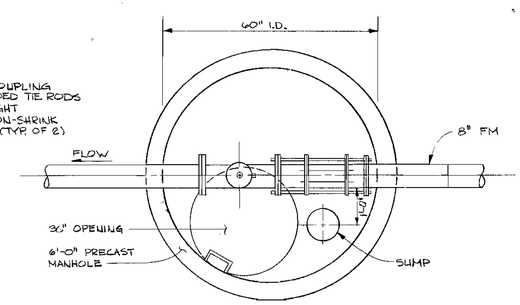
BASEMENT
SCALE: ½"=1'-0"



(1/26) BEAM DETAIL (TYP. OF 4)
NOT TO SCALE



ELEVATION



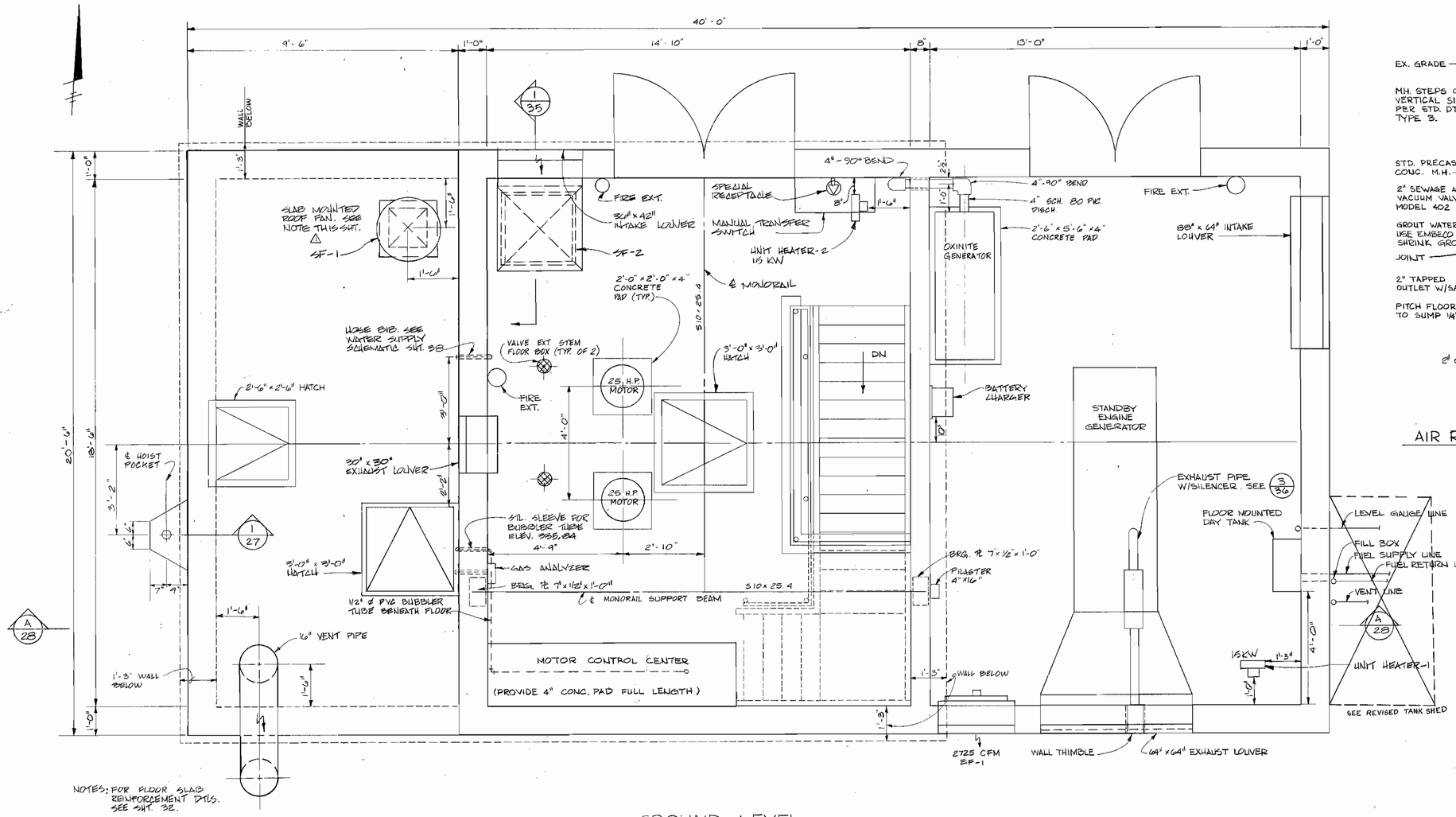
PLAN

EMERGENCY CONNECTION VALVE DETAIL 0+41
NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B. DRN: C.M. CHK: C.B. DATE: 5/24/85	PUMP STATION - PLAN KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN
Harry F. Nemeyer 3-26-87 DIRECTOR OF PUBLIC WORKS DATE CHIEF, BUREAU OF ENGINEERING DATE 3-25-87 Robert M. Bennett 3-25-87 CHIEF, BUREAU OF UTILITIES DATE CHIEF, UTILITY DIVISION DATE 3/25/87	STATE OF MARYLAND CHARLES GROSSER No. 13734 REGISTERED PROFESSIONAL ENGINEER	BY / NO. / REVISION / DATE LB / 1 / REVISE SIZE OF SEAL WATER LINE 600' SCALE MAP NO. 31 BLOCK NO. 22			SHEET 26 OF 38

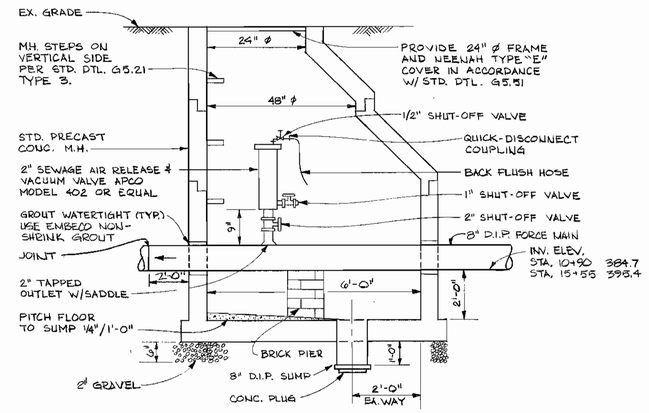
38950
OZALID



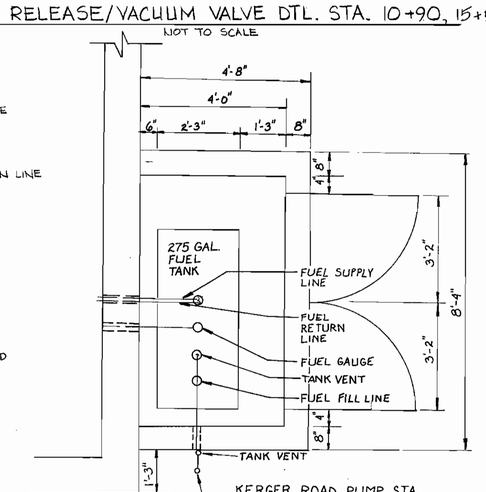
NOTES: FOR FLOOR SLAB REINFORCEMENT DTLS. SEE SHT. 32.

EXTEND 6" PVC DUCT FOR S.F.-1 TO ELEV. 331.00. PROVIDE GALV. STL. WALL BRACES TOP & BOTTOM

GROUND LEVEL
SCALE: 1/2" = 1'-0"



AIR RELEASE/VACUUM VALVE DTL. STA. 10+90, 15+55
NOT TO SCALE



KERGER ROAD PUMP STA.
PUMP STA-GROUND LEVEL PLAN FUEL TANK SHED REVISION

LINTELS

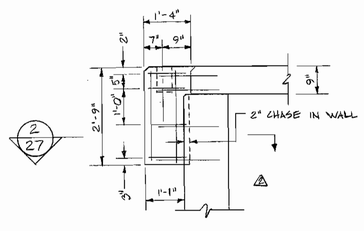
UNLESS NOTED OTHERWISE, LINTELS OVER MASONRY OPENINGS SHALL BE AS FOLLOWS:

MASONRY OPG.	STEEL LINTEL
UP TO 4'-0" WIDE	1-L 4"x3½"x⅜" FOR 4" OF WALL THICKNESS WITH A MIN. OF 6" BEARING EACH END.
4'-0" TO 6'-0" WIDE	1-L 5"x3½"x⅜" FOR 4" OF WALL THICKNESS WITH A MIN. OF 6" BEARING EACH END.
6'-0" TO 10'-0" WIDE	1-L 6"x3½"x⅜" FOR 4" OF WALL THICKNESS WITH A MIN. OF 6" BEARING EACH END.

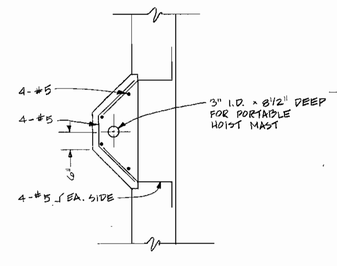
PRE-CAST CONCRETE LINTELS

MASONRY OPG.	LINTEL SIZE & REINF.
0' TO 4'-0"	1-7⅝"x3⅝" W/ 1-3/8" ⌀ DEF. BAR FOR EA 4" WALL
4' TO 9'-0"	1-7⅝"x3⅝" W/ 1-1/2" ⌀ DEF. BAR FOR EA 4" WALL

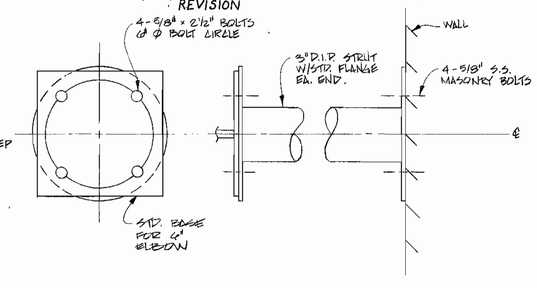
TOP OF LINTEL TO BE MARKED OR 1-BAR PLACED TOP & BOTTOM



1/27 PORTABLE HOIST SUPPORT
NOT TO SCALE



2/27 SECTION-HOIST SUPPORT
NOT TO SCALE



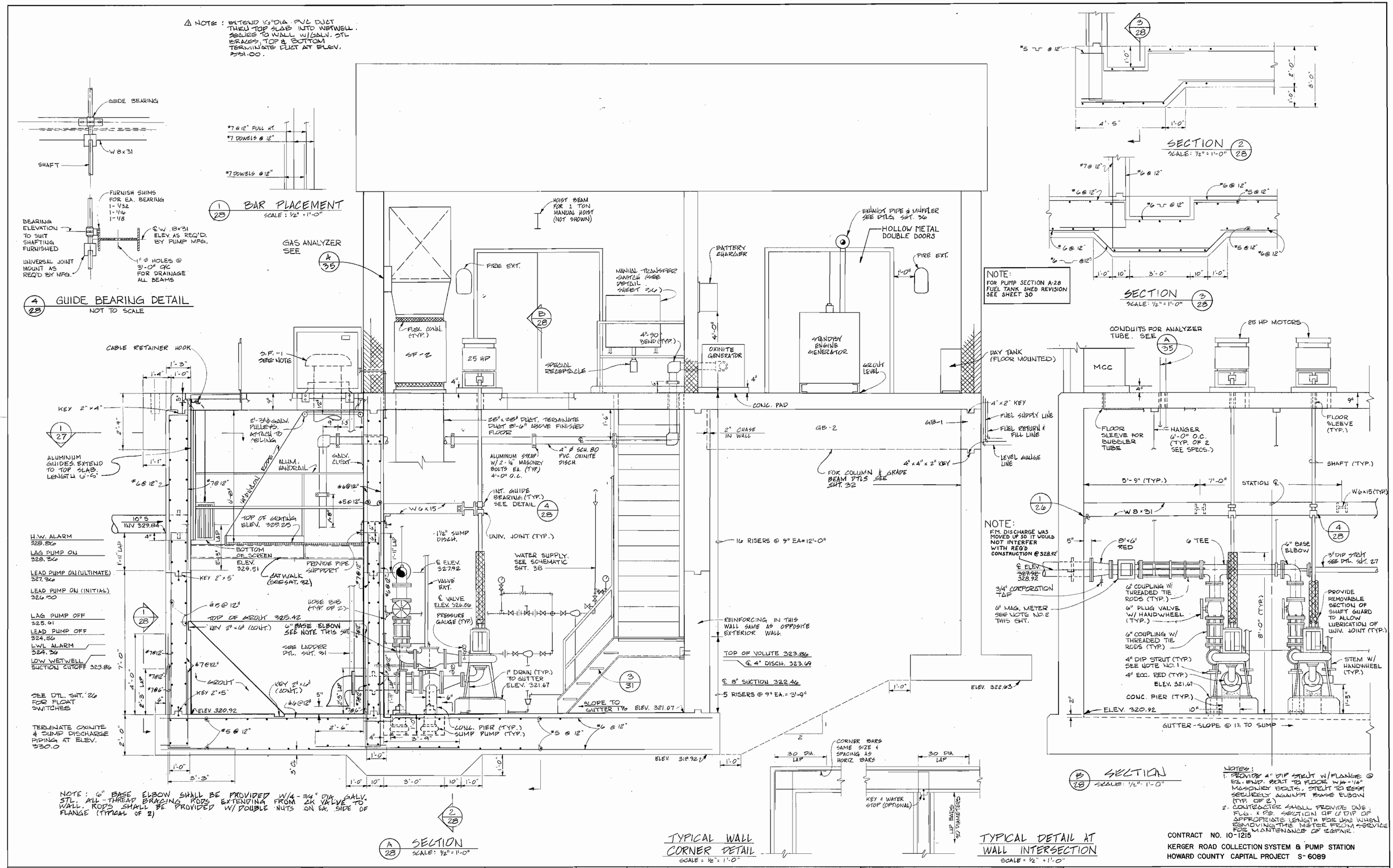
3/27 3-INCH DIP STRUT DTL.
NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B. / DRN: C.M. / CHK: C.B. / DATE: 5/24/85	BY	NO.	REVISION	DATE	PUMP STATION - PLAN KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN / SHEET 27 OF 38
George F. Newman 3-26-87 DIRECTOR OF PUBLIC WORKS DATE; Robert H. Bauman 3-25-87 CHIEF, BUREAU OF UTILITIES DATE			LB	1	REVISE HOIST SUPPORT DTL.		600' SCALE MAP NO. 31 BLOCK NO. 22		
			LB	1	REVISE NOTE FOR S.F.-1				

CHIEF, BUREAU OF ENGINEERING DATE; CHIEF, UTILITY DIVISION DATE

AS-BUILT 9/6/89



NOTES:
1. PROVIDE 4" DIP STRUT W/ FLANGE @ EA. END. BOLT TO FLOOR W/4 - 1/4" MASONRY BOLTS, STRUT TO REST SECURELY AGAINST BASE ELBOW (TYP. OF 2)
2. CONTRACTOR SHALL PROVIDE DWE FLG. x PE SECTION OF W DIP OF APPROPRIATE LENGTH FOR USE WHEN REMOVING THE METER FROM SERVICE FOR MAINTENANCE OR REPAIR.

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	3-26-87 DATE	CHIEF, BUREAU OF ENGINEERING	3-25-87 DATE
CHIEF, BUREAU OF UTILITIES	3-25-87 DATE	CHIEF, UTILITY DIVISION	3/25/87 DATE

JOHN E. HARMS, JR & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES E. BROOKS — REGISTERED PROFESSIONAL ENGINEER

DES: C.B.
DRN: C.M.
CHK: C.B.
DATE: 5/24/85

BY	NO.	REVISION	DATE
	1	ADD NOTE FOR SUPPLY FAN	

PUMP STATION - SECTIONS
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN
SHEET 28 OF 38

AS-BUILT 9/6/89

36550
02ALID

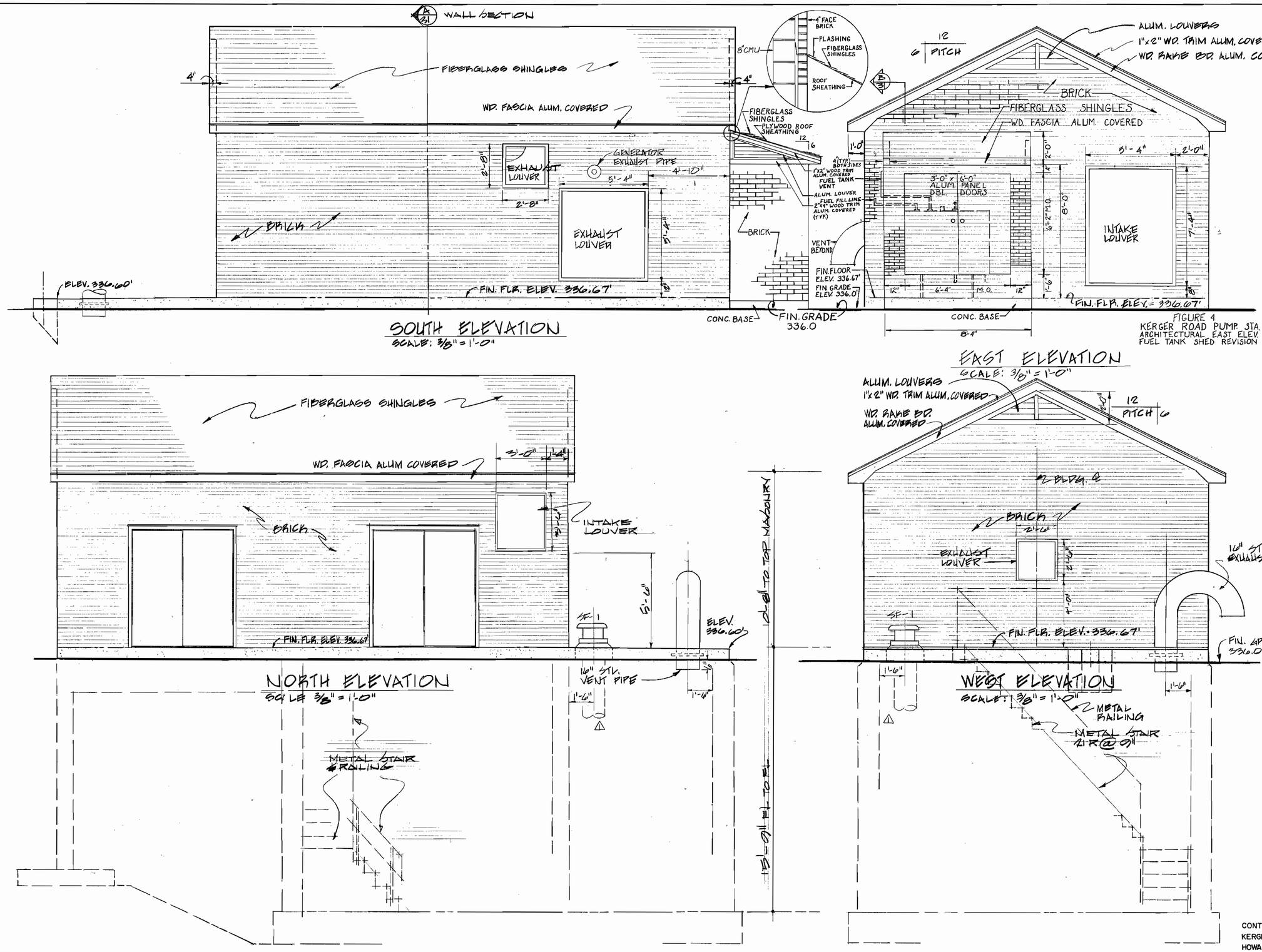


FIGURE 4
KERGER ROAD PUMP STA.
ARCHITECTURAL EAST ELEV.
FUEL TANK SHED REVISION

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

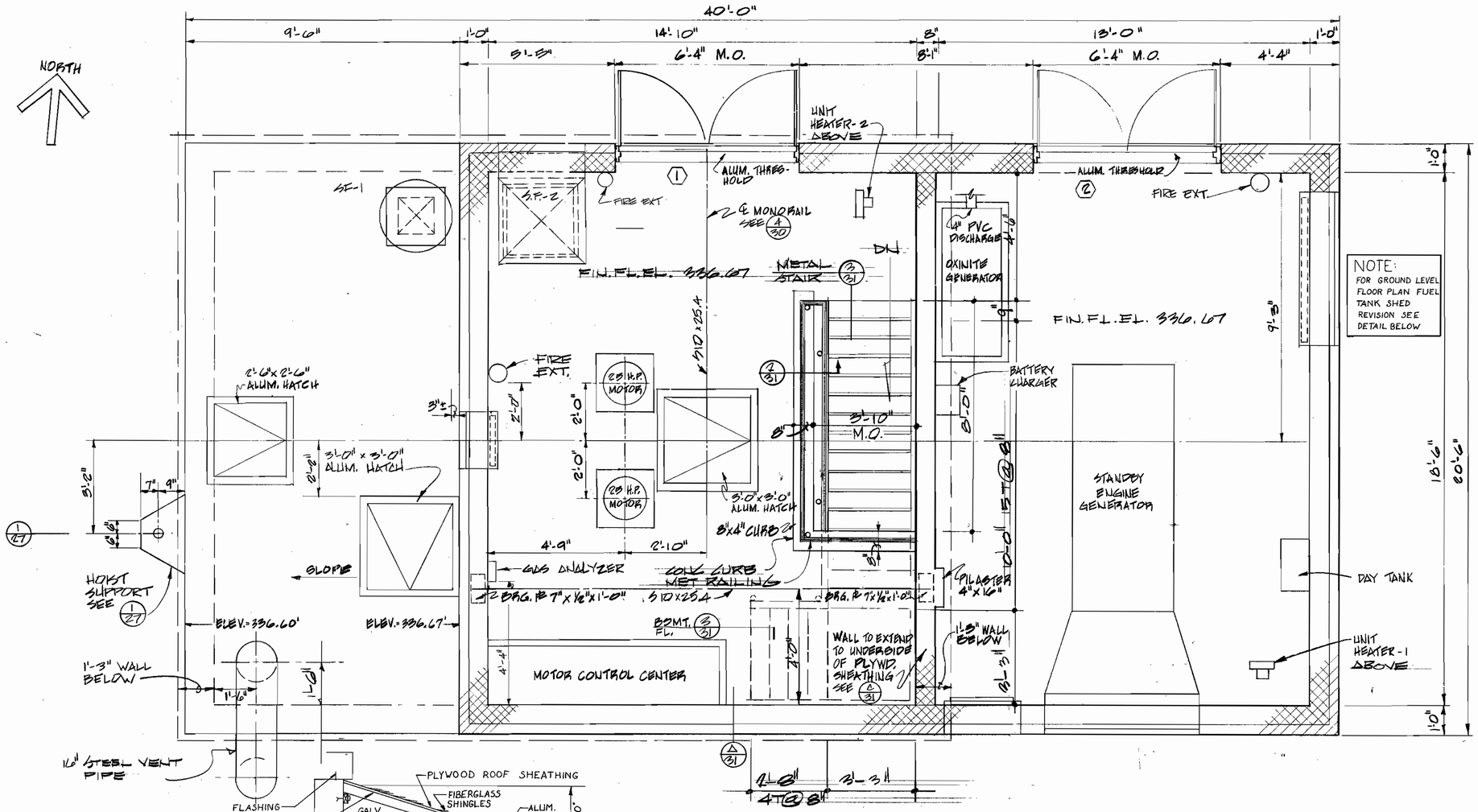
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS 3-26-87 DATE CHIEF, BUREAU OF ENGINEERING 3-25-87 DATE CHIEF, BUREAU OF UTILITIES 3-25-87 DATE CHIEF, UTILITY DIVISION 3/25/87 DATE	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND CHARLES BROWN 13713 REGISTERED PROFESSIONAL ENGINEER	DES: W.M.M. DRN: W.M.M. CHK: C.B. DATE: 5/24/85	CB BY	△ NO.	EXTEND SUPPLY DUCT INTO WETWELL REVISION	DATE

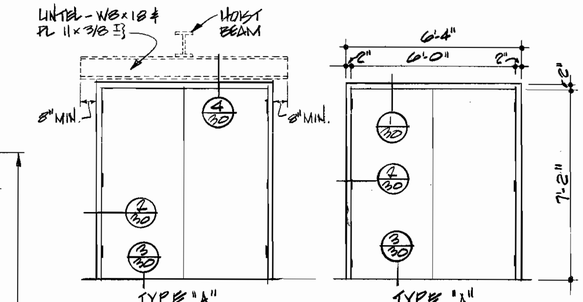
ARCHITECTURAL - ELEVATIONS
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

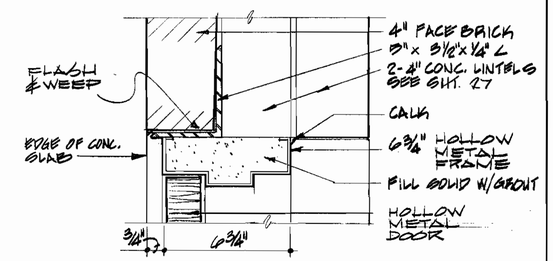
SCALE AS SHOWN
SHEET 29 OF 38

AS-BUILT 9/6/89

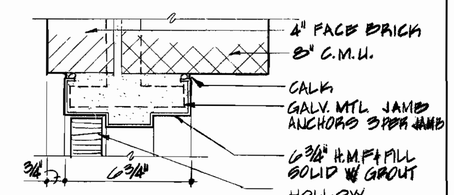




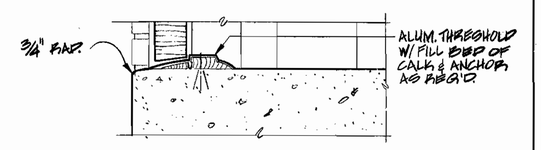
DOOR TYPES
N.T.S.



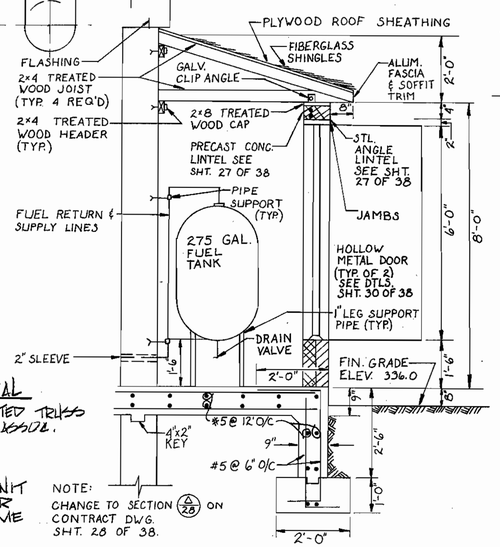
1/30 HEAD AT 2
NTS



2/30 JAMB
NTS



3/30 SILL
NTS



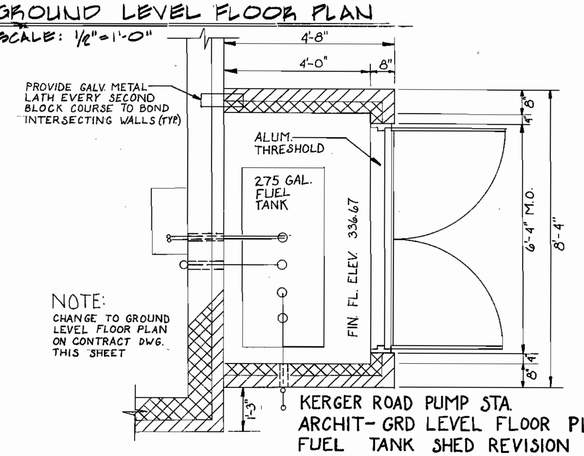
KERGER ROAD PUMP STATION-
SECTION A/28
FUEL TANK SHED REVISION
NOT TO SCALE
SEE SHEET 28 OF 38

NOTE:
CHANGE TO SECTION 2/28 ON CONTRACT DWG. SHT. 28 OF 38.

LEGEND-ARCHITECTURAL

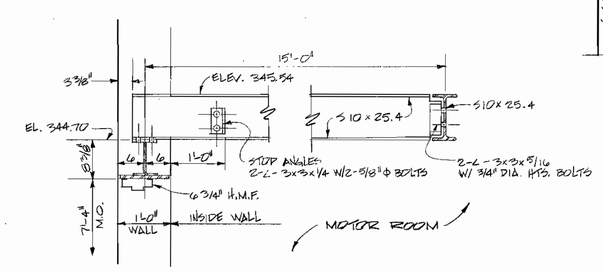
MPLT :	METAL PLATE CONNECTED TRUSS
APA :	AMERICAN PLYWOOD ASSOC.
C-C :	PLYWOOD GRADE
A.B. :	ANCHOR BOLT
MAS. :	MASONRY
C.M.U. :	CONC. MASONRY UNIT
H.M.D. :	HOLLOW METAL DOOR
H.M.F. :	HOLLOW METAL FRAME
O.C. :	ON CENTER
M.O. :	MASONRY OPENING

GROUND LEVEL FLOOR PLAN
SCALE: 1/2"=1'-0"



NOTE:
CHANGE TO GROUND LEVEL FLOOR PLAN ON CONTRACT DWG. THIS SHEET

KERGER ROAD PUMP STA.
ARCHIT- GRD LEVEL FLOOR PLAN
FUEL TANK SHED REVISION
SCALE: 1/2" = 1'-0"



4/30 DOOR HEAD AT 1
NTS

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87 CHIEF, BUREAU OF UTILITIES — DATE 3-25-87 CHIEF, UTILITY DIVISION — DATE 3/25/87	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND — CHARLES BROOKS HARMS — REGISTERED PROFESSIONAL ENGINEER	DES: G.J. DRN: W.M.M. CHK: G.J. DATE: 5/24/85

BY	NO.	REVISION	DATE

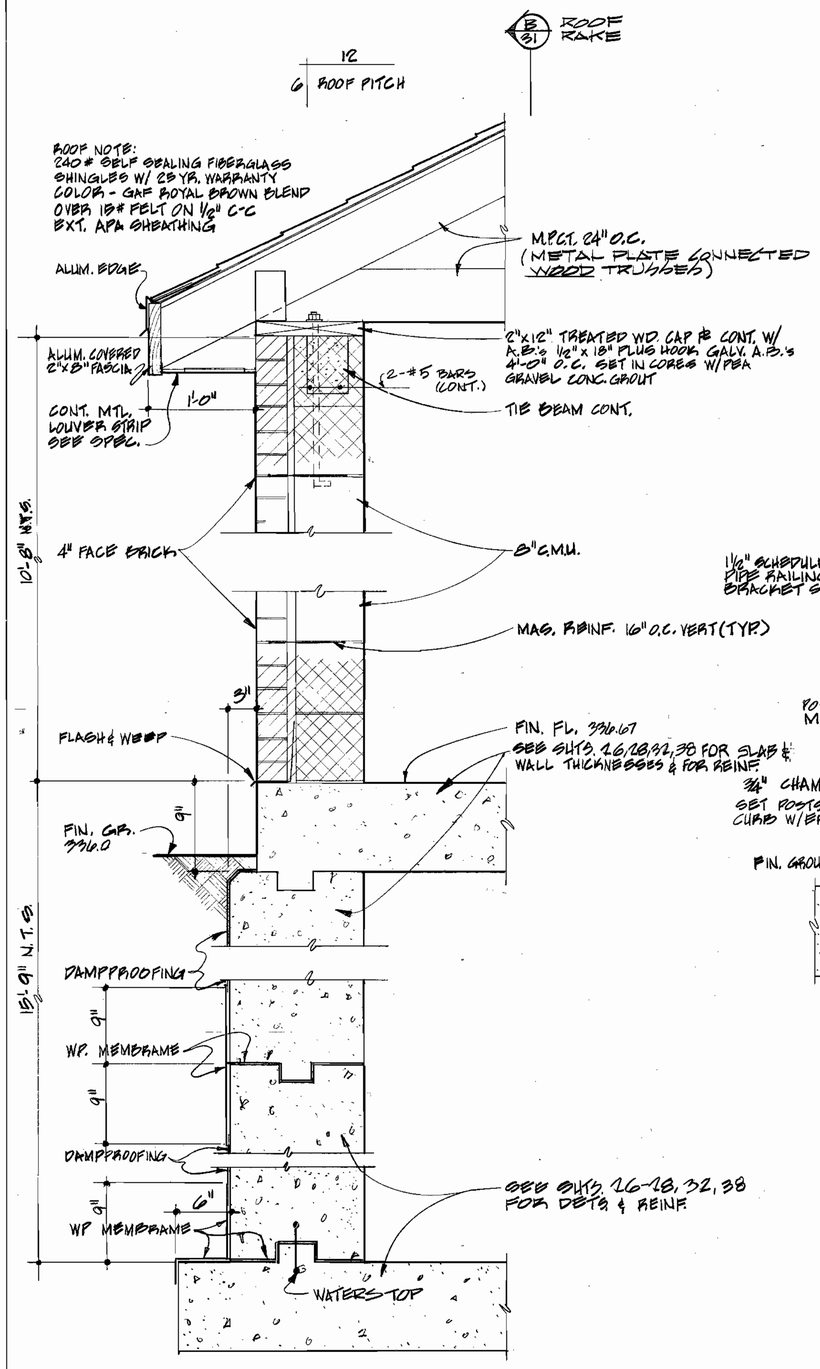
ARCHITECTURAL-PLAN
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

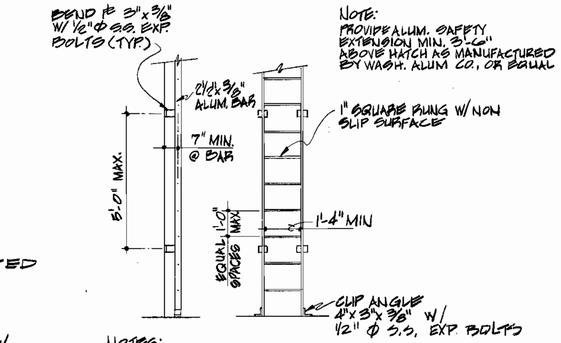
SCALE AS SHOWN
SHEET 30 OF 38

AS-BUILT 9/6/89

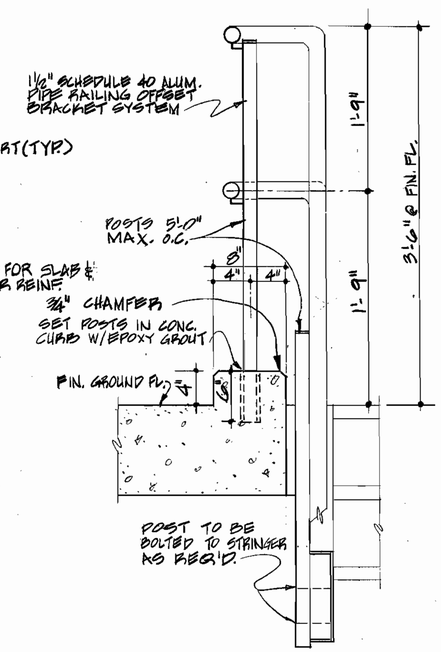
OZALID



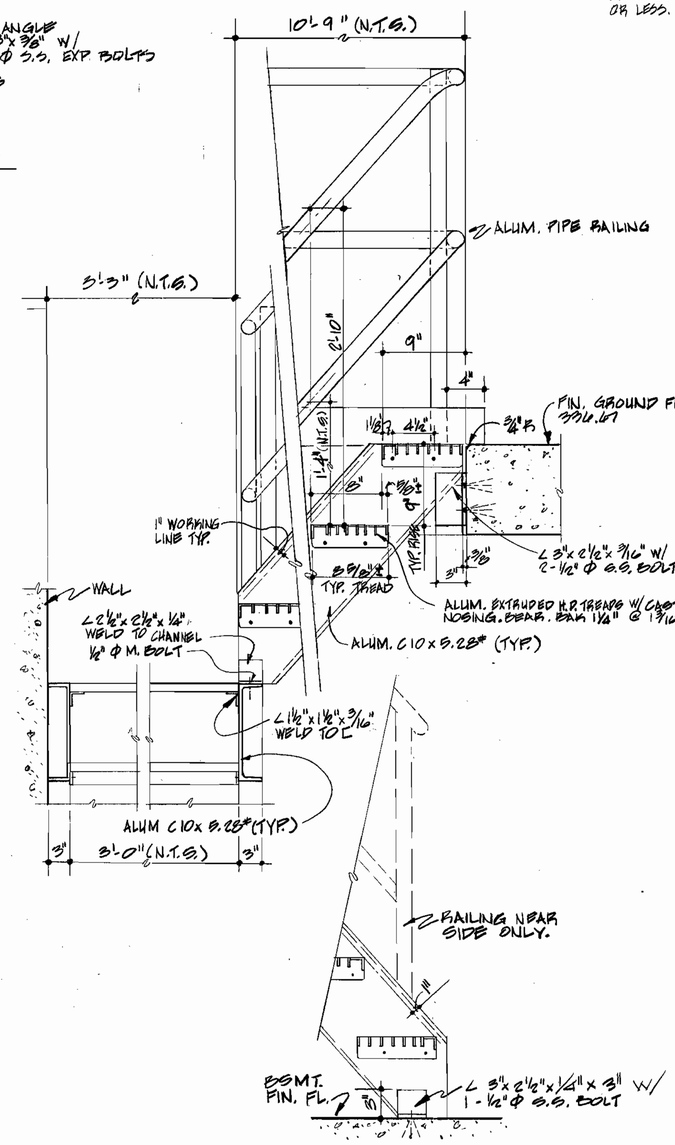
A/31 WALL SECTION
SCALE: 1 1/2" = 1'-0"



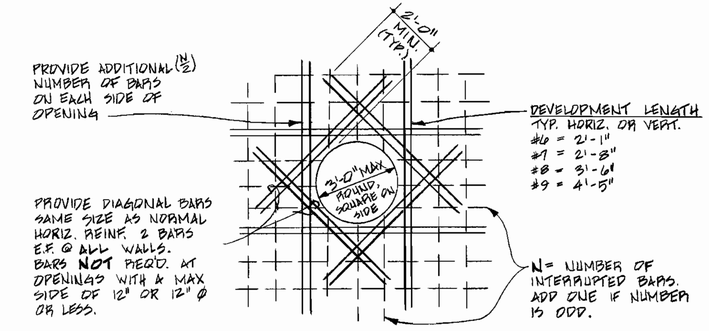
1/31 LADDER DETAIL
N.T.S.



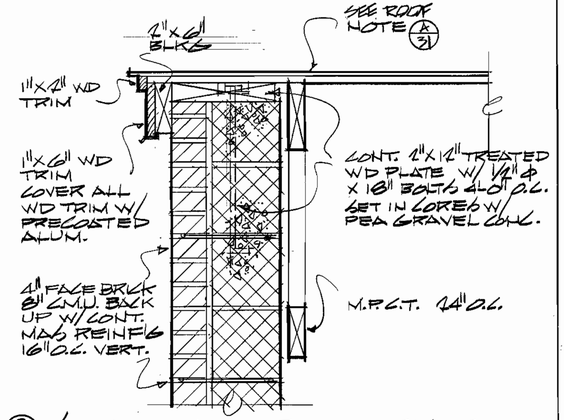
2/31 RAILING DETAIL
N.T.S.



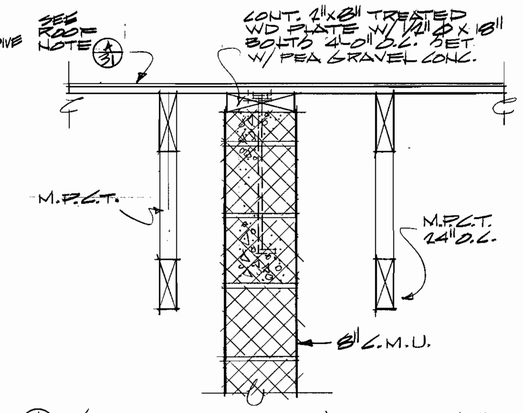
3/31 STAIR DETAILS
NTS



WALL PENETRATIONS
N.T.S.



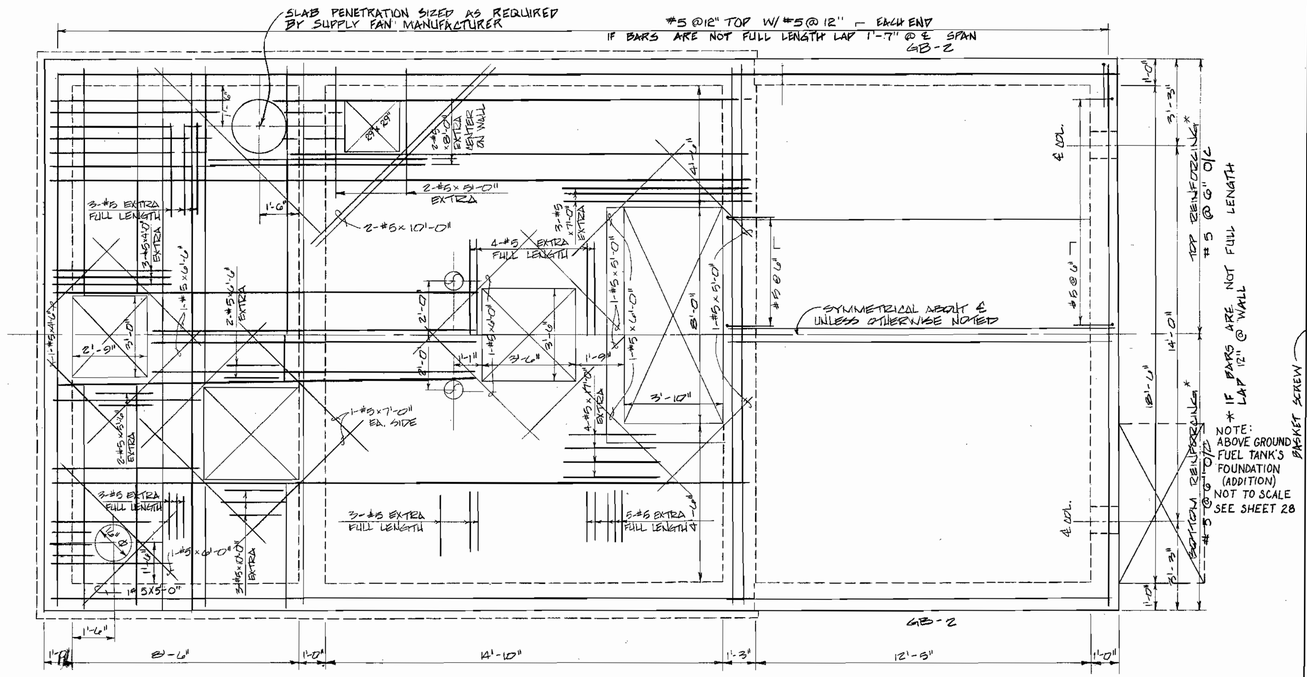
B/31 SECTION AT ROOF RAKE
SCALE: 1 1/2" = 1'-0"



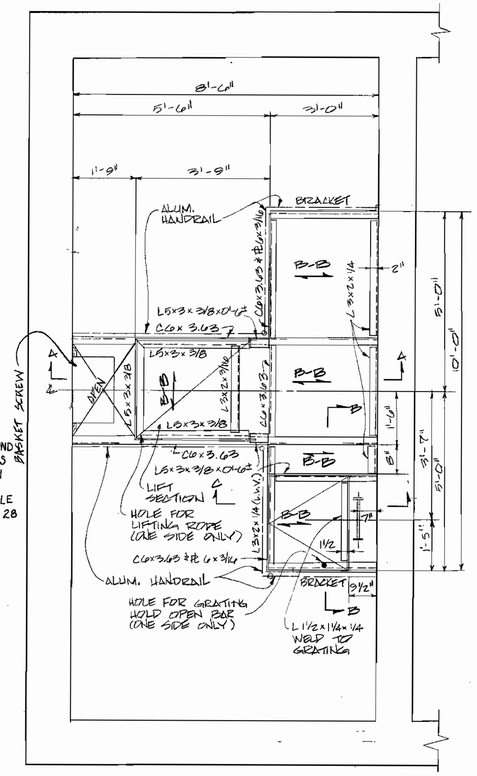
C/31 SECTION THRU DIVIDER PARTITION
SCALE: 1 1/2" = 1'-0"

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

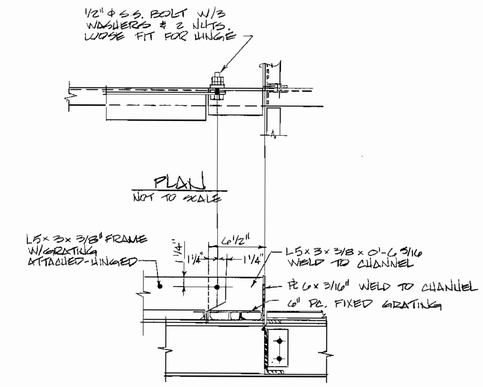
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87 CHIEF, BUREAU OF UTILITIES — DATE 3-25-87 CHIEF, UTILITY DIVISION — DATE 3/25/87	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND CHARLES GROSSKOPF No. 13736 PROFESSIONAL ENGINEER	DES: G.J. DRN: W.M.M. CHK: G.J. DATE: 5/24/85	BY / NO. / REVISION / DATE	ARCHITECTURAL DETAILS KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 22	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 31 OF 38



TOP SLAB REINFORCING
SCALE: 3/8" = 1'-0"



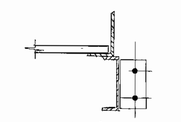
CATWALK PLAN
(TOP OF GRATING EL. 329.25)



PLAN
NOT TO SCALE

ELEVATION
SCALE: 1/2" = 1'-0"

DETAIL - E

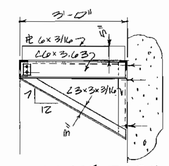


SECTION D-D
NOT TO SCALE

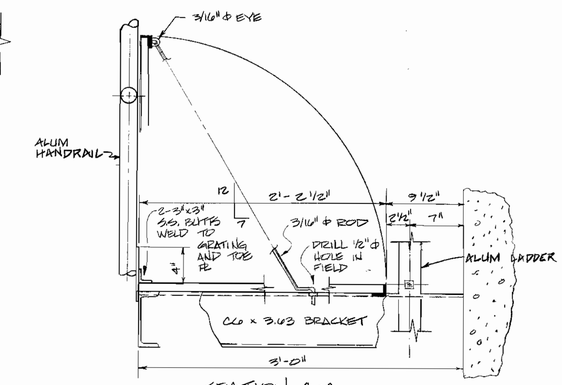
NOTES FOR CATWALK & GRATING

1. ALUMINUM SHAPES: ALL STRUCTURAL SHAPES SHALL BE ALUMINUM. ALL SHOP CONNECTIONS TO BE WELDED OR BOLTED. ALL FIELD CONNECTIONS TO BE BOLTED USING 1/2" ϕ S.S. BOLTS. ALL BOLTED CONNECTIONS TO WALLS SHALL BE 3/4" ϕ S.S. BOLTS WITH NON CORROSIVE EXPANSION SHIELDS.
2. PIPE RAILS: ALL PIPE RAILS SHALL BE FABRICATED FROM 1 1/2" ϕ ALUMINUM PIPE WITH ALL PIPE CONNECTIONS WELDED. POSTS SHALL BE FIELD BOLTED TO CATWALK.

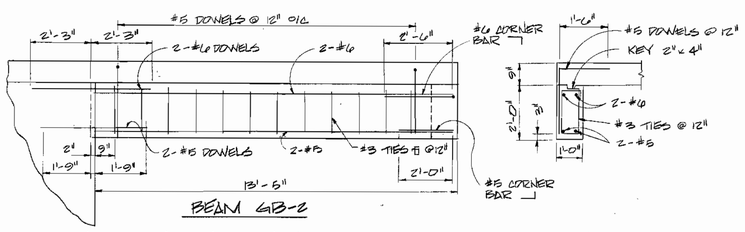
FOR ADDITIONAL TOP SLAB REINFORCING & OTHER STRUCTURAL DTLS, SEE SHTS 26-31 & 38



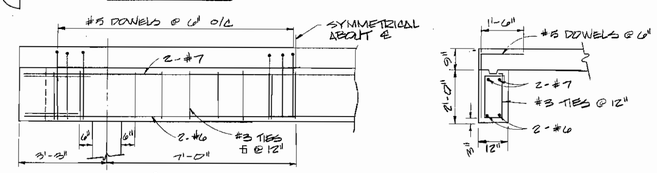
BRACKET DETAIL
SCALE: 1/2" = 1'-0"



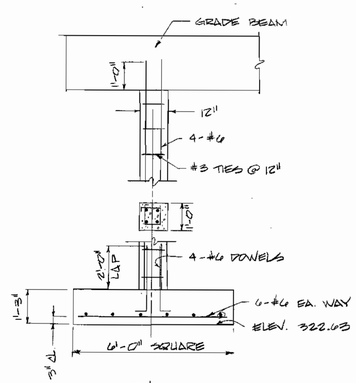
SECTION C-C
NOT TO SCALE



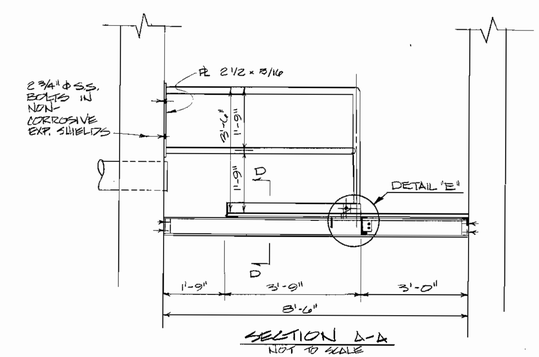
BEAM GB-2



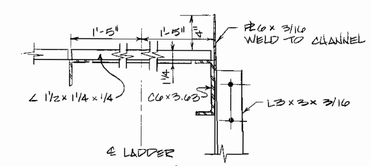
BEAM GB1
SCALE: 3/8" = 1'-0"



COL. & FOOTING DTL.
SCALE: 3/8" = 1'-0"



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

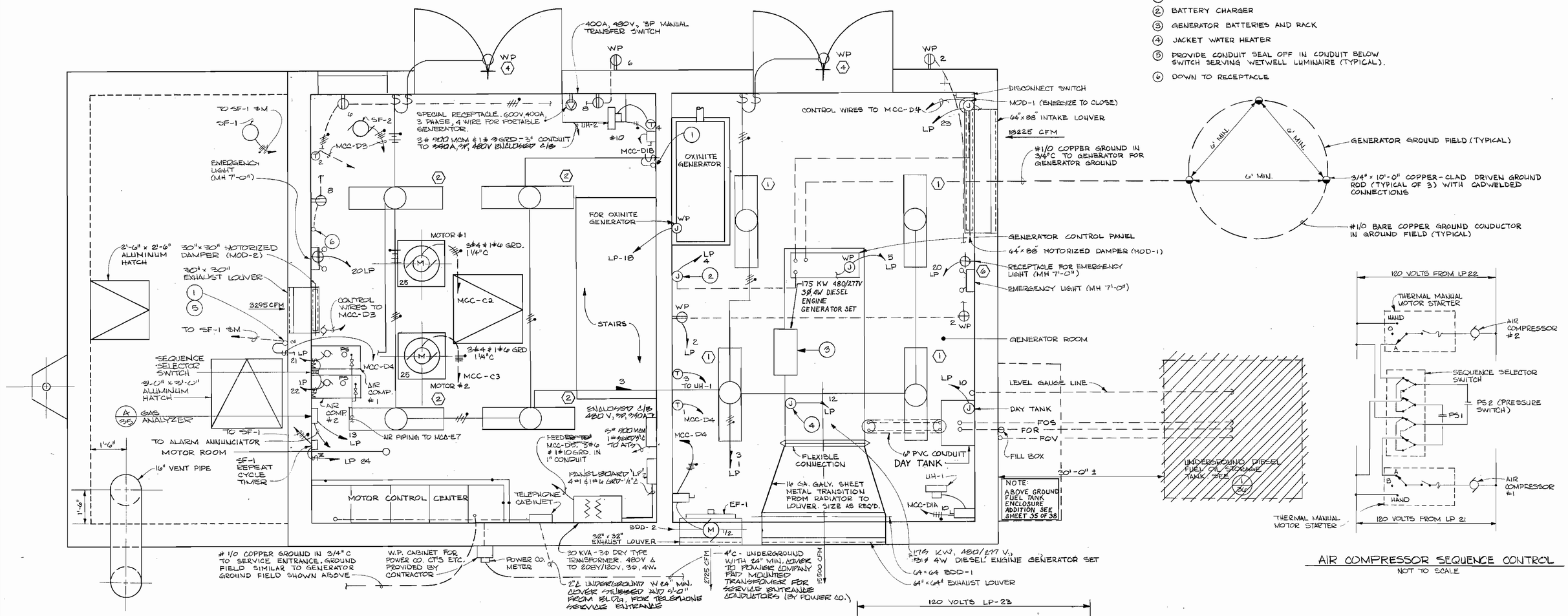
CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS 3-26-87 DATE CHIEF, BUREAU OF ENGINEERING 3-25-87 DATE CHIEF, BUREAU OF UTILITIES 3-25-87 DATE CHIEF, UTILITY DIVISION 3/25/87 DATE	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND CHARLES SHOSTAK No. 13779 REGISTERED PROFESSIONAL ENGINEER	DES: J.G.S. DRN: D.E.S. CHK: J.G.S. DATE: 7/28/86	BY / NO. / REVISION / DATE	STRUCTURAL DETAILS KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 22	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 32 OF 38

AS-BUILT 9/6/89

NOTES:

1. DOWN TO FIXTURE BELOW
2. BATTERY CHARGER
3. GENERATOR BATTERIES AND RACK
4. JACKET WATER HEATER
5. PROVIDE CONDUIT SEAL OFF IN CONDUIT BELOW SWITCH SERVING WETWELL LUMINAIRE (TYPICAL).
6. DOWN TO RECEPTACLE

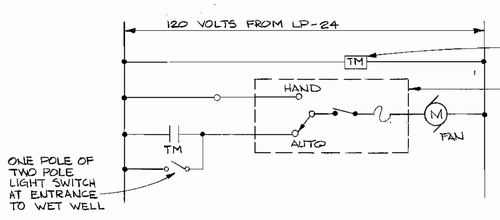


ELECTRICAL PLAN - TOP LEVEL

SCALE : 1/2" = 1'-0"

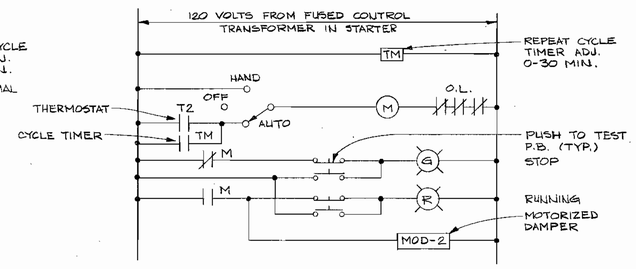
AIR COMPRESSOR SEQUENCE CONTROL

NOT TO SCALE



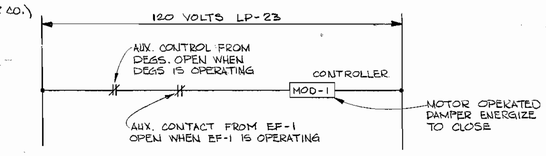
SUPPLY FAN NO. 1 (SF-1)

NOT TO SCALE



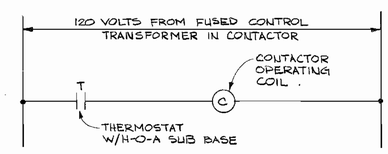
SUPPLY FAN (SF-2)

NOT TO SCALE



MOTORIZED DAMPER CONTROL DIAGRAM

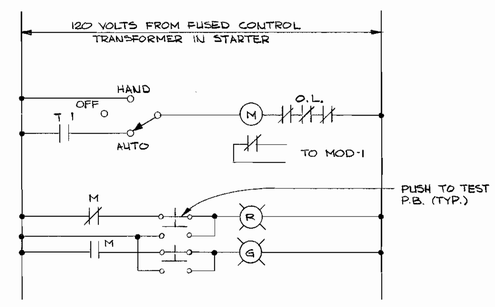
NOT TO SCALE



NOTE: T-3 FOR UH #1, T-4 FOR UH #2 & T-5 FOR UH #3

UNIT HEATER (TYPICAL)

NOT TO SCALE



EXHAUST FAN NO. 1 (EF-1)

NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

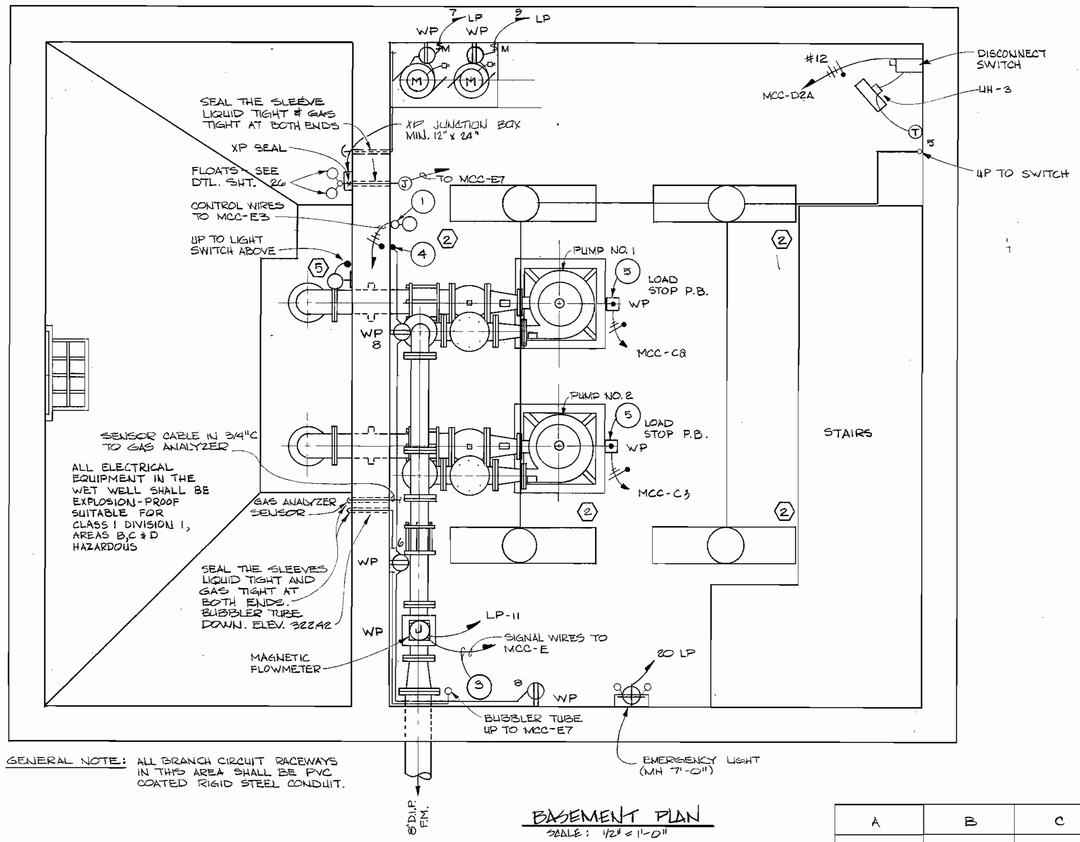
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS 3-26-87 DATE CHIEF, BUREAU OF ENGINEERING 3-25-87 DATE CHIEF, BUREAU OF UTILITIES 3-25-87 DATE CHIEF, UTILITY DIVISION 3/25/87 DATE	JOHN E. HARMS, JR. & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND CHARLES BROBERT No. 13749 REGISTERED PROFESSIONAL ENGINEER	DES: C.B DRN: L.F. CHK: C.B DATE: 5/24/85	BY / NO. / REVISION / DATE	ELECTRICAL DETAILS KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

SHEET 33 OF 38

AS-BUILT 9/6/89



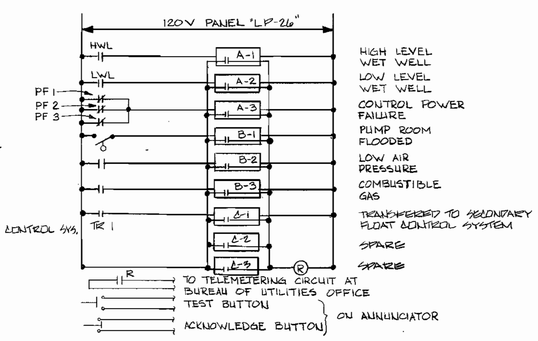
GENERAL NOTE: ALL BRANCH CIRCUIT RACEWAYS IN THIS AREA SHALL BE PVC COATED RIGID STEEL CONDUIT.

BASEMENT PLAN

SCALE: 1/2" = 1'-0"

NOTES:

1. PROVIDE PUMP ROOM FLOOD ALARM ON WALL ADJACENT TO SUMP PUMPS PROVIDE 3/4" C. 2 #12 TO INSTRUMENTATION CUBICLE E-B1 IN MOTOR CONTROL CENTER.
2. NOT USED.
3. SIGNAL WIRES AS RECOMMENDED BY MANUFACTURER IN 3/4" C. TO TOTALIZER INDICATOR-RECORDER IN MCC.
4. UP TO RECEPTACLES ABOVE.
5. PROVIDE KINDORF CHANNEL SUPPORT.
6. SIZE STARTER FOR ULTIMATE MOTOR SIZE (40 HP) MODIFIED FOR INITIAL MOTOR SIZE (25 HP).



ANNUNCIATOR SCHEDULE

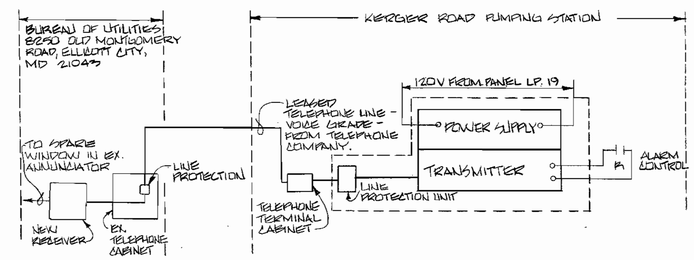
A-1	HIGH LEVEL WET WELL
A-2	LOW LEVEL WET WELL
A-3	CONTROL POWER FAILURE
B-1	PUMP ROOM FLOODED
B-2	LOW AIR PRESSURE
B-3	COMBUSTIBLE GAS
L-1	TRANSFER TO SECONDARY FLOAT CONTROL SYS.
L-2	SPARE
L-3	SPARE

ANNUNCIATOR ALARM WIRING

NOT TO SCALE

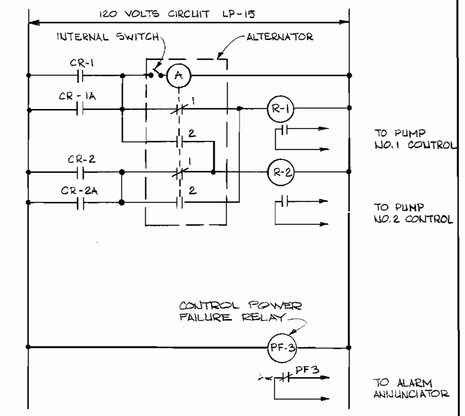
PANELBOARD: LP MAINS: MCB AMPS: 100 MIN AIC: 10,000
LOCATION: MOTOR ROOM VOLTS: 208Y/120 PHASE: 3 WIRES: 4 + 1GND.
ENCL: NEMA: ONE MOUNTING: SURFACE NOTES:

SERVES	N	CB P	CB TA	SCPN	BUS A	BUS B	BUS C	SCPN	CB TA	CB P	N	SERVES
LIGHTING		1	20	1				2	20	1		RECEPTACLES
LIGHTING		1	20	3				4	20	1		BATTERY CHARGER
GENERATOR CONTROL		1	20	5				6	20	1		RECEPTACLES
RECEPTACLE (SUMP PUMP)		1	20	7				8	20	1		RECEPTACLES
RECEPTACLE (SUMP PUMP)		1	20	9				10	20	1		DAYTANK
FLOW METER		1	20	11				12	20	1		JACKET WATER HEATER
GAS ANALYZER		1	20	13				14	20	1		PRIMARY PUMP CONTROL SYSTEM
PUMP SEQUENCE CONTROL		1	20	15				16	20	1		SECONDARY PUMP CONTROL SYSTEM
FLOW RECORDER		1	20	17				18	20	1		OXINITE GENERATOR
TELEMETRY SYSTEM		1	20	19				20	20	1		RECEPTACLE FOR EMERGENCY LIGHTS
AIR COMPRESSOR #1		1	20	21				22	20	1		AIR COMPRESSOR #2
MOD-1 GEN. ROOM		1	20	23				24	20	1		SUPPLY FAN SF-1
SPARE		1	20	25				26	20	1		ALARM SYSTEM
SPACE		1	-	27				28	-	1		SPACE
SPACE		1	-	29				30	-	1		SPACE



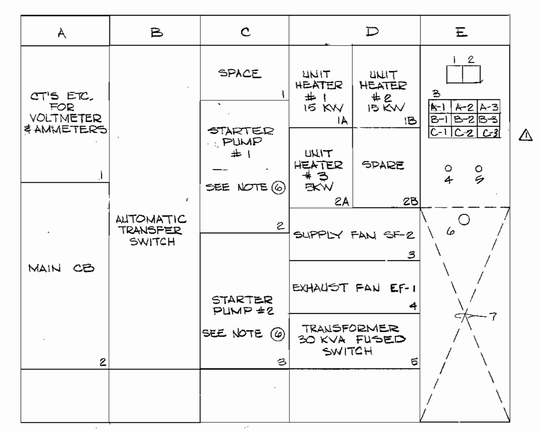
TELEMETRY SYSTEM CONTROL DIAGRAM

NO SCALE



PUMP SEQUENCE CONTROL

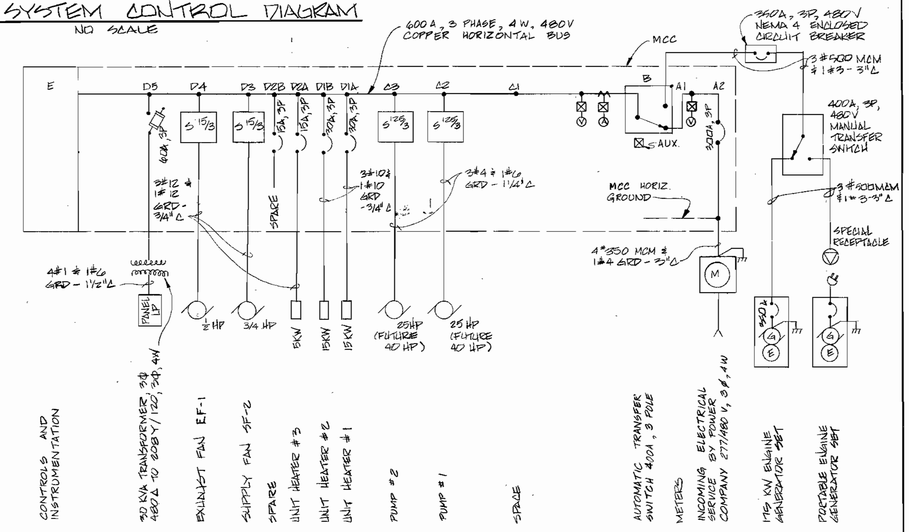
NOT TO SCALE



FRONT ELEVATION - MOTOR CONTROL CENTER

NOT TO SCALE

E-1 FLOW INDICATOR RECORDER
E-2 FLOW TOTALIZER
E-3 ALARM ANNUNCIATOR
E-4 LAMP TEST PUSHBUTTON
E-5 ALARM ACKNOWLEDGE
E-6 WETWELL LEVEL GAUGE
E-7 BUBBLER CONTROLS, FLOAT CONTROLS, AIR COMPRESSOR, TELEMETERING EQUIPMENT, ETC.



SINGLE LINE DIAGRAM

NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	DATE 3-26-87	CHIEF, BUREAU OF ENGINEERING	DATE 3-25-87
CHIEF, BUREAU OF UTILITIES	DATE 3-25-87	CHIEF, UTILITY DIVISION	DATE 3/25/87

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES BROOKS — REGISTERED PROFESSIONAL ENGINEER — No. 13713

DES: C.B
DRN: L.F.
CHK: C.B
DATE: 5/24/85

BY	NO.	REVISION	DATE
CB	1	ADD SPACES IN MCC-E3	

ELECTRICAL DETAILS
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

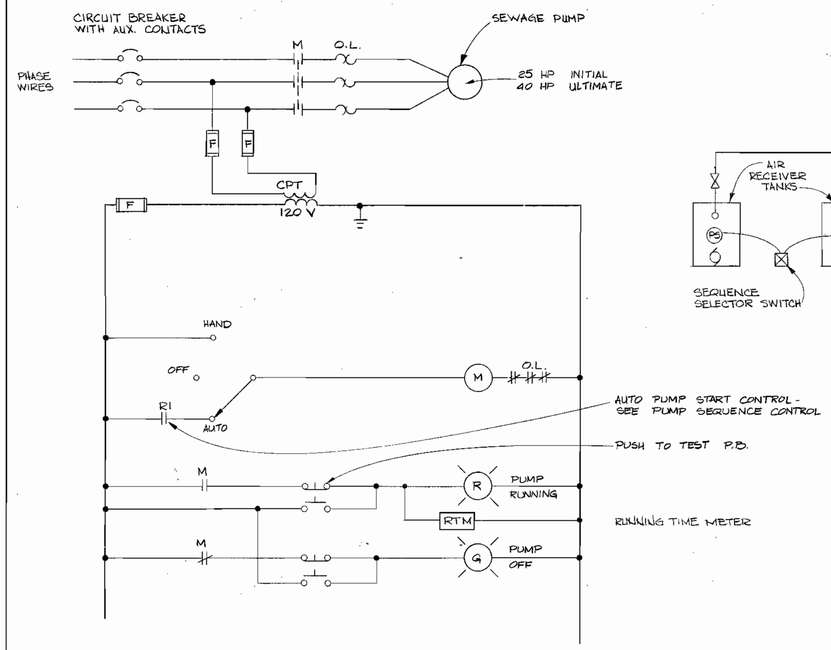
600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

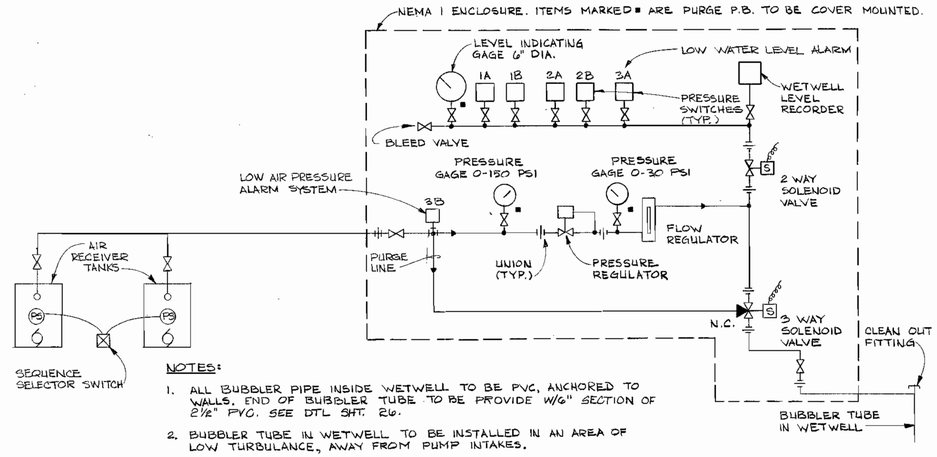
SHEET 34 OF 38

0ZALID



SEWAGE PUMP #1
NOT TO SCALE

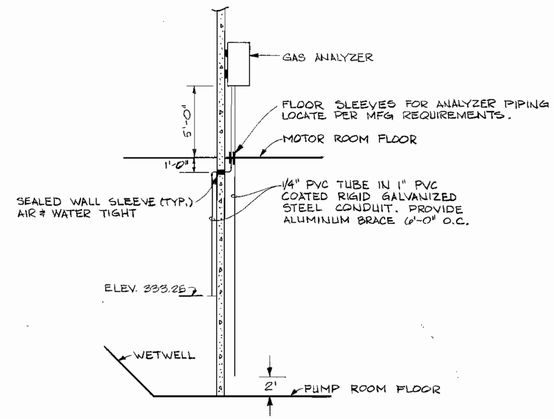
(SEWAGE PUMP #2 SIMILAR EXCEPT R1 WILL BE R2.)



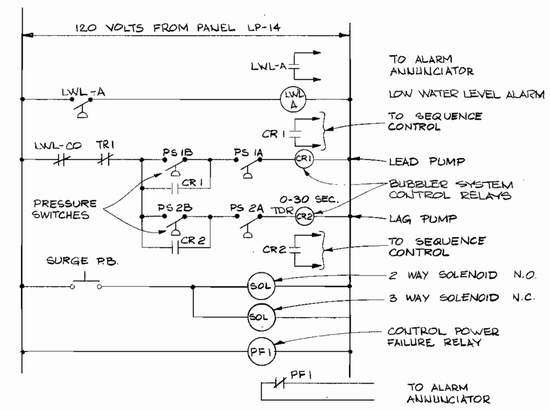
NOTES:

1. ALL BUBBLER PIPE INSIDE WETWELL TO BE PVC, ANCHORED TO WALLS. END OF BUBBLER TUBE TO BE PROVIDE W/6" SECTION OF 2½" PVC. SEE DTL SHT. 26.
2. BUBBLER TUBE IN WETWELL TO BE INSTALLED IN AN AREA OF LOW TURBULANCE, AWAY FROM PUMP INTAKES.
3. PIPING BETWEEN BUBBLER TUBE IN WETWELL AND BUBBLER SYSTEM INSTRUMENT PANEL SHALL BE PVC PLASTIC.

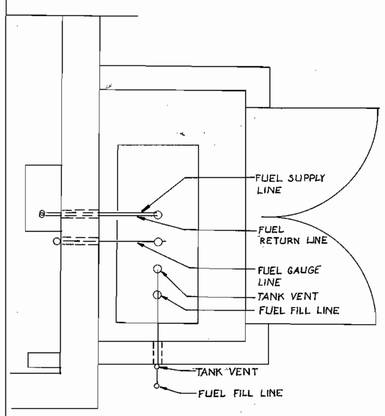
SCHEMATIC DIAGRAM - BUBBLER SYSTEM
NOT TO SCALE



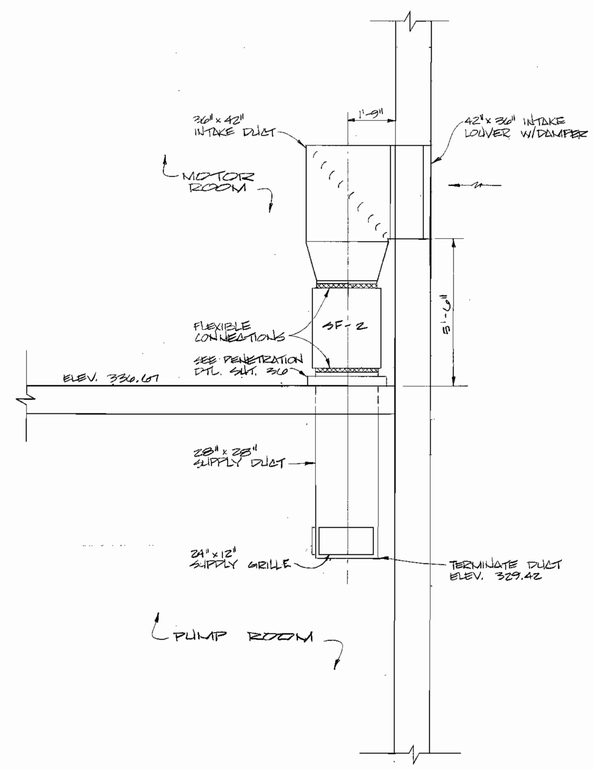
A/35 COMBUSTIBLE GAS ANALYZER
NOT TO SCALE



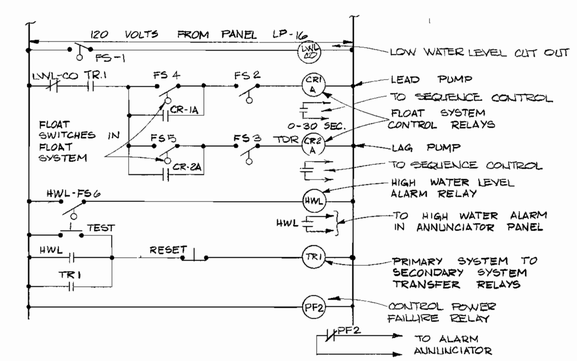
(BUBBLER) PRIMARY PUMP CONTROL SYSTEM CONTROL DIAGRAM
NOT TO SCALE



KERGER ROAD PUMP STA.
ELECTRICAL PLAN - TOP
LEVEL FUEL TANK
SHED REVISION
NOT TO SCALE
SEE SHEET 33 OF 38



1/35 SECTION
NOT TO SCALE

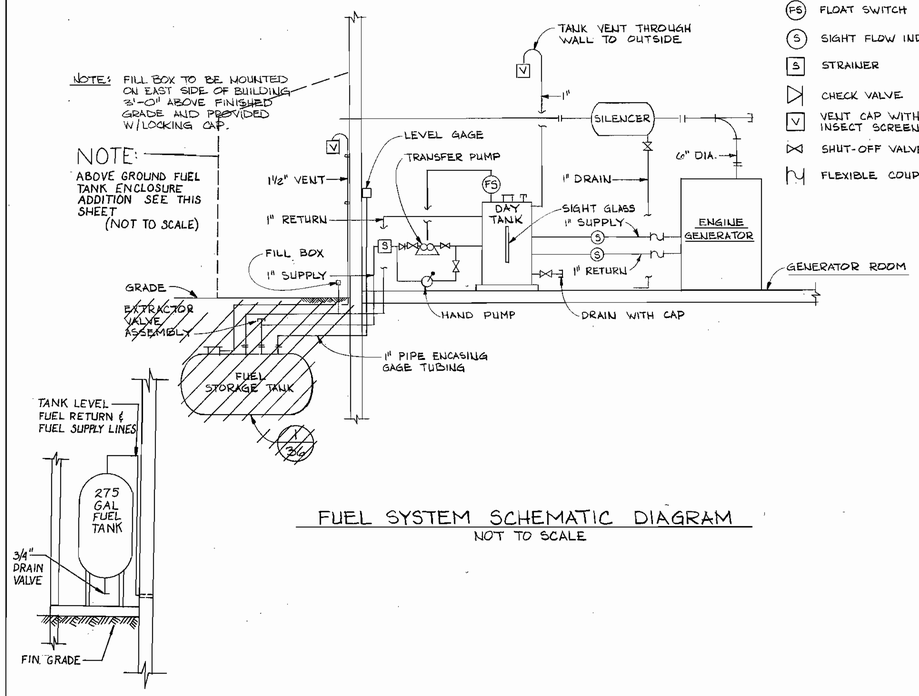


(FLOAT) SECONDARY PUMP CONTROL SYSTEM
NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	JOHN E. HARMS, JR. & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: C.B DRN: L.F. CHK: C.B DATE: 5/24/85	ELECTRICAL/MECHANICAL DETAILS KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 35 OF 38
DIRECTOR OF PUBLIC WORKS 3-26-87 DATE; CHIEF, BUREAU OF ENGINEERING 3-25-87 DATE		BY / NO. / REVISION / DATE	600' SCALE MAP NO. 31 BLOCK NO. 22		
CHIEF, BUREAU OF UTILITIES 3-25-87 DATE; CHIEF, UTILITY DIVISION 3/25/87 DATE					

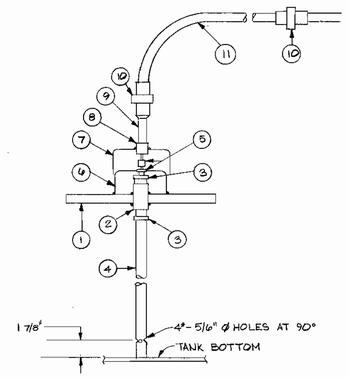
AS-BUILT 9/6/89



FUEL SYSTEM SCHEMATIC DIAGRAM
NOT TO SCALE

LEGEND

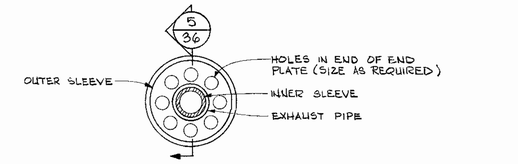
- FS — FLOAT SWITCH
- S — SIGHT FLOW INDICATOR
- S — STRAINER
- CHECK VALVE
- V — VENT CAP WITH INSECT SCREEN
- SHUT-OFF VALVE
- FLEXIBLE COUPLING



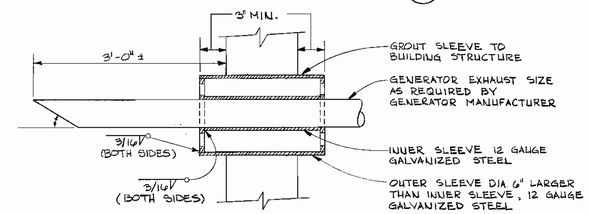
NOTES:

1. 4" DIA. BLIND FLANGE ; FLAT
2. 1" DIA. SCREWED COUPLING
3. 1" DIA. - 3/4" HEXAGONAL BUSHING
4. 3/4" DIA. SCH. 80 PVC PIPE
5. TUBING AND TUBING TO PIPE FITTINGS FURNISHED WITH GAGE ASSEMBLY
6. 3" DIA. NIPPLE
7. 3" DIA. SCREWED CAP
8. 1" DIA. HALF COUPLING
9. 1" DIA. PIPE NIPPLE
10. 1" DIA. UNION (INSTALL AS NEEDED)
11. 1" DIA. STEEL PIPE (TO PROTECT 1/4" NYLON TUBING)

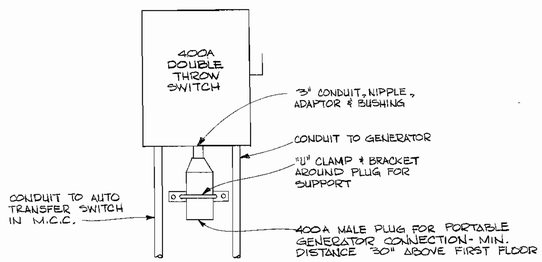
LEVEL GAGE LINE AND TANK CONNECTION DETAIL (2/36)
NOT TO SCALE



EXHAUST PIPE PENETRATION DETAIL (4/36)

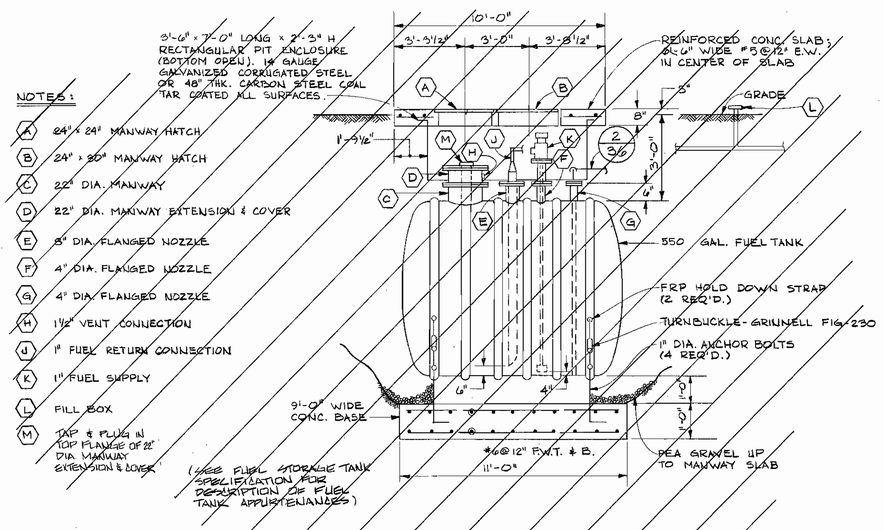


(5/36) SECTION
NOT TO SCALE



MANUAL TRANSFER SWITCH DTL. (3/36)
NOT TO SCALE

DUCT PENETRATION SLEEVE (6/36)
NOT TO SCALE

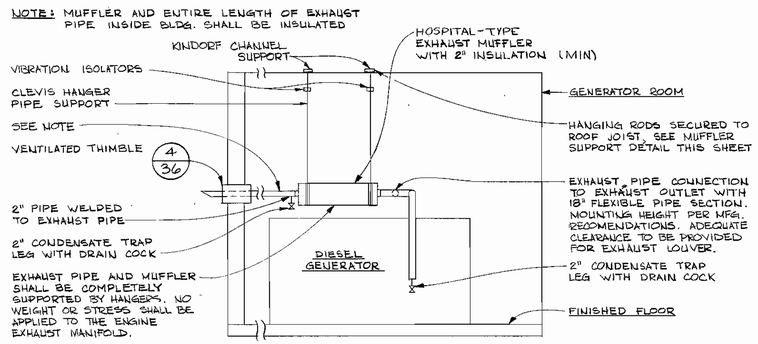


NOTES:

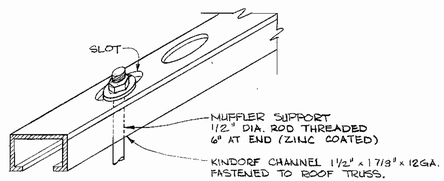
- (A) 24" x 24" MANWAY HATCH
- (B) 24" x 30" MANWAY HATCH
- (C) 22" DIA. MANWAY
- (D) 22" DIA. MANWAY EXTENSION & COVER
- (E) 8" DIA. FLANGED NOZZLE
- (F) 4" DIA. FLANGED NOZZLE
- (G) 4" DIA. FLANGED NOZZLE
- (H) 1½" VENT CONNECTION
- (J) 1" FUEL RETURN CONNECTION
- (K) 1" FUEL SUPPLY
- (L) FILL BOX
- (M) TAP & PLUG IN TOP FLANGE OF 22" DIA. MANWAY EXTENSION & COVER

DETAIL - UNDERGROUND FUEL STORAGE TANK (1/36)
NOT TO SCALE

NOTE: MUFFLER AND ENTIRE LENGTH OF EXHAUST PIPE INSIDE BLDG. SHALL BE INSULATED



ELEVATION - GENERATOR EXHAUST INSTALLATION
NOT TO SCALE



MUFFLER SUPPORT DETAIL
NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS — DATE 3-26-87 CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87 CHIEF, BUREAU OF UTILITIES — DATE 3-25-87 CHIEF, UTILITY DIVISION — DATE 3/25/87	JOHN E. HARMS JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	STATE OF MARYLAND — CHARLES BROSKY — No. 13736 — REGISTERED PROFESSIONAL ENGINEER	DES: C.B DRN: L.A.F CHK: C.B DATE 5/24/85	ELECTRICAL/MECHANICAL DETAILS KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 22	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 36 OF 38

BY	NO.	REVISION	DATE

AS-BUILT 9/6/89

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS	VOLT	REMARKS
1	BENJAMIN	FLB-1124-2WA	2-F40T12RS	120	NOTE 1, 2
2	BENJAMIN	FE-1524-4	2-F40T12RS	120	NOTE 1
3	BENJAMIN	OLW-270-120B	1-70W-HPS	120	NOTE 2
4	CROUSE-HINDS	VKHD 15 P	1-100 W	120	
5	CROUSE-HINDS	EVE-K-282	1-200 W	120	NOTE 3
6	DUAL-LITE	AS-BL/BX SERIES	2	--	NOTE 4

LIGHTING FIXTURE SCHEDULE NOTES:

1. PROVIDE SCHEDULED LUMINAIRE OR EQUAL BY CROUSE HINDS COMPANY.
2. INSTALL LUMINAIRES ON UNDERSIDE OF JOISTS ON KINDORF CHANNEL. COORDINATE LOCATION AND INSTALLATION OF LUMINAIRES WITH LOCATION OF CRANE HOIST.
3. EXPLOSION-PROOF SUITABLE FOR CLASS I DIV. I, GROUPS B, C & D.
4. FIXTURE PROVIDED WITH HEAVY DUTY WALL MOUNTING BRACKET AND BATTERY LIFE EXPECTANCY ALARM (BLEA).

UNIT HEATER SCHEDULE

UNIT NO.	LOCATION	No. OF STAGES	TOTAL KW	VOLTS	PHASE	HZ	CONTROLLED	REMARKS
UH-1	GENERATOR ROOM	2	15	480	3	60	T-3	
UH-2	MOTOR ROOM	2	15	480	3	60	T-4	
UH-3	PUMP ROOM	2	5	480	3	60	T-5	

FAN SCHEDULE

UNIT NO.	SERVICE	TYPE	CFM	SP	DRIVE	VOLTS	PHASE	HZ	HP	CONTROLLED
EF-1	GENERATOR ROOM	PROPELLER	2725	0.375	DIRECT	480	3	60	1/2	H-O-A SWITCH, THERMOSTAT T-1
SF-2	MOTOR ROOM	IN-LINE CENT.	3300	0.375	DIRECT	480	3	60	3/4	H-O-A SWITCH, TIMER, THERMOSTAT T-2
SF-1	WETWELL	ROOF	1320	0.125	DIRECT	120	1	60	1/4	H-O-A SWITCH, TIMER, LIGHTSWITCH

CONVENTIONS

SYMBOL	DESCRIPTION
2	LIGHTING FIXTURE TYPE SEE SCHEDULE
NOTE 1	APPLIES WHERE APPLICABLE TO THE DRAWING SHEET ON WHICH THE NOTE APPEARS
LP2 - 2,4	BRANCH CIRCUIT IDENTIFICATION; PANELBOARD IDENTIFICATION (REF. DESIGNATION)
	EACH SYMBOL INDICATING A RACEWAY SEGMENT SHALL BE UNDERSTOOD TO INCLUDE 2#12 & 1#12 GRD. WIRING UNLESS OTHERWISE NOTED
#8	INDICATES WIRE SIZE
	CROSSHATCH LINES INDICATES PHASE AND NEUTRAL CONDUCTORS (#12 AWG U.O.N.)
	CROSSHATCH LINE WITH DOT ON END INDICATES A "GREEN WIRE" GROUNDING CONDUCTOR

SCHEMATIC WIRING DIAGRAM LEGEND

SYMBOL	DESCRIPTION
R	RED PILOT LIGHT
G	GREEN PILOT LIGHT
W	WHITE PILOT LIGHT
N.O.	NORMALLY OPEN CONTACT
N.C.	NORMALLY CLOSED CONTACT
C	COIL
TM	REPEAT CYCLE TIMER (0-30 MIN. ADJUSTABLE)
	MOTOR
MOD-1	MOTOR OPERATED DAMPER, NUMBER AS INDICATED
	FUSE
	PUSH TO TEST PUSHBUTTON
HAND OFF AUTO	HAND-OFF-AUTOMATIC (H-O-A) SWITCH
M	STARTER COIL, NUMBER AS INDICATED
	SINGLE POLE SWITCH
CPT	CONTROL POWER TRANSFORMER 480 V. TO 120 V., 1Ø
	GROUND CONNECTION
	TIME DELAY CLOSING SWITCH (TDS)
OL	OVERLOAD
	PRESSURE SWITCH (PS)
	FLOAT SWITCH (FS)
T	OFF DELAY TIMER
TDO	TIME DELAY OPEN SWITCH
SOL	SOLENOID (SOL)
	PUSHBUTTON
ETM	ELAPSED TIME METER
	LIMIT SWITCH (LS)

MECHANICAL / ELECTRICAL LEGEND

ABBREV	DESCRIPTION
A.	AMPS OR AMPERE
AC.	ALTERNATING CURRENT
ABBREV.	ABBREVIATION
A.F.F.	ABOVE FINISHED FLOOR
A.I.C.	AMPERES INTERRUPTING CAPACITY (SYM., RMS, AMPS)
C	CONDUIT
CB; C/B	CIRCUIT BREAKER
CKT.	CIRCUIT
C/T	CIRCUIT TRANSFORMER
DC.	DIRECT CURRENT
DN.	DOWN
EF.	EXHAUST FAN
EH	ELECTRIC HEATER
EXP	EXPLOSION-PROOF
F; FU.	FUSE
F.B.O.	FURNISHED BY OTHERS
FDR.	FEEDER
FLR.	FLOOR
FSS.	FUSED SAFETY SWITCH
G; GRD.	GROUND
GFI	GROUND FAULT INTERRUPTER
H-O-A	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HTR.	HEATER
HZ	HERTZ
ISC	SHORT CIRCUIT AMPERE
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MH	MOUNTING HEIGHT
MLO	MAIN LUG ONLY
MTD	MOUNTED
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
N.F.S.S.	NON-FUSED SAFETY SWITCH
NO	NORMALLY OPEN
P	POLE POLES
PNL	PANELBOARD
S/N	SOLID NEUTRAL
TTC	TELEPHONE TERMINAL CABINET
TYP	TYPICAL
UH	UNIT HEATER
V	VOLTS OR VOLTAGE
W	WIRE
WP	WEATHERPROOF
XFMR.	TRANSFORMER
Ø	PHASE
SS.	SELECTOR SWITCH
EDH	ELECTRIC DUCT HEATER
EXP	EXPLOSION-PROOF DEVICE
OL	OVER LOAD
LT	LIGHT
BDD	BACKDRAFT DAMPER
SF	SUPPLY FAN
ELEV.	ELEVATION
EXH	EXHAUST
ER	EXHAUST REGISTER
SR	SUPPLY REGISTER
MOD	MOTOR OPERATED DAMPER

SYMBOL	DESCRIPTION
$	SINGLE POLE SWITCH
$2	DOUBLE POLE SWITCH
	DUPLEX RECEPTABLE
GFI	GROUND FAULT INTERRUPTER TYPE RECEPTACLE
	SINGLE RECEPTACLE MOUNTED AT 84" (FOR EMERGENCY LIGHTS)
J	JUNCTION BOX
U	UNIT HEATER CONNECTION
M 5	MOTOR CONNECTION - NUMBER INDICATES HORSEPOWER
R	RELAY
C	CONTACTOR
G	GENERATOR
	CONTROL DEVICE AS INDICATED ON DRAWINGS
	SAFETY SWITCH
	COMBINATION MAGNETIC MOTOR STARTER & SAFETY SWITCH
$M	MANUAL MOTOR STARTER WITH THERMAL OVERLOADS
	PUSHBUTTON STATION
	BRANCH CIRCUIT PANELBOARD
LS	LIMIT SWITCH
SOL	SOLENOID SWITCH
	RACEWAY UP
	RACEWAY DOWN
	RACEWAY ROUTED BELOW FLOOR SLAB
T1	THERMOSTAT, NUMBER AS INDICATED
	RACEWAY RUN EXPOSED ON WALLS OR CEILING
#8	BRANCH CIRCUIT HOMERUN TO ASSOCIATED PANELBOARD WITH A MINIMUM OF 2#12 & 1#12 GRD. OR AS INDICATED BY CROSSMARKS. ARROWHEADS INDICATE NUMBER OF CIRCUITS. ↓ DENOTES GROUND.
	TELEPHONE OUTLET
E OR	GROUNDED
	GROUND ROD
	FLUORESCENT LIGHTING FIXTURE
	FLUORESCENT LIGHTING FIXTURE; WALL MOUNTED
	INCANDESCENT OR H.I.D. LIGHTING FIXTURE, CEILING MOUNTED
	INCANDESCENT OR H.I.D LIGHTING FIXTURE, WALL MOUNTED
	EXIT LIGHT - BACK MOUNTED AND WITH DIRECTIONAL ARROWS AS INDICATED (WITH BATTERY BACK-UP)
	F.C. - FLEXIBLE CONNECTION
	ELBOW WITH TURNING VANES
	M.O.D. - MOTOR OPERATED DAMPER
	SUPPLY DUCT (UP & DOWN)

ABBREV.	DESCRIPTION
FC	FLEXIBLE CONDUIT
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
PB	PUSH-BUTTON
TDR	TIME DELAY RELAY
BOD	BOTTOM OF DUCT
CENT.	CENTRIFUGAL

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
DIRECTOR, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND

STATE OF MARYLAND — CHARLES E. PROBST — No. 13775 — REGISTERED PROFESSIONAL ENGINEER

DES: C.B
DRN: C.M.
CHK: C.B
DATE: 5/24/85

BY	NO.	REVISION	DATE

ELECTRICAL/MECHANICAL DETAILS
KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION

600' SCALE MAP NO. 31 BLOCK NO. 22

KERGER ROAD COLLECTION SYSTEM
AND PUMPING STATION
HOWARD COUNTY, MARYLAND
CONTRACT NO. 10-1215

SCALE AS SHOWN

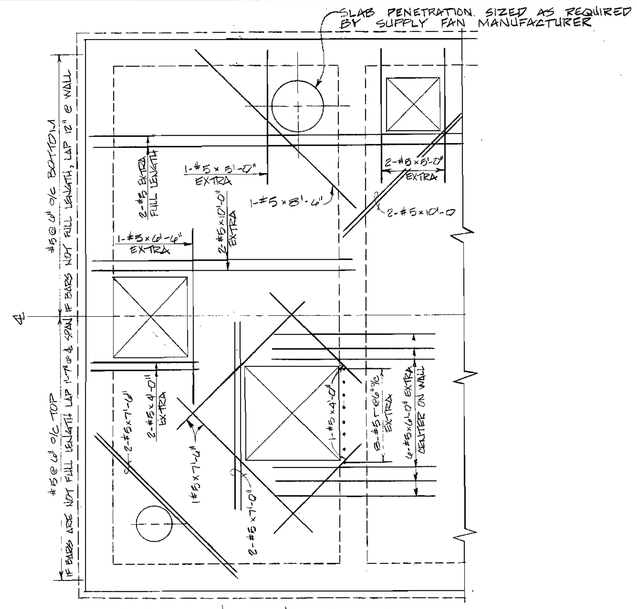
SHEET 37 OF 38

02/26/87
OZALID

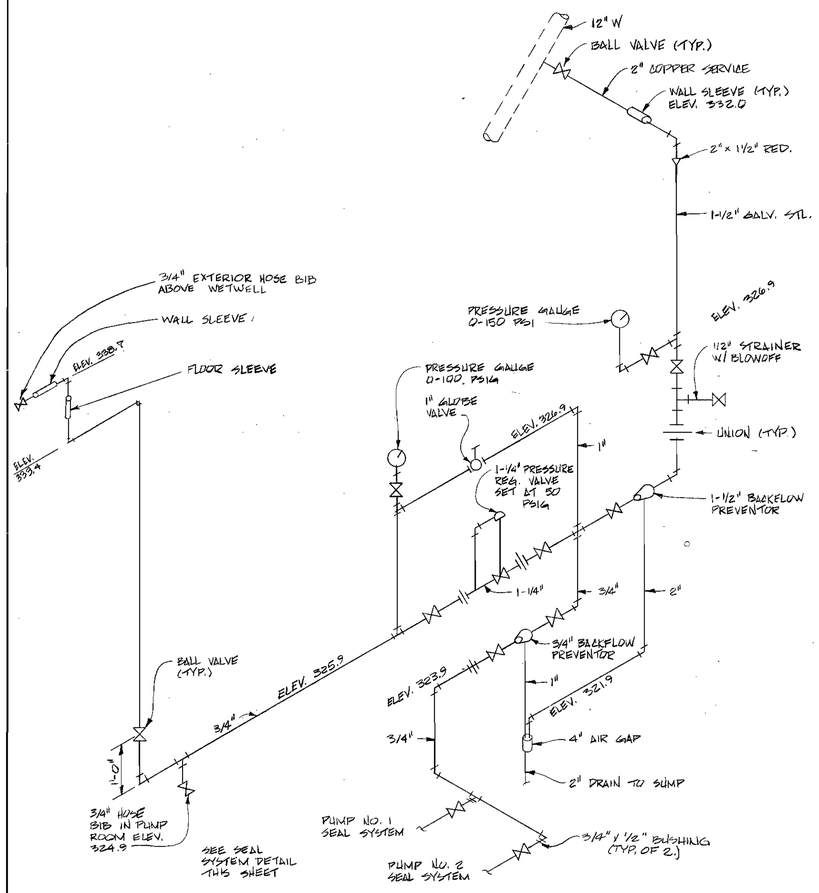
STRUCTURAL NOTES

1. CONCRETE: ALL CONCRETE SHALL BE MD. STATE HIGHWAY MIX. NO. 3 WITH A MINIMUM COMPRESSIVE STRENGTH AFTER 28 DAYS OF 3500 P.S.I.
2. REINFORCEMENT: ALL STEEL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 AND BE OF GRADE 60. ALL BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" ACI 315, THE LATEST EDITION.
3. COVER: ALL STEEL REINFORCEMENT SHALL BE PLACED SO THAT IT HAS 2 INCHES OF CONCRETE COVER MINIMUM UNLESS OTHERWISE SHOWN OR NOTED ON PLANS.
4. SUPPORTS: PROVIDE BAR SUPPORTS AND SPACERS IN ACCORDANCE WITH THE ACI DETAILING MANUAL.
5. STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36. ALL CONNECTIONS SHALL BE EITHER WELDED IN ACCORDANCE WITH THE AWS SPECIFICATIONS FOR BUILDING CONSTRUCTION OR BOLTED USING HIGH STRENGTH BOLTS ASTM A325.

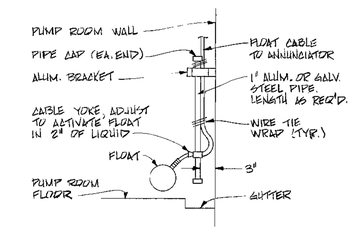
FOR ADDITIONAL STRUCTURAL NOTES & DTLS SEE SHTS 26 TO 32.



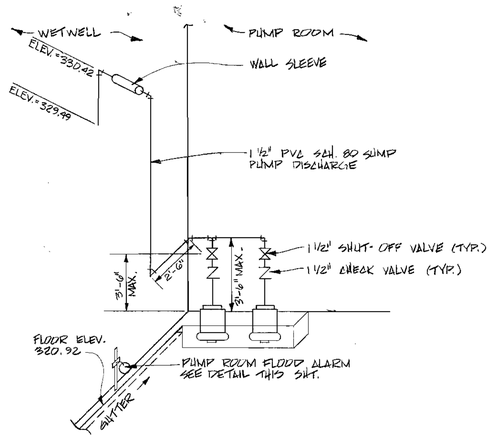
EXTRA REINFORCING TOP & BOTTOM WET WELL SLAB
NOT TO SCALE



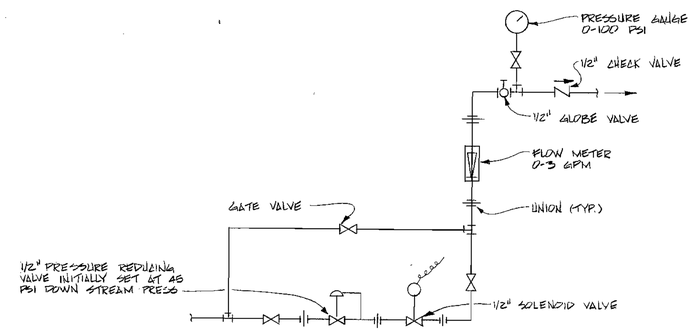
WATER SUPPLY SCHEMATIC
NOT TO SCALE



2/38 PUMP ROOM FLOOD ALARM DETAIL
NOT TO SCALE



SUMP PUMP SCHEMATIC DIAGRAM
NOT TO SCALE



SEALING WATER SYSTEM DETAIL
NOT TO SCALE

CONTRACT NO. 10-1215
KERGER ROAD COLLECTION SYSTEM & PUMP STATION
HOWARD COUNTY CAPITAL PROJECT S-6089

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	JOHN E. HARMS, JR & ASSOCIATES, INC. CONSULTING ENGINEERS P.O. BOX 5 PASADENA, MARYLAND	DES: J.G.S. DRN: C.M. CHK: J.G.S. DATE: 5/24/85	BY / NO. / REVISION / DATE	STRUCTURAL AND MISC. DETAILS KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION 600' SCALE MAP NO. 31 BLOCK NO. 22	KERGER ROAD COLLECTION SYSTEM AND PUMPING STATION HOWARD COUNTY, MARYLAND CONTRACT NO. 10-1215	SCALE AS SHOWN SHEET 38 OF 38

DIRECTOR OF PUBLIC WORKS — DATE 3-26-87
CHIEF, BUREAU OF ENGINEERING — DATE 3-25-87
CHIEF, BUREAU OF UTILITIES — DATE 3-25-87
CHIEF, UTILITY DIVISION — DATE 3/25/87

STATE OF MARYLAND — CHARLES BROBERT — REGISTERED PROFESSIONAL ENGINEER

OZALID