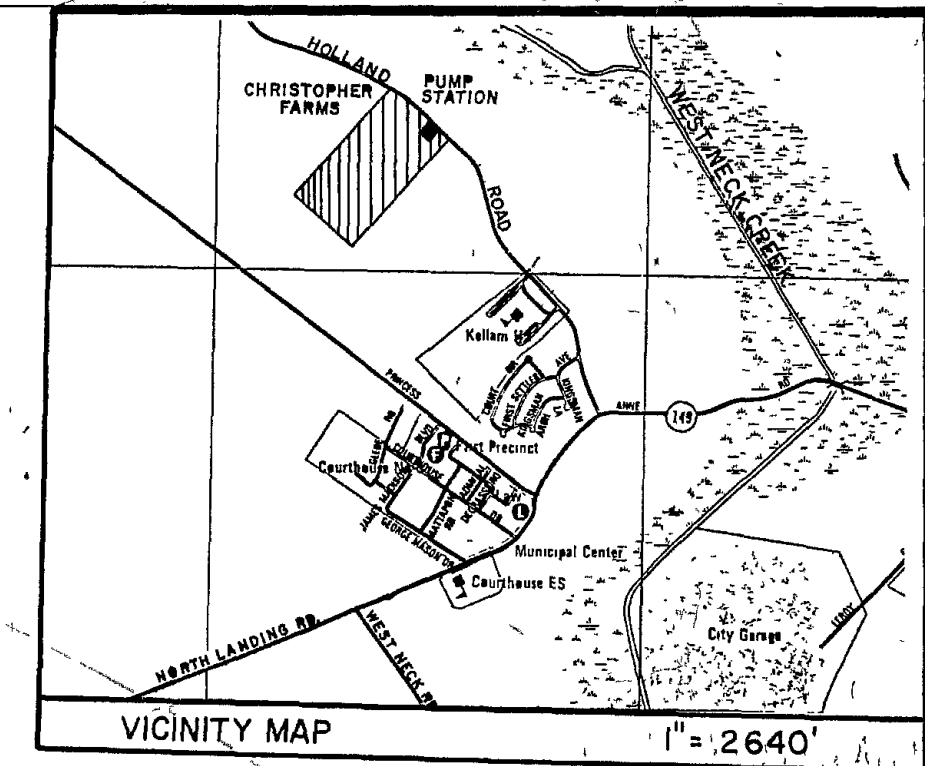


CONSTRUCTION PLANS CHRISTOPHER FARMS

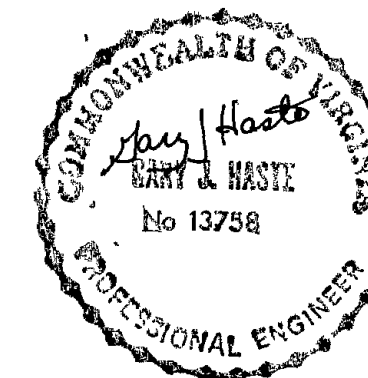
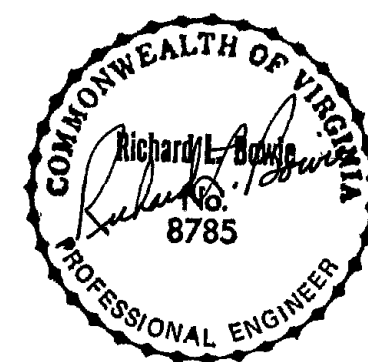
Phase 1, Section 2



FOR THE CHRISTOPHER COMPANY VIRGINIA BEACH, VIRGINIA

PLAN STATUS

DATE	INITIAL	DESCRIPTION
4/12/66	CBW	SUBMITTAL FOR MUNICIPAL REVIEW
1/5/67		RECEIVED MUNICIPAL COMMENTS
1/27/67	CBW	RESUBMITTAL FOR MUNICIPAL APPROVAL
3/11/67	MARK WANNINK	RECEIVED MUNICIPAL APPROVAL
PLANS RELEASED ONLY FOR THE FOLLOWING IMPROVEMENTS		
3/13/67	CBW	1. R/W & PUBLIC UTIL. EASEMENT CLEARING - NOT TO UTIL.
4/3/67	CBW	2. LAKE ELEVATION & ROUGH GRADING
		3. _____
		4. _____
		5. _____



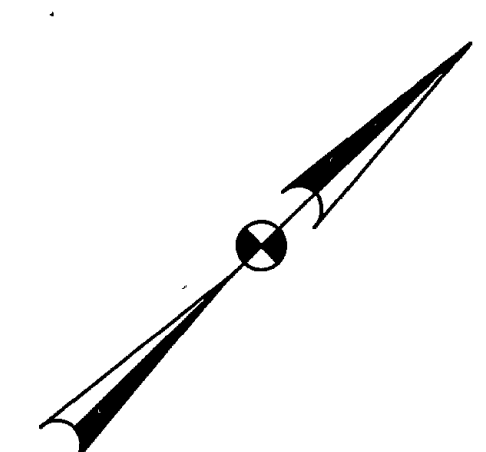
*22 Nov 88
DPA/CHC*

ta Talbot & Associates, Ltd.
Architects, Engineers, Planners, Surveyors, Landscape Architects

BURY FARM ASSOCIATES
6037 PROVIDENCE ROAD
VIRGINIA BEACH, VIRGINIA
23464

CLIENT DATA

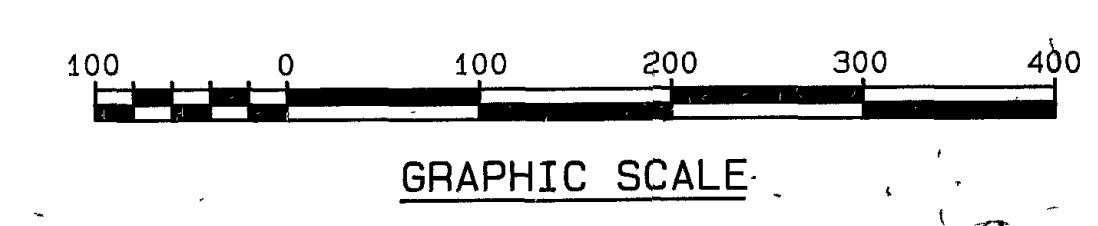
THE CHRISTOPHER COMPANY
1212 LAKE JAMES DRIVE
VIRGINIA BEACH, VIRGINIA
23464



66' V.E.P. CO. R/W
EXIST 20' W.M.

LEGEND

PROPOSED	DESCRIPTION	EXISTING
	WATER MAIN, TEE, VALVE, & BEND	
	FIRE HYDRANT WITH VALVE	
	SANITARY SEWER WITH MANHOLE	
	SANITARY SEWER CLEANOUT	
	SANITARY FORCE MAIN	
	SANITARY SEWER LATERAL WITH C.O.	
	STORM SEWER WITH STORM MANHOLE	
	DROP OR CURB INLET	
	TOP OF CURB ELEVATION	
	BOUNDARY LINE	
	PROPERTY LINE	
	SPOT ELEVATION, PROPOSED GRADE	
	WATER SERVICE CONNECTION WITH CURB STOP	
	STRUCTURE NUMBER	
	SHEET NUMBER	
	LOT ELEVATION	
	BORING LOCATION & NUMBER	



ta
Talbot & Associates, Ltd.
Architects, Engineers, Planners, Surveyors, Landscape Architects
100 Lassiter Square, Virginia Beach, VA 23462
758 7th Street, Suite 100, Newport News, VA 23606

CHRISTOPHER FARMS
SANITARY SEWER AND WATER INDEX
VIRGINIA
VA. BEACH

COMMONWEALTH OF VIRGINIA
BARY J. HASTE
No. 13758
PROFESSIONAL ENGINEER

Designed	C.A.M.
Drawn	A.E.T.
Checked	C.B.W.
Scale	1"=100'
Date	11-12-86
File No.	U-1-524
Project No.	861268

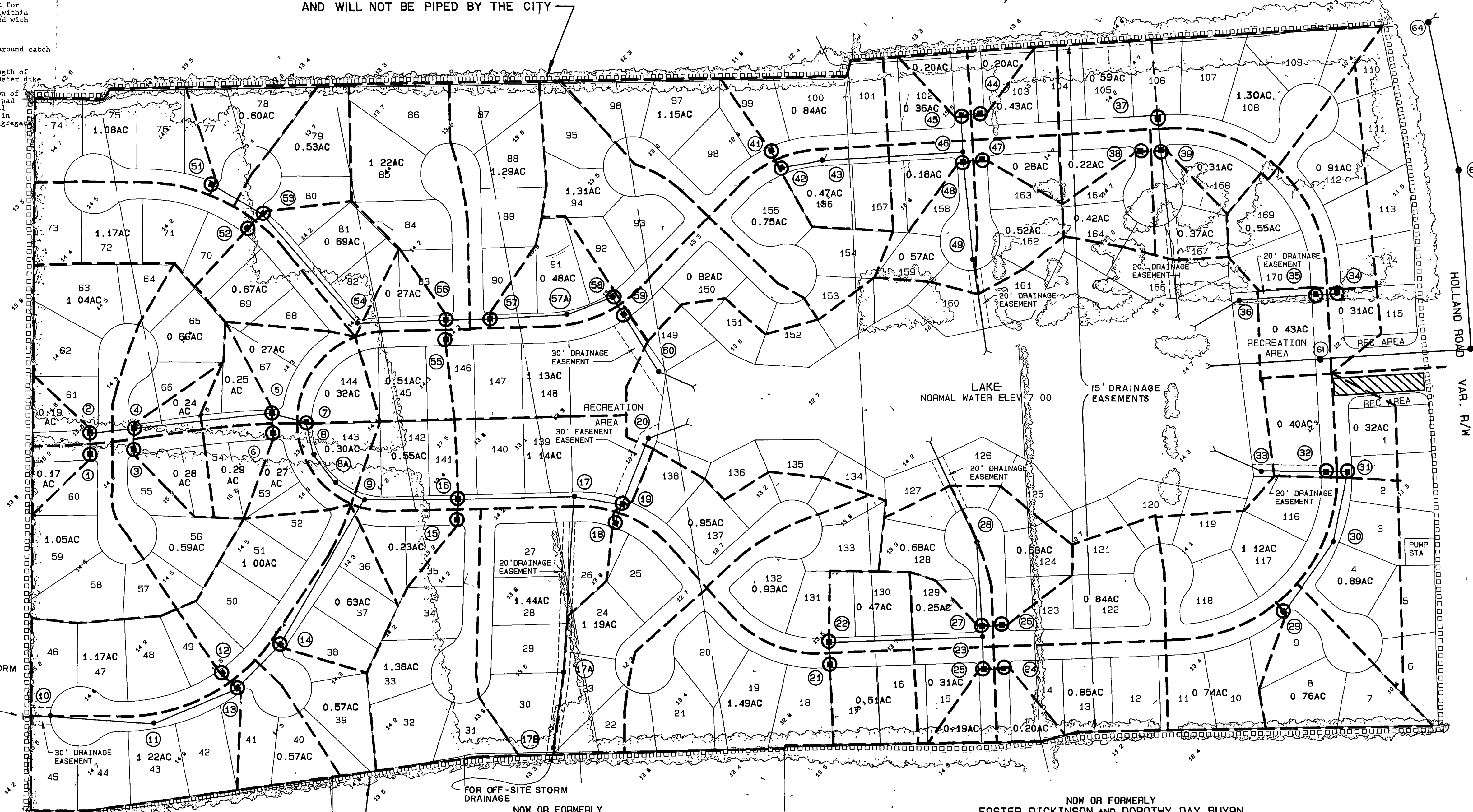
Sheet No. **I**
of **IV** Sheets

- Notes**
- Datum Elevations as shown herein are in feet and refer to U.S.C.G.S. M.S.L. - 0.00.
 - Storm Drainage System**
 - All storm manholes and catch basins shall have shaped inverts as shown in details.
 - If a pipe joint length is used other than that which is stated on the plans, the pipe radius must be adjusted accordingly. Where open joint pipe is used, no joint is to be opened a distance exceeding 2% of the pipe length.
 - Lengths of pipe are measured to center of structure.
 - Sanitary Sewer System**
 - Lengths of pipe and inverts are shown to center of structure.
 - Laterals, excluding those from a manhole or vertical riser, are stationed from the preceding downstream manhole.
 - Laterals shall be laid on a slope providing a minimum velocity of 2 FPS (4" lateral min. grade = 1' per 100').
 - Laterals marked with specific grades or inverts shall be laid to conform to plan. Laterals not marked in such fashion may be laid on a steeper grade as determined by the field engineer provided the lateral will function as a gravity service and appropriate clearances to other improvements and utilities are maintained.
 - Water Distribution System**
 - The installation of water main taps, individual copper service lines, and curb stops is to be completed prior to the placement of base material or subgrade treatment for street construction. Curb stops will be brought to within 5' of the property line and their locations indicated with a 2" x 4" stake marked "W".
 - Erosion and Sedimentation Control**
 - Denotes location of sediment traps around catch basins and drop inlets.
 - Denotes approximate location and length of straw bale sediment barrier or perimeter dikes.
 - Denotes approximate size and location of temporary stone stabilized cleaning pad (min. 150' x 30' x 6") to be located at all construction entrances. Stone used in cleaning pad shall not be used as aggregate base in pavement construction.

- All lots are to be permanently seeded or sodded immediately after final lot grading is complete.
- Those trees and shrubs existing within the limits of construction and not interfering with construction are to be protected from damage to the root, trunk, and branch systems.

NOW OR FORMERLY
PLEASANT ACRES, LTD.
D.B. 2, 324, PG. 1, 543

NOTE: DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS
AND WILL NOT BE PIPED BY THE CITY



66' V.E.P. CO. R/W
D.B. 302, PG. 153

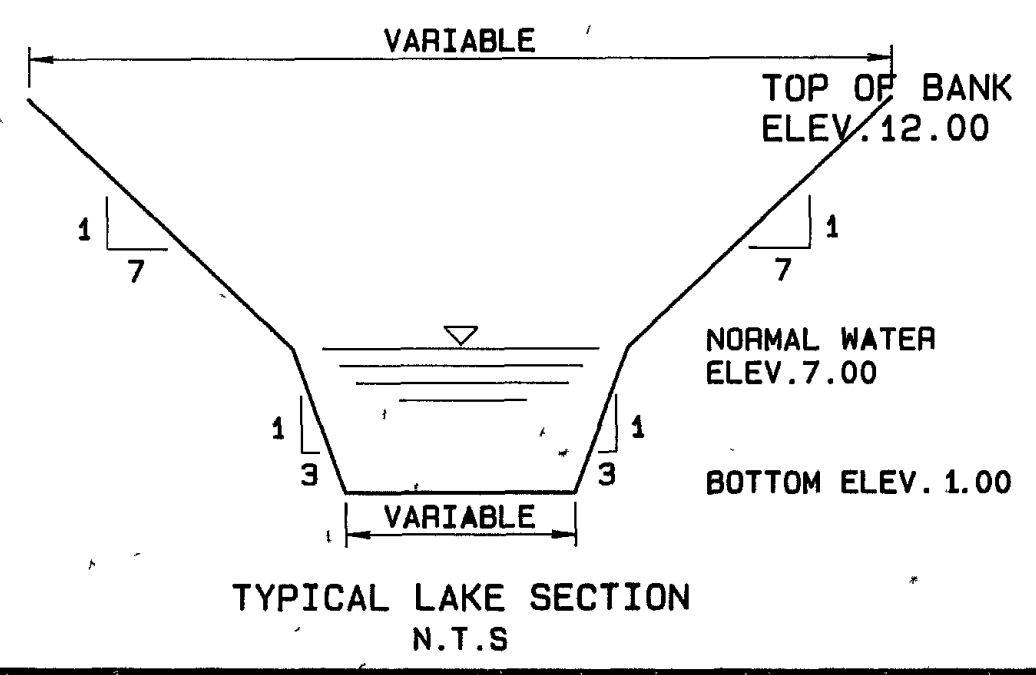
FOR OFF-SITE STORM DRAINAGE

NOW OR FORMERLY
OSWALD STEPHEN BUYRN
D.B. 2, 084, PG. 369
M.B. 145, PG. 27

NOW OR FORMERLY
FOSTER D. BUYRN
D.B. 2, 084, PG. 171
M.B. 4, PG. 15
M.B. 145, PG. 27

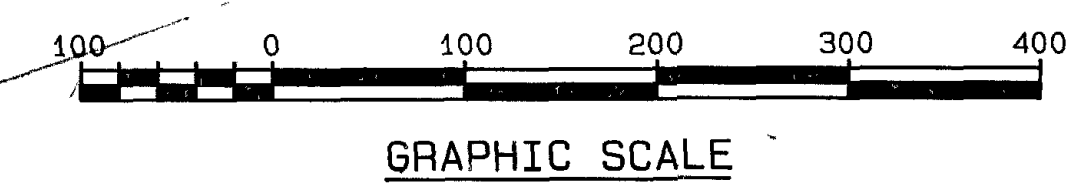
NOW OR FORMERLY
FOSTER DICKINSON AND DOROTHY DAY BUYRN
D.B. 1, 192, PG. 410
D.B. 1, 706, PG. 304
M.B. 122, PG. 25

NOTE: DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS
AND WILL NOT BE PIPED BY THE CITY



LEGEND

PROPOSED	DESCRIPTION	EXISTING
	WATER MAIN, TEE, VALVE, & BEND	
	FIRE HYDRANT WITH VALVE	
	SANITARY SEWER WITH MANHOLE	
	SANITARY SEWER CLEANOUT	
	SANITARY FORCE MAIN	
	SANITARY SEWER LATERAL WITH C.O.	
	STORM SEWER WITH STORM MANHOLE	
	DROP OR CURB INLET	
	TOP OF CURB ELEVATION	
	BOUNDARY LINE	
	PROPERTY LINE	
	SPOT ELEVATION, PROPOSED GRADE	
	WATER SERVICE CONNECTION WITH CURB STOP	
	STRUCTURE NUMBER	
	SHEET NUMBER	
	LOT ELEVATION	
	BORING LOCATION & NUMBER	
	WOOD LINE	



Talbot & Associates, Ltd.
Architects, Engineers, Surveyors, Landscape Architects
100 Landon Square, Virginia Beach, VA 23462
757/481-8800
757/481-8801

CHRISTOPHER FARMS
STORM DRAINAGE INDEX

COMMONWEALTH OF VIRGINIA
GARY J. HASTE
No. 1375A
PROFESSIONAL ENGINEER

Designed C.A.M.
Drawn A.E.T.
Checked C.B.W.
Scale 1"=100'
Date 11-12-86
File No. U-1-524
Project No. B61268
REVISIONS 8/11/88
REV. DRAIN FROM STR 37 TO OUTFALL

Sheet No. **II**
of IV Sheets

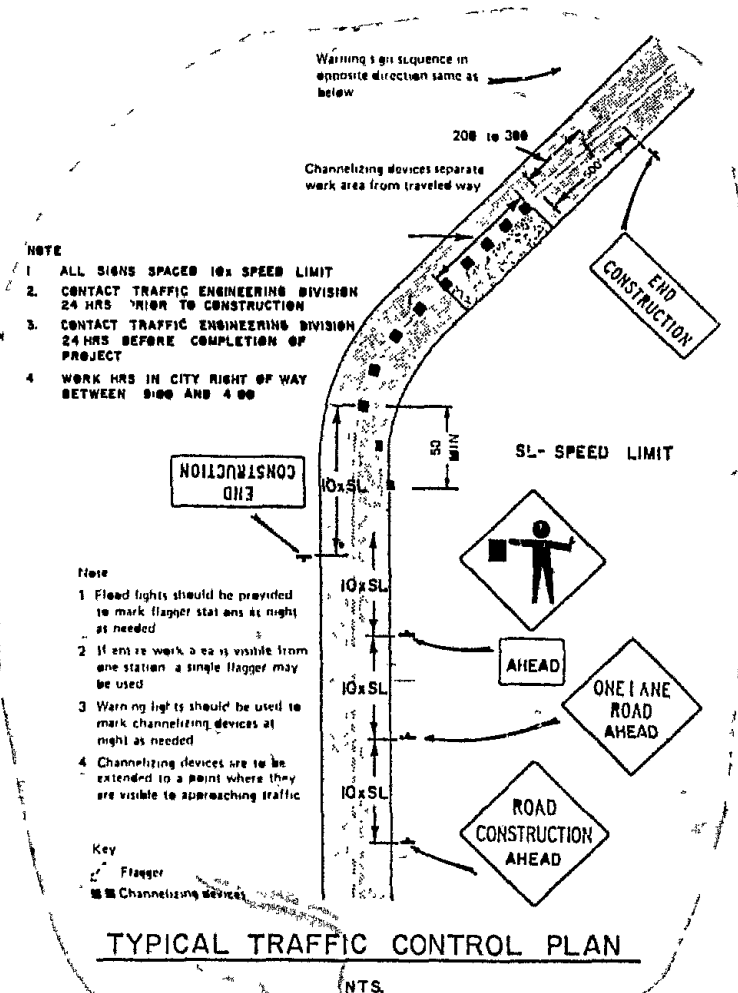
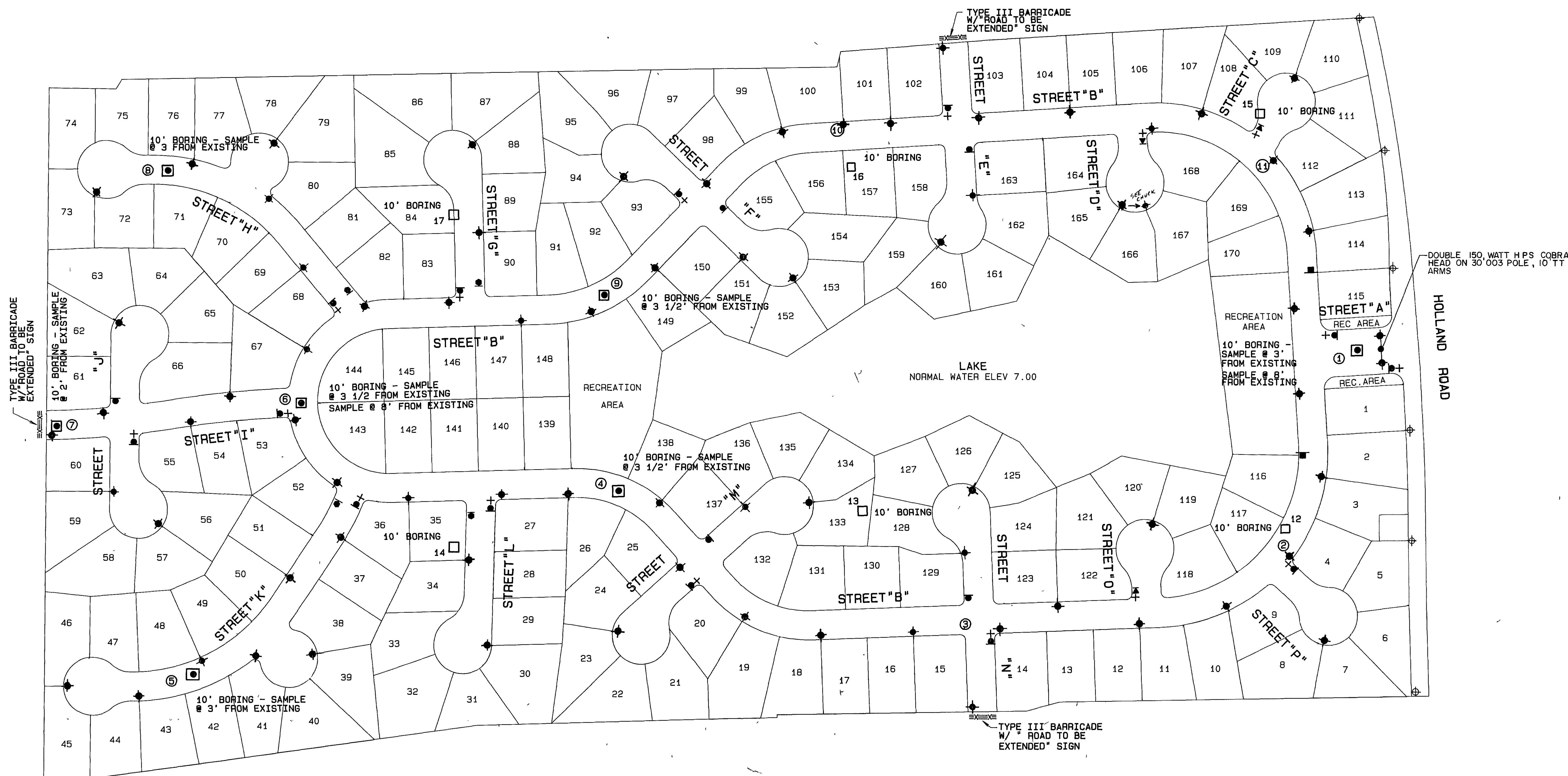
VIRGINIA

VA: BEACH

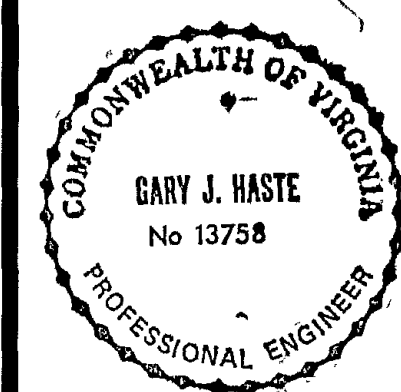
REV. 7/28/87 EUM PIPE FROM OFFSITE TO STR 51

CHRISTOPHER FARMS
 STREET SIGN AND STREET LIGHTING INDEX
 SOIL TEST AND BORING LOCATION MAP

66' V.E.P. CO. R/W



- LEGEND**
- LOCATION OF SOIL TESTS (CBR, ETC.) WITH SAMPLE DEPTH INDICATED
 - LOCATION OF 10' BORING
 - ⊕ 250 WATT, 23,000 LUMINAIRE HPS STREET LIGHT ON 30' 002 POLE, 8' TT ARM
 - ⊕ 70 WATT, 5,000 LUMINAIRE HPS COLONIAL TYPE STREET LIGHT ON 14' ALUMINUM POLES
 - + DOUBLE STREET NAME SIGN
 - ⊕ STOP SIGN
 - ⊕ SPEED LIMIT SIGN
 - ⊕ YIELD SIGN
 - ⊕ DEAD END SIGN



Designed C.A.M.

Drawn A.E.T.

Checked C.B.W.

Scale 1"=100'

Date 11-12-86

File No U-1-524

Project No 861268

REVISED 10-30-87 COLONIAL TYPE LIGHT
 REVISED 11-11-87 RELOCATE STREET LIGHTS

Sheet No **IV**

of **IV** Sheets

CHRISTOPHER FARMS
HOLLAND ROAD IMPROVEMENTS
 (REVISIONS TO SHEETS OF APPROVED CONSTRUCTION PLAN)
 (MUNICIPAL APPROVAL 3-11-87)

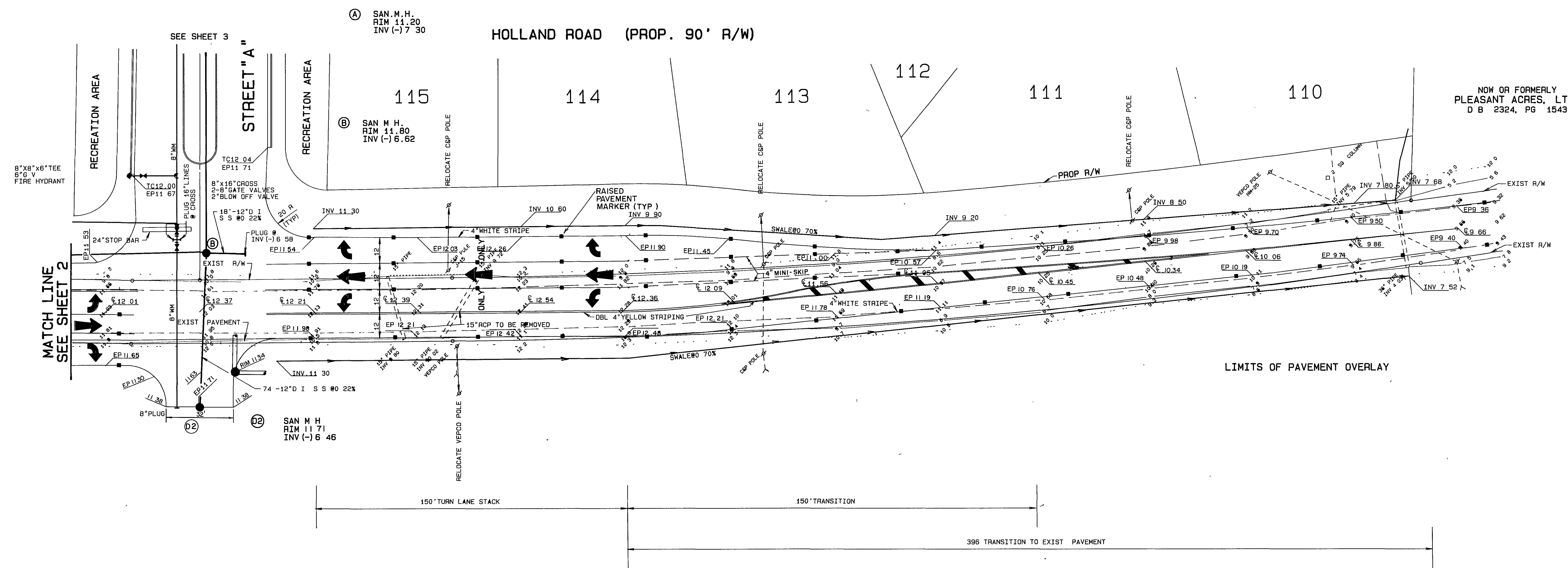
VA BEACH

REVISED 10-29-87 H B H
 REVISED 11-25-87 H B H

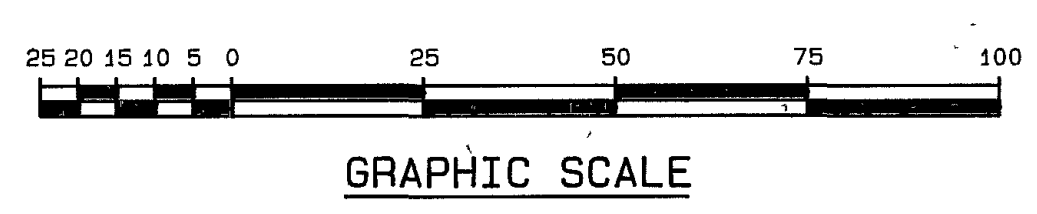
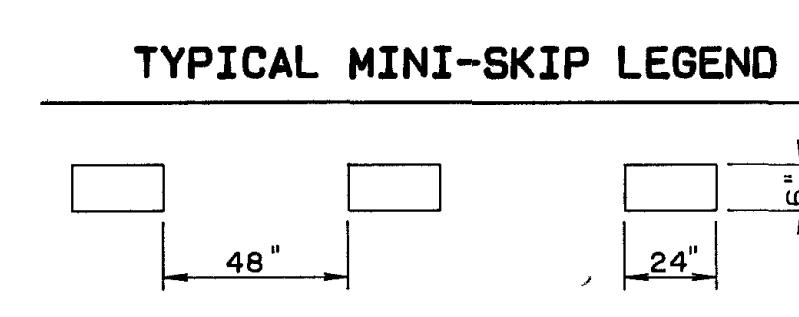
Designed H.B.H.
 Drawn L.E.J.
 Checked C.B.W.
 Scale 1"=25'
 Date 8-24-87
 File No U-1-524
 Project No 861268

Sheet No **1**
 of **2** Sheets

FIELD CHANGE TO ADJUST PAVEMENT GRADES 5/6/88



NOTE
 1 ALL STRIPING IS TO BE OF THERMO-PLASTIC MATERIAL AND ALL LEGENDS AND ARROWS ARE TO BE PERFORMED 3M TAPE OR APPROVED EQUIVALENT
 2 ERADICATION OF EXISTING PAVEMENT MARKINGS IS TO BE ACCOMPLISHED BY A 1" APPLICATION OF BITUMINOUS CONCRETE (TYPE S-5).



CHRISTOPHER FARMS
HOLLAND ROAD IMPROVEMENTS
 (REVISIONS TO SHEETS OF APPROVED CONSTRUCTION PLAN
 (MUNICIPAL APPROVAL 3-11-87)

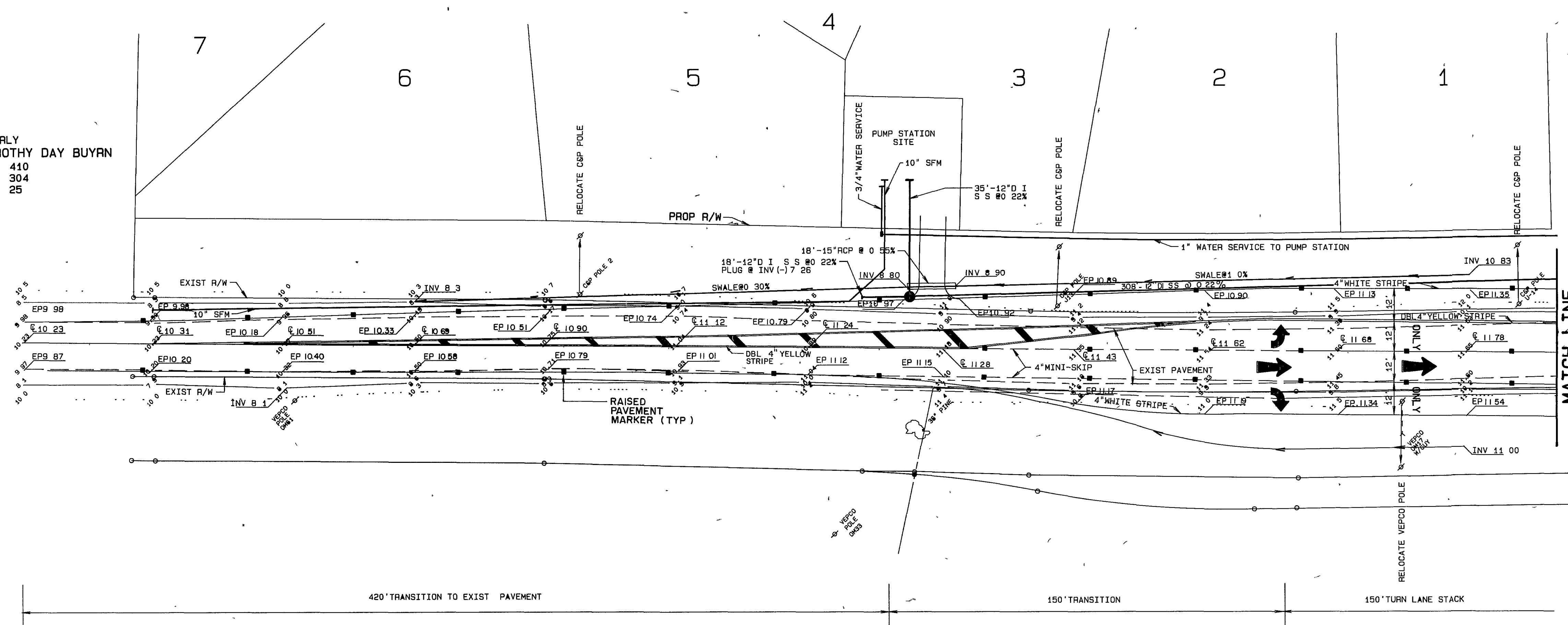
REVISED 10-29-87 H B H
 REVISED 11-25-87 H B H

Designed H B H
 Drawn L E J
 Checked C B W
 Scale 1"=25'
 Date 8-24-87
 File No U-1-524
 Project No 861268

Sheet No **2**
 of 2 Sheets

FIELD CHANGE TO ADJUST PAVEMENT GRADES 5/6/88
 MATCH LINE SEE SHEET 1

NOW OR FORMERLY
 FOSTER DICKINSON & DOROTHY DAY BUYRN
 D.B. 1492, PG 410
 D.B. 1706, PG 304
 M.B. 122, PG 25

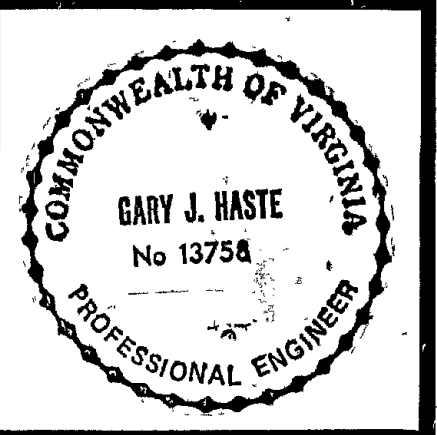


420' TRANSITION TO EXIST PAVEMENT 150' TRANSITION 150' TURN LANE STACK

LIMITS OF PAVEMENT OVERLAY

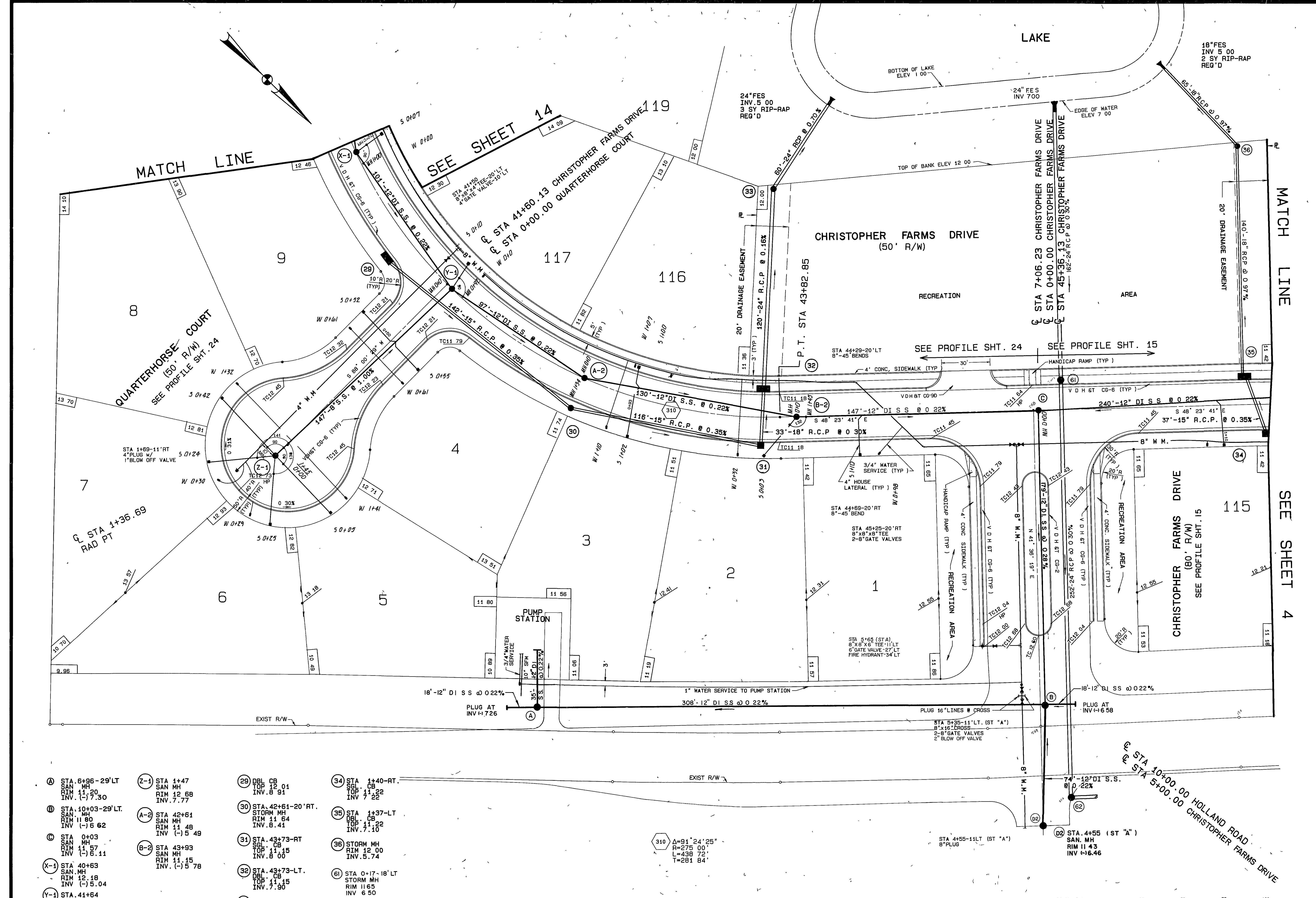


GRAPHIC SCALE



Designed	C.A.M.
Drawn	A.E.T.
Checked	C.B.W.
Scale	1"=25'
Date	11-12-86
File No	U-1-524
Project No	861268

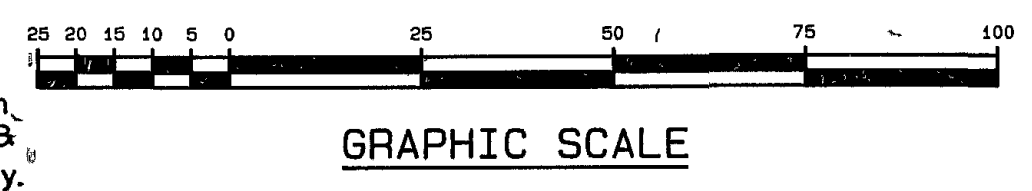
Sheet No	3
of 31 Sheets	



- (A) STA. 6+96-29'LT
SAN MH
RIM 11.20
INV. (-) 9.30
- (B) STA. 10+03-29'LT.
SAN MH
RIM 11.80
INV. (-) 6.62
- (C) STA. 0+03
SAN MH
RIM 11.57
INV. 5.11
- (X-1) STA. 40+63
SAN MH
RIM 12.18
INV. (-) 5.04
- (Y-1) STA. 41+64
SAN DROP MH
RIM 11.82
INV. 6.30 (IN 8")
(-) 5.27 (12")
- (Z-1) STA. 1+47
SAN MH
RIM 12.68
INV. 7.77
- (A-2) STA. 42+61
SAN MH
RIM 11.48
INV. (-) 5.49
- (B-2) STA. 43+93
SAN MH
RIM 11.15
INV. (-) 5.78
- (29) DBL CB
TOP 12.01
INV. 8.91
- (30) STA. 42+61-20'RT.
STORM MH
RIM 11.54
INV. 8.41
- (31) STA. 43+73-RT
STORM MH
RIM 11.15
INV. 8.00
- (32) STA. 43+73-LT.
DBL CB
TOP 11.15
INV. 7.90
- (33) STORM MH
RIM 12.00
INV. 7.70 (IN)
5.46 (OUT)
- (34) STA. 1+40-RT.
SAN MH
TOP 11.22
INV. 7.22
- (35) STA. 1+37-LT
SAN MH
TOP 11.22
INV. 7.10
- (36) STORM MH
RIM 12.00
INV. 5.74
- (6) STA. 0+17-18'LT
STORM MH
RIM 11.65
INV. 6.50

310 $\Delta = 91^{\circ} 24' 25''$
 $R = 275.00'$
 $L = 439.72'$
 $T = 284.84'$

RECORD DRAWINGS
 These drawings are based upon record information provided by Owner &/ or his Contractor. Talbot & Associates did not perform an "as-built" survey.
 11/19/88 (Date)



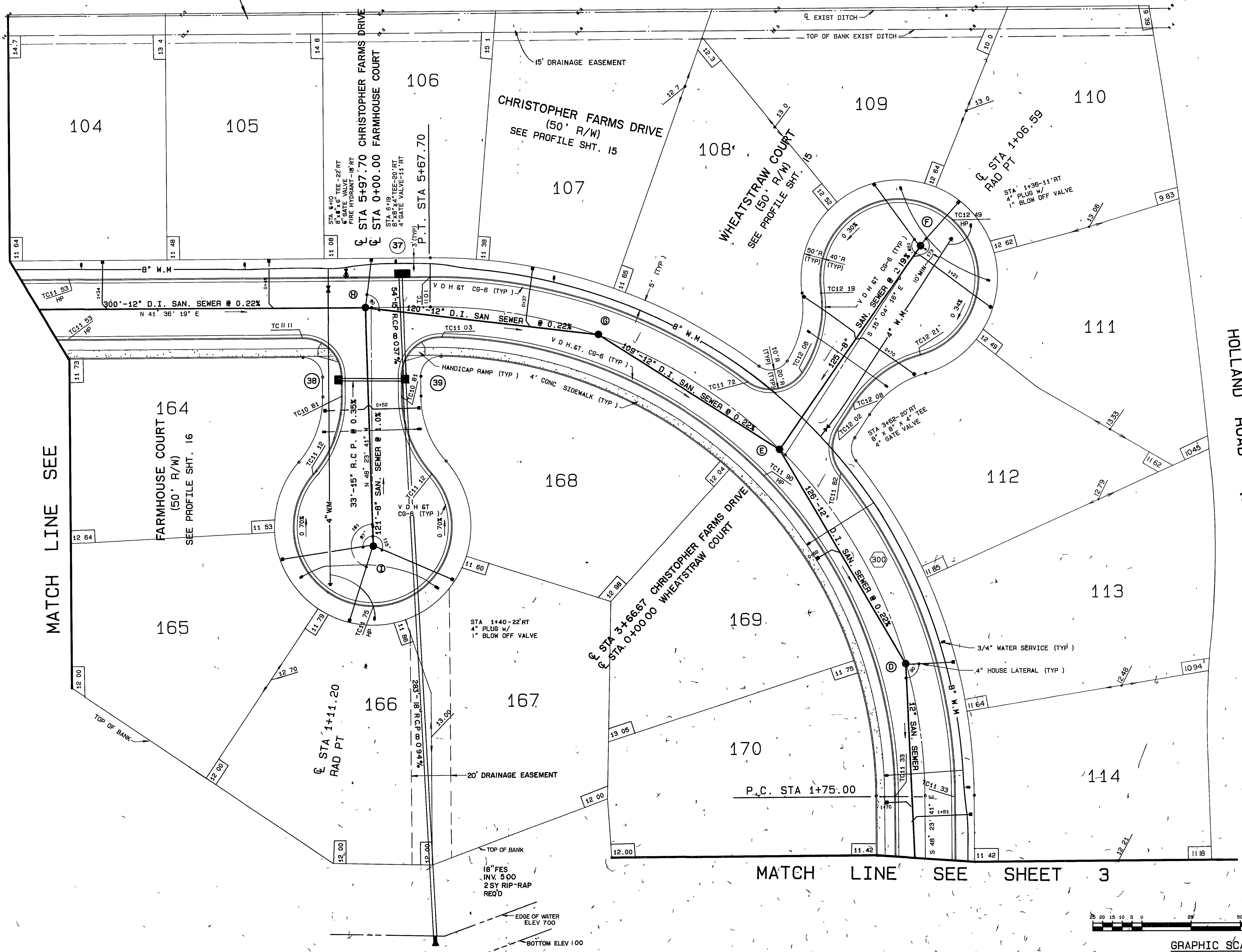
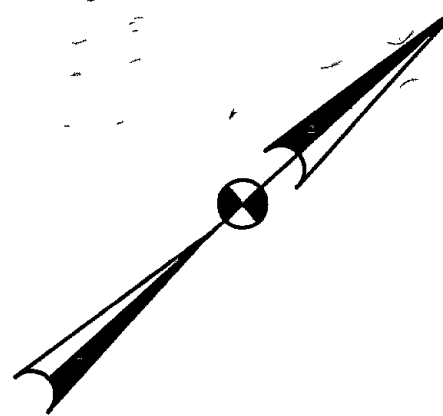
GRAPHIC SCALE

SHEET 5

MATCH LINE SEE

MATCH LINE SEE SHEET 3

NOTE DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS AND IT WILL NOT BE PIPED BY THE CITY



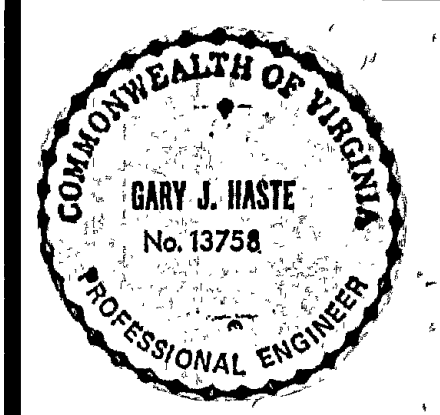
- ① STA 2+43
SAN. MH
RIM 11.47
INV. (-) 5.58
- ② STA 3+71
SAN. MH
RIM 11.82
INV. 5.60 (IN 8")
(-) 5.30 (IN 12")
(-) 5.30 (OUT 12")
- ③ STA 1+26
SAN. MH
RIM 12.34
INV. 8.34
- ④ STA 4+80
SAN. MH
RIM 11.33
INV. (-) 5.06
- ⑤ STA. 6+00
SAN. MH
RIM 10.94
INV. 4.47 (IN 8")
(-) 4.79 (IN 12")
(-) 4.79 (OUT 12")
- ⑥ STA. 1+21
SAN. MH
RIM 11.70
INV. 5.68
- ⑦ STA 5+92-RT.
DBL. CB
TOP 10.88
INV. 7.86
- ⑧ S&L CB
TOP 10.74
INV. 7.78
- ⑨ S&L CB
TOP 10.74
INV. 7.66

300
 Δ = 90° 00' 00"
 R = 250.00'
 L = 392.70'
 T = 250.00'



Talbot & Associates, Ltd.
 Architects, Engineers, Planners, Surveyors, Landscape Architects
 7297 Flanders Street, Suite 100, Newmarket, Virginia 22096

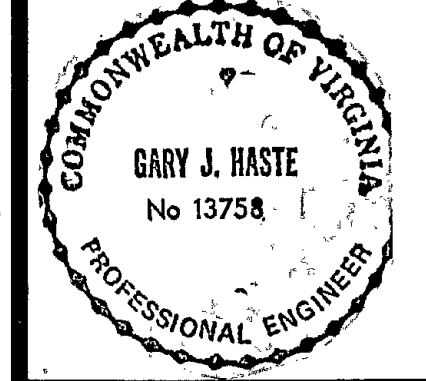
CHRISTOPHER FARMS
 VIRGINIA
 VA. BEACH



Designed C.A.M.
 Drawn A.E.T.
 Checked C.B.W.
 Scale 1"=25'
 Date 11-12-86
 File No. U-1-524
 Project No. B61268
 REVISIONS: 8.10.88
 REVISE FARMHOUSE CT
 DRAINAGE PIPE FROM
 CB ST. 14 OUTFALL

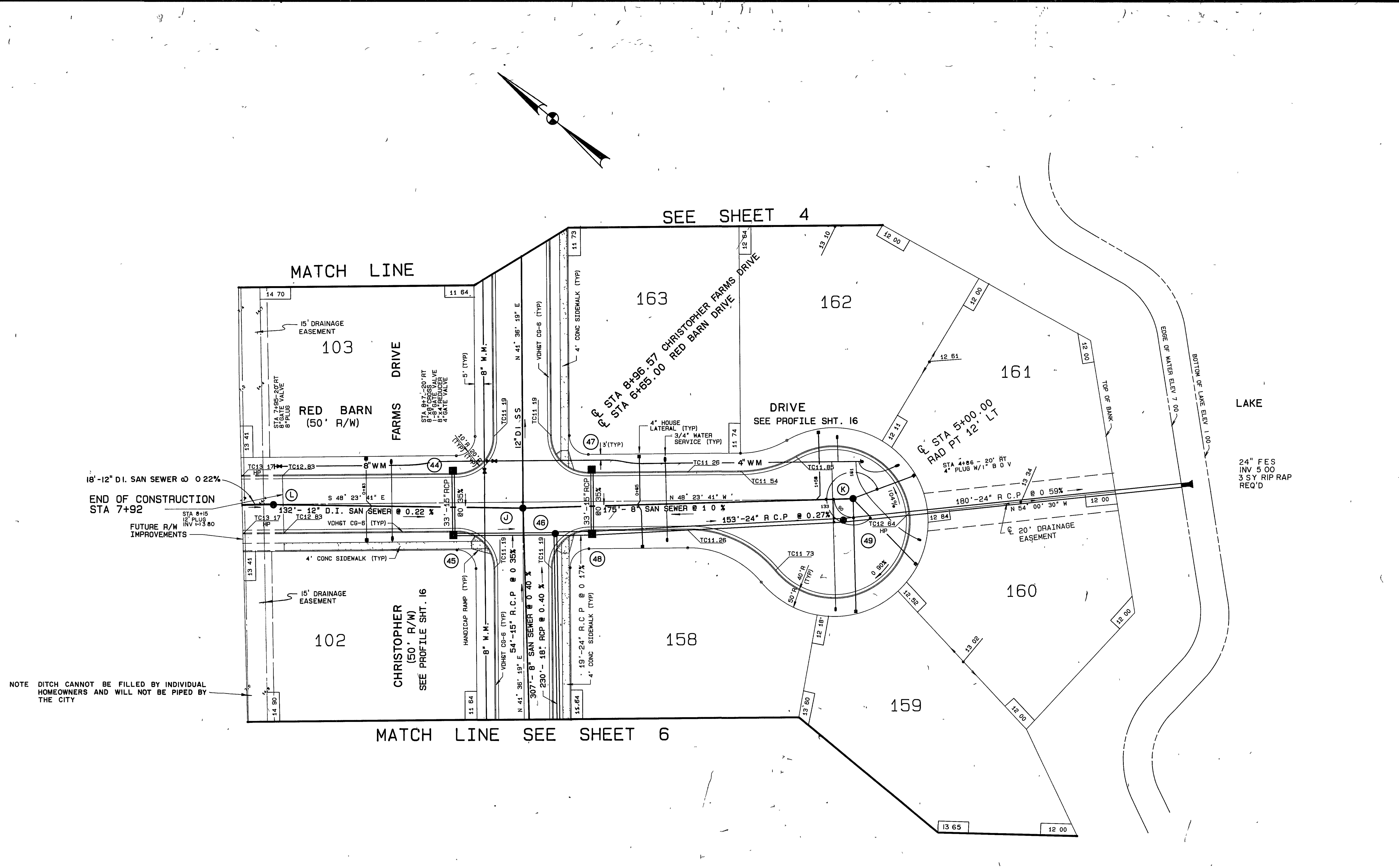
Sheet No. **4**
 of 31 Sheets

CHRISTOPHER FARMS

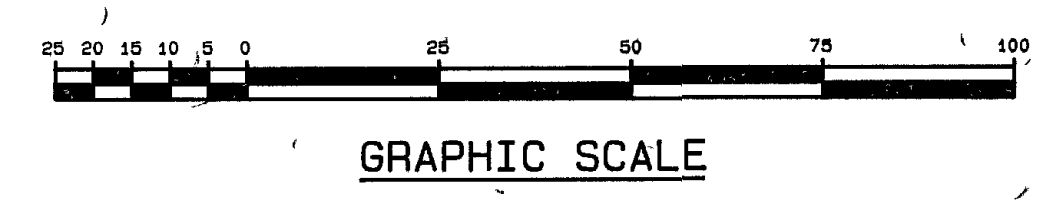


Designed C.A.M.
 Drawn A.E.T.
 Checked C.B.W.
 Scale 1"=25'
 Date 11-12-86
 File No U-1-524
 Project No 861268

Sheet No **5**
 of 31 Sheets



- (J) STA. 9+00
SAN. DROP MH
RIM 11.04
INV 3.25 (IN E)
2.67 (IN S)
(-) 4.13 (IN W)
(-) 4.13 (OUT N)
- (K) STA. 4+90
SAN. MH
RIM 12.40
INV 5.00
- (L) STA. 7+97
SAN. MH
RIM 12.87
INV (-) 3.84
- (44) SGL. CB
TOP 10.99
INV 8.03
- (45) SGL. CB
TOP 10.99
INV 7.91
- (46) STA. 9+14-17' LT
STORM MH (INLET SHAPING REQ'D)
TOP 10.79
INV 7.72 (IN 15")
6.57 (IN 18")
6.57 (OUT 24")
- (47) SGL. CB
TOP 10.99
INV 8.03
- (48) SGL. CB (INLET SHAPING REQ'D)
TOP 10.99
INV 7.91 (IN 15")
6.53 (IN 24")
6.53 (OUT 24")
- (49) STA. 4+95-12' LT.
STORM MH (INLET SHAPING REQ'D)
TOP 12.64
INV 6.11



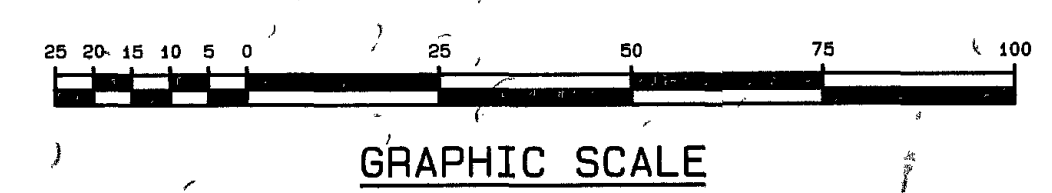
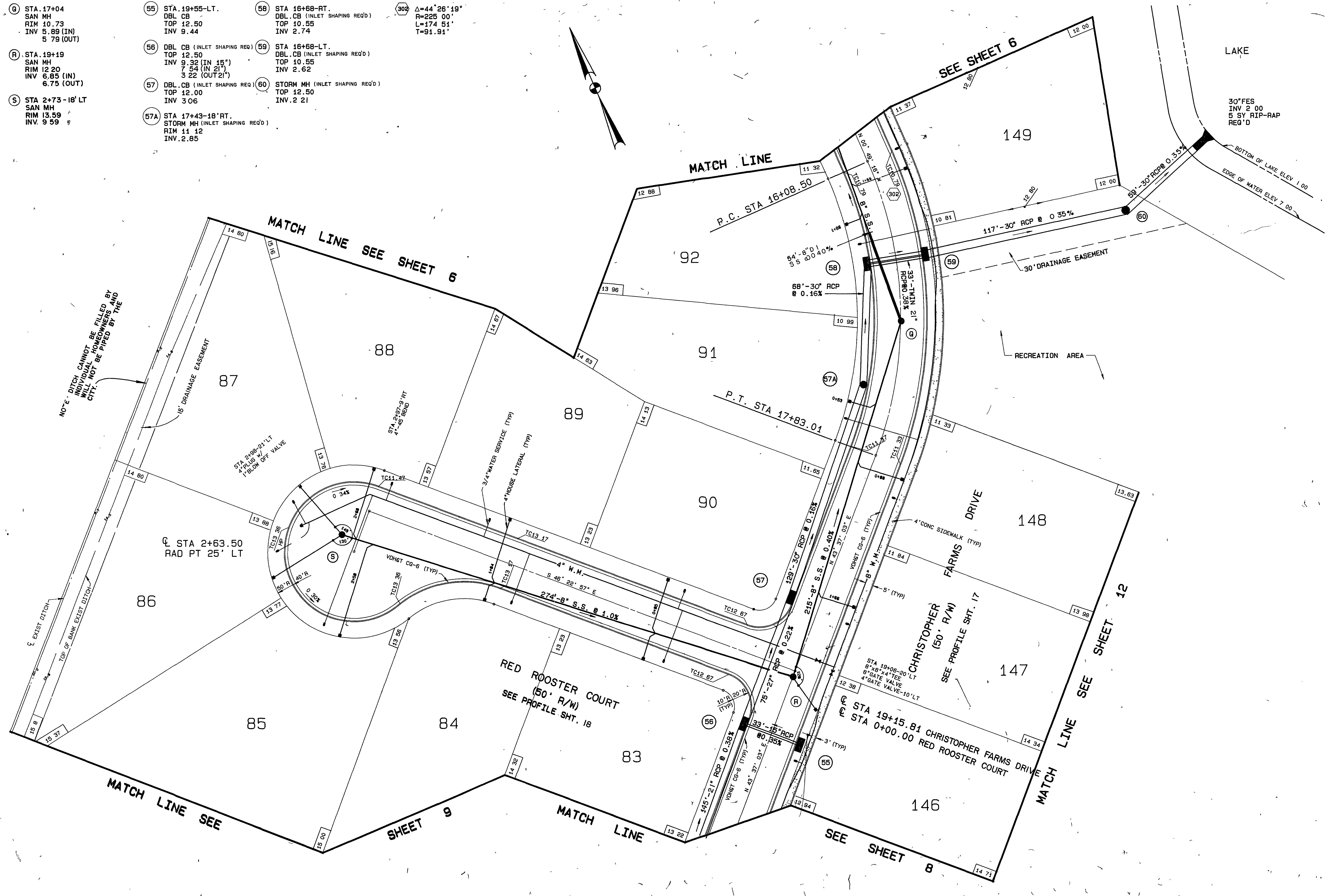
GRAPHIC SCALE

NOTE DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS AND WILL NOT BE PIPED BY THE CITY

18"-12" D.I. SAN SEWER @ 0.22%
 END OF CONSTRUCTION STA 7+92
 FUTURE R/W IMPROVEMENTS

24" FES
 INV 5.00
 3 SY RIP RAP
 REQ'D

- Q STA. 17+04
SAN MH
RIM 10.73
INV 5.89 (IN)
5.79 (OUT)
- R STA. 19+19
SAN MH
RIM 12.20
INV 6.65 (IN)
6.75 (OUT)
- S STA. 2+73-18' LT
SAN MH
RIM 13.59
INV 9.53
- 55 STA. 19+55-LT.
DBL CB
TOP 12.50
INV 9.44
- 56 DBL CB (INLET SHAPING REQ'D)
TOP 12.50
INV 9.32 (IN 15")
7.54 (IN 21")
3.22 (OUT 21")
- 57 DBL CB (INLET SHAPING REQ'D)
TOP 12.00
INV 3.06
- 57A STA. 17+43-18' RT.
STORM MH (INLET SHAPING REQ'D)
RIM 11.12
INV 2.85
- 58 STA. 16+88-RT.
DBL CB (INLET SHAPING REQ'D)
TOP 10.55
INV 2.74
- 59 STA. 16+88-LT.
DBL CB (INLET SHAPING REQ'D)
TOP 10.55
INV 2.62
- 60 STORM MH (INLET SHAPING REQ'D)
TOP 12.50
INV 2.21
- 302 $\Delta=44^{\circ}26'19"$
 $R=225.00'$
 $L=174.51'$
 $T=91.91'$

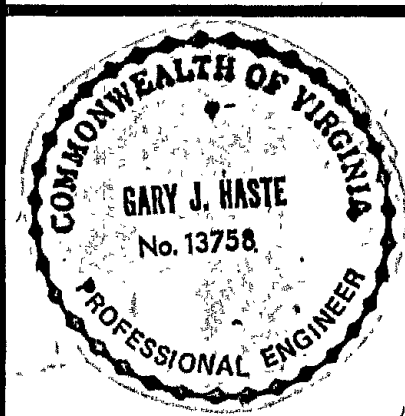


TA
Talbot & Associates, Ltd.
Architects, Engineers, Planners, Surveyors, Landscape Architects
100 Landon Square, Virginia Beach, VA 23462
758 Thomas Street, Suite 100, Newport News, VA 23606

VIRGINIA

CHRISTOPHER FARMS

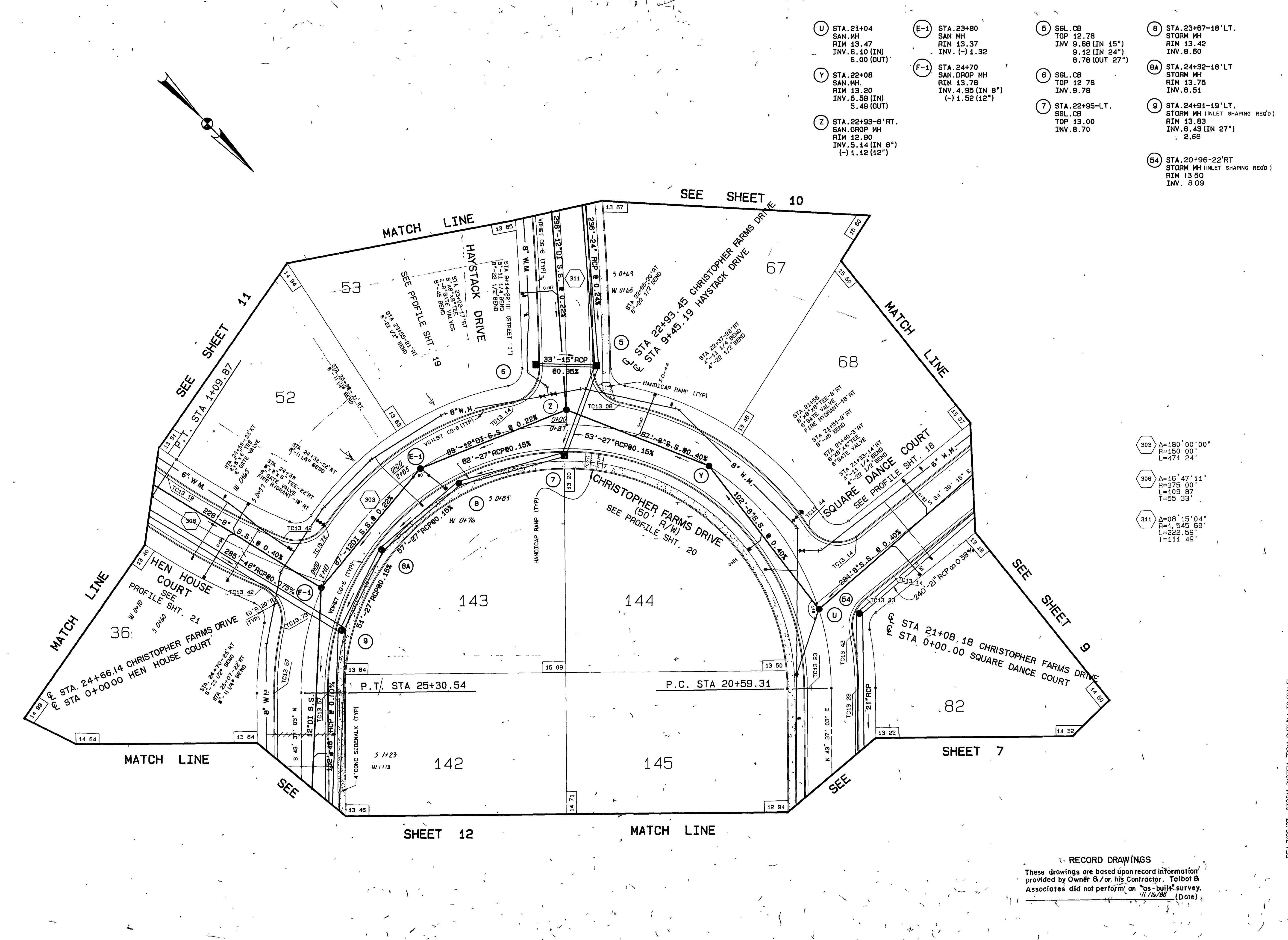
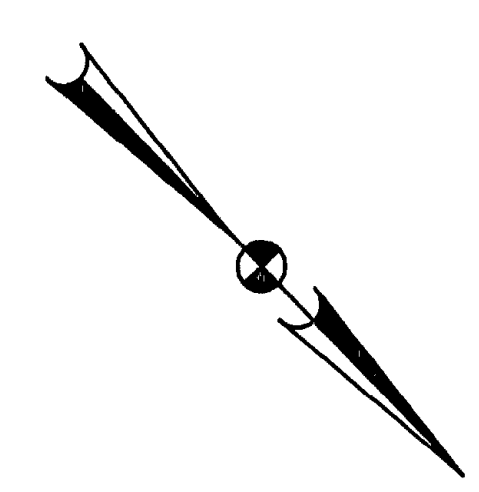
VA BEACH



Designed	C.A.H.
Drawn	K.E.T.
Checked	C.B.W.
Scale	1"=25'
Date	11-12-86
File No.	U-1-524
Project No.	861268

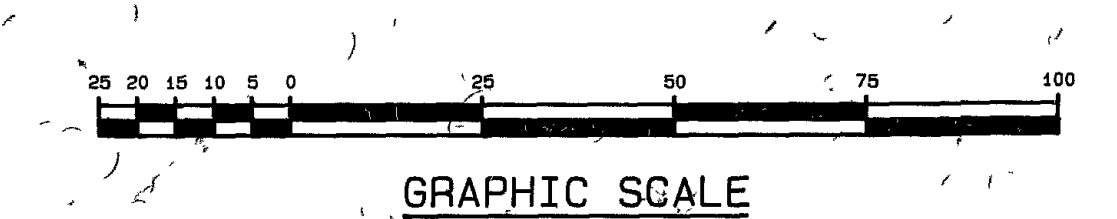
Sheet No **7**
of 31 Sheets

REV 7/28/87 STORM SYSTEM FROM OUTFALL TO STR 51



- U STA. 21+04
SAN. MH
RIM 13.47
INV. 6.10 (IN)
6.00 (OUT)
- Y STA. 22+08
SAN. MH
RIM 13.20
INV. 5.59 (IN)
5.49 (OUT)
- Z STA. 22+93-8' RT.
SAN. DROP MH
RIM 12.90
INV. 5.14 (IN 8")
(-) 1.12 (12")
- E-1 STA. 23+80
SAN. MH
RIM 13.37
INV. (-) 1.32
- F-1 STA. 24+70
SAN. DROP MH
RIM 13.78
INV. 4.95 (IN 8")
(-) 1.52 (12")
- 5 SGL. CB
TOP 12.78
INV. 9.66 (IN 15")
9.12 (IN 24")
8.78 (OUT 27")
- 6 SGL. CB
TOP 12.78
INV. 9.78
- 7 STA. 22+95-LT.
SGL. CB
TOP 13.00
INV. 8.70
- 8 STA. 23+67-18' LT.
STORM MH
RIM 13.42
INV. 8.60
- 8A STA. 24+32-18' LT
STORM MH
RIM 13.75
INV. 8.51
- 9 STA. 24+91-19' LT.
STORM MH (INLET SHAPING REQ'D)
RIM 13.83
INV. 8.43 (IN 27")
2.68
- 5A STA. 20+96-22' RT
STORM MH (INLET SHAPING REQ'D)
RIM 13.50
INV. 8.09

- 303 Δ=180° 00' 00"
R=150.00'
L=471.24'
- 306 Δ=16° 47' 11"
R=375.00'
L=109.87'
T=55.33'
- 311 Δ=08° 15' 04"
R=1,545.69'
L=222.59'
T=111.45'



RECORD DRAWINGS
These drawings are based upon record information provided by Owner &/or his Contractor. Talbot & Associates did not perform an "as-built" survey. 11/14/88 (Date)

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A Subsidiary of Talbot Corporation
300 Linstead Square, Virginia Beach, VA 23462
759 Thimble Shoak Blvd., Suite 1006, Newport News, VA 23606

VIRGINIA

CHRISTOPHER FARMS

VA. BEACH



Designed	C.A.M.
Drawn	A.E.T.
Checked	C.B.W.
Scale	1"=25'
Date	11-12-86
File No.	U-1-524
Project No.	861268

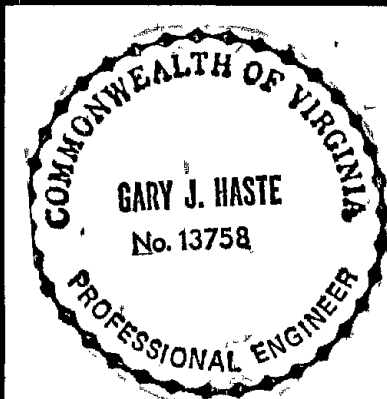
Sheet No. **8**
of 31 Sheets

REV. 7/28/87 STORM SYSTEM FROM OUTFALL TO STR. 51

CHRISTOPHER FARMS

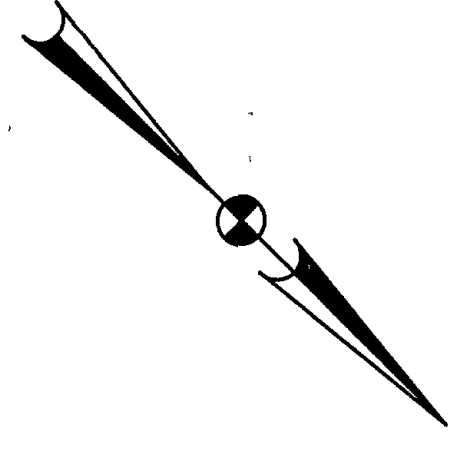
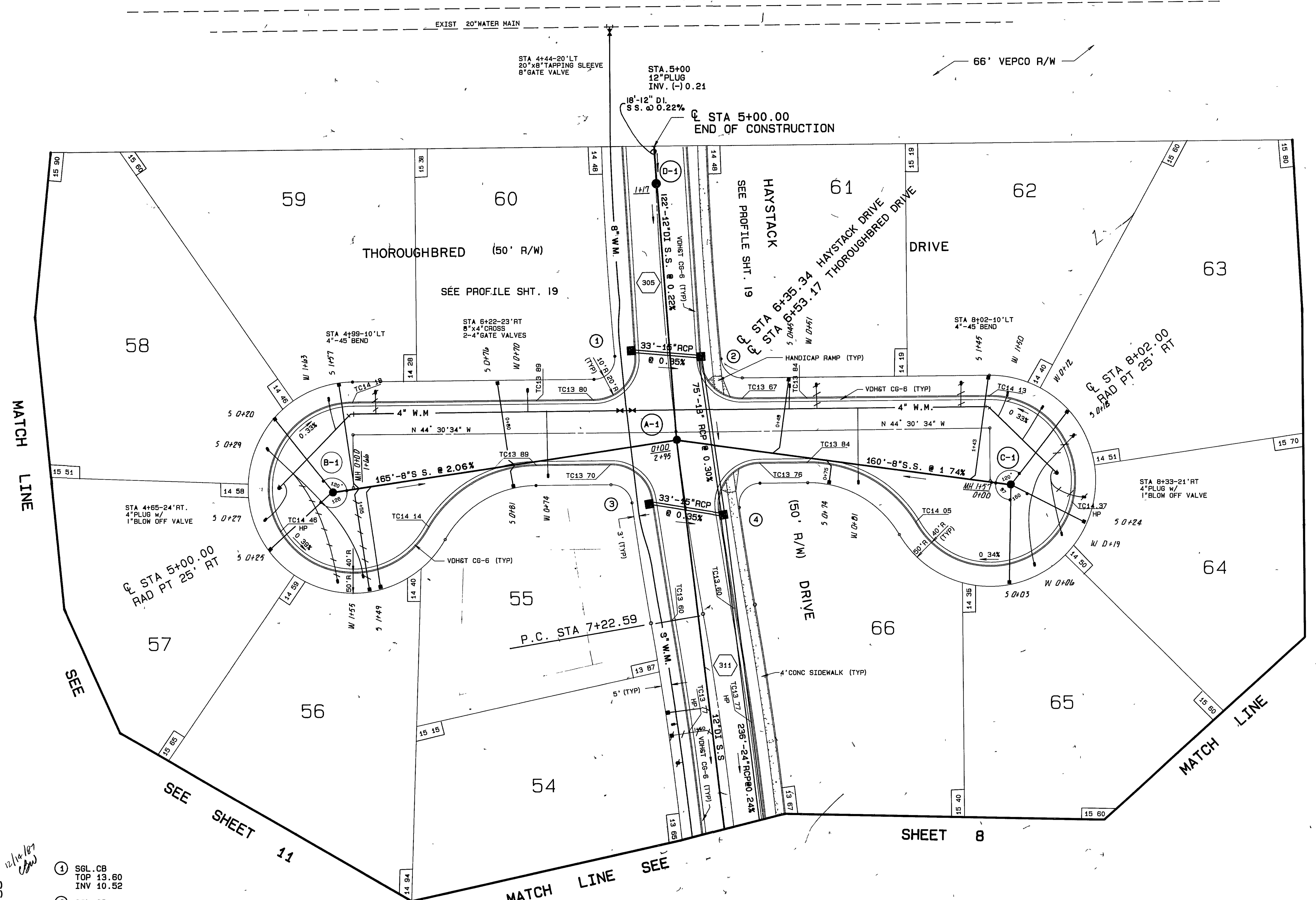
VIRGINIA

VA. BEACH



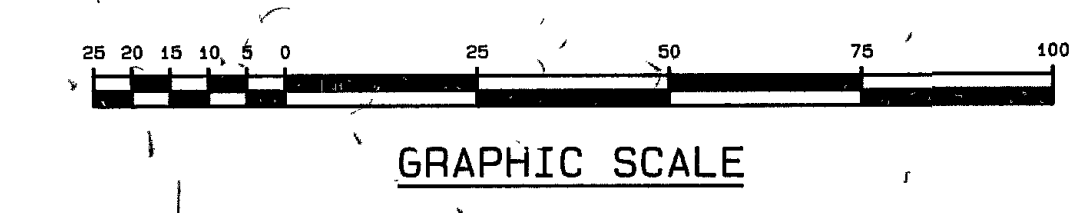
Designed	C.A.M.
Drawn	A.E.T.
Checked	C.B.W.
Scale	1"=25'
Date	11-12-86
File No.	U-1-524
Project No.	861268

Sheet No. **10**
 of 31 Sheets

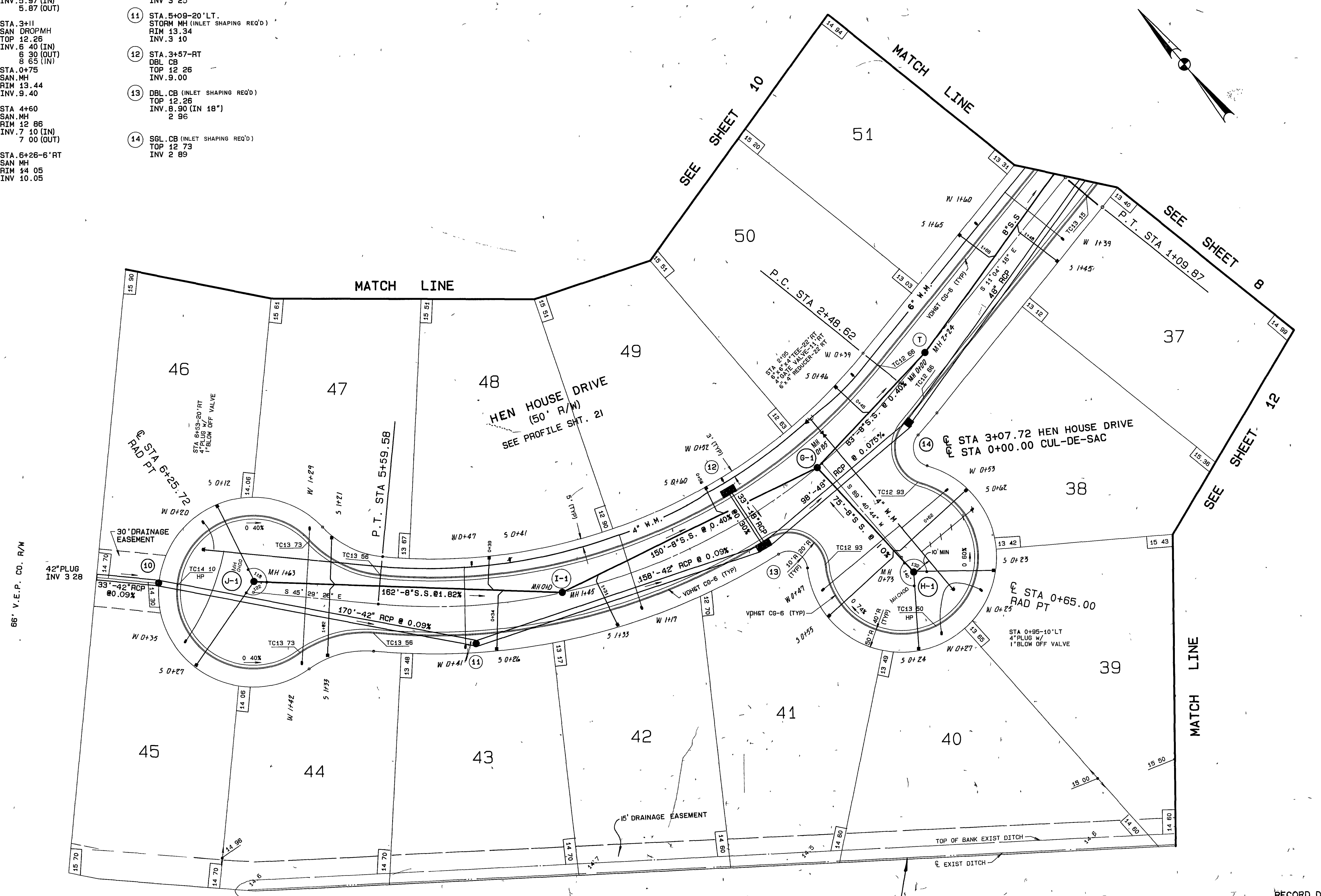


- (A-1) STA 6+39
SAN DROP MH
RIM 13.28 (13.60)
INV 7.73 (IN 8' W)
7'00 (IN 8' E)
(-) 0.52 (12")
- (B-1) STA 4+90-27' RT
SAN MH
RIM 14.40
INV. 10.40
- (C-1) STA 8+12-27' RT
SAN MH
RIM 14.32
INV. 10.32
- (D-1) STA 5+23
SAN MH
RIM 14.05
INV (-) 0.26
- (1) SGL. CB
TOP 13.60
INV. 10.52
- (2) SGL. CB
TOP 13.56
INV. 10.40
- (3) SGL. CB
TOP 13.42
INV. 10.29
- (4) SGL. CB
TOP 13.45
INV. 10.17 (IN)
9.70 (OUT)

RECORD DRAWINGS
 These drawings are based upon record information provided by Owner &/or his Contractor. Talbot & Associates did not perform on "as-built" survey. 11/16/86 (Date)

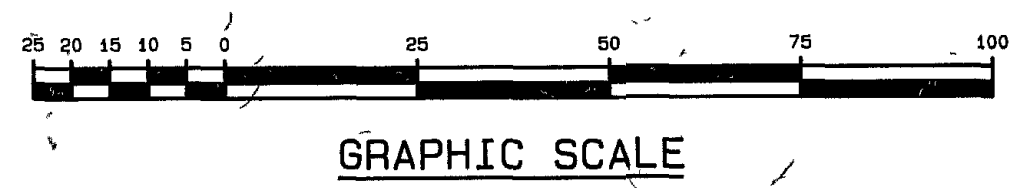


- (T) STA. 2+29
SAN MH
RIM 12.68
INV. 5.97 (IN)
5.87 (OUT)
- (G-1) STA. 3+11
SAN DROP MH
TOP 12.26
INV. 6.40 (IN)
6.30 (OUT)
8.65 (IN)
- (H-1) STA. 0+75
SAN MH
RIM 13.44
INV. 9.40
- (I-1) STA. 4+60
SAN MH
RIM 12.86
INV. 7.10 (IN)
7.00 (OUT)
- (J-1) STA. 6+26-6' RT
SAN MH
RIM 14.05
INV. 10.05
- (10) STA. 6+75
STORM MH (INLET SHAPING REQ'D)
RIM 14.30
INV. 3.25
- (11) STA. 5+09-20' LT.
STORM MH (INLET SHAPING REQ'D)
RIM 13.34
INV. 3.10
- (12) STA. 3+57-RT
DBL. CB
TOP 12.26
INV. 9.00
- (13) DBL. CB (INLET SHAPING REQ'D)
TOP 12.26
INV. 8.90 (IN 18")
2.96
- (14) SSL. CB (INLET SHAPING REQ'D)
TOP 12.73
INV. 2.89



NOTE: DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS AND WILL NOT BE PIPED BY THE CITY.

RECORD DRAWINGS
These drawings are based upon record information provided by Owner B/or his Contractor. Talbot & Associates did not perform an "as-built" survey. *1/16/88* (Date)

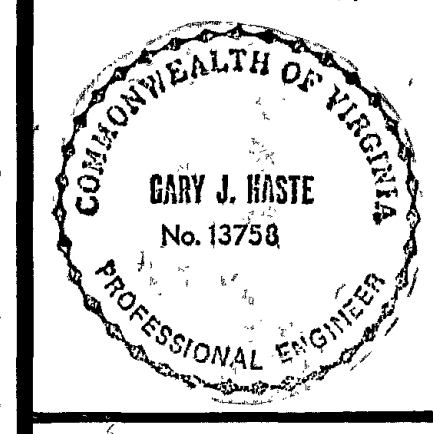


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Architects, Engineers, Planners, Surveyors, Landscape Architects
100 Laramie Square, Virginia Beach, Va. 23462
757 435-2222
757 435-2223 (Fax)

VIRGINIA

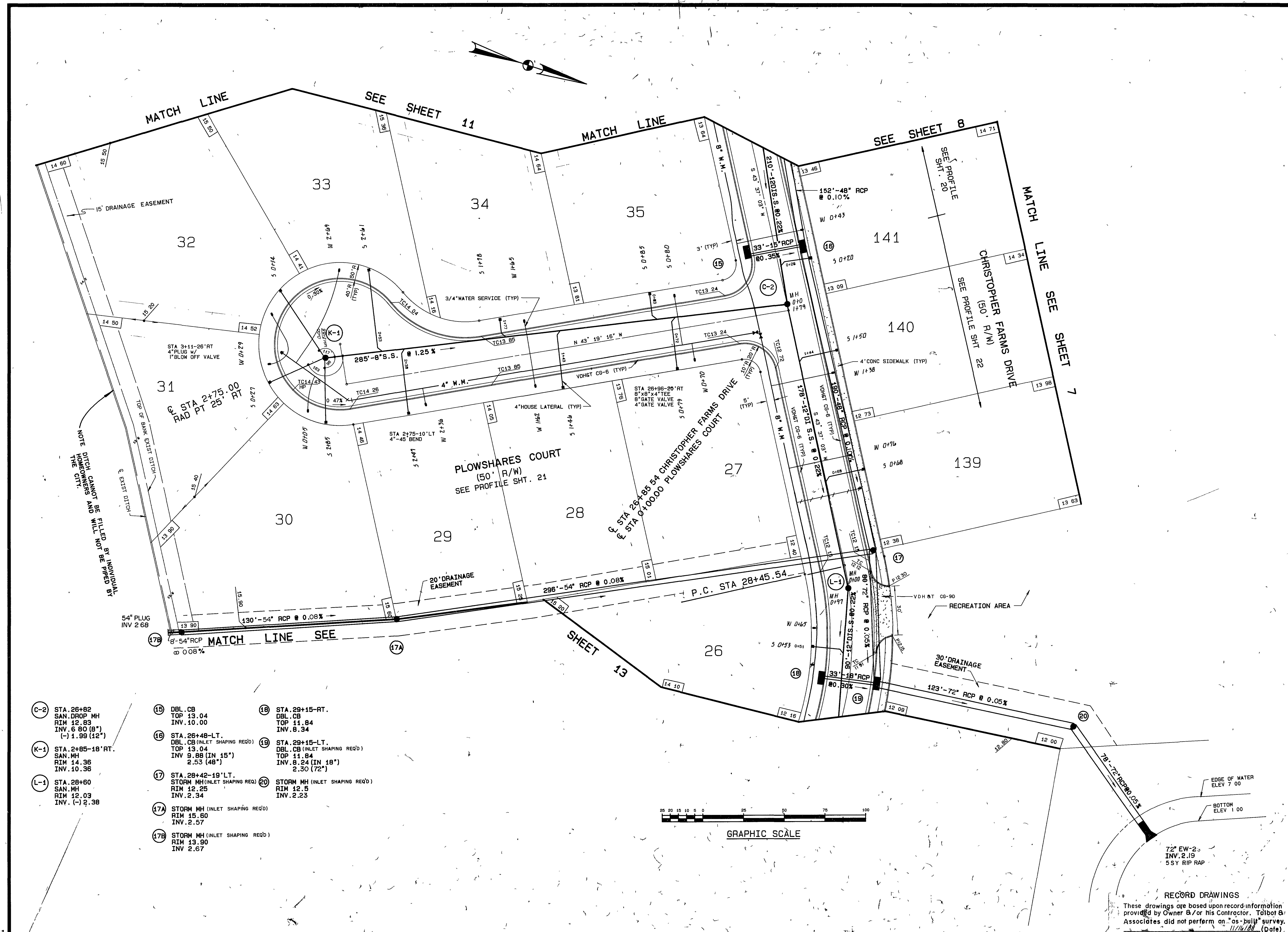
CHRISTOPHER FARMS

VA. BEACH

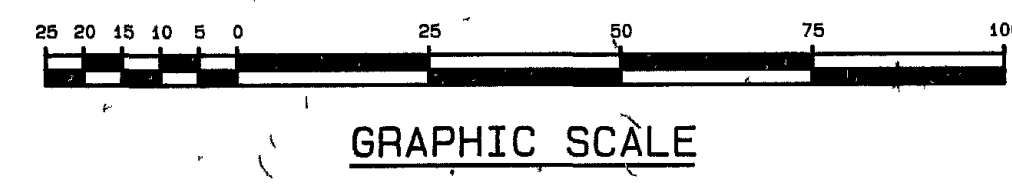


Designed	C.A.M.
Drawn	A.E.T.
Checked	C.B.W.
Scale	1"=25'
Date	11-12-88
File No	U-1-524
Project No	BB1268

REV. 7-10-87 REVISED STORM DRAINAGE SYSTEM FROM OUTFALL TO 11817010
Sheet No. **11**
of 31 Sheets



- (C-2) STA. 26+82
SAN. DROP MH
RIM 12.83
INV. 6.80 (18")
(-) 1.99 (42")
- (K-1) STA. 2+85-18" RT.
SAN. MH
RIM 14.36
INV. 10.36
- (L-1) STA. 28+60
SAN. MH
RIM 12.03
INV. (-) 2.38
- (15) DBL. CB
TOP 13.04
INV. 10.00
- (16) STA. 26+48-LT.
DBL. CB (INLET SHAPING REQ'D)
TOP 13.04
INV. 9.88 (IN 15")
2.55 (48")
- (17) STA. 28+42-19" LT.
STORM MH (INLET SHAPING REQ'D)
RIM 12.25
INV. 2.34
- (17A) STORM MH (INLET SHAPING REQ'D)
RIM 15.60
INV. 2.57
- (17B) STORM MH (INLET SHAPING REQ'D)
RIM 13.90
INV. 2.67
- (18) STA. 29+15-RT.
DBL. CB
TOP 11.84
INV. 8.34
- (19) STA. 29+15-LT.
DBL. CB (INLET SHAPING REQ'D)
TOP 11.84
INV. 8.24 (IN 18")
2.30 (72")
- (20) STORM MH (INLET SHAPING REQ'D)
RIM 12.5
INV. 2.23



RECORD DRAWINGS
 These drawings are based upon record information provided by Owner B or his Contractor. Talbot & Associates did not perform an "as-built" survey.
 11/16/88 (Date)

CHRISTOPHER FARMS
 VIRGINIA
 VA. BEACH

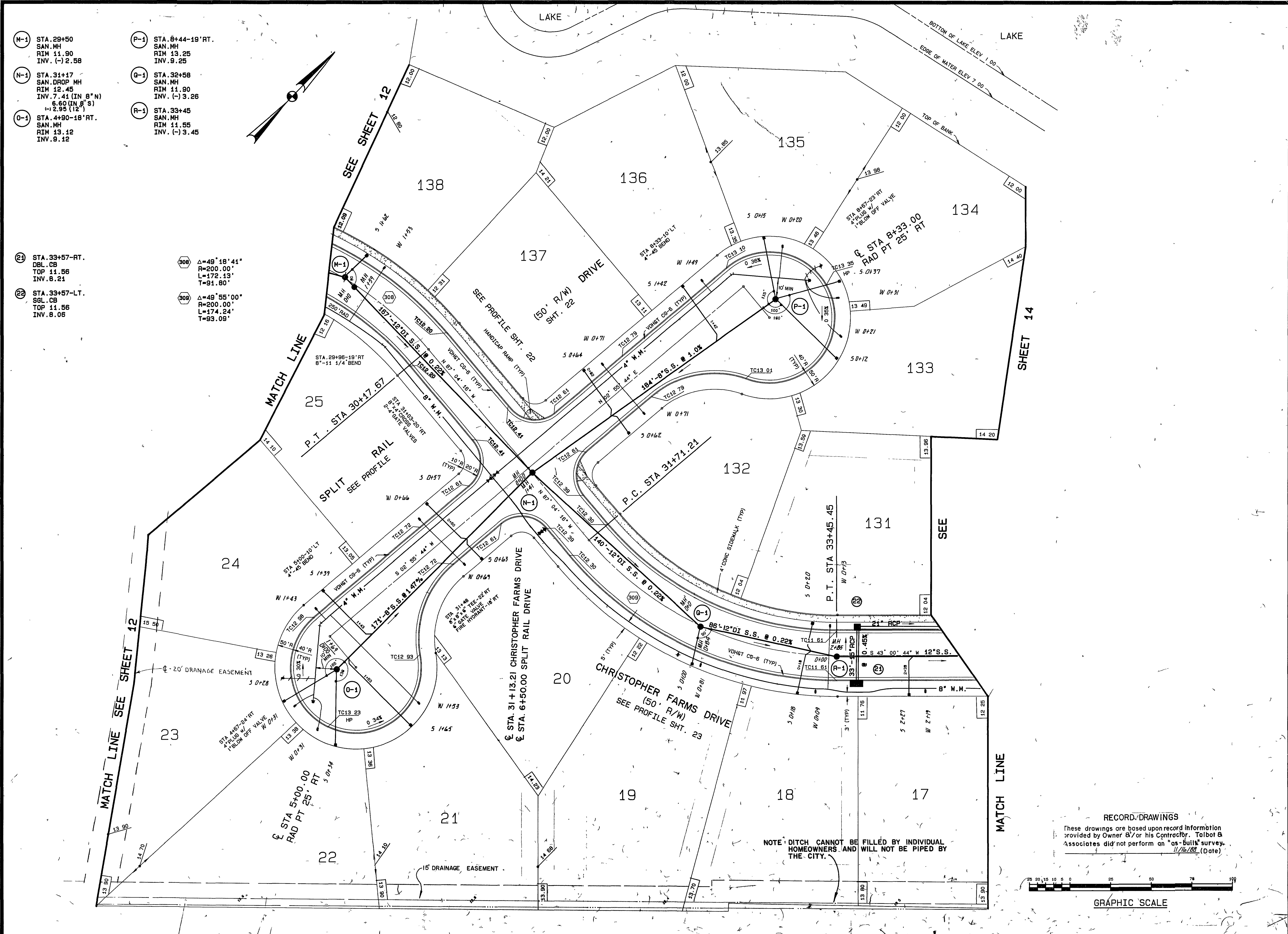


Designed C.A.M.
 Drawn A.E.T.
 Checked C.B.W.
 Scale 1"=25'
 Date 11-12-86
 File No U-1-524
 Project No 884268

REV. 7-10-87 - REVISED STORM DRAINAGE SYSTEM FROM OUTFALL TO ITS L & D.

- (M-1) STA. 29+50
SAN. MH
RIM 11.90
INV. (-) 2.58
- (N-1) STA. 31+17
SAN. DROP MH
RIM 12.45
INV. 7.41 (IN 8' N)
6.60 (IN 8' S)
(-) 2.95 (12' S)
- (D-1) STA. 4+90-18' RT.
SAN. MH
RIM 13.12
INV. 9.12
- (P-1) STA. 8+44-19' RT.
SAN. MH
RIM 13.25
INV. 9.25
- (B-1) STA. 32+58
SAN. MH
RIM 11.90
INV. (-) 3.26
- (R-1) STA. 33+45
SAN. MH
RIM 11.55
INV. (-) 3.45

- (21) STA. 33+57-RT.
DBL. CB
TOP 11.56
INV. 8.21
- (22) STA. 33+57-LT.
SGL. CB
TOP 11.56
INV. 8.06
- 900 $\Delta=49^{\circ}18'41''$
R=200.00'
L=172.13'
T=91.80'
- 900 $\Delta=49^{\circ}55'00''$
R=200.00'
L=174.24'
T=93.09'



NOTE: DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS AND WILL NOT BE PIPED BY THE CITY.

RECORD DRAWINGS
 These drawings are based upon record information provided by Owner &/or his Contractor. Talbot & Associates did not perform an "as-built" survey. 11/16/88 (Date)

GRAPHIC SCALE

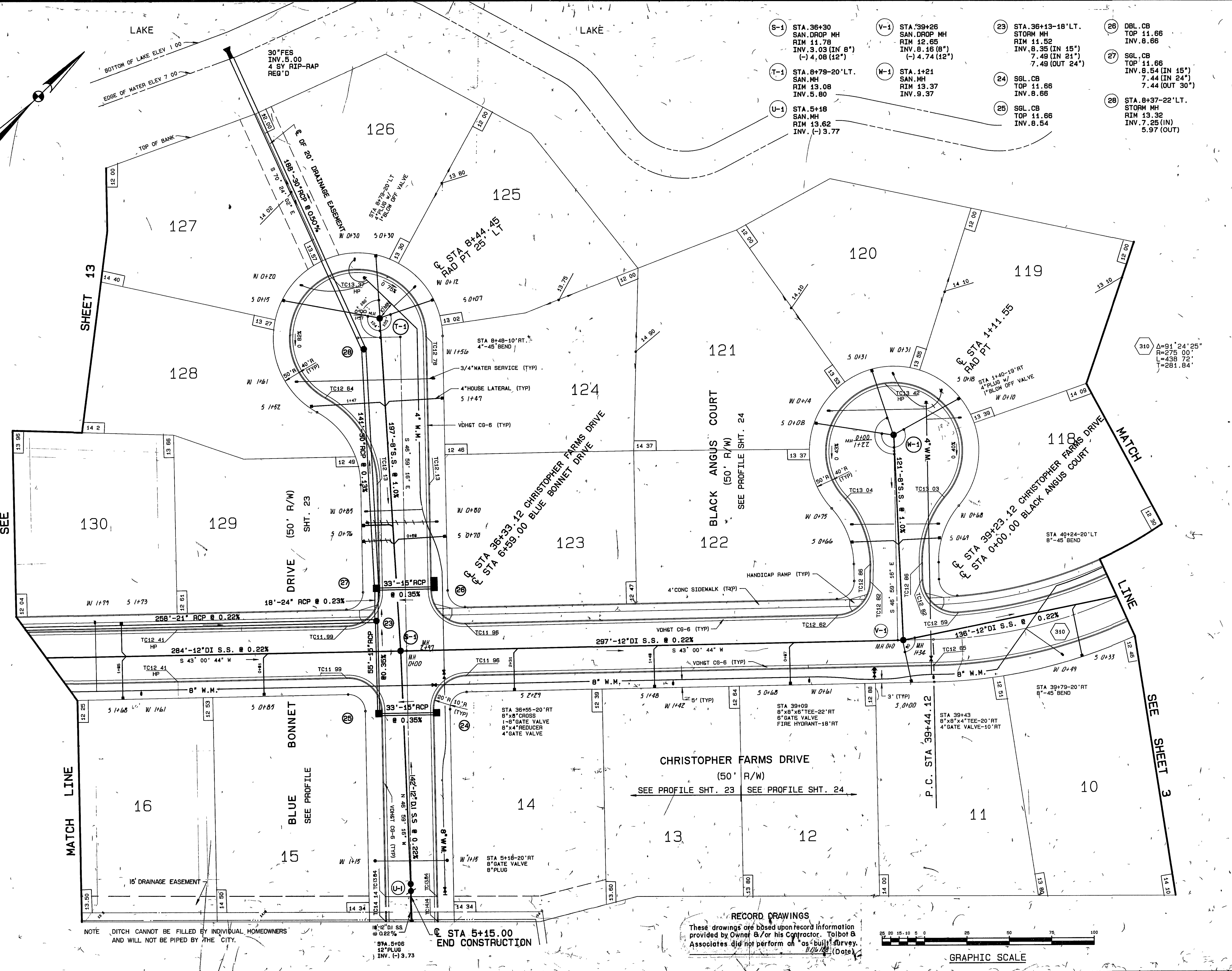
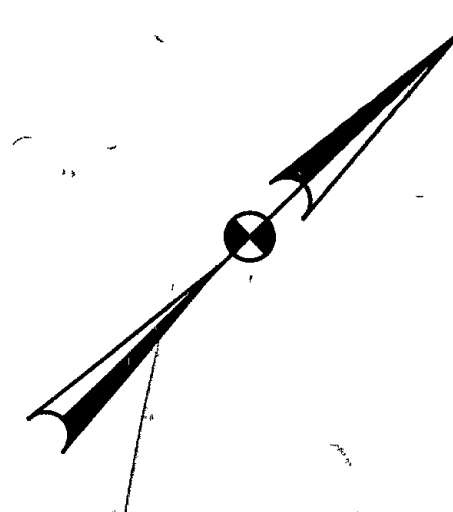
Talbot & Associates Ltd.
 Architects, Engineers, Surveyors, Urban Planners, Landscape Architects
 789 Thimble Shoal Road, Suite 100, Newport News, VA 23606

CHRISTOPHER FARMS
 VIRGINIA
 V.A. BEACH

COMMONWEALTH OF VIRGINIA
 GARY J. HASTE
 No. 13758
 PROFESSIONAL ENGINEER

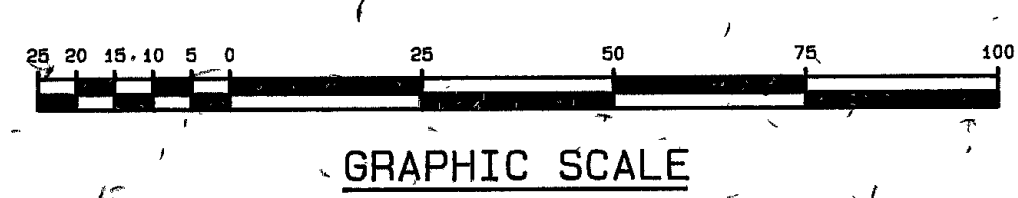
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 Drawn A.E.T.
 Checked C.B.W.
 Scale 1"=25'
 Date 11-12-88
 File No U-1-524
 Project No 861268

Sheet No **13**
 of 31 Sheets



NOTE: DITCH CANNOT BE FILLED BY INDIVIDUAL HOMEOWNERS AND WILL NOT BE PIPED BY THE CITY.

RECORD DRAWINGS
 These drawings are based upon record information provided by Owner &/or his Contractor. Talbot & Associates do not perform an "as-built" survey.



- S-1 STA. 36+30
SAN. DROP MH
RIM 11.78
INV. 3.03 (IN 8")
(-) 4.08 (12")
- T-1 STA. 8+79-20' LT.
SAN. MH
RIM 13.08
INV. 5.80
- U-1 STA. 5+18
SAN. MH
RIM 13.62
INV. (-) 3.77
- V-1 STA. 39+26
SAN. DROP MH
RIM 12.65
INV. 8.16 (8")
(-) 4.74 (12")
- 23 STA. 36+13-18' LT.
STORM MH
RIM 11.52
INV. 8.35 (IN 15")
7.49 (IN 21")
7.49 (OUT 24")
- 24 SGL. CB
TOP 11.66
INV. 8.66
- 25 SGL. CB
TOP 11.66
INV. 8.54
- 26 DBL. CB
TOP 11.66
INV. 8.66
- 27 SGL. CB
TOP 11.66
INV. 8.54 (IN 15")
7.44 (IN 24")
7.44 (OUT 30")
- 28 STA. 8+37-22' LT.
STORM MH
RIM 13.32
INV. 7.25 (IN)
5.97 (OUT)

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CHRISTOPHER FARMS
 VIRGINIA
 VA. BEACH



Designed C.A.M.
 Drawn A.E.T.
 Checked C.B.W.
 Scale 1"=25'
 Date 11-12-86
 File No. U-1-524
 Project No. 861268

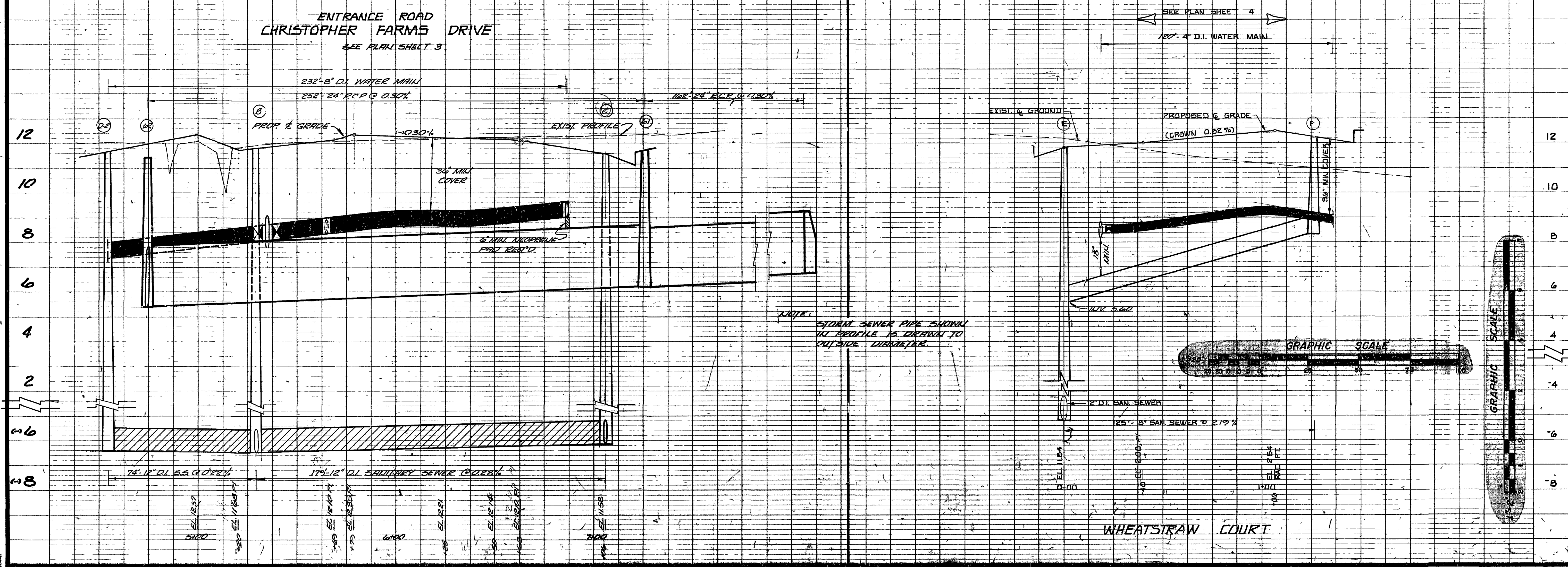
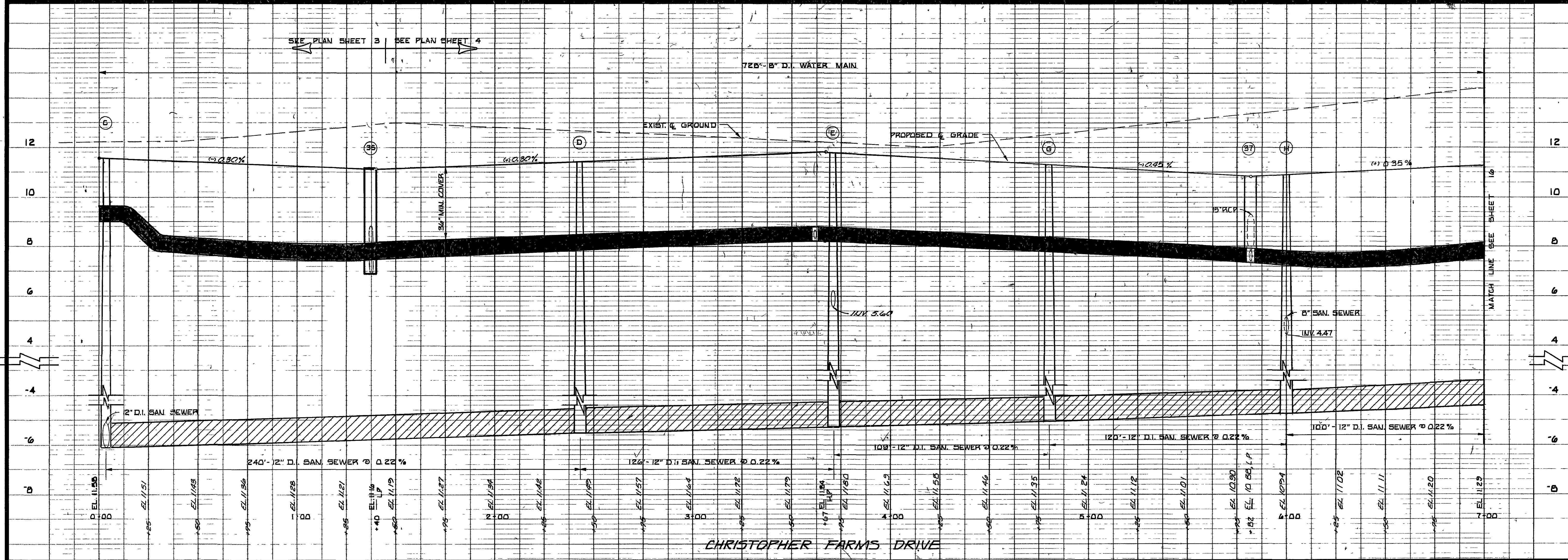
Sheet No. **14**
 of 31 Sheets

CHRISTOPHER FARMS
 PROFILES

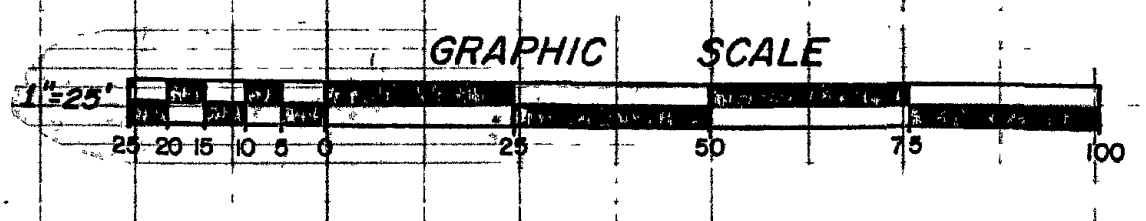
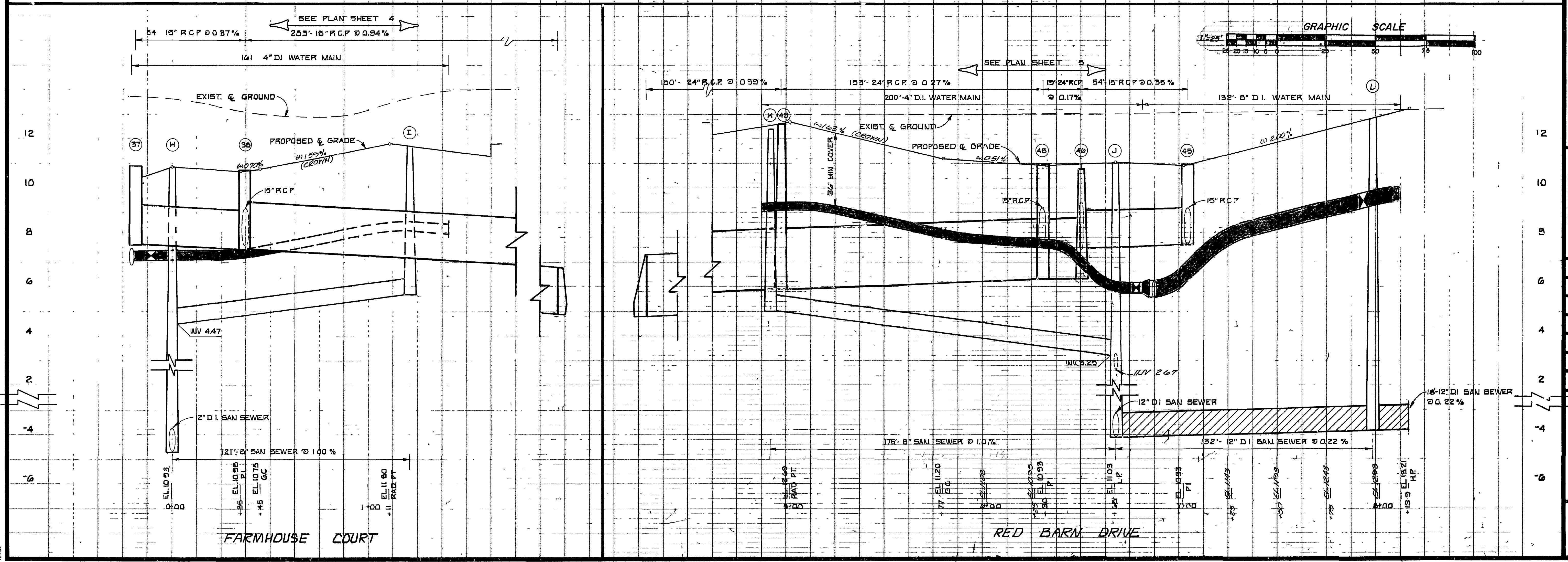
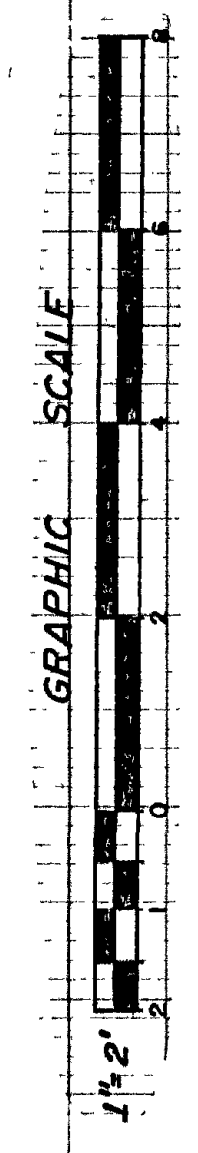
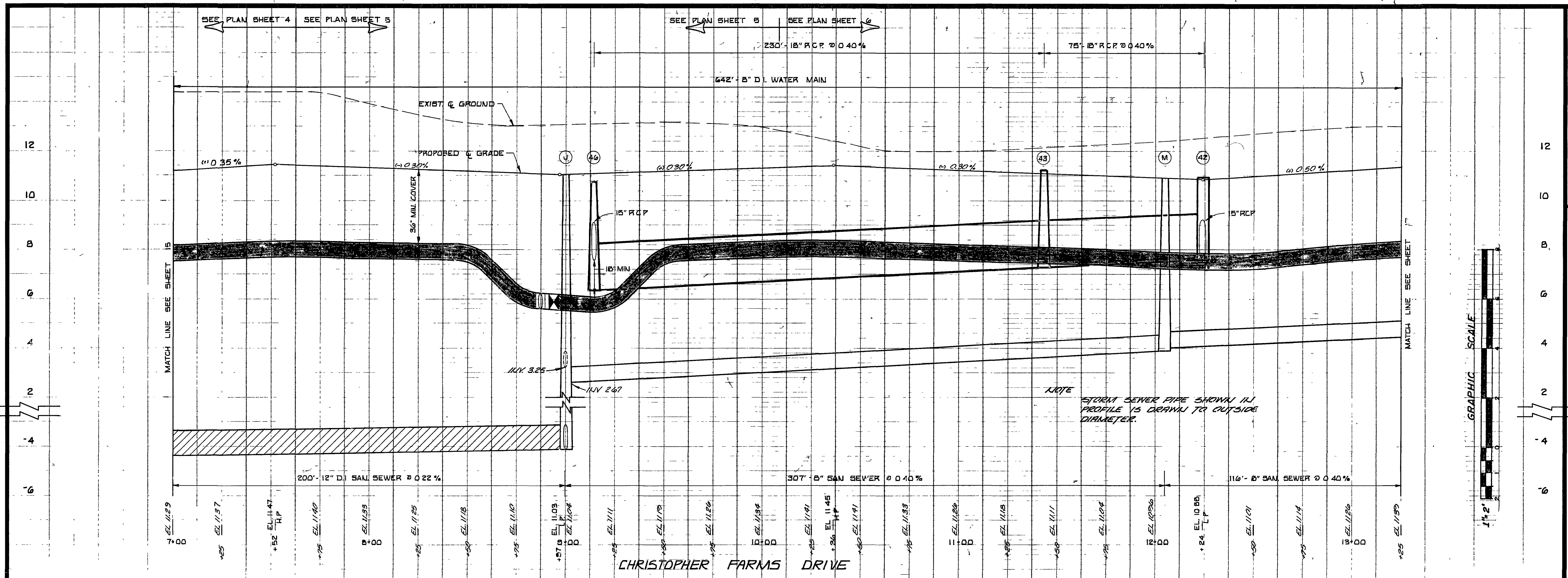


Designed **CM**
 Drawn **MKS & CA**
 Checked **CBW**
 Scale **1"=2' VERT.**
 Date **NOV 12, 1986**
 File No **41-524**
 Project No **861268**
 REVISIONS 6-11-88
 REVISE CHRIST FARMS
 DR FROM STA 3167 TO
 7+00

Sheet No
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 of 31 Sheets



NOTE: STORM SEWER PIPE SHOWN IN PROFILE IS DRAWN TO OUTSIDE DIAMETER.



TA
Talbot & Associates, Ltd.
 Architects, Engineers, Planners, Surveyors, Landscape Architects
 1111 Lakeside Square, Virginia Beach, VA 23462
 759 Third Street, Suite 400, Newport News, VA 23606

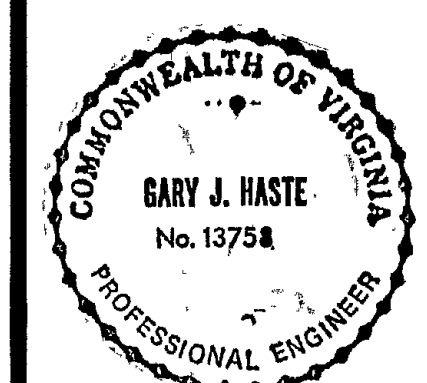
CHRISTOPHER FARMS
 PROFILES

COMMONWEALTH OF VIRGINIA
GARY J. HASTE
 No 13758
 PROFESSIONAL ENGINEER

Designed **CM**
 Drawn **MKS/CM**
 Checked **CBW**
 Scale **1"=25' HORIZ**
1"=2' VERT
 Date **NOV 12, 1986**
 File No **U-1524**
 Project No **861268**
 REVISIONS: 01168
 REVISE FARMHOUSE COURT

Sheet No
16
 of 31 Sheets

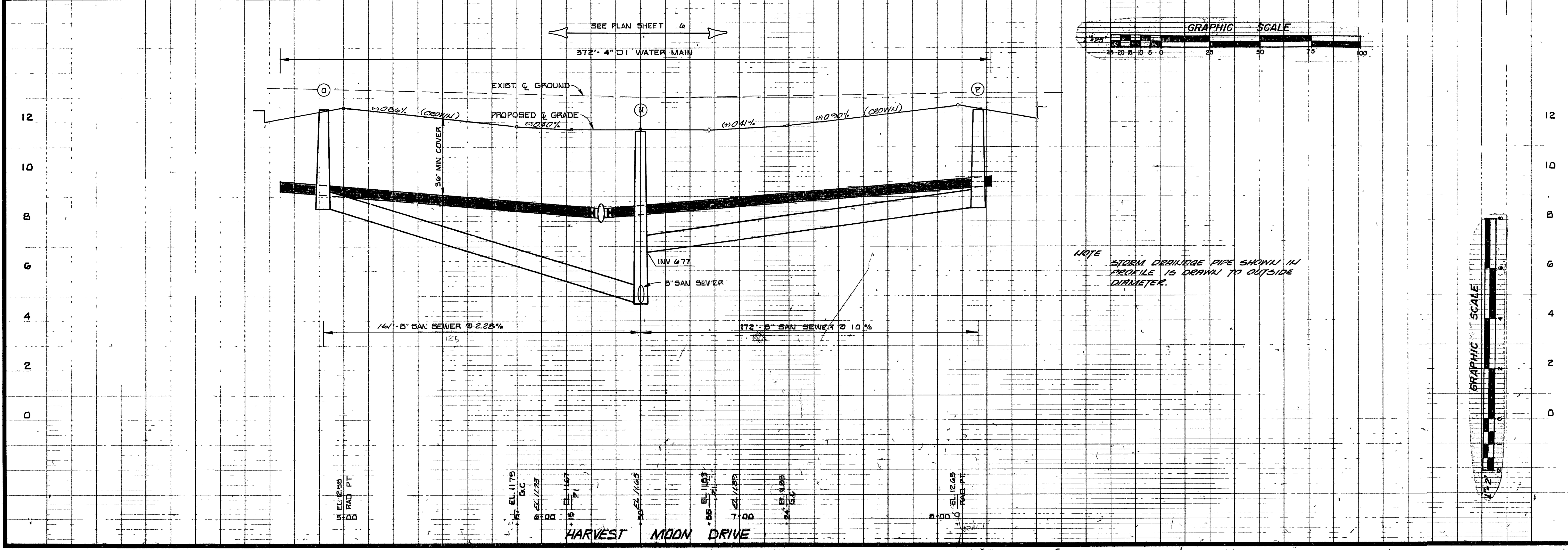
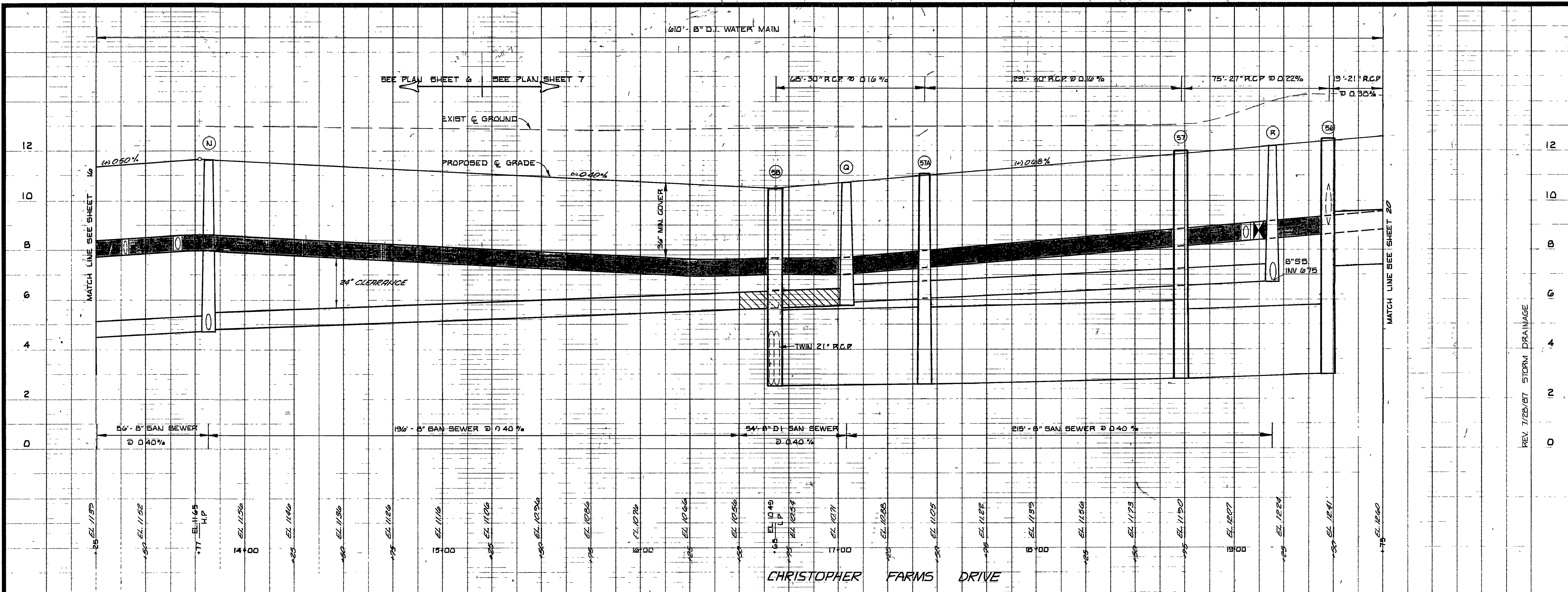
CHRISTOPHER FARMS
 PROFILES



Designed **CH**
 Drawn **MKS & CH**
 Checked **C.B.W.**
 Scale **1" = 2' VERT**
 Date **NOV 12, 1986**
 File No **04-524**
 Project No **B01268**

Sheet No
17
 of 31 Sheets

REV. 7/25/87 STORM DRAINAGE



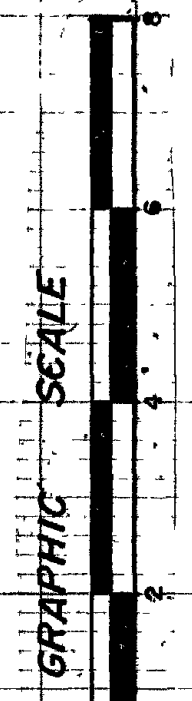
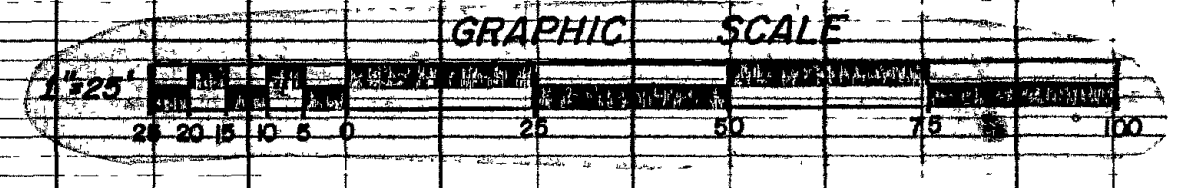
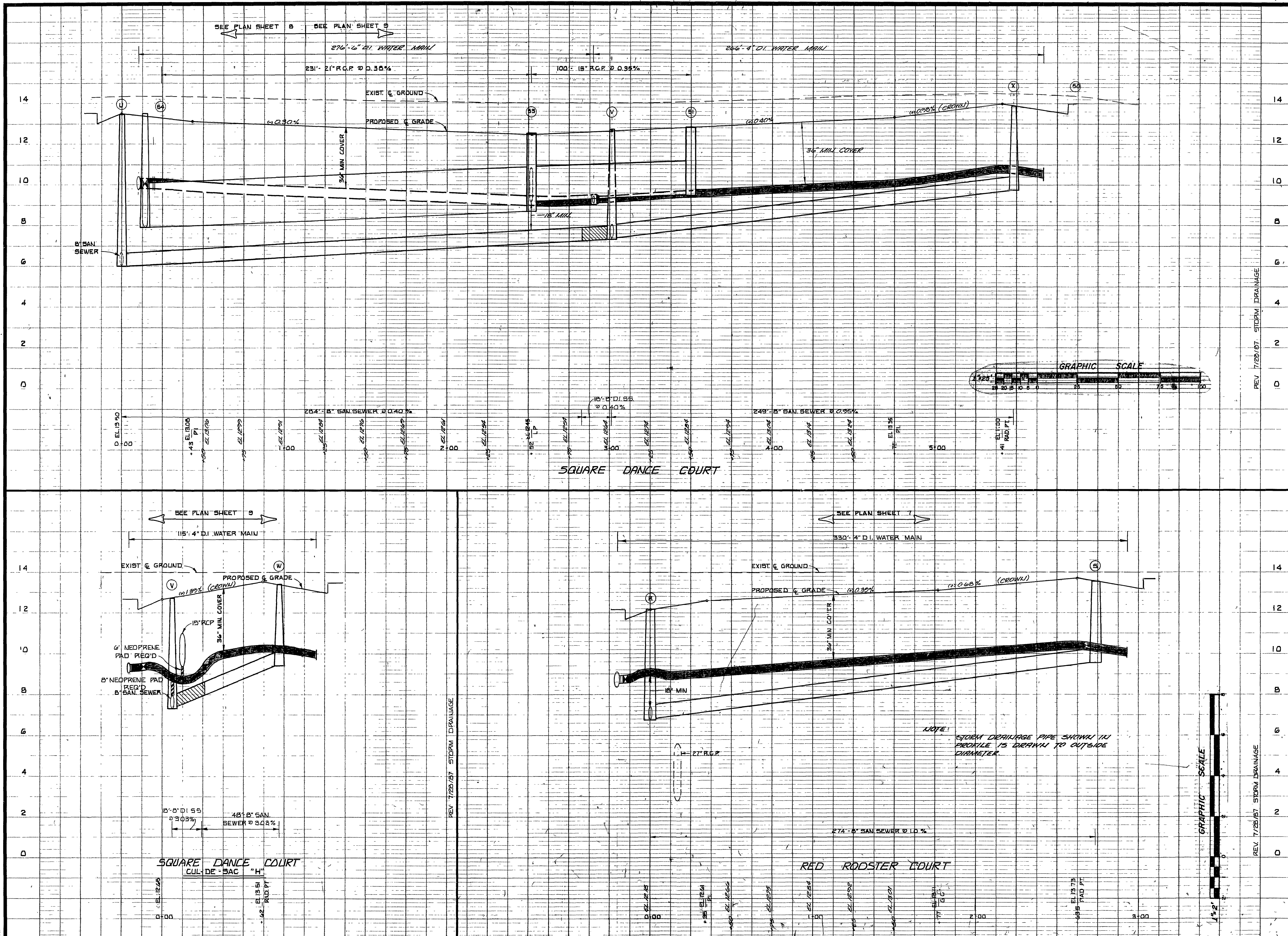
NOTE
 STORM DRAINAGE PIPE SHOWN IN PROFILE IS DERIVED TO OUTSIDE DIAMETER.

CHRISTOPHER FARMS PROFILES



Designed *CH*
 Drawn *MK's & CH*
 Checked *CBW*
 Scale 1" = 25' HORIZ
 1" = 2' VERT
 Date *NOV 12, 1986*
 File No *U-1-524*
 Project No *861268*

Sheet No **18**
 of 31 Sheets

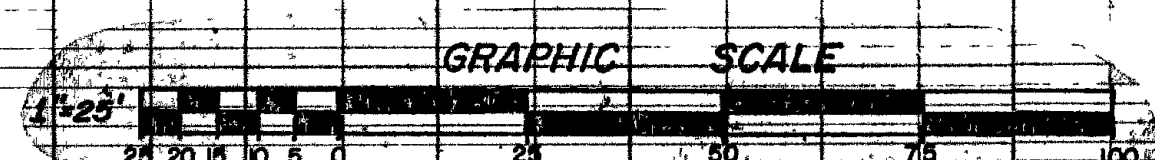
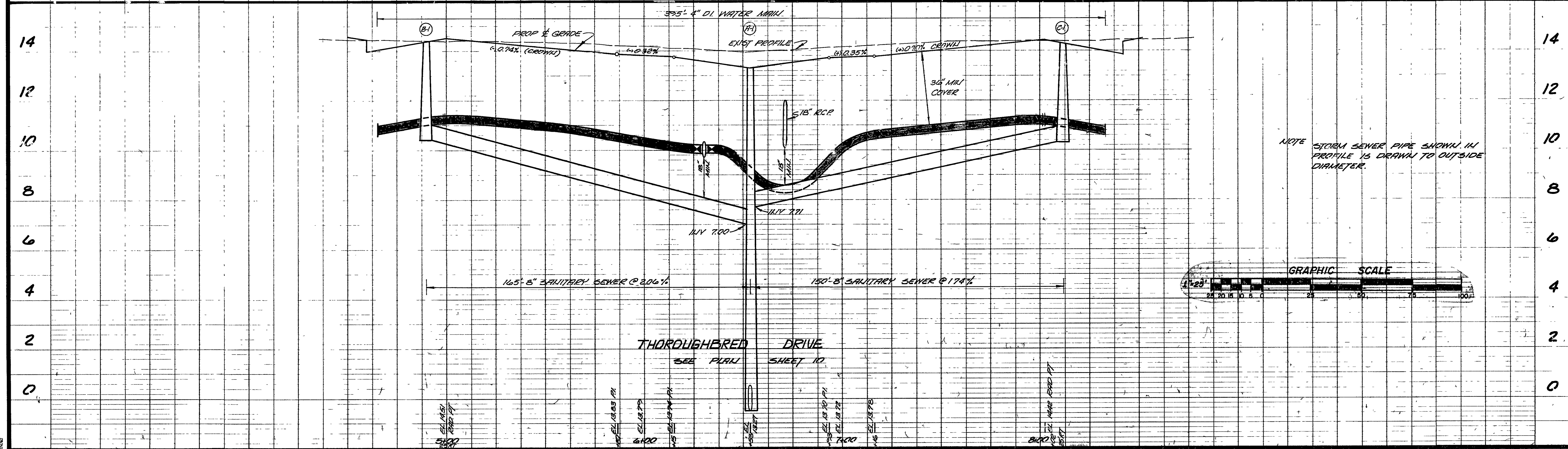
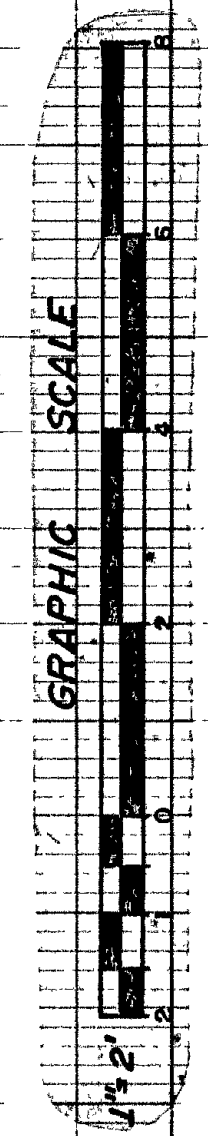
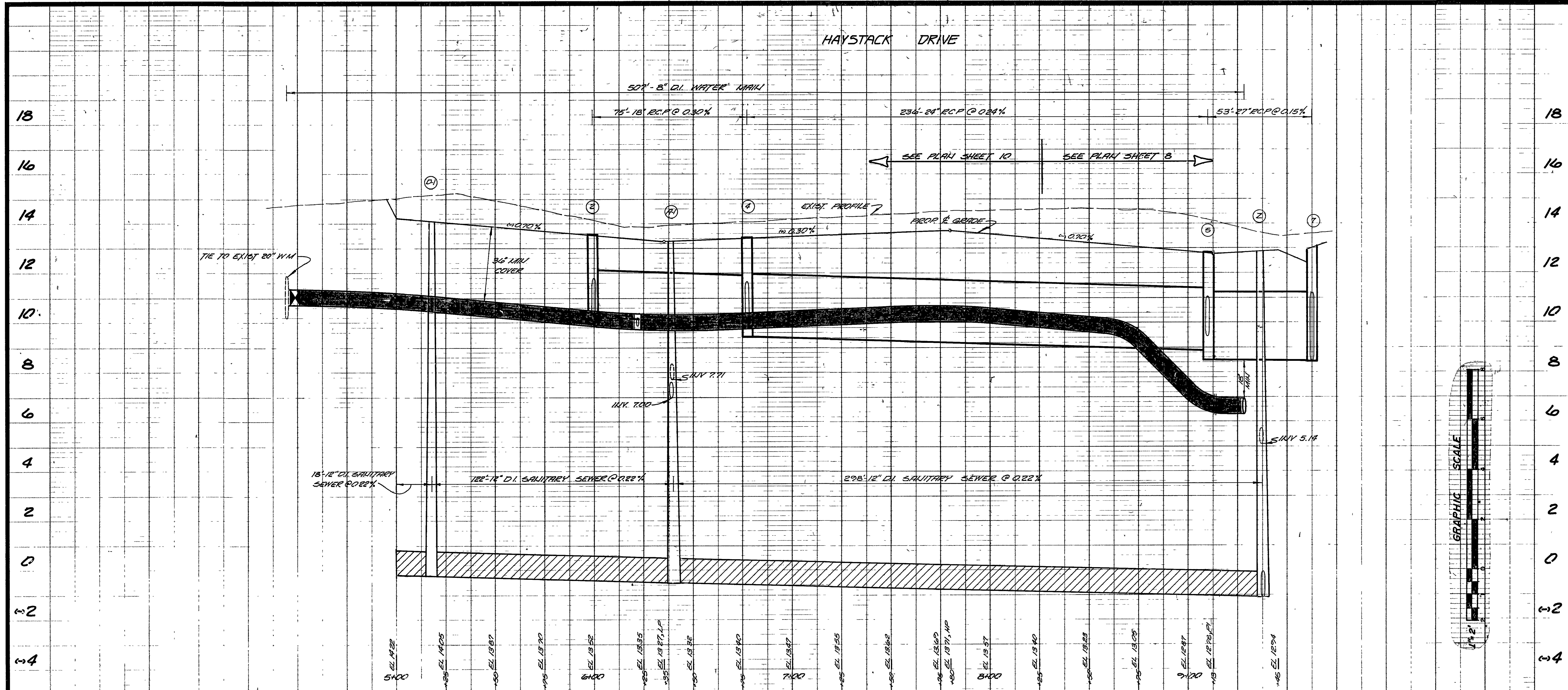


NOTE: STORM DRAINAGE PIPE SHOWN IN PROFILE IS DRAWN TO OUTSIDE DIAMETER.

REV 7/26/87 STORM DRAINAGE

REV 7/26/87 STORM DRAINAGE

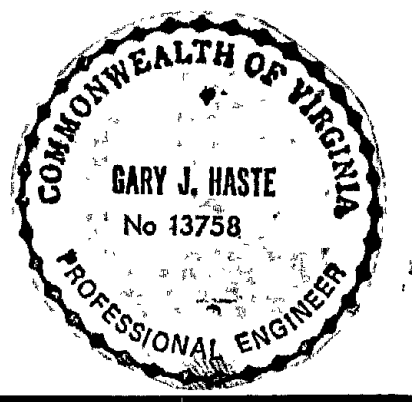
REV 7/26/87 STORM DRAINAGE



NOTE: STORM SEWER PIPE SHOWN IN PROFILE IS DRAWN TO OUTSIDE DIAMETER.

Talbot & Associates Ltd.
 Architects, Engineers, Surveyors, Landscape Architects
 180 Lantana Square, Virginia Beach, VA 23462
 759 Thimble Shoar Blvd., Suite 100, Newport News, VA 23606

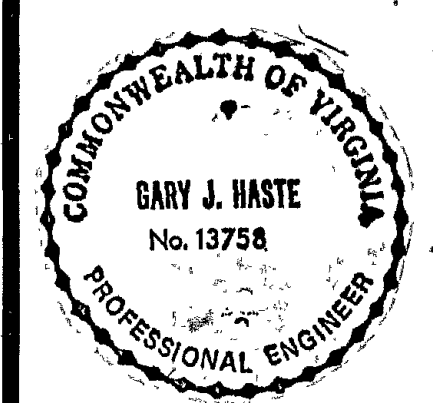
CHRISTOPHER FAEMS
 PROFILES



Designed **CK**
 Drawn **CK**
 Checked **CBW**
 Scale **1"=25' HORIZ**
1"=2' VERT
 Date **MAY 12, 1986**
 File No **U-1-524**
 Project No **861268**

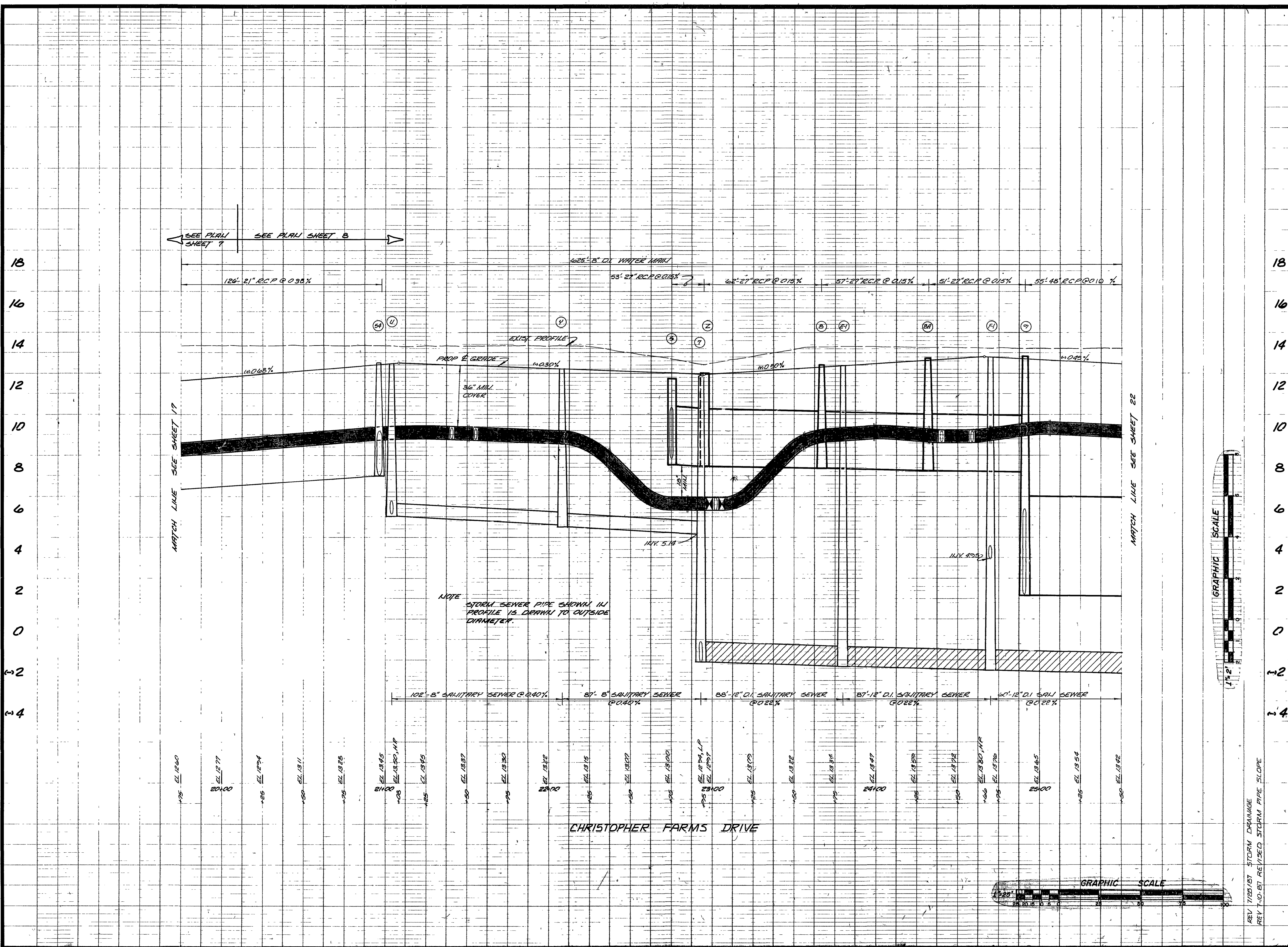
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 of 31 Sheets

CHRISTOPHER FARMS PROFILES

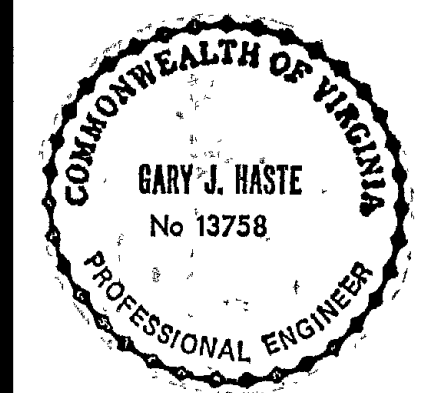


Designed **CM**
 Drawn **CM**
 Checked **C.B.W.**
 Scale **1"=25' HORIZ.**
1"=2' VERT.
 Date **JUN 12, 1986**
 File No **U-1-524**
 Project No **861268**

Sheet No
20
 of 31 Sheets



CHRISTOPHER FARMS
 PROFILES

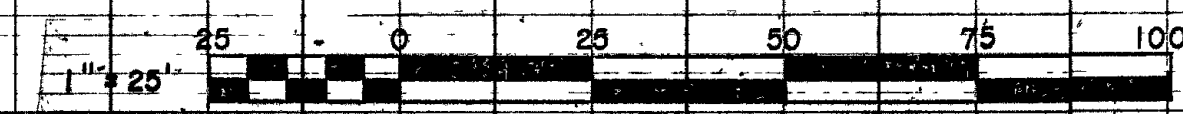


Designed CM
 Drawn M.K.S. & C.M.
 Checked C.B.W.
 Scale 1" = 25' HORIZ
 1" = 2' VERT
 Date NOV 12, 1986
 File No U-1-524
 Project No 86126B

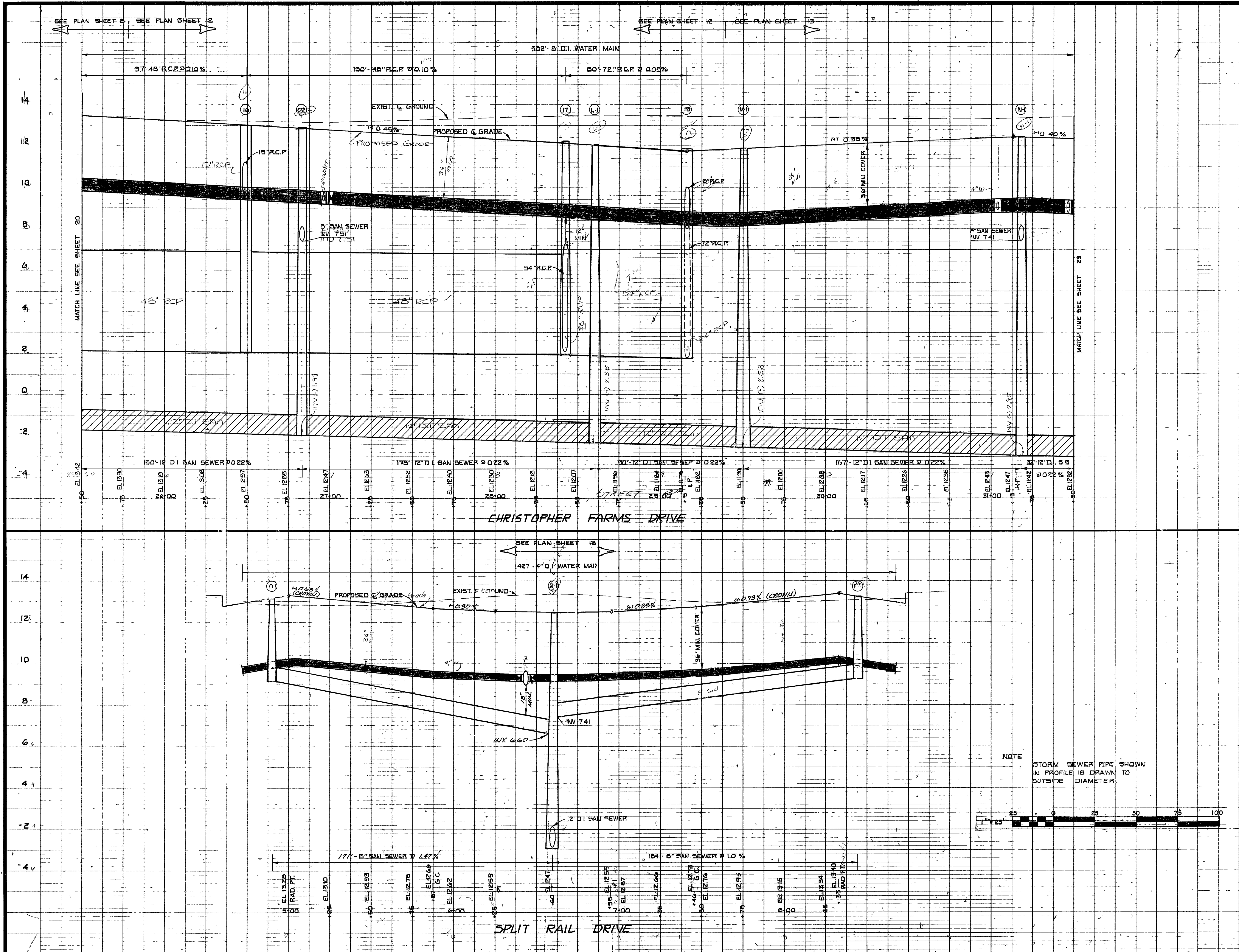
Sheet No
22
 of 31 Sheets

REV 7/10/87 REVISED STORM DRAINAGE FROM 17-19

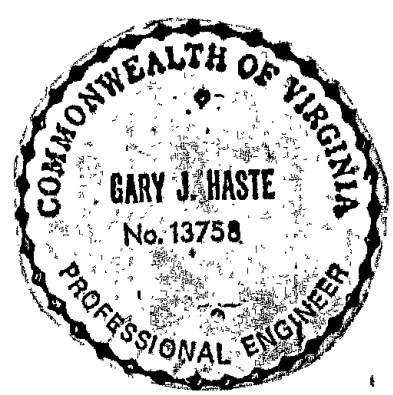
GRAPHIC SCALE



NOTE
 STORM SEWER PIPE SHOWN
 IN PROFILE IS DRAWN TO
 OUTSIDE DIAMETER.

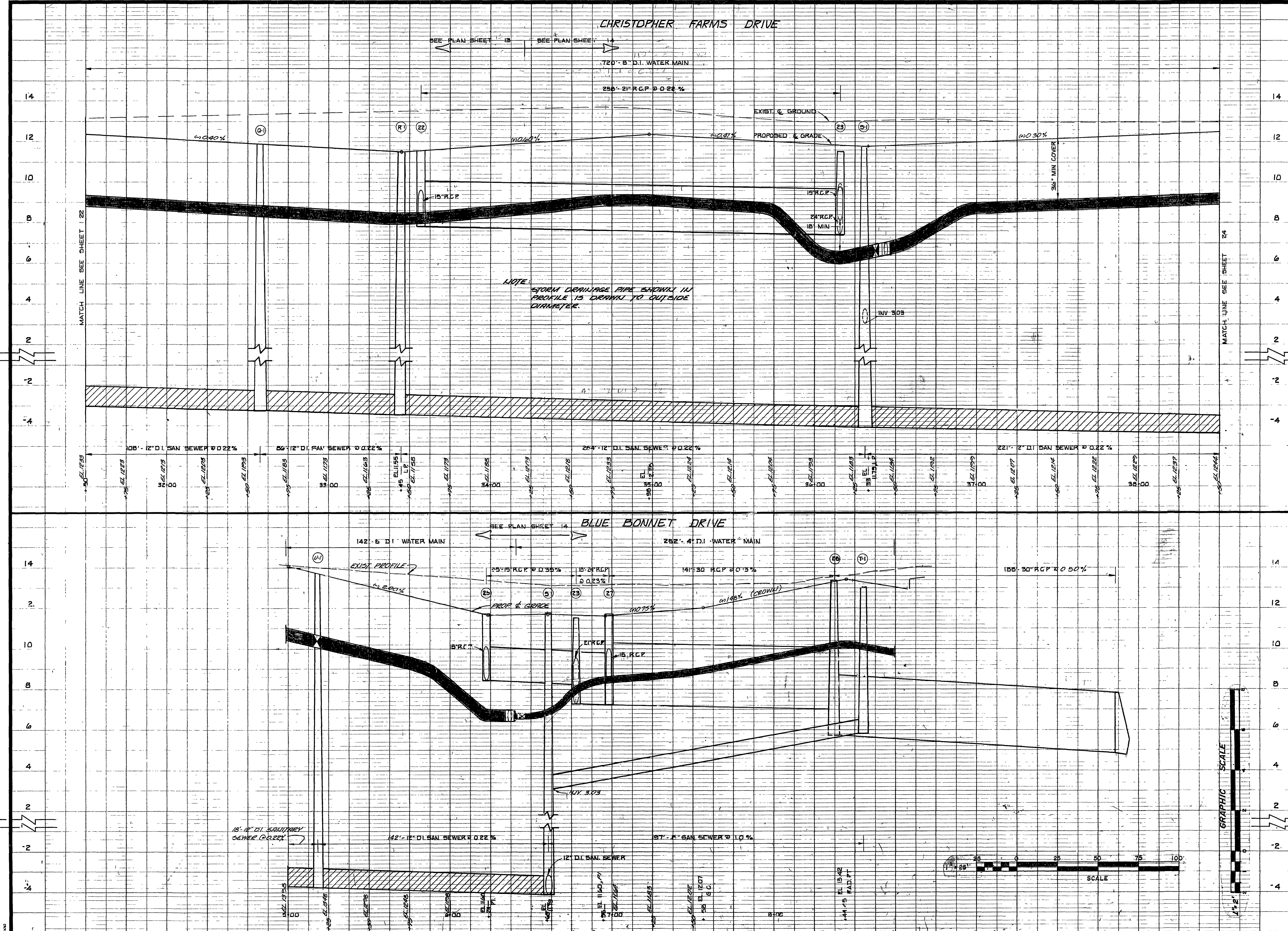


CHRISTOPHER FARMS
 PROFILES

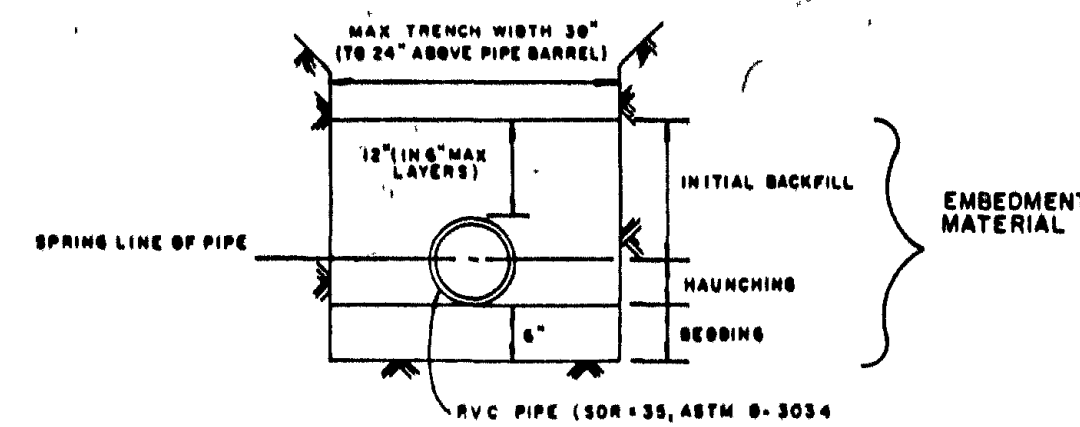


Designed **CH**
 Drawn **MKS. & CH**
 Checked **CBW**
 Scale **1"=25' HORIZ**
1"=2' VERT.
 Date **NOV 12, 1986**
 File No **U-1-524**
 Project No **26126B**

Sheet No
23
 of 31 Sheets



NOTE:
 STORM DRAINAGE PIPE SHOWN IN
 PROFILE IS DRAWN TO OUTSIDE
 DIAMETER.



EMBEDMENT MATERIAL
(UNIFIED SOIL CLASSIFICATION SYSTEM)

CLASS I - SMOOTH (1/2 TO 1 1/2") GRADED STONE

CLASS II - COARSE SAND & GRAVEL (MAX. 3/4" SOL. TYPES GW, GP, SW, & SP)

CLASS III - FINE SAND & SANDY CLAY - SOL. TYPES SM, SC, SH, & SC

CLASS IV - SILT, SILTY CLAYS, & CLAY - SOL. TYPES ML, CL, MH, & CH

CLASS V - ORGANIC SILTS & SOILS GREATER THAN 1/2" SOL. TYPES OL, OH, & PT

COMPACTION REQUIREMENTS

MINIMUM COMPACTION REQUIRED

MIN 90% STD. PROCTOR DENSITY

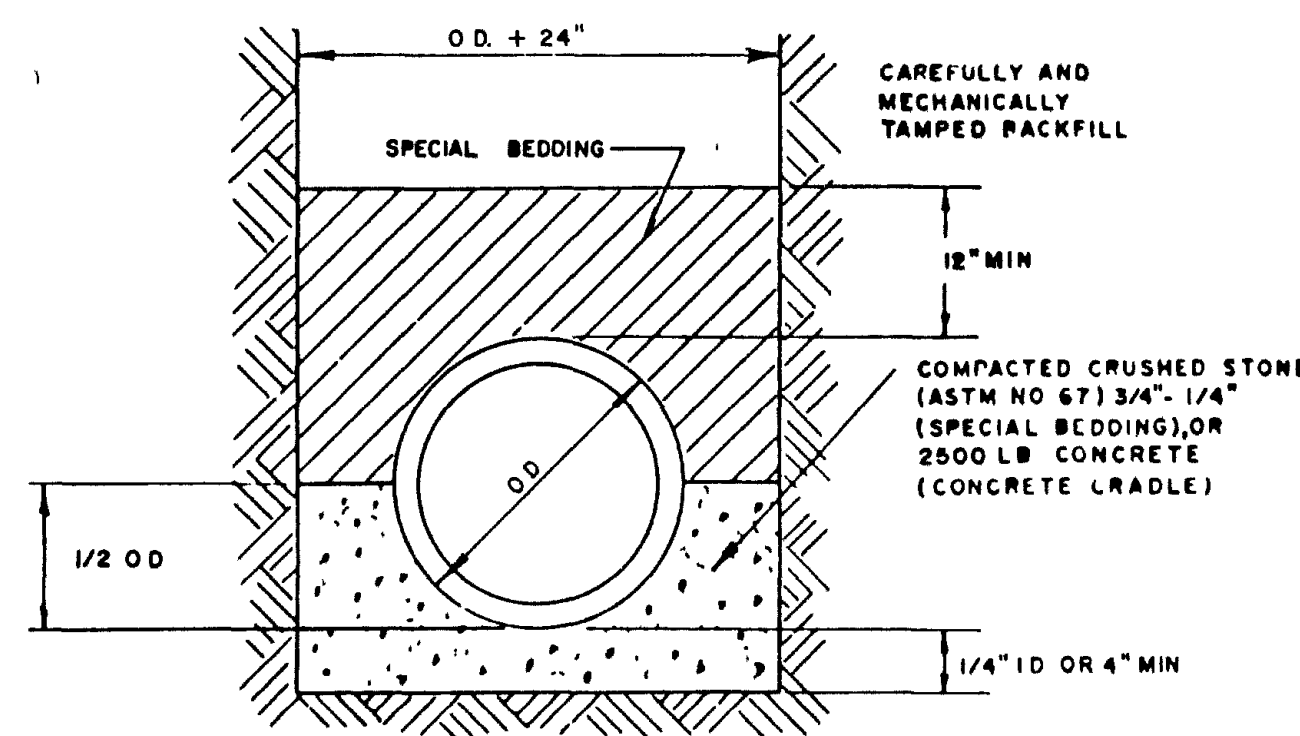
MIN 98% STD. PROCTOR DENSITY

REMOVE & REPLACE WITH CLASS I, II, OR III

REMOVE & REPLACE WITH CLASS I, II, OR III

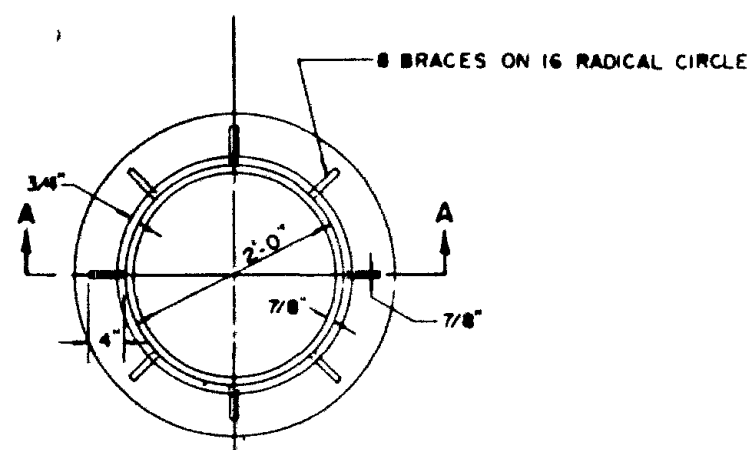
- NOTE**
- 1) EACH INDIVIDUAL STRIKE OF EMBEDMENT MATERIAL TO BE PLACED AND COMPACTED AS SHOWN ABOVE WITH INSTALLATION OF PVC PIPE IN ACCORDANCE WITH ASTM D 2321-74
 - 2) IF CLASS I MATERIALS ARE USED AS BEDDING, IT SHALL ALSO BE USED AS HAUNCHING AT LEAST TO THE PIPE SPRING LINE
 - 3) ONLY CLASS I OR II EMBEDMENT MATERIALS SHALL BE USED BELOW THE LEVEL OF THE GROUND-WATER TABLE
 - 4) TRENCH BACKFILL ABOVE THE EMBEDMENT MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE VA BEACH DEPT. OF PUBLIC UTILITIES. A MINIMUM OF 30" COVER OVER PVC PIPE SHALL BE PROVIDED BEFORE TRENCH IS WHEEL LOADED AND A MINIMUM OF 48" COVER BEFORE USE OF A WINDHAMMER DURING CONSTRUCTION
 - 5) PIPE DEFLECTION SHALL NOT EXCEED 5% OF THE INSIDE PIPE DIAMETER AS DETERMINED BY DEFLECTION TESTS PERFORMED AFTER THE BACKFILL HAS REACHED 95% COMPACTION. THE CONTRACTOR SHALL EXCEED THE MINIMUM EMBEDMENT AND BACKFILL REQUIREMENTS TO ACHIEVE THE MAXIMUM 5% REFLECTION AT 95% COMPACTION AT NO ADDITIONAL COST TO THE OWNER

P.V.C. BACKFILL REQUIREMENTS



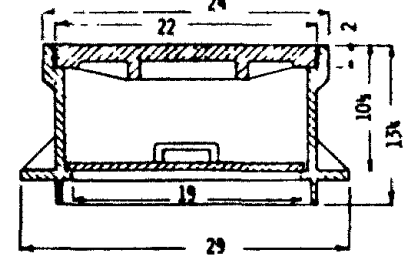
(FOR USE IN DEEP INSTALLATIONS OR UNSUITABLE SOIL CONDITION AS DIRECTED BY ENGINEER)

CLASS B SPECIAL BEDDING



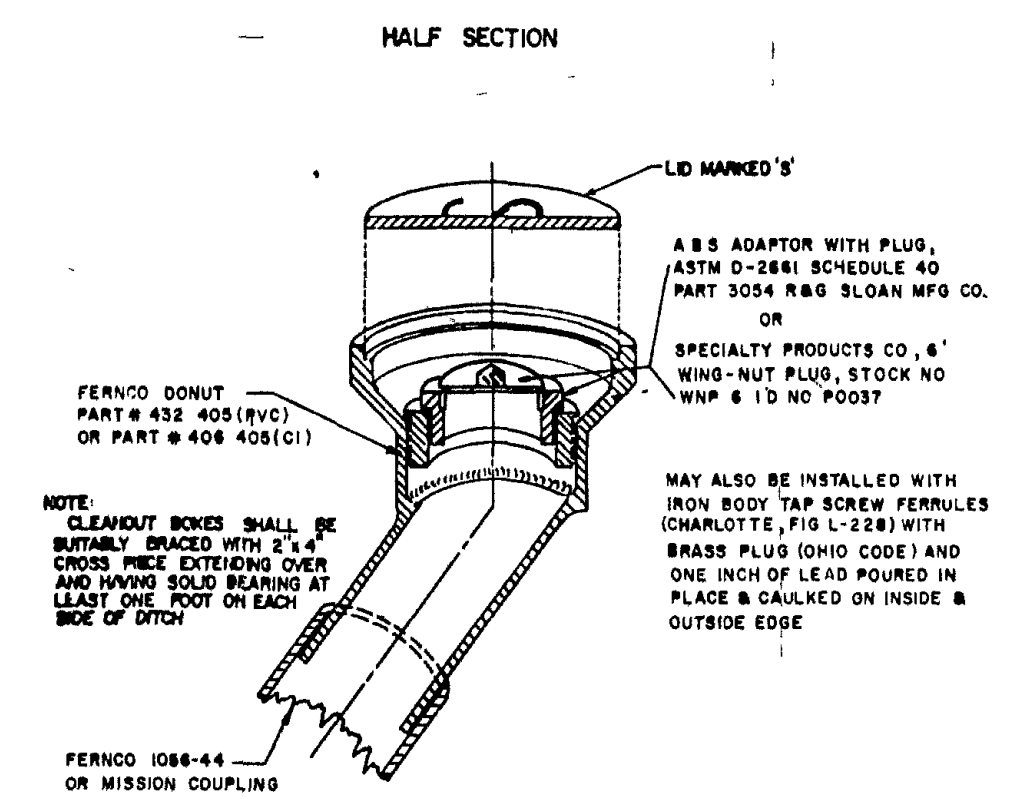
PLAN OF MANHOLE CASTING
COVER PLATE REMOVED

NOTE
24" I.D. FRAME, COVER AND DUST PAN SHALL BE RICHARD FOUNDRY R-2400R SERIAL

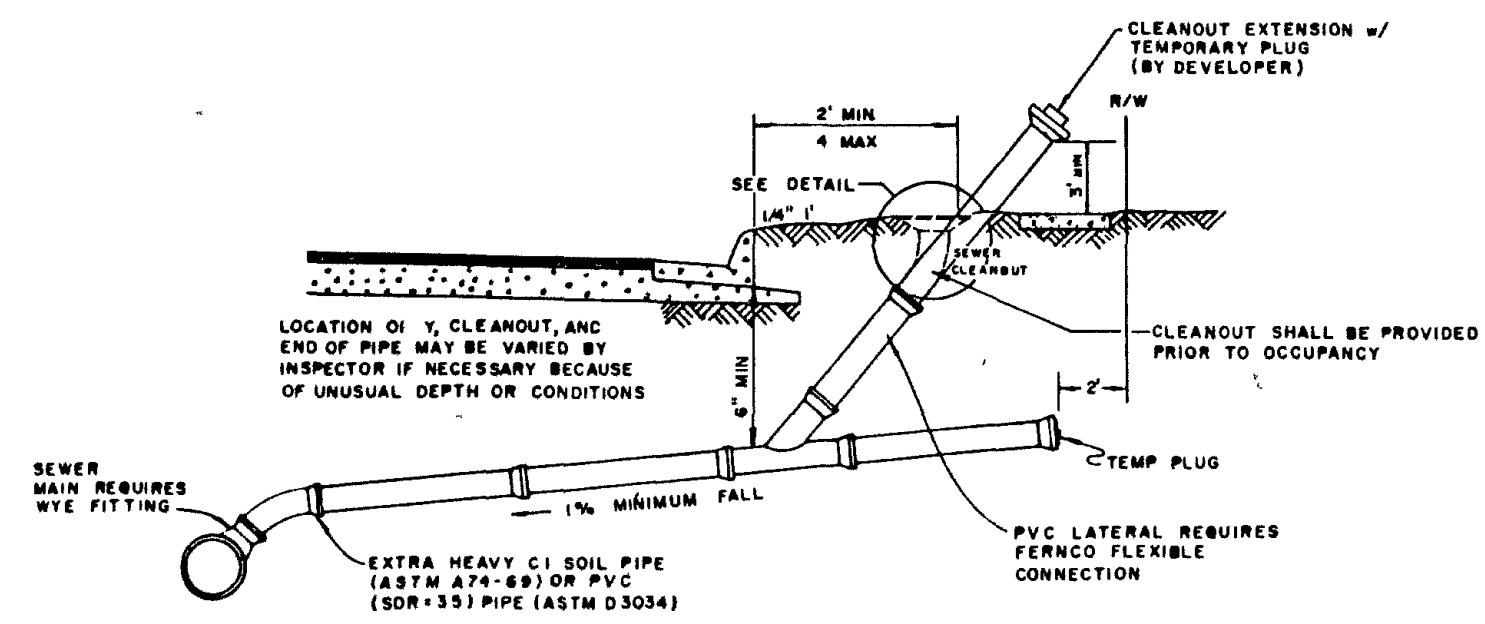


SECTION A-A
MANHOLE CASTING WITH COVER IN PLACE

STD. SAN. SEWER FRAME & COVER



HOUSE LATERAL CLEANOUT



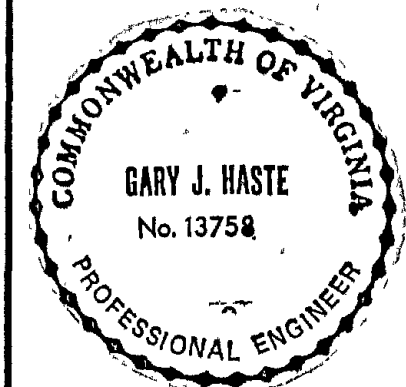
NOTE
THE CLEANOUT TOP WILL BE SET BY THE BUILDER PRIOR TO OCCUPANCY PERMIT

NOTES
PVC CLEANOUT EXTENSION REQUIRES ASTM 3024 4" CAP OR PLUG OR CAST IRON CLEANOUT EXTENSION REQUIRES 4" DI. DISCREET SLIP PLUG

TYPICAL SANITARY SERVICE

Talbot & Associates, Inc.
Engineers, Architects, Planners, Surveyors
P.O. Office, Box 2774
Virginia Beach, VA 23462
Phone (804) 360-0227

CHRISTOPHER FARMS
SANITARY SEWER DETAILS



Designed T.A.
Drawn T.A.
Checked C.B.W.
Scale N/A
Date 11/12/86
File No U-1-524
Project No. 861268
Sheet No

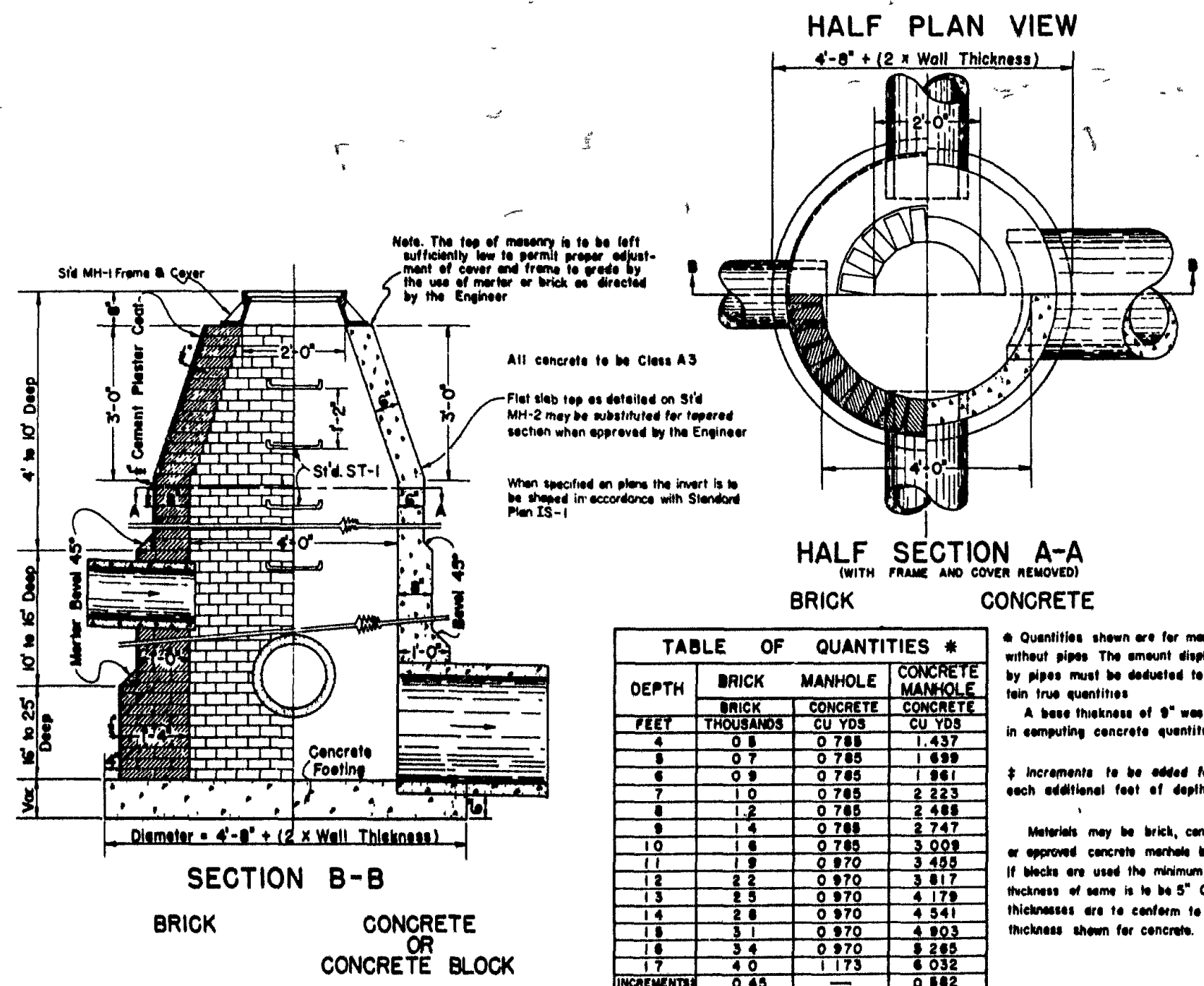
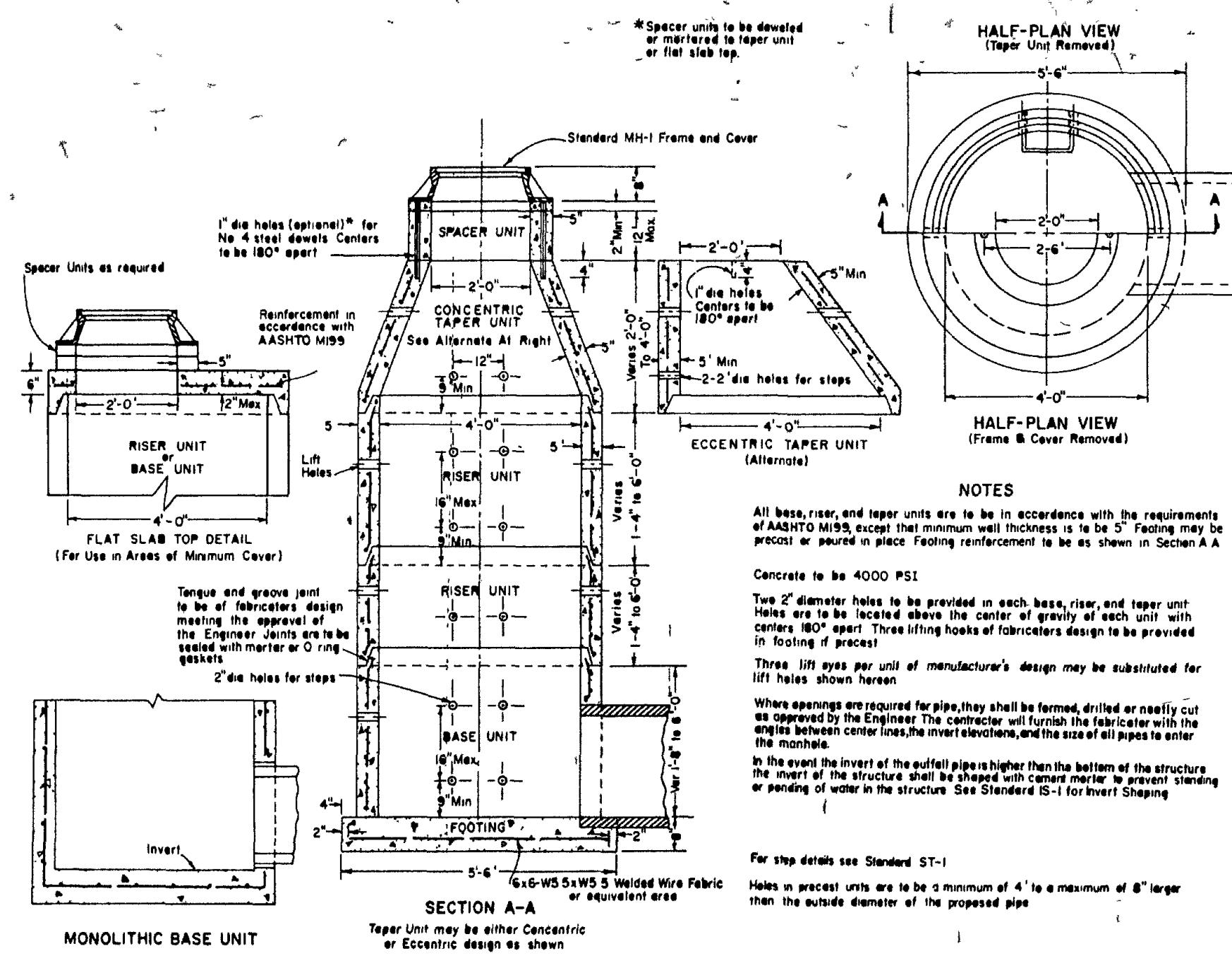


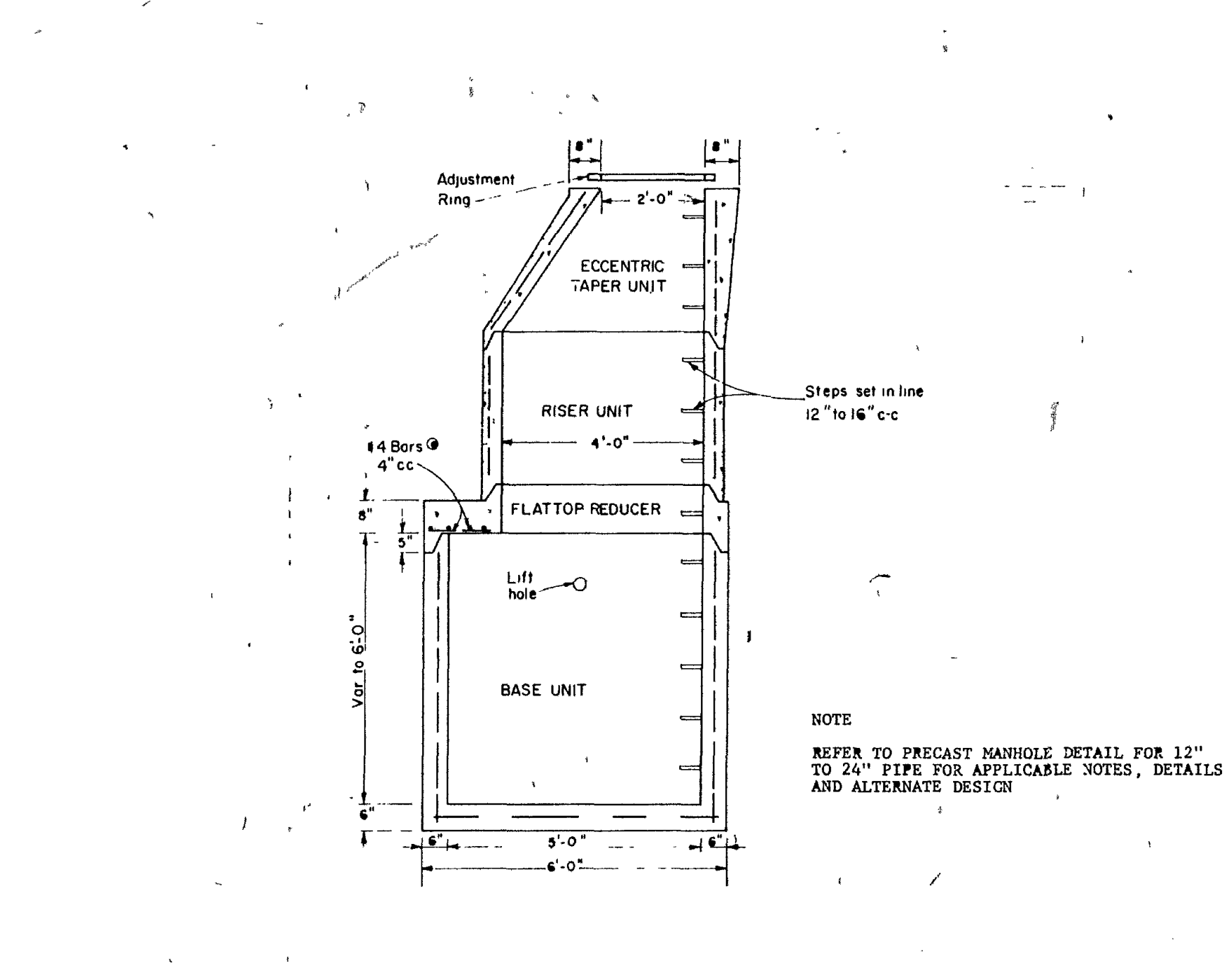
TABLE OF QUANTITIES

DEPTH FEET	BRICK		CONCRETE MANHOLE	
	THOUSANDS	YDS	THOUSANDS	YDS
4	0.9	0.785	1.437	1.178
6	0.9	0.785	1.881	1.557
8	1.0	0.785	2.325	1.936
10	1.1	0.785	2.769	2.315
12	1.2	0.785	3.213	2.694
14	1.3	0.785	3.657	3.073
16	1.4	0.785	4.101	3.452
18	1.5	0.785	4.545	3.831
20	1.6	0.785	4.989	4.210
22	1.7	0.785	5.433	4.589
24	1.8	0.785	5.877	4.968
26	1.9	0.785	6.321	5.347
28	2.0	0.785	6.765	5.726
30	2.1	0.785	7.209	6.105
32	2.2	0.785	7.653	6.484
34	2.3	0.785	8.097	6.863
36	2.4	0.785	8.541	7.242
38	2.5	0.785	8.985	7.621
40	2.6	0.785	9.429	7.999
42	2.7	0.785	9.873	8.378
44	2.8	0.785	10.317	8.757
46	2.9	0.785	10.761	9.136
48	3.0	0.785	11.205	9.515
INCREMENTS	0.45	—	0.832	—

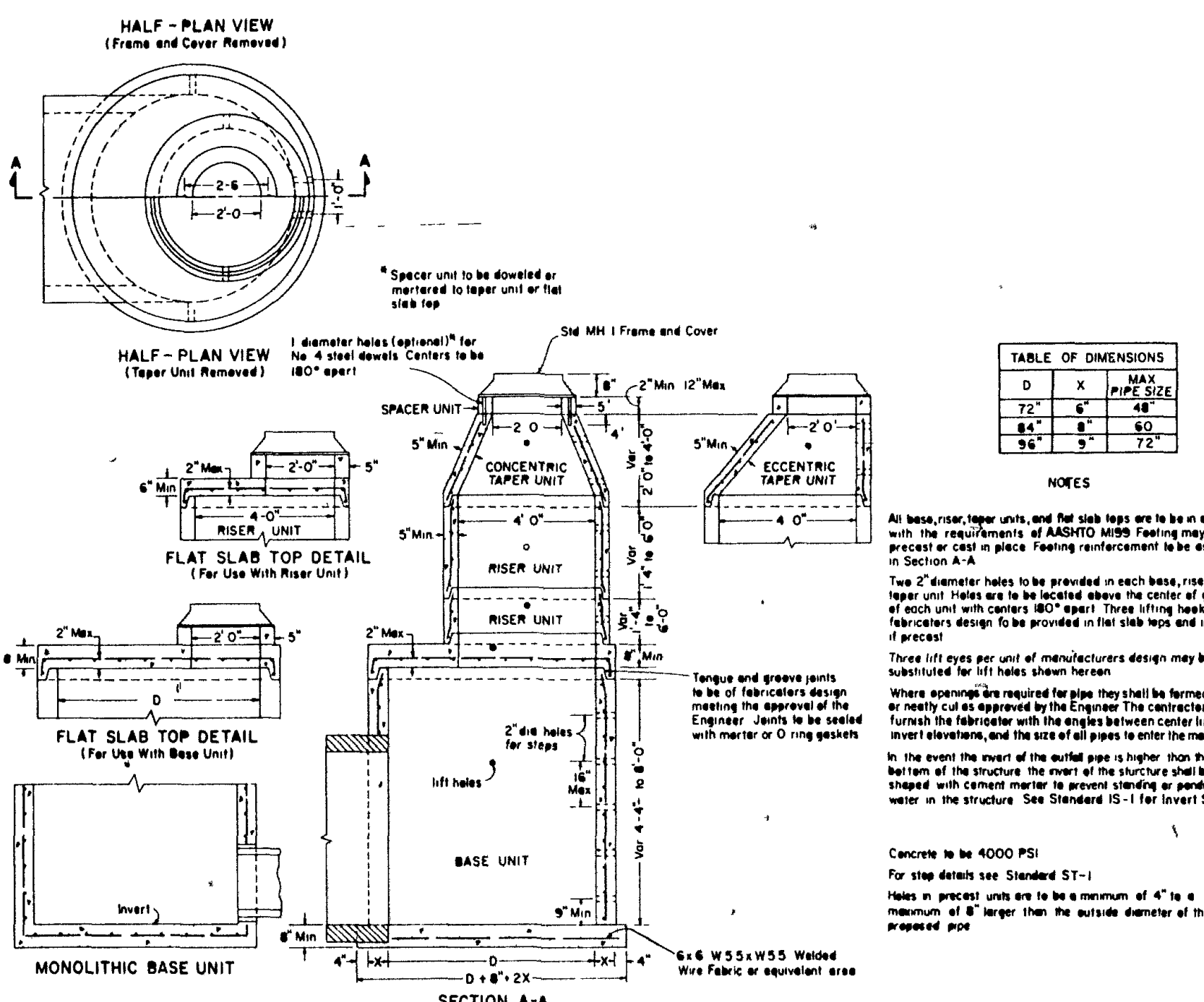
**MANHOLE FOR 12"-48" PIPE
V.D.H.T. MH-1**



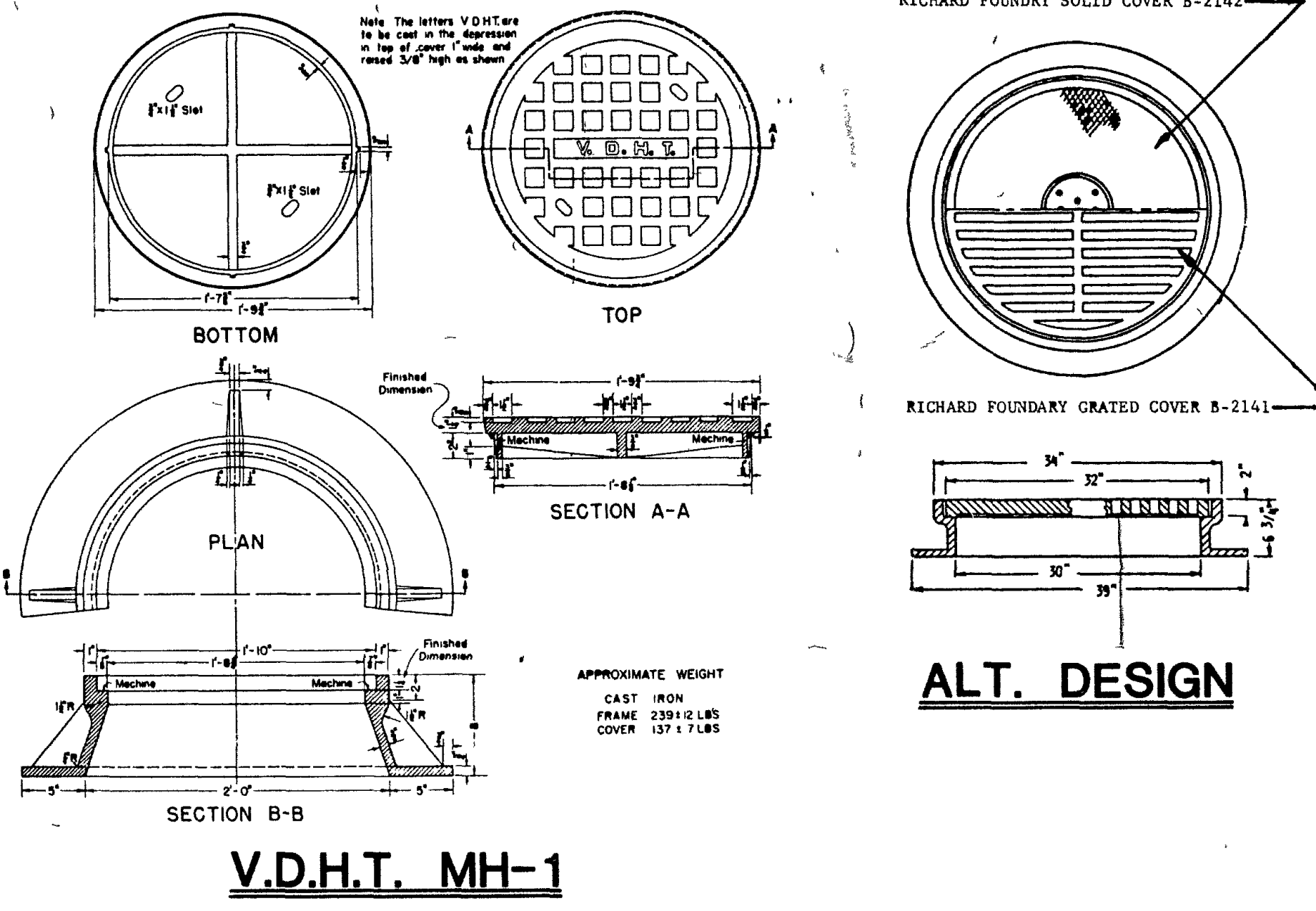
**PRECAST MANHOLE FOR 12"-24" PIPE
V.D.H.T. MH-2**



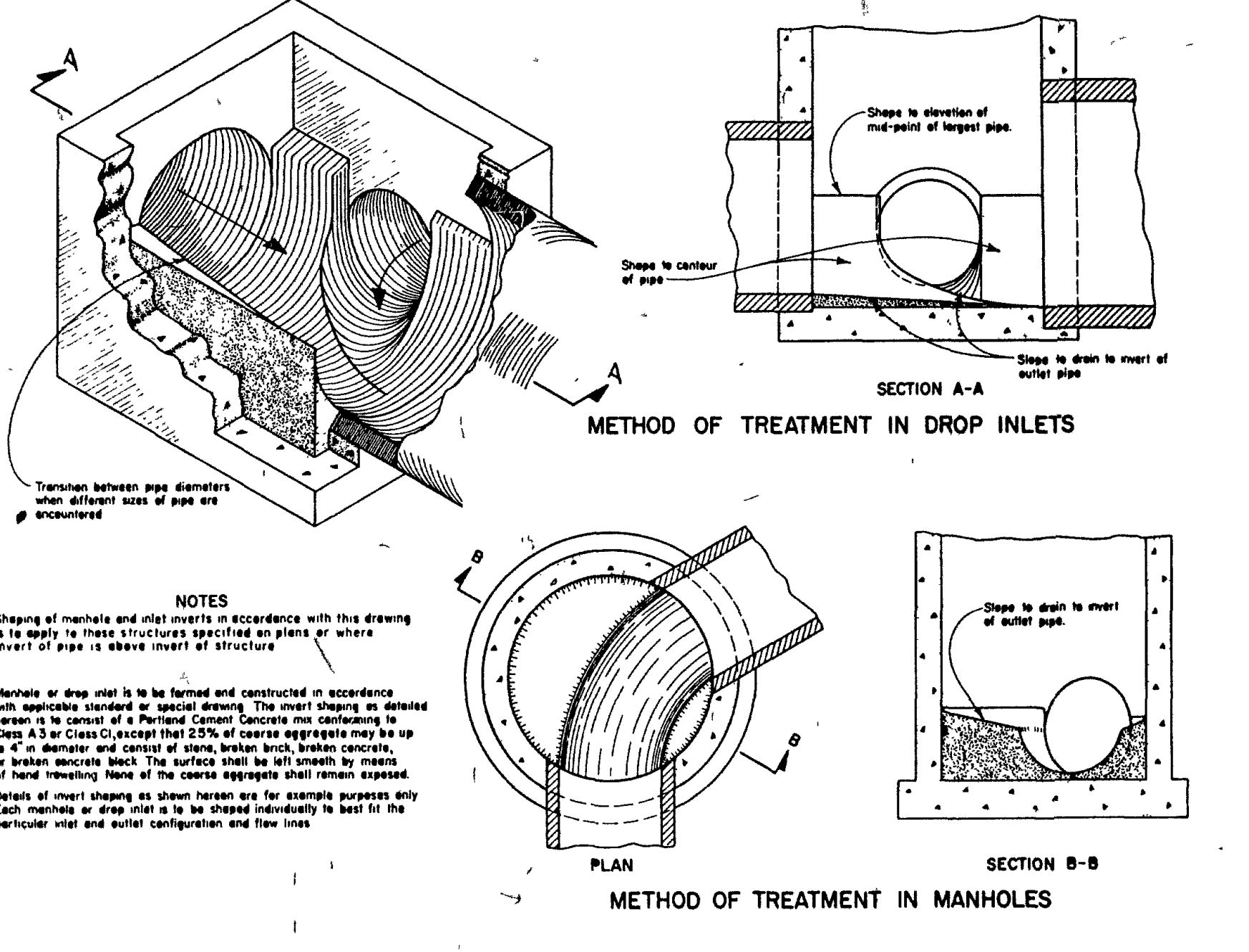
**PRECAST MANHOLE FOR 27"-36" PIPE
V.D.H.T. MH-2**



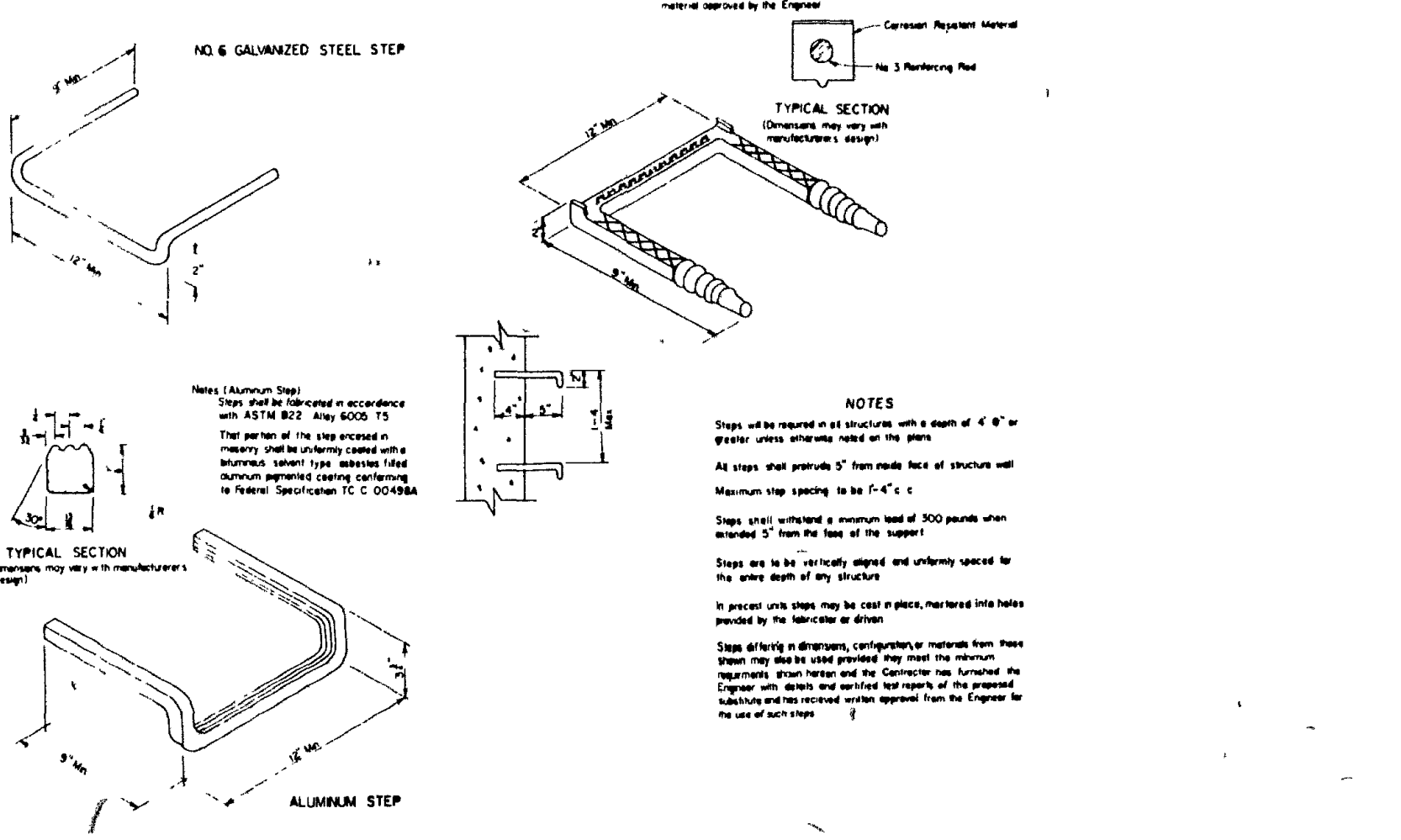
**PRECAST MANHOLE FOR 42"-72" PIPE
V.D.H.T. MH-2**



**STANDARD MANHOLE FRAME AND COVERS
V.D.H.T. MH-1**



**STANDARD METHOD OF SHAPING
MANHOLE & INLET INVERTS V.D.H.T. IS-1**



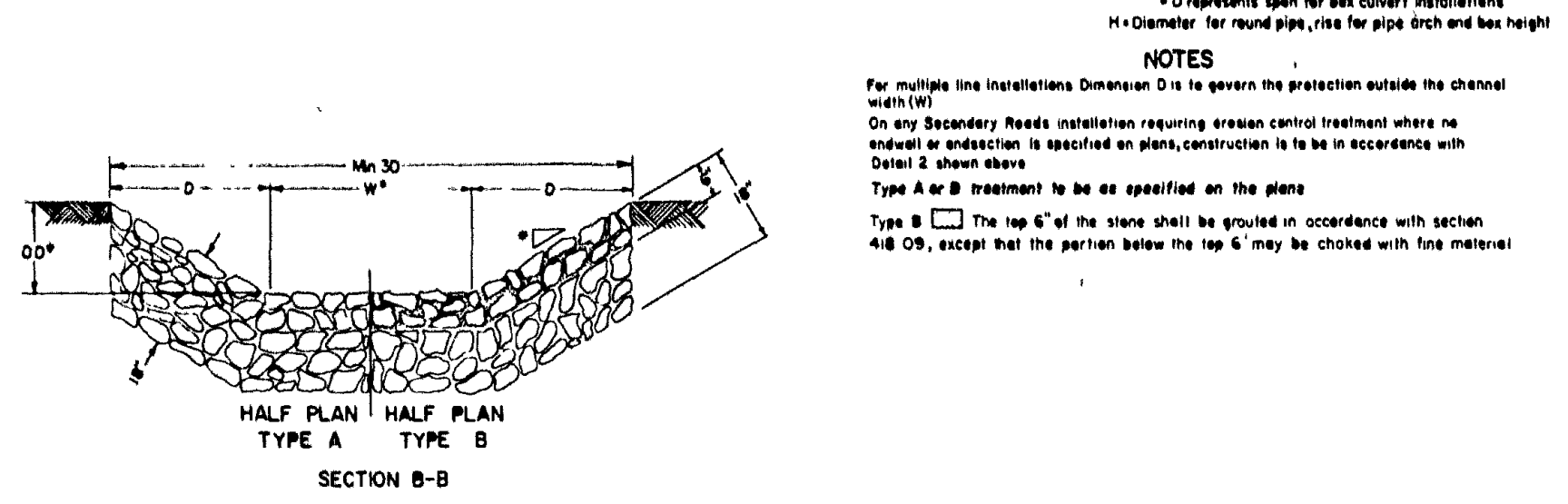
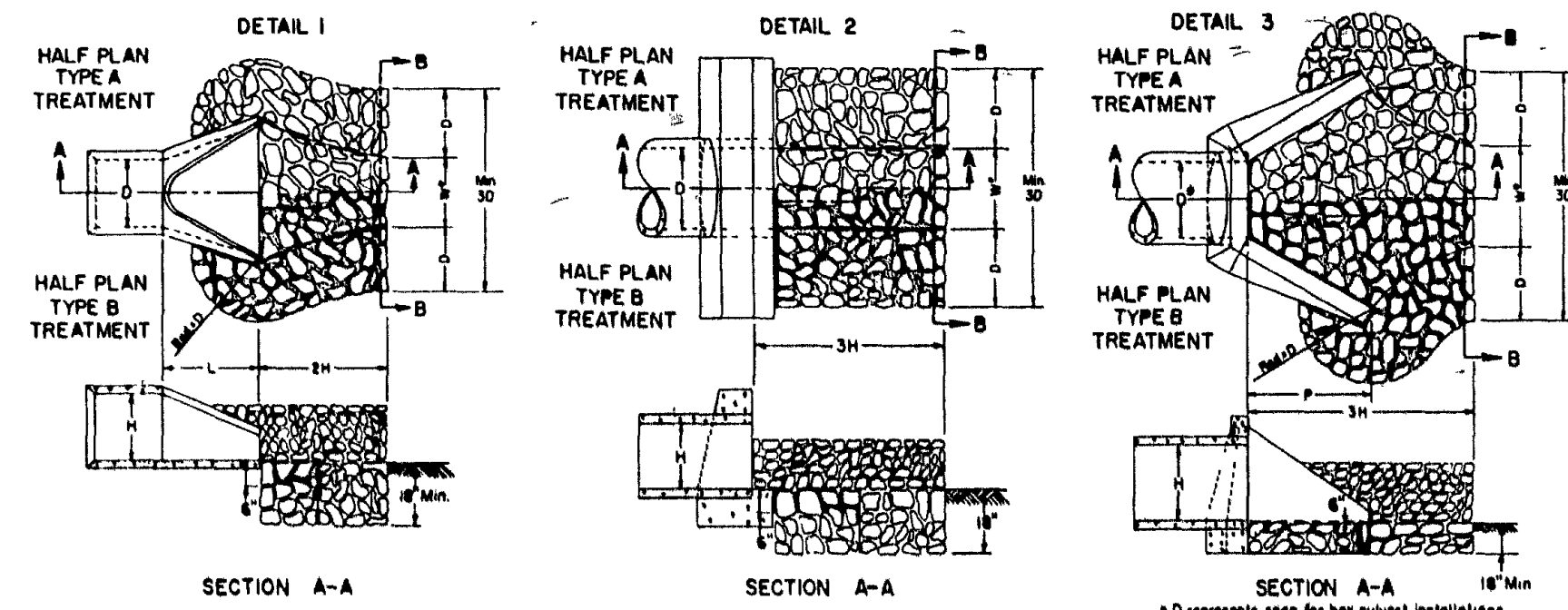
STANDARD STEP V.D.H.T. ST-1

Talbot & Associates, Inc.
Engineers, Architects, Planners, Surveyors
100 Commerce Blvd., Suite 200
Virginia Beach, VA 23462
Phone: (804) 485-2000

CHRISTOPHER FARMS
STORM DRAINAGE DETAILS

COMMONWEALTH OF VIRGINIA
GARY J. HASTE
No. 13758
PROFESSIONAL ENGINEER

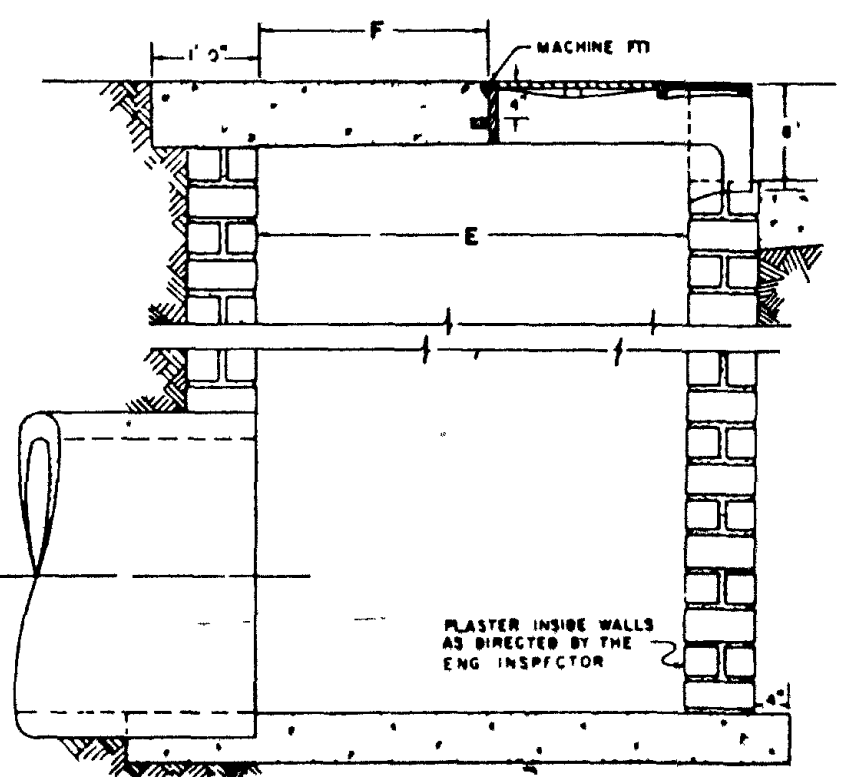
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Checked C.B.W.
Scale N/A
Date 11/12/86
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Project No. 861268
Sheet No.



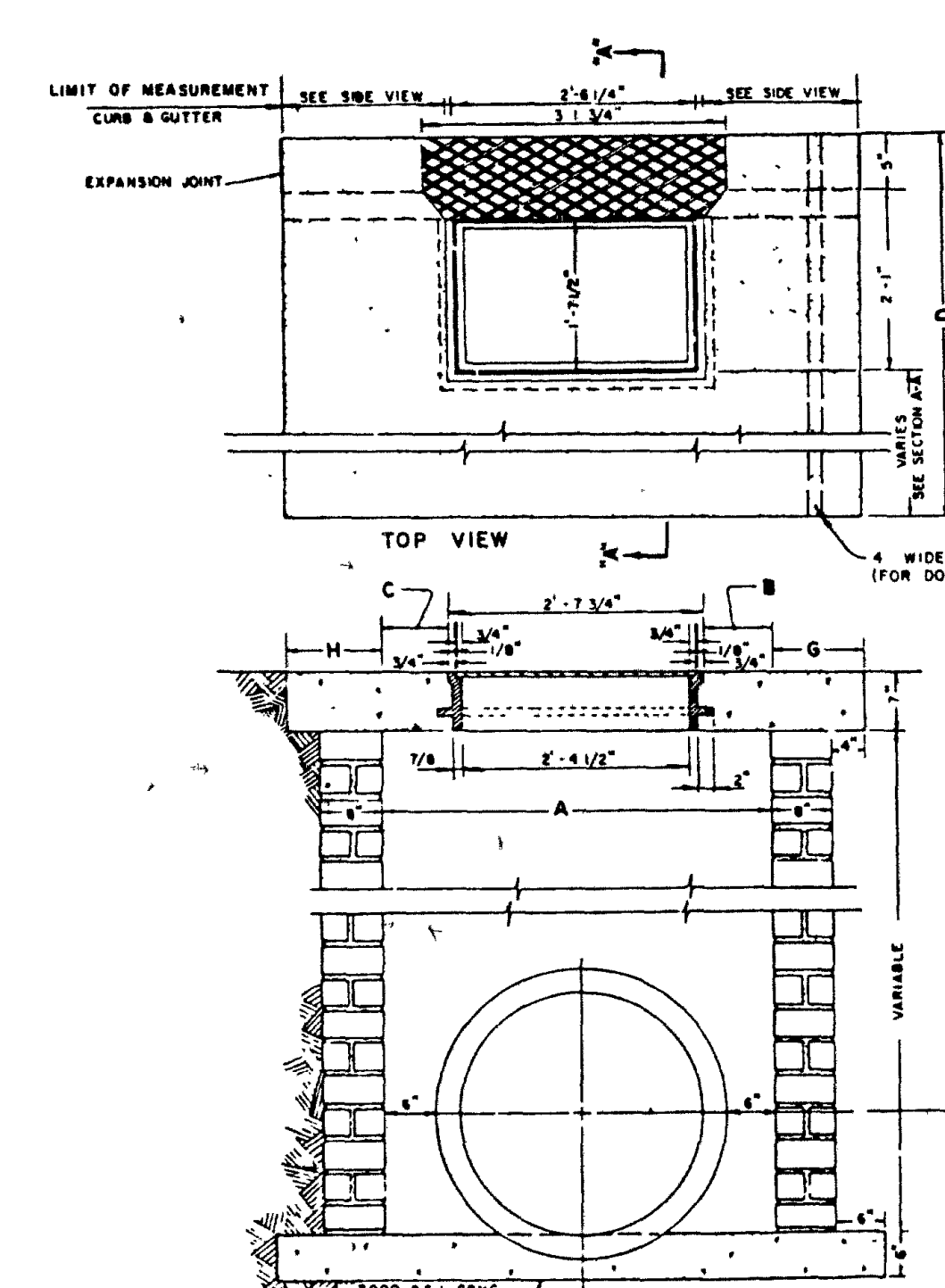
RIPT-RAP FOR EROSION CONTROL
V.D.H.T. EC-1

PIPE ID	DIMENSIONS							
	A	B	C	D	E	F	G	H
18"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
24"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
30"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
36"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
42"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
48"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
54"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"
60"	2'-0"	0'-0"	0'-0"	4'-0"	3'-7 1/2"	0'-8 1/2"	0'-8 1/2"	0'-11 1/2"

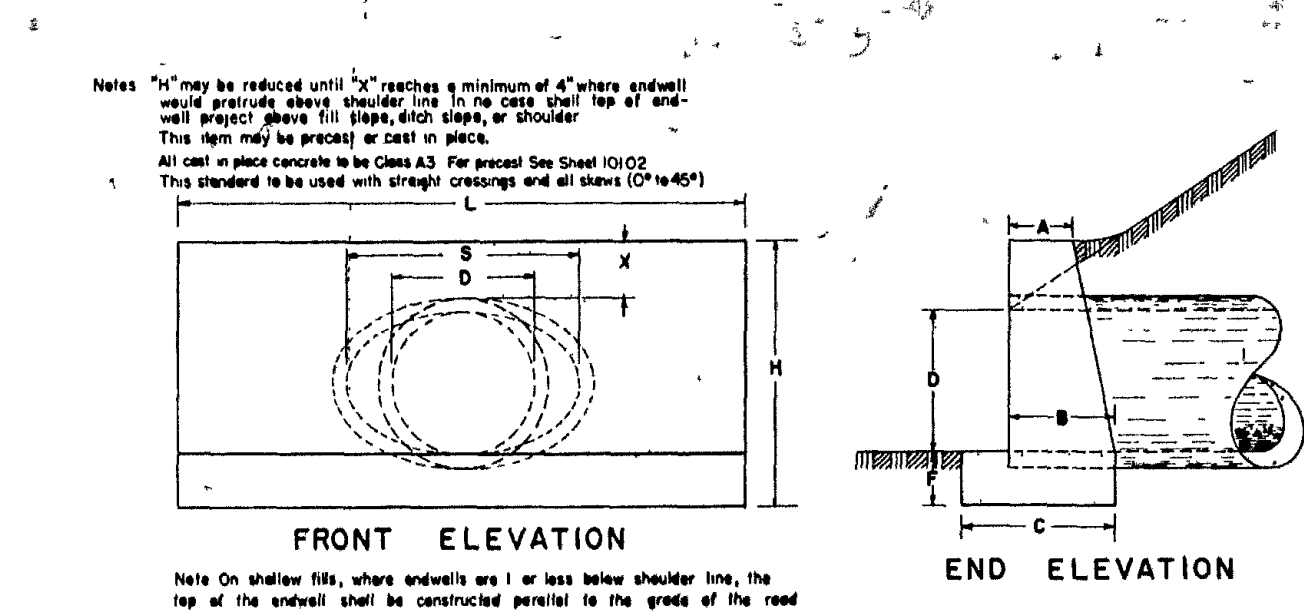
FOR SINGLE BASINS ONLY FOR MULTIPLE BASINS, PROVIDE CLEARANCE FOR 4" IRON PLATE AND INCREASE DIMENSION 'A' AS NECESSARY.



STANDARD CATCH BASIN



- NOTES
- Casting shall be Richard Foundry Design No. J-1010 or equal and shall be provided and set to grade as part of the utility contractor's contract.
 - Concrete collar shall be poured by the curb and gutter contractor.
 - Mortar shall be mixed 1 of Portland Cement to 3 of clean graded sand. Joints shall be flushed full. Inside of all walls to be fully plastered 1/2" thick (min).
 - Keep holes made of 2" galvanized steel pipe located at the top of the subgrade shall be provided as follows: two on the face of the structure and one at each end.
 - Manhole steps shall be provided in all catch basins deeper than 4 feet.
 - For catch basins which have concrete tops greater than 3' 6" by 4' 7 3/4", the thickness of the slab shall be increased to nine (9) inches and it shall be reinforced with #4 deformed reinforcing bars four (4) inches on center, each way, located 2 inches (clear) from the bottom or edge of slab.



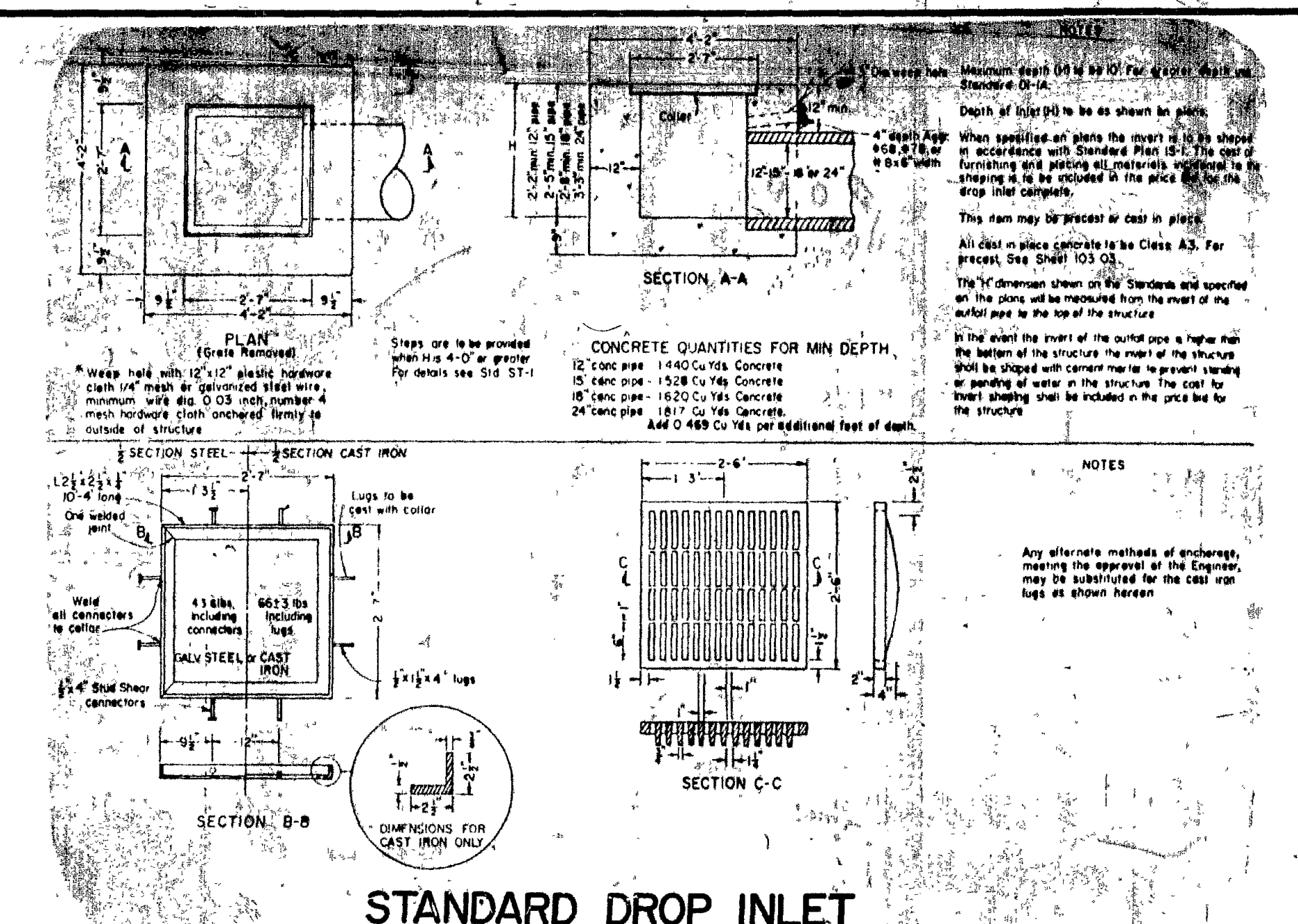
EW-1

ENDWALL FOR CIRCULAR PIPE	
DIAMETER OF PIPE CULVERT	
18"	0.24
24"	0.49
30"	0.87
36"	1.31
42"	2.07
48"	2.87
54"	3.78
60"	4.78

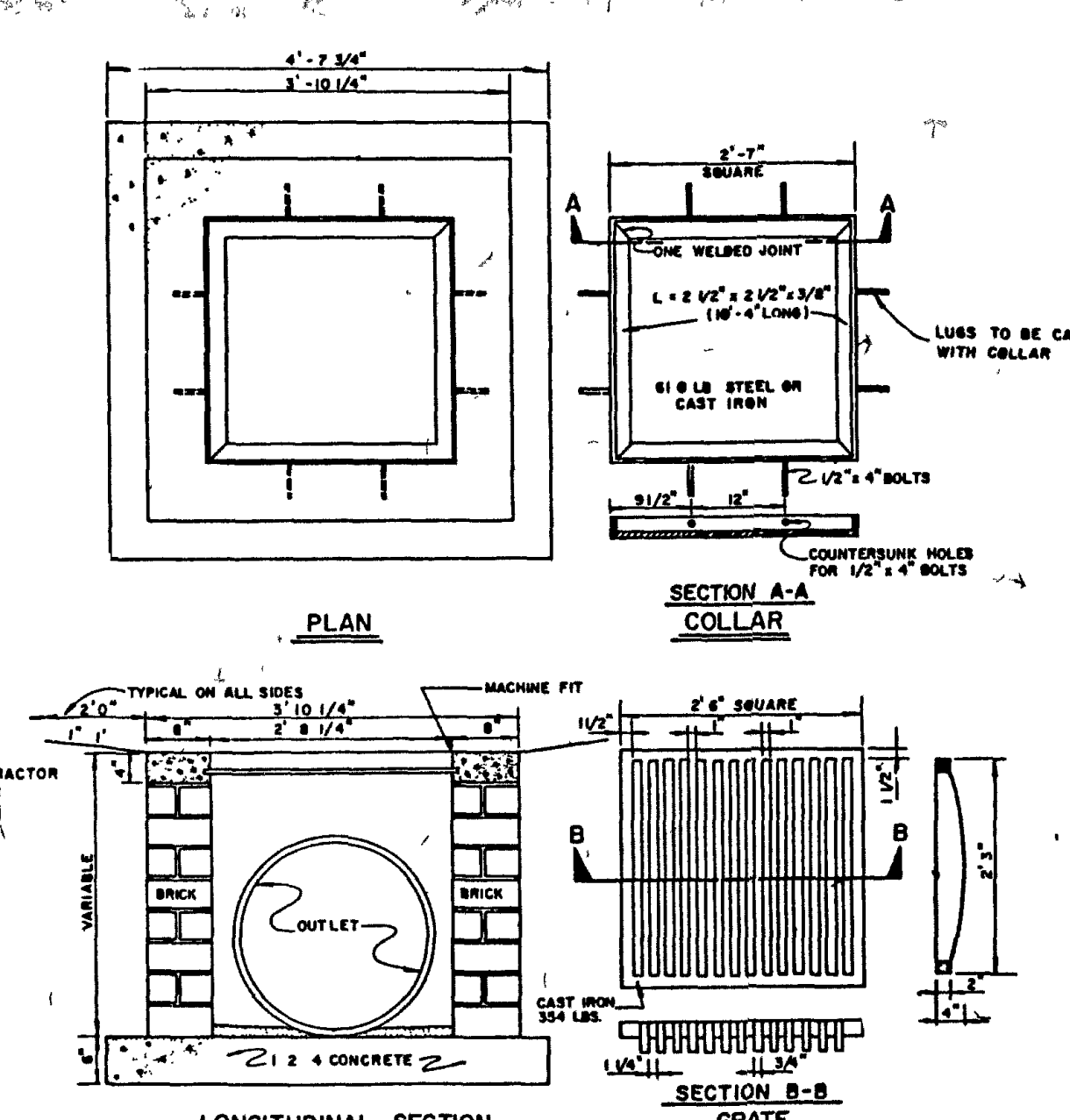
EW-1A

ENDWALL FOR ELLIPTICAL PIPE	
SIZE OF ELLIPTICAL PIPE CULVERT (SPAN x RISE)	
12' x 6"	0.24
12' x 8"	0.49
12' x 10"	0.87
12' x 12"	1.31
12' x 14"	2.07
12' x 16"	2.87
12' x 18"	3.78
12' x 20"	4.78

STD. ENDWALL FOR PIPE CULVERTS
V.D.H.T. EW-1, EW-1A



STANDARD DROP INLET



STANDARD YARD BASIN

Talbot & Associates, Inc.
Engineers, Architects, Planners, Surveyors

CHRISTOPHER FARMS
STORM DRAINAGE DETAILS

COMMONWEALTH OF VIRGINIA
BARRY J. HASTE
No. 13758
PROFESSIONAL ENGINEER

Designed T.A.
Drawn T.A.
Checked C.B.W.
Scale N/A
Date 11/12/86
File No U-1-524
Project No 861268
Sheet No

CONSTRUCTION SPECIFICATIONS

INSTALLATION

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS WHEN JOINTS ARE NECESSARY. FILTER CLOTH SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 4-INCH OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART USING FILTER FABRIC WITH WIRE FENCE SUPPORT. HIGH EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 8 FEET.
3. WHEN STANDARD STRENGTH FABRIC IS USED, A WIRE SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, THE WIRE OR HOOP RINGS. THE WIRE SHALL EXTEND INTO THE 4" X 4" TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 34 INCHES ABOVE THE ORIGINAL GROUND SURFACE. THE FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 34 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
4. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ITEM 3 APPLYING.
5. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
6. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSES, BUT NOT BEFORE THE UPOUSE AREA HAS BEEN PERMANENTLY STABILIZED.

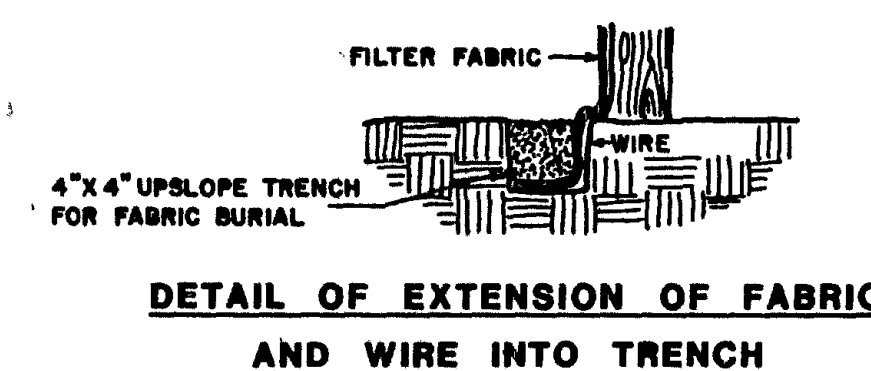
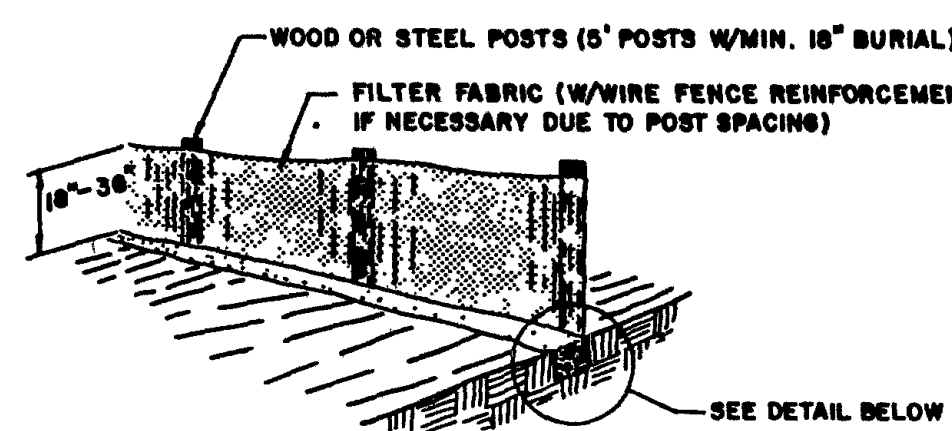
MATERIALS

1. SYNTHETIC FILTER FABRIC SHALL BE PERVIOUS SHEET OF PROPELLE, NYLON, POLYESTER OR ETHYLENE TARN WITH MINIMUM SIX (6) MONTHS EXPECTED USEFUL LIFE, CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:

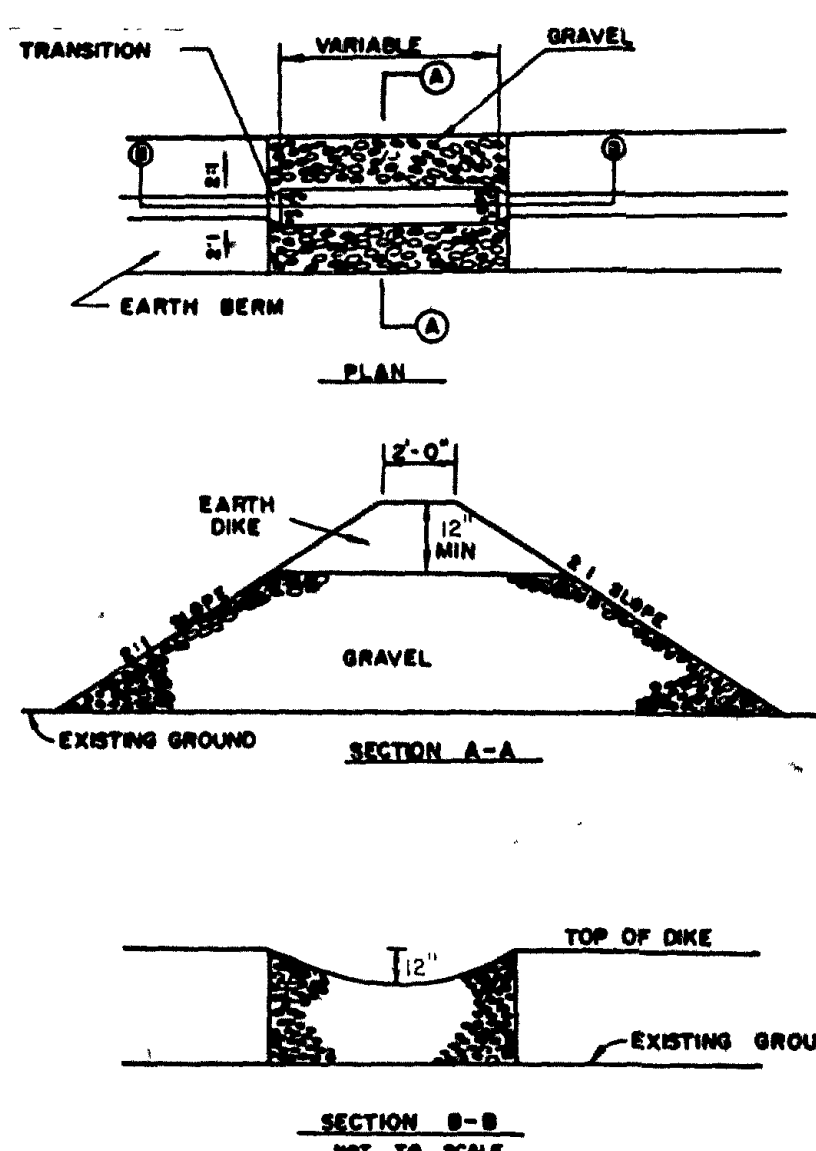
PHYSICAL PROPERTY	TEST	REQUIREMENTS
FILTERING EFFICIENCY	VFM-51	75% (MIN.)
TENSILE STRENGTH AT 25% (MAX.) ELONGATION	VFM-52	EXTRA STRENGTH- 50 LBS./LIN. IN. (MIN.) STANDARD STRENGTH- 30 LBS./LIN. IN. (MIN.)
FLOW RATE	VFM-51	0.3 GAL./SQ. FT./MIN. (MIN.)
2. POSTS SHALL BE EITHER 4-INCH DIAMETER WOOD OR 1.33 POUNDS PER LINEAL FOOT STEEL WITH A MINIMUM LENGTH OF 3 FEET. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
3. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER FABRIC SHALL BE MINIMUM OF 42 INCHES IN HEIGHT, 12 INCHES IN GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES.

MAINTENANCE

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEFUL LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT THAT MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE REEMED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.



SILT FENCE



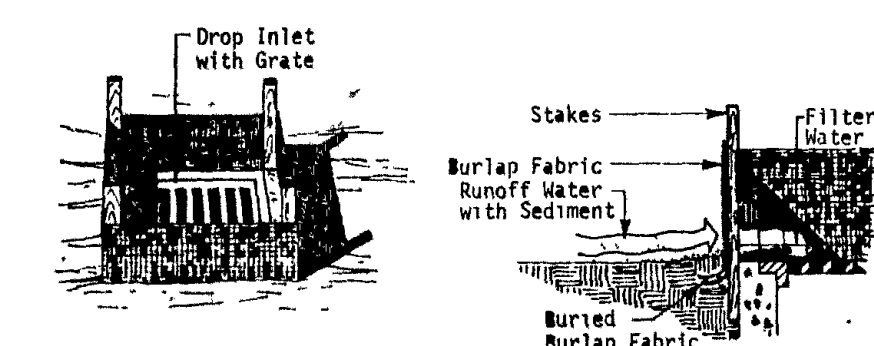
THE BARE AND SIDE SLOPES OF THE GRAVEL WILL BE PLACED SO AS TO CONFORM TO THE ONE COMPENSATING THE INCLINE OF THE GRAVEL. THE GRAVEL SHALL BE NOT LESS THAN 18 INCHES DEEPER THAN THE TOP OF THE ADJACENT EARTH. THE GRAVEL SHALL EXTEND TO THE TOP OF THE DIKE.

GRAVEL OUTLET STRUCTURE

CONSTRUCTION SPECIFICATIONS

1. ALL PERIMETER DIKES MUST HAVE POSITIVE GRADE GRADING TO A SEDIMENT TRAPPING FACILITY.
2. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED.

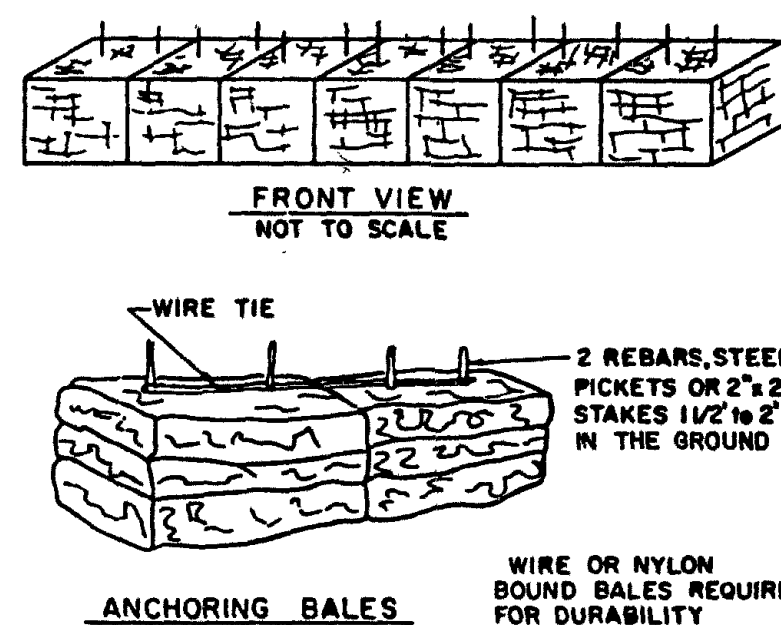
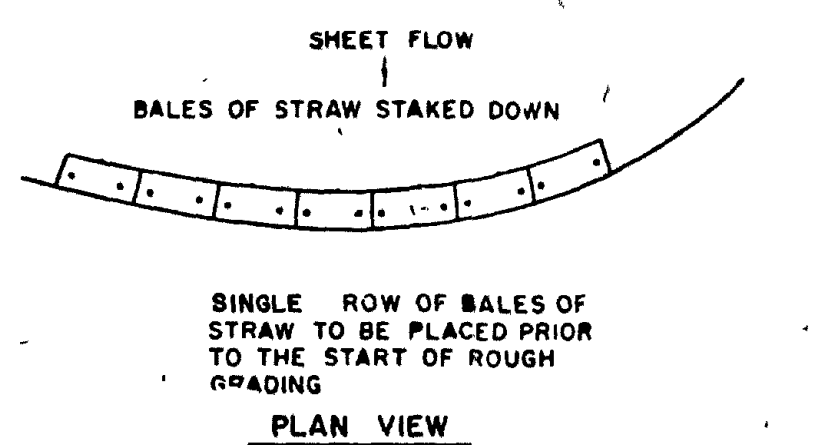
PERIMETER DIKE-1



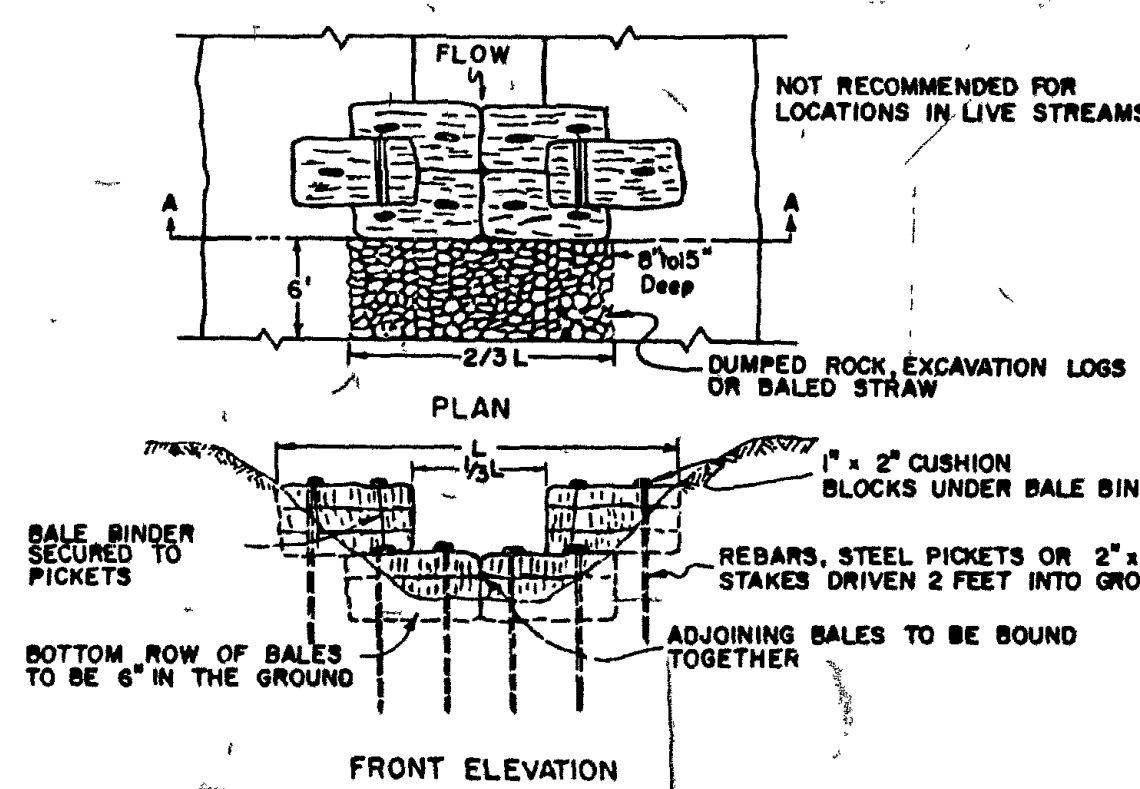
NOTES:

1. BURLAP SHALL BE 10 OUNCES PER SQUARE YARD FABRIC AND SHALL BE CUT FROM A CONTINUOUS ROLL TO AVOID JOINTS.
2. STAKES SHALL BE 1" X 2" WOOD (PREFERRED) OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
3. STAPLES SHALL BE OF HEAVY DUTY WIRE AT LEAST 1/2-INCH LONG.
4. STAKES SHALL BE SPACED AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART AND SECURELY DRIVEN INTO THE GROUND (MINIMUM OF 4 INCHES).
5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP AROUND THE OUTSIDE PERIMETER OF THE STAKES.
6. THE BURLAP SHALL BE STAPLED TO THE WOODEN STAKES, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE HEIGHT OF THE FILTER BARRIER SHALL BE A MINIMUM OF 15 INCHES AND SHALL NOT EXCEED 18 INCHES AS SHOWN ABOVE.
7. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE BURLAP.

**BURLAP DROP INLET
SEDIMENT FILTER**

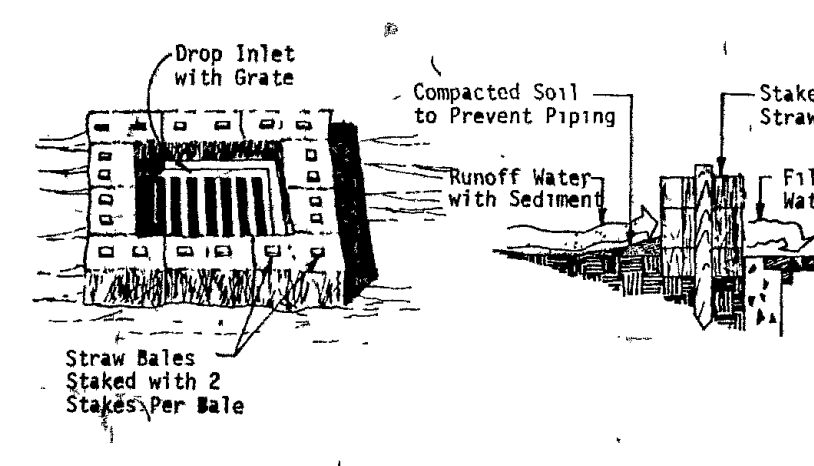


**TEMPORARY STRAW BALE BARRIER
STB**



NOTES: THE LOCATIONS OF BALED STRAW CHECK DAMS AS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. SUCH LOCATIONS MAY BE CHANGED OR DAM MAY BE ADDED OR DELETED AS DIRECTED BY THE ENGINEER. THE NUMBER OF BALES REQUIRED WILL VARY ACCORDING TO ACTUAL GROUND CONDITIONS. DAMS ARE TO BE TWO BALES HIGH WHERE POSSIBLE.

CHECK DAM



NOTES:

1. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
2. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER, AS SHOWN ABOVE.
3. THE FILTER BARRIER SHALL BE FORTENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED AROUND THE INLET THE WIDTH OF A BALE TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
4. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
5. LOOSE STRAW SHALL BE WIDDED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.

**STRAW BALE DROP INLET
SEDIMENT FILTER**

EROSION CONTROL AND TREE PROTECTION NOTES

1. THE CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REGULATIONS OF THE CITY OF VIRGINIA BEACH, VIRGINIA. "EROSION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS" DEEMED NECESSARY BEFORE, DURING AND AFTER CONSTRUCTION.
2. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION, PROTECTION BARRIERS SHALL BE PLACED AROUND ALL TREES TO BE RETAINED ON THE SITE. PLANS TO PREVENT THE DESTRUCTION OR DAMAGING OF TREES THESE WILL BE LOCATED IN A CIRCULAR PATTERN WITH A RADIUS EQUAL TO THE LENGTH OF THE WIDEST OR LONGEST BRANCH. MATERIAL WILL NOT BE STOCKPILED WITHIN THIS DEFINED AREA AND VEHICLES AND OTHER EQUIPMENT ARE TO BE ELIMINATED TO AVOID SOIL CONTACT. THE ONLY EXCEPTION TO THIS REQUIREMENT WILL BE THOSE SPECIFICALLY ALLOWED BY THESE STANDARDS AND SPECIFICATIONS.
3. BOARDS OR WIRES OF A NON-PROTECTIVE NATURE WILL NOT BE NAILLED OR ATTACHED TO TREES DURING BUILDING OPERATIONS.
4. HEAVY EQUIPMENT OPERATIONS WILL BE CAUTIONED TO AVOID DAMAGE TO EXISTING TREE TRUNKS AND ROOTS DURING LAND LEVELING OPERATIONS. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA EQUAL TO TWICE THE TREE CIRCUMFERENCE (MEASURED 4 FEET ABOVE GROUND LINE IN INCHES) EXPRESSED IN FEET. (EXAMPLE: CIRCUMFERENCE OF TEN INCHES WOULD HAVE A "20" CUT) ZONE OF TWENTY FEET IN ALL DIRECTIONS FROM THE TREE). THIS SHOULD APPLY TO DITCHING FOR ALL UTILITY SERVICES, IF FEASIBLE.
5. TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING EQUIPMENT OPERATIONS WILL BE PAINTED IMMEDIATELY WITH A GOOD GRADE OF "TREE PAINT". CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY THE CITY ARBORIST.
6. ALL TREE LIMBS DAMAGED DURING BUILDING OR LAND LEVELING, OR REMOVED FOR ANY OTHER REASON, WILL BE SAVED TO TREE TRUNK AND PAINTED WITH A "TREE PAINT".
7. CRITERIA FOR REPLACING TREES KILLED DURING CONSTRUCTION IF DESIGNED TREES PROTECTED BY THE ABOVE MEANS ARE KILLED DURING CONSTRUCTION, THEY SHALL BE REPLACED BY A TREE OF AT LEAST 2 INCHES CALIPER OF THE SAME SPECIES OR LIKE QUALITY, AS SPECIFIED BY THE CITY ARBORIST.
8. ALL EROSION CONTROL DEVICES SHALL BE INSTALLED WITH THE FIRST PHASE OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL FINAL GRADING AND PAVING. (SEE PERMANENT SEEDING SCHEDULE & SPECIFICATIONS).
9. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN SILT TRAPS SUFFICIENT TO PREVENT SOIL FROM BEING ERODED FROM THE SITE INTO ANY ADJACENT DRAINAGE SYSTEM, DITCH OR WATER COURSE. ANY MATERIAL THAT IS TOO ERODED SHALL BE PROMPTLY REMOVED.
10. CONSTRUCTION OPERATIONS SHALL BE MANAGED SO THAT AS MUCH OF THE SITE AS POSSIBLE IS LEFT COVERED WITH TOPSOIL AND VEGETATION.
11. TEMPORARY SEEDING SHALL BE APPLIED PRIOR TO CONSTRUCTION IN AREAS INDICATED (SEE TEMPORARY SEEDING SCHEDULE AND SPECIFICATIONS).
12. ALL GRADED AREAS MUST BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING INSTALLATION OF EACH SYSTEM IS COMPLETE.
13. TEMPORARY STABILIZATION SHALL BE PROVIDED IN AREAS DISTURBED FROM INSTALLATION OF DRAINAGE OR UTILITY SYSTEMS IMMEDIATELY AFTER INSTALLATION OF EACH SYSTEM IS COMPLETE.
14. TEMPORARY AND PERMANENT ENTRANCES TO THE SITE SHALL HAVE A STONE STABILIZED PAVE PASS AT ENTRANCES SHALL BE CONSTRUCTED IMMEDIATELY FOLLOWING STREET GRADING.

MINIMUM SIZE STONE - 2" DIAMETER	THICKNESS - NOT LESS THAN 6"
LENGTH - NOT LESS THAN 50'	WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS

TEMPORARY SEEDING

- I. LINE & FERTILIZER

A. LINE - 1 TON OF AGRICULTURAL GROUND LIMESTONE OR EQUIVALENT PER ACRE.	FEB - MARCH
B. FERTILIZER - 1,000 LBS. OF 10-10-10 OR EQUIVALENT PER ACRE.	FEB - MARCH

WORK LINE AND FERTILIZER INTO THE SOIL IMMEDIATELY FOLLOWING SPREADING OPERATIONS USING A DISC OR OTHER APPROVED TOOL. SURFACE SOIL SHALL BE WORKED TO A DEPTH OF AT LEAST 3 INCHES.

PERMANENT SEEDING

- I. TOPSOILING

WHERE TOPSOIL IS REQUIRED ON ADVERSE SOIL CONDITIONS, A MINIMUM OF FOUR INCHES OF TOPSOIL SHOULD BE USED. THE TOPSOIL SHOULD CONTAIN A MINIMUM OF 3% FINE GRAINED MATERIAL (SILT AND CLAY AND 1 3/4% ORGANIC MATTER).	FEB - MARCH
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- II. LINE AND FERTILIZER

A. LINE - APPLY GROUND LIMESTONE OR EQUIVALENT AT THE RATE OF 2 TONS PER ACRE.	FEB - MARCH
B. FERTILIZER - 1,000 POUNDS PER ACRE OF 10-20-10 FERTILIZER OR EQUIVALENT.	FEB - MARCH
- III. SEEDING

SEED ONE OF THE FOLLOWING MIXTURES AT THE SPECIFIED RATES PER ACRE FOR AREAS WITHOUT THE REQUIREMENTS:	FEB - MARCH
A. 40 - 40 LBS. TALL FESCUE (KY-31) 2 LBS. OF LADINO 2 LBS. OF RED CLOVER	FEB - MARCH
B. 30 - 40 LBS. TALL FESCUE (KY-31) 23 LBS. SERGIA LESPEDEZA FOR SPRING SEEDINGS	FEB - MARCH

SEEDING DATES - FALL SEEDING DATES FROM AUGUST 1 TO NOVEMBER 1 ARE GENERALLY PREFERRED FOR THE ABOVE MIXTURES. SPRING SEEDING DATES SHOULD BE FROM FEBRUARY TO MAY 15.

IV. SEED ONE OF THE FOLLOWING MIXTURES FOR AREAS WITH TREE REQUIREMENTS:

TYPE OF GRASS	SEEDING RATE	SEEDING DATE
TALL FESCUE (KY-31)	8 - 10 LBS. PER 1,000 SQ. FT.	FEB - MARCH
COMMON BERMUDA	SPRING SEEDING 2 LBS./1,000 SQ. FT. (BULLED SEED) FALL SEEDING: 1 LB. PER 1,000 SQ. FT. (UNBULLED SEED)	MAY - JUNE
TUFOTE (BERMUDA)	SOD PLUGS ON 1-FT. CENTER SPACES 7 BU./1,000 SQ. FT. BROADCAST	MARCH - JULY
U-3		MARCH - JULY
ZOTZIA MIXER & DEKALD		MARCH - JULY

V. MULCHING

- A. MULCH - MULCH WITH ANY OF THE MATERIALS LISTED BELOW AND AT THE RATE INDICATED. SPREADING SHOULD BE UNIFORM AND AT A RATE THAT PERMITS NO MORE THAN 25 - 30% OF THE GROUND SHOWING THROUGH THE MULCH.
- B. MULCHING IS REQUIRED ON ALL SOILS EXCEEDING 25% SLOPE. STRAW - 1 TO 2 TONS DEPENDING ON SEASON AND METHOD OF APPLICATION. WOOD FIBER MATERIALS - 1,000 POUNDS PER ACRE.

VI. MAINTENANCE

- A. IRRIGATION - IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS AND PLANTINGS WITH ADEQUATE WATER FOR PLANT GROWTH UNTIL THEY ARE FIRMLY ESTABLISHED.
- B. REPAIR - INSPECT ALL AREAS FOR PLANTING FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDING WITH THE PLANTING SEASON IF POSSIBLE.
- C. LINE & FERTILIZER - SHALL BE APPLIED UNDER A REGULAR PROGRAM THAT IS BASED ON SOIL FERTILITY TESTS AND ON THE USE AND GENERAL APPEARANCE OF THE VEGETATIVE COVER DURING SUBSEQUENT GROWING SEASONS.

NOTES:

1. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/4" OPENINGS SHALL BE PLACED OVER THE CURB INLET OPENING SO THAT AT LEAST 12" OF GREE EXTENDS ACROSS THE INLET COVER AND AT LEAST 12" OF WIRE EXTENDS ACROSS THE CONCRETE GUTTER FROM THE INLET OPENING.
2. VENT NO. 1 COARSE AGGREGATE SHALL BE FILLED AGAINST THE WIRE SO AS TO ANCHOR IT INTO POSITION AND COVER OPENING COMPLETELY.
3. PERIODIC CLEANING AND REPLACEMENT OF FILTER MATERIALS IS REQUIRED TO INSURE ADEQUATE FUNCTION OF STONE FILTER.

**GRAVEL CURB INLET
SEDIMENT FILTER**

THE ABOVE NOTES APPLY TO AREAS WITHOUT THE BENEFIT OF A SOIL TEST. WHERE SOIL TEST IS AVAILABLE, SPECIFIC RECOMMENDATIONS FOR LINE AND FERTILIZER WILL BE PROVIDED BY THE VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY EXTENSION SERVICE FOR EACH SITE.

II. SEEDING (DATES AND RATES PER ACRE)

- A. AUGUST 1 TO DECEMBER 15

RVE - 2BU OR GREAT - 2 BU. OR RYF GRASS - 20 TO 30 LBS
FEBRUARY TO MAY 1
SPRING OATS - 3 BU. OR SPRING OATS - (14 BU. OATS PLUS KOREAN LESPEDEZA) 20 LB. LESPEDEZA (HULLED AND INOCULATED).
MAY 1 TO AUGUST 1
SUDANGRASS - 30 TO 40 LBS. OR HILLET - 30 TO 40 LBS. OR SORGHUM - 30 TO 40 LBS.
- BROADCAST OR DRILL SEED UNIFORMLY AND COVER TO A DEPTH OF 1/4" TO APPROXIMATELY 2" (DEPENDING ON THE SEED MIXTURE) EXCEPT WHERE A GRAM GRASS IS USED. SEED SHOULD BE COVERED AND THE SEEDBED FIRMED BY THE USE OF A CORRUGATED AGRICULTURAL CULTIPACKER. SEEDING IMPLEMENTS SHOULD BE USED AT RIGHT ANGLES TO THE GENERAL SLOPE TO MINIMIZE EROSION.

III. MULCHING

- A. MULCH - IMMEDIATELY AFTER COMPLETION OF SEEDING OPERATIONS UNIFORMLY MULCH ALL SEEDING AREAS WITH SMALL GRAIN STRAW AT THE RATE OF 1 TONS PER ACRE.
- B. MULCHING IS REQUIRED ON ALL SOILS EXCEEDING 25% SLOPE.

PERMANENT SEEDING

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- II. LINE AND FERTILIZER

A. LINE - APPLY GROUND LIMESTONE OR EQUIVALENT AT THE RATE OF 2 TONS PER ACRE.	FEB - MARCH
B. FERTILIZER - 1,000 POUNDS PER ACRE OF 10-20-10 FERTILIZER OR EQUIVALENT.	FEB - MARCH
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SEED ONE OF THE FOLLOWING MIXTURES AT THE SPECIFIED RATES PER ACRE FOR AREAS WITHOUT THE REQUIREMENTS:	FEB - MARCH
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CHRISTOPHER FARMS
EROSION & SEDIMENTATION CONTROL DETAILS

COMMONWEALTH OF VIRGINIA
GARY A. HASTE
No. 13758
PROFESSIONAL ENGINEER

Designed: T.A.
Drawn: T.A.
Checked: C.B.W.
Scale: N/A
Date: 11/12/86
File No.: U-1-524
Project No.: 861268
Sheet No.:

31
of 31 Sheets