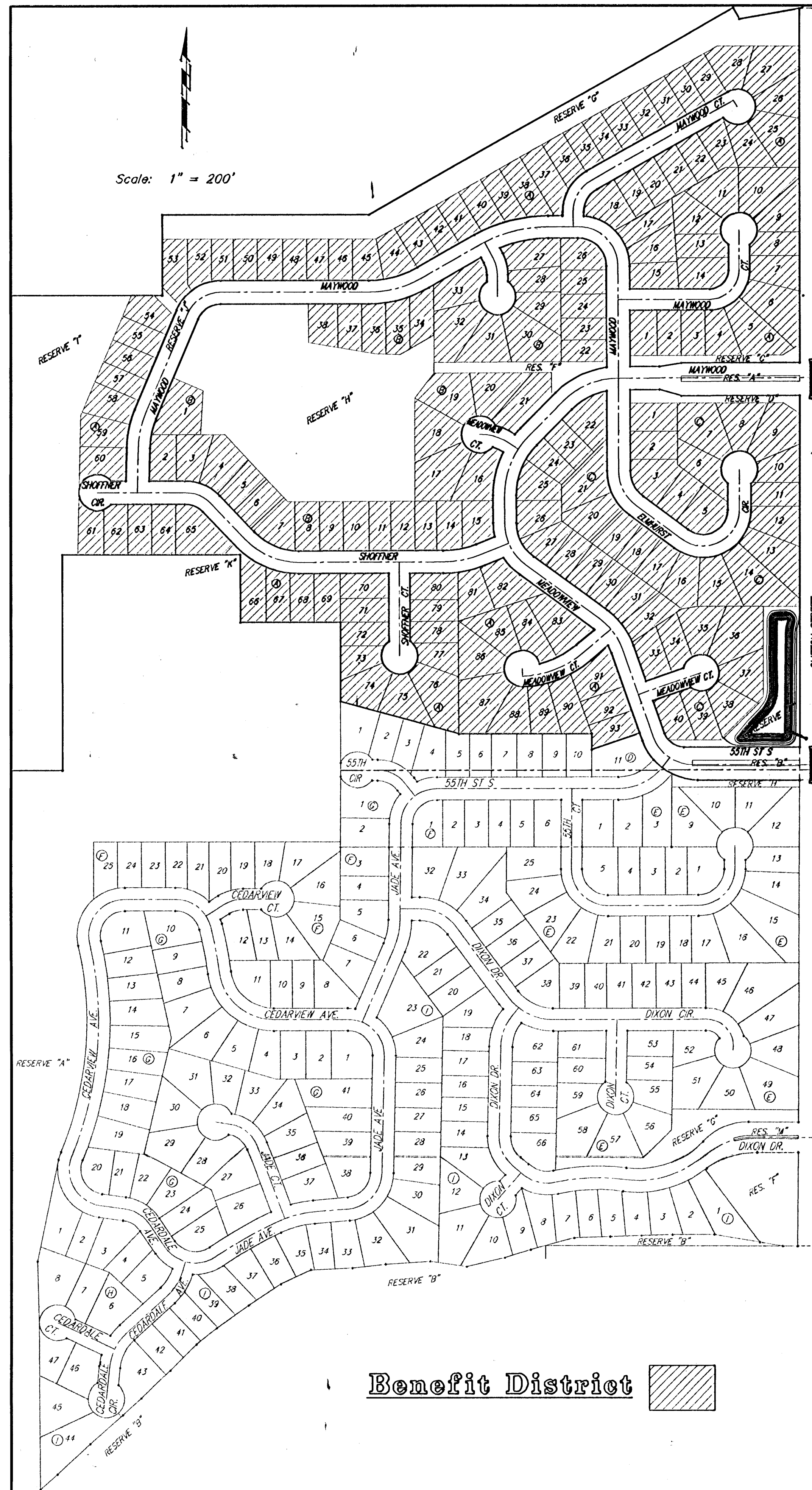




GENERAL NOTES:

- Contractor will be required to provide notice to utility companies a minimum of forty-eight (48) hours prior to any excavation, as follows:

Kansas One-Call 687-2470

The Contractor must notify the following in case of an emergency:

Cox Communications 262-4270
 Kansas Gas Service 1-888-482-4950
 Westar Energy 383-8650
 Aquila Energy 1-800-303-0357
 AT&T 268-2245
 City of Wichita Water Dept. 268-4583
 City of Wichita Sewer Maint. 268-4024
 City of Wichita Storm Sewer Maint. 268-4090
 City of Wichita Traffic Maint. 268-4034
 Conoco Phillips Pipeline Co. 1-877-267-2290
 Southern Star Pipeline Co. 529-6600
 Kinder-Morgan Pipeline Co. 1-888-844-5658

- Utility service lines, poles, valve boxes, meters, and etcetera are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

- Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations, in the opinion of the Engineer, that will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps. of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.

STORM WATER DRAIN #315

MEADOWLAKE BEACH ADDITION

to serve

CITY OF WICHITA, KANSAS

James L. Armour, P.E. City Engineer

Project Number

468-84302

O.C.A. Number

751444

Benchmark

BM #1 - City of Wichita Benchmark Disc, SE Corner of Clifton and 55th Street South, Southwest corner of RCBC, on top of hubguard at the West end.
 ELEV. = 1263.29 NGVD29

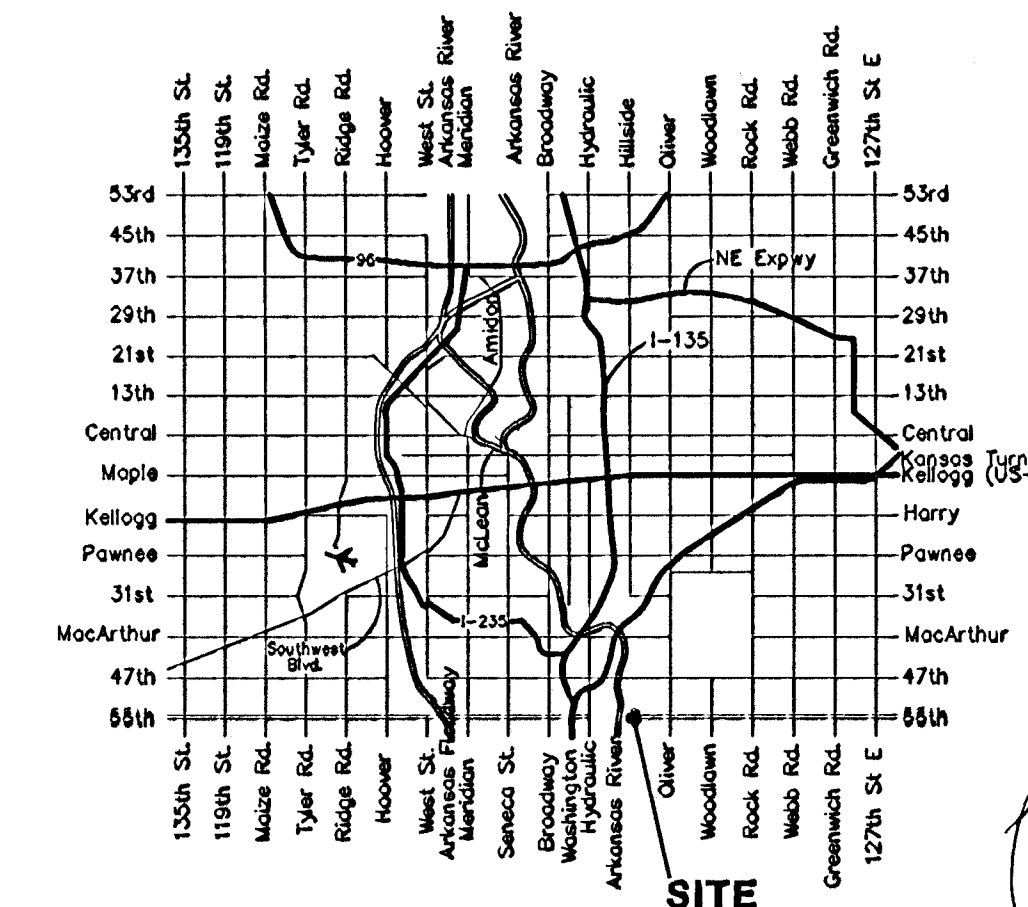
BM #2 - 1" Cut on wall footing located 29' North of the South end of wall, at the Southwest corner of Lot 7 Block A, Meadowlake Beach Addition, Sedgwick County, Kansas.
 ELEV. = 1266.82 NGVD29

BM #3 - 1" Cut Top of Curb, West side South end of Concrete street North west of Northeast corner of Meadowlake Beach Addition, Sedgwick County, Kansas.
 ELEV. = 1262.86 NGVD29

BM #4 - 1" Cut Top of Curb, East return on East side of Concrete street North of the Northwest Corner of Meadowlake Beach Addition, Sedgwick County, Kansas.
 ELEV. = 1262.95 NGVD29

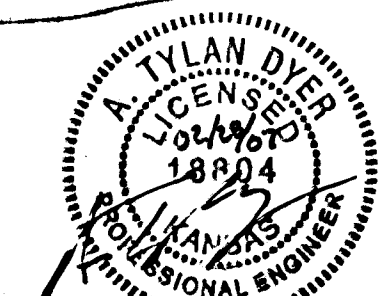
Sheet Index

Title Sheet	1
Mass Grading Plan	2-4
Mass Grading Typical Section	5
Pond Plan	6
Borrow Excavation Pond Plan	7-9
Pond Cross Sections	10-14
RC Headwall Detail	15
SS Manhole Adjustments	16
Soil Erosion BMP Details	17-20
Coordinate Sheet	21
Copy of Plat	22



Vicinity Map

99 adjustments archived.
 JOL 12/31/07



As Built- KK 10/8/07

Final Plans
 02/28/07 ATD



Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316-262-7271 F 316-262-0144
 ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

BM #1 - City of Wichita
Benchmark Disc, SE Corner of
Clifton and 55th Street South,
Southwest corner of RCBG, on top
of hubguard at the West end.
ELEV. = 1263.29 NGVD29

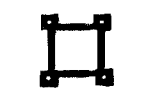
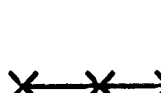
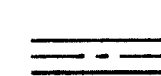
BM #2 - "C" Cut on wall footing
located 29' North of the South
end of wall, at the Southeast
corner of Lot 7 Block A,
Meadowlake Beach Addition,
Sedgwick County, Kansas.
ELEV. = 1266.82 NGVD29

BM #3 - "C" Cut Top of Curb,
West side South end of Concrete
street North west of Northeast
corner of Meadowlake Beach
Addition, Sedgwick County, Kansas.
ELEV. = 1262.86 NGVD29

BM #4 - "C" Cut Top of Curb,
East return on East side of
Concrete street North of the
Northwest Corner of Meadowlake
Beach Addition, Sedgwick County,
Kansas.
ELEV. = 1262.95 NGVD29

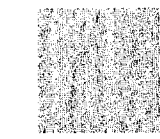
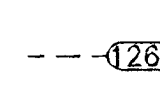
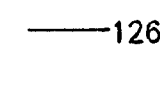
EROSION CONTROL PLAN LEGEND

(Installation Details Found in the SFP2 Plan)

-  - HEAVY STONE RIP-RAP
-  - DROP INLET PROTECTION
-  - CURB INLET PROTECTION
-  - STRAW BALE BARRIERS
-  - SILT FENCING
-  - EARTH DIKES
-  - TEMPORARY DITCH

NO SCALE

Scale: 1" = 60'

-  Area to be graded
-  Existing Grade
-  Proposed Grade
-  FEMA BFE Line

Existing Water Line
to be abandoned
prior to construction
contractor shall
verify.

Install 969 L.F. silt
fence per detail,
sheet 19.

Construct berm per
detail, sheet 4. Cost of
berm construction to be
incidental to lump sum
bid item "Mass Grading".

Construct hay bale
ditch check per
detail, sheet 18.

Construct ditch to
ensure positive drainage
of sump areas. See
detail, sheet 3.

Construct hay bale
ditch check per
detail, sheet 18.

Existing structure to be
removed by others prior
to construction.

Install 275 L.F. silt
fence per detail,
sheet 19.

Construct hay bale
ditch check per
detail, sheet 18.

Existing structure to be
removed by others prior
to construction.

FEMA BFE = 1263.0
State MBE 1255.0
MIN. ELEV. = 1263.0

Construct ditch to
ensure positive drainage
of sump areas. See
detail, sheet 3.

Maintain two construction
entrance onto existing
paved roadway per detail,
sheet 19. One each at the
Maywood entrance and the
55th Street entrance.

Construct 1,780 L.F.
cut-off trench per
detail, sheet 6.

Construct hay bale
ditch check per
detail, sheet 18.

Construct ditch to
ensure positive drainage
of sump areas. See
detail, sheet 3.



MEADOWLAKE BEACH ADDITION
MASS GRADING PLAN
WICHITA, KANSAS

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7771 F 316-262-0149

ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-302

DESIGN DRAWN

REVISIONS

APPROVED DATE 03-07

SCALE Noted SHEET

2 OF 22

MeadowlakeBeach/Mas2 06-10-E676

BM #1 - City of Wichita
Benchmark Disc, SE Corner of
Clifton and 53th Street South,
Southwest corner of 4020, on top
of hubguard at the West end.
ELEV. = 1263.29 NGVD29

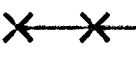
BM #2 - "G" Cut on wall footing
located 29' North of the South
end of wall, at the Southeast
corner of Lot 7 Block A,
Meadowlake Beach Addition,
Sedgwick County, Kansas.
ELEV. = 1266.82 NGVD29

BM #3 - "G" Cut Top of Curb,
West side South end of Concrete
street North west of Northeast
corner of Meadowlake Beach
Addition, Sedgwick County, Kansas.
ELEV. = 1262.86 NGVD29

BM #4 - "G" Cut Top of Curb,
East return on East side of
Concrete street North of the
Northwest Corner of Meadowlake
Beach Addition, Sedgwick County,
Kansas.
ELEV. = 1262.95 NGVD29

EROSION CONTROL PLAN LEGEND

(Installation Details Found in the SMP2 Plan)

-  - HEAVY STONE RIP-RAP
-  - DROP INLET PROTECTION
-  - CURB INLET PROTECTION
-  - STRAW BALE BARRIERS
-  - SILT FENCING
-  - EARTH DIKES
-  - TEMPORARY DITCH

NO SCALE

EARTH WORK TOTALS

	EXCAVATION	FILL
LOT GRADING	20,199	162,918
BERM RES. G	138	19,252
POND RES. E	7,024	208
TOTAL	27,361	182,378

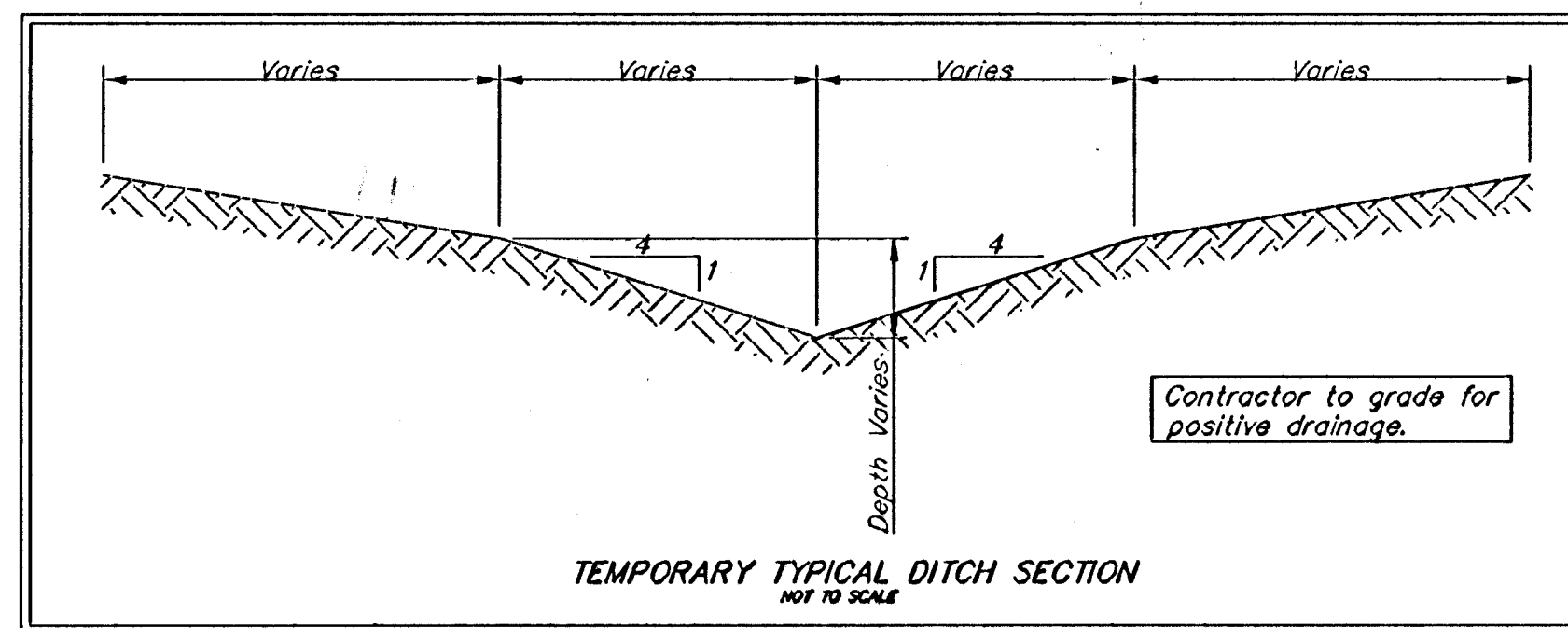
Earthwork quantities are for reference only. All cost associated with mass grading shall be incidental to lump sum bid item "Mass Grading".

- Contractor to strip top 3" of soil within Res. "E" and street R/W before mass grading and stockpile. Top soil stockpile to be redistributed over Reserve "E" above water surface.
- Compaction of 95% shall be obtained in all street R/Ws, 90% in all other areas.
- Any damage done to existing utilities by Contractor or subcontractor shall be repaired at no additional cost to the project.
- Only trees within the street R/W or Res. "E" may be removed if necessary for grading. Trees shall be trimmed by chainsaw if necessary to allow for construction equipment to place and compact fill around them. All other trees shall be protected from damage.
- All areas disturbed by construction (except within street R/W) shall be seeded as indicated on Pond Plan.
- Borrow excavation will be available east of Clifton Ave. as indicated on Borrow Excavation Plan.

1.1 x Fill - 0.9 x Excavation
1.1 x 182,378 - 0.9 x 27,361
Offsite Borrow = 175,991

- 10% Shrink and 10% Swell correction factors have been used as shown to estimate the amount of offsite borrow. Contractor shall be responsible to satisfy himself with these numbers during the bidding process and bid this project accordingly. Mass grading shall be all inclusive to fill, compact and grade site as shown on plan. No additional change orders or request for payment will be accepted.
- Lots marked with  symbol need extra deep foundations and require compaction testing (95% std. density) for every 12" lift of fill. Also, additional sites marked with  symbol will require the same testing. Compaction testing to be incidental to "Site Clearing & Restoration".

- All areas north of FEMA BFE line (except existing pond) shall be filled to a minimum elevation of 1263.5. All areas south of FEMA BFE line (except proposed pond) shall be filled to a minimum elevation of 1263.0. This shall be taken into account at locations where the bottom of a street cross section would have fallen below the minimum elevation.



Scale: 1" = 60'

Construct ditch to ensure positive drainage of sump areas. See detail, sheet 3.

Construct hay bale barrier per detail, sheet 18.

Install 634 L.F. silt fence per detail, sheet 19.

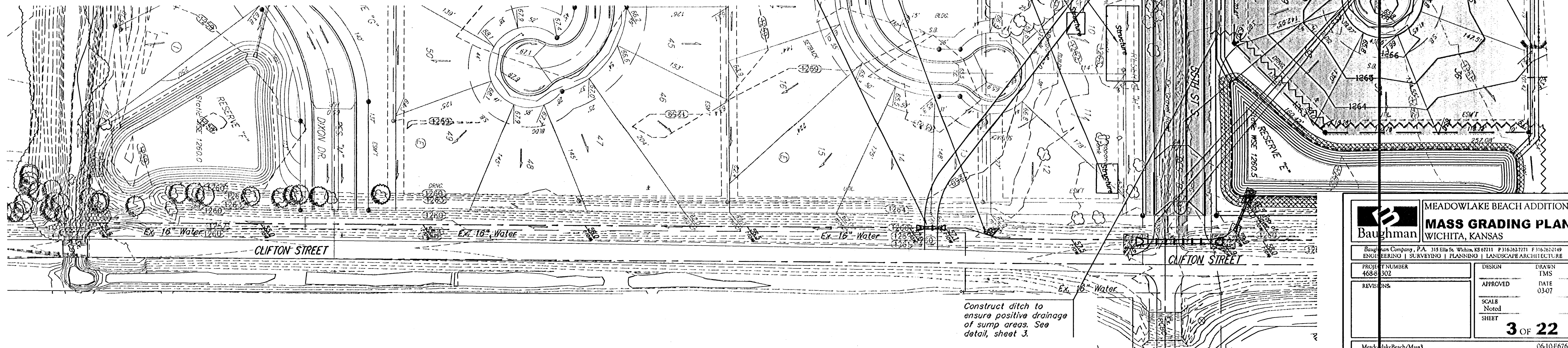
--- Existing Grade
--- Proposed Grade
 Area to be graded

Taper flowline of ditch from 17' to 30' east of property line. Install 13.0 S.Y. light stone rip-rap to protect manhole from erosion.

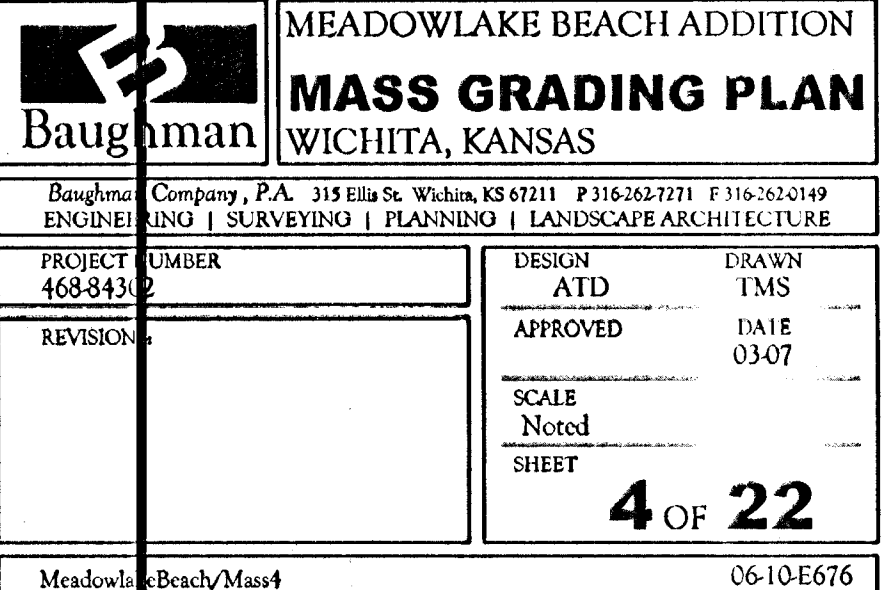
Existing structures, propane tanks, etc. to be removed by others prior to construction.

Install 35.0 L.F. 36" CMP w/ end sections. Construct 16" wide AS-1 gravel drive from Clifton to the existing gravel road. Access shall be maintained at all times for homeowners throughout construction via this entrance. Incidental to "Site Clearing & Restoration"

Construct ditch to ensure positive drainage of sump areas. See detail, sheet 3.

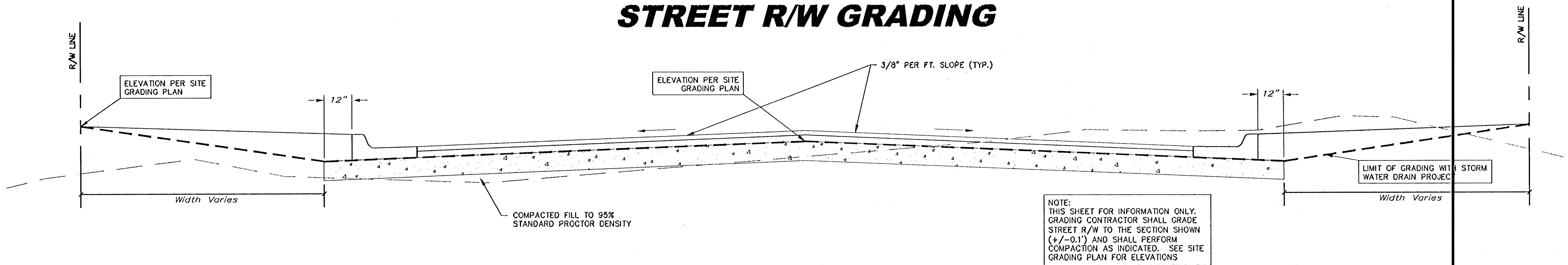


 MEADOWLAKE BEACH ADDITION MASS GRADING PLAN WICHITA, KANSAS	
Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316.262.7771 F 316.262.7749 ENGINEERING SURVEYING PLANNING LANDSCAPE ARCHITECTURE	
PROJECT NUMBER 468-8302	DESIGN TMS
REVISIONS	APPROVED DATE 03/07
	SCALE None
	SHEET 3 OF 22
MeadowlakeBeach/Mass3	06-10-E676



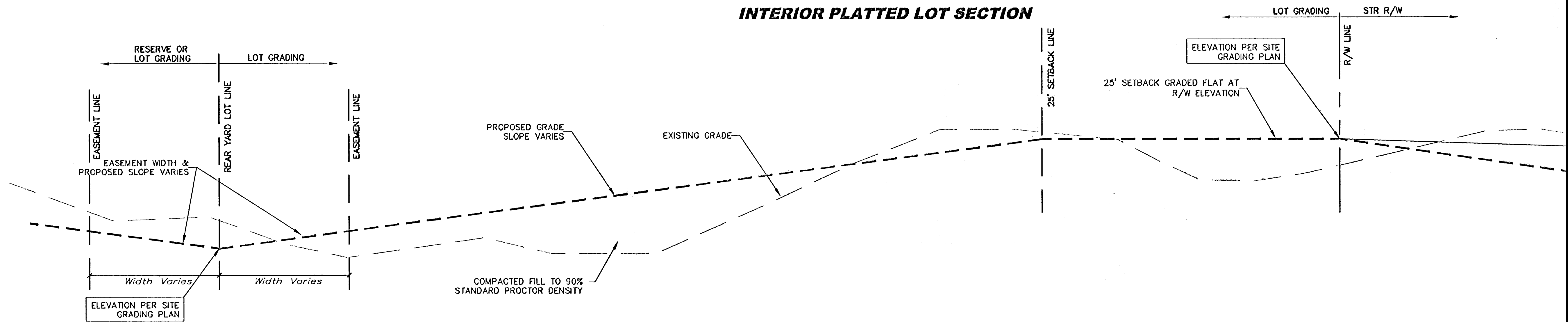
TYPICAL MASS GRADING DETAIL

STREET R/W GRADING

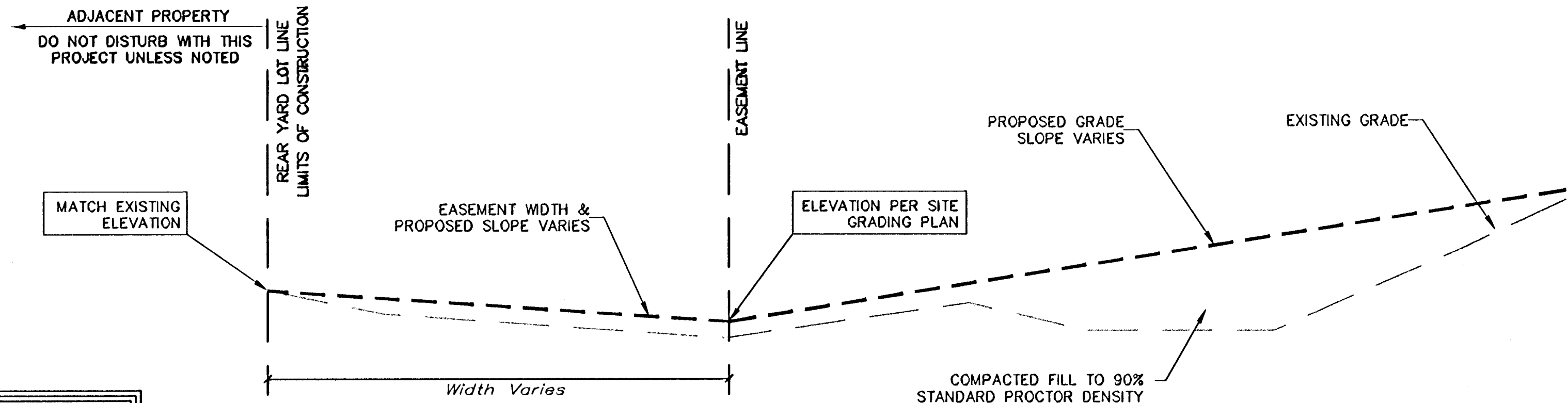


LOT FILL GRADING

INTERIOR PLATTED LOT SECTION



EXTERIOR PLATTED LOT SECTION

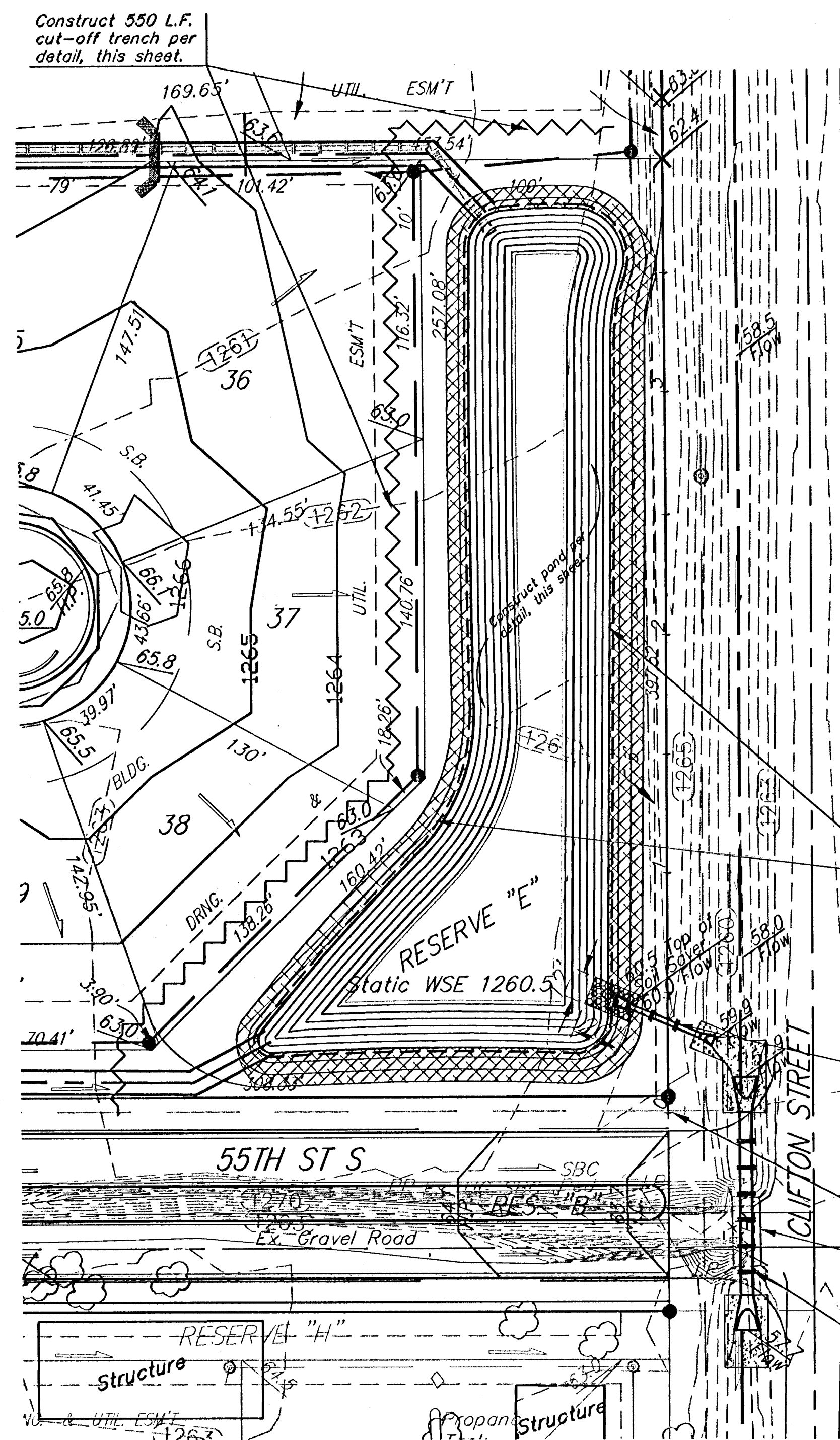
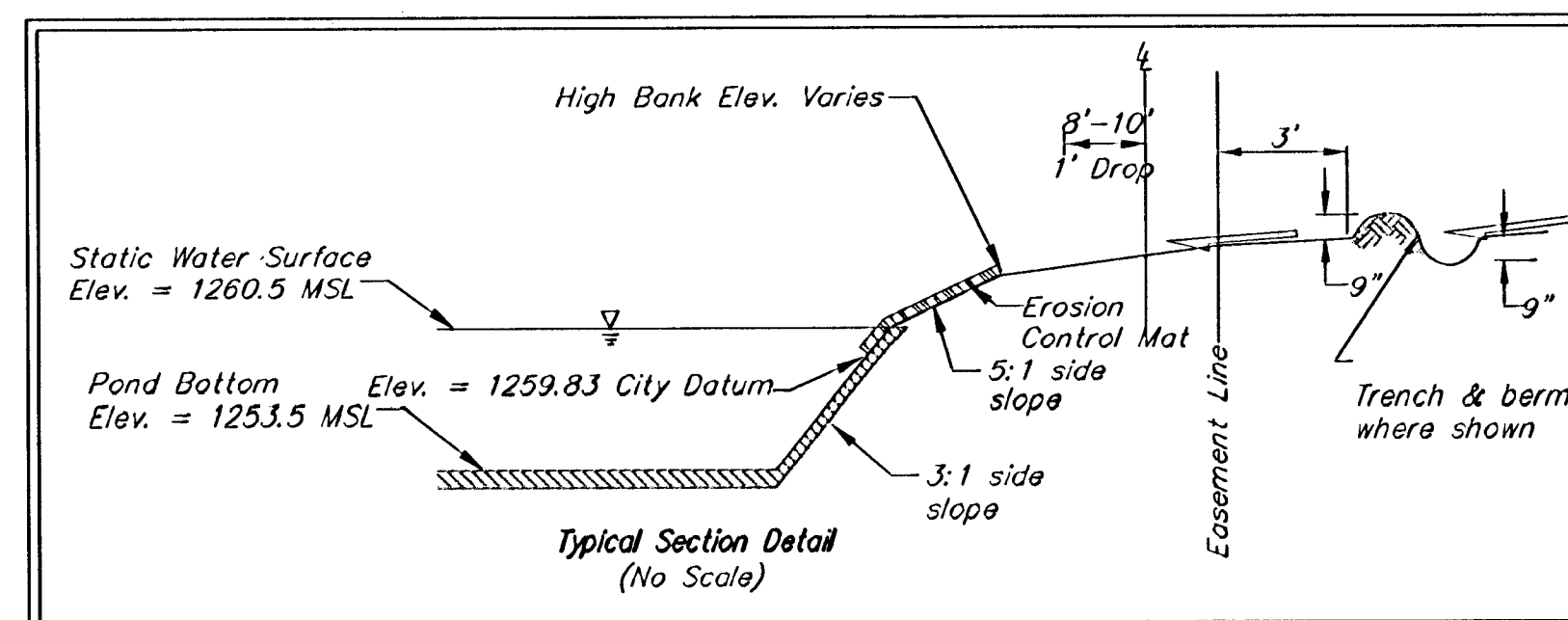
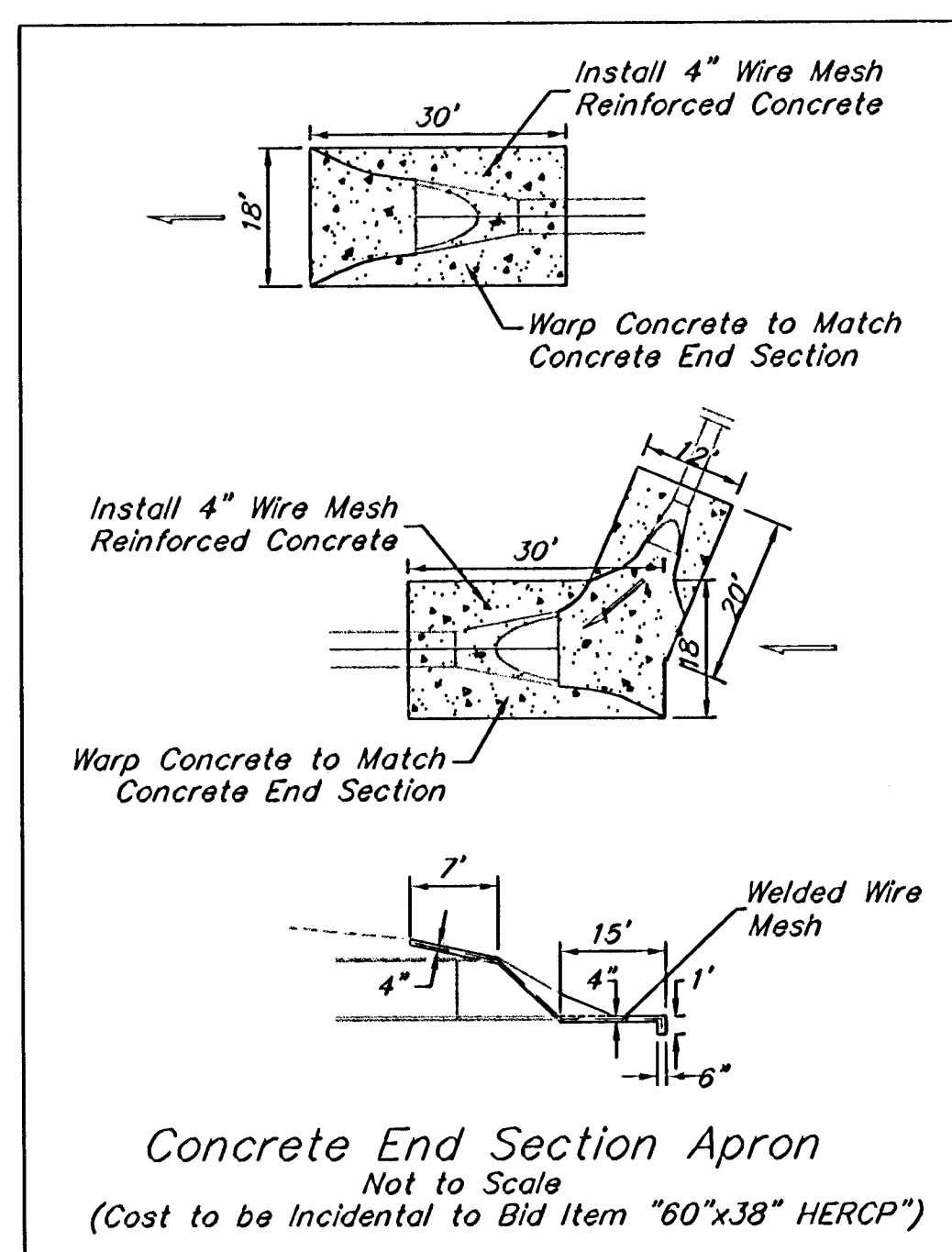


NOTE:
GRADING CONTRACTOR SHALL GRADE
LOTS TO THE SECTION SHOWN
(+/-0.2') AND SHALL PERFORM
COMPACTION AS INDICATED. SEE SITE
GRADING PLAN FOR ELEVATIONS

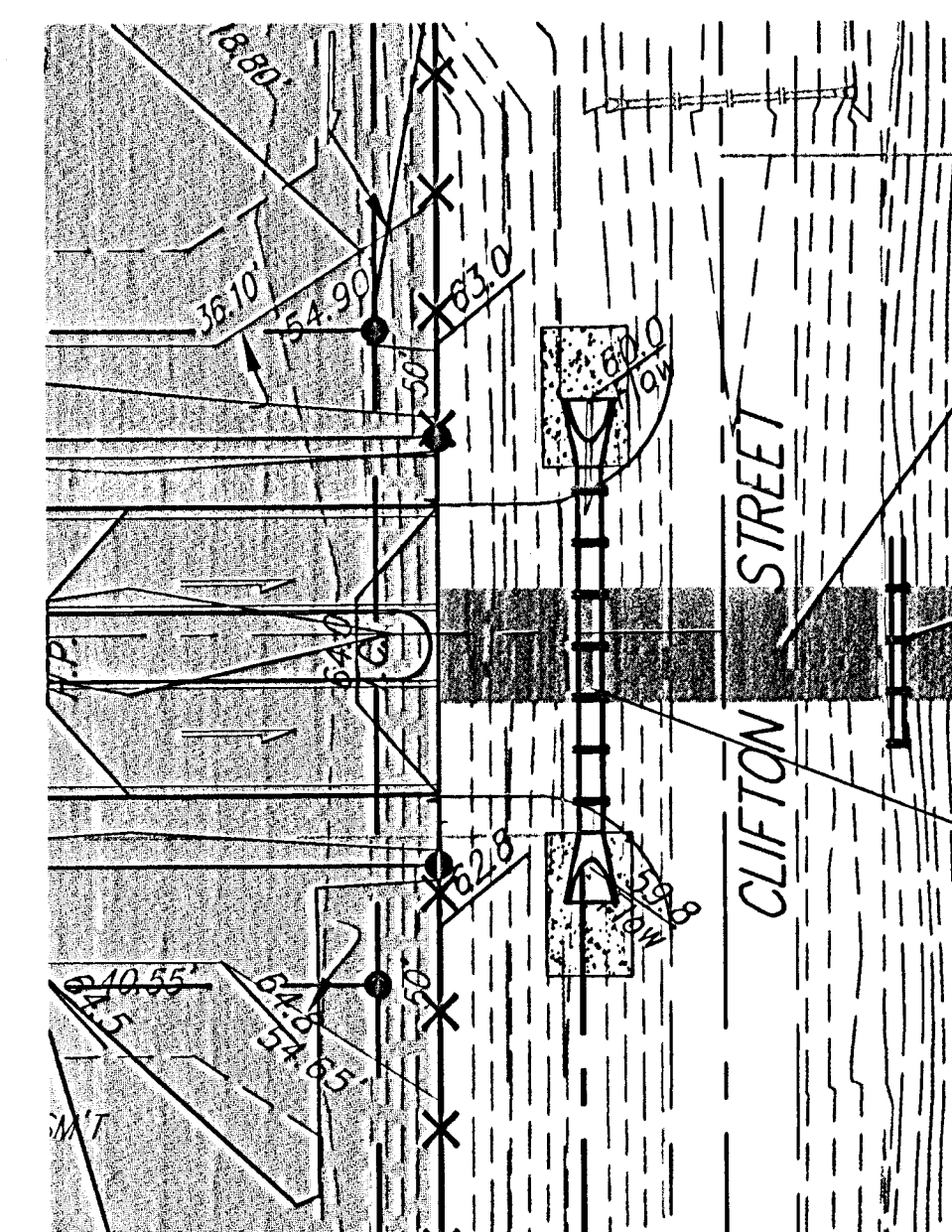
When trees are present along rear lot
line, grade shall match at trunk line and
trees shall not be disturbed. Any
trimming of trees shall be approved by
the engineer and owner.

Baughman		MASS GRADING TYPICAL SECTION	
Baughman Company, P.A. 315 Ella St. Winton, KS 67111 F3162627171 F3162620149			
ENGINEERING		SURVEYING PLANNING LANDSCAPE ARCHITECTURE	
PROJECT NUMBER 469-843-2	DESIGN C.O.W.	DRAWN STAFF	
REVISIONS	APPROVED	DATE 03/07	
SCALE NONE		SHEET 5 OF 22	
Meadow Lake Beach\MassGradingSection		0610E676	

BM #4 - "□" Cut Top of Curb,
East return on East side of
Concrete street North of the
Northwest Corner of Meadowlake
Beach Addition, Sedgwick County,
Kansas.
ELEV. = 1262.95 NGVD29



1. Pond bottom and slideslopes below static pool elevation shall be over-excavated 1' and a 1' clay liner shall be compacted to 95% std. density. The plasticity index (P.I.) shall be at least 30. The compaction and P.I. shall be verified during construction. P.I. determination and compaction testing shall be arranged by the contractor at the request of the inspector. Cost shall be incidental to "Site Clearing & Restoration". Cost of over-excavation, installation and Clay Liner shall be incidental to bid item, "Excavation."
2. All of Reserve "E" above the static water surface shall be seeded and mulched as follows: (Permanent Seeding)
SEED --- Kansas Premium Fescue Blend; 8#/1000 Sq. Ft.
FERTILIZER --- 12-24-12 Ratio at 350 Lbs./Ac.
MULCH --- 2 Tons Prairie Hay / Acre
- All other disturbed areas not in street R/W are to be seeded as follows: (Temporary seeding)
SEED --- Rye grass (PLS)--5#/1000 Sq. Ft. and
Kansas Premium Fescue Blend; 5#/1000 Sq. Ft.
4. Install Erosion Control Mat (Curlux II or approved equal) from 2' below the water surface to top bank.
5. Contractor to strip top 3" of soil within Res. "E" and street R/W before mass grading and stockpile. Top soil stockpile to be redistributed over Reserves "E" above water elevation prior to seeding.
6. Compaction of 95% shall be obtained in all street R/W's, 90% in all other areas unless otherwise noted on plans.



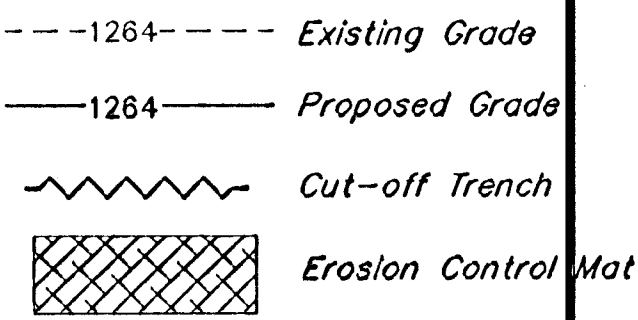
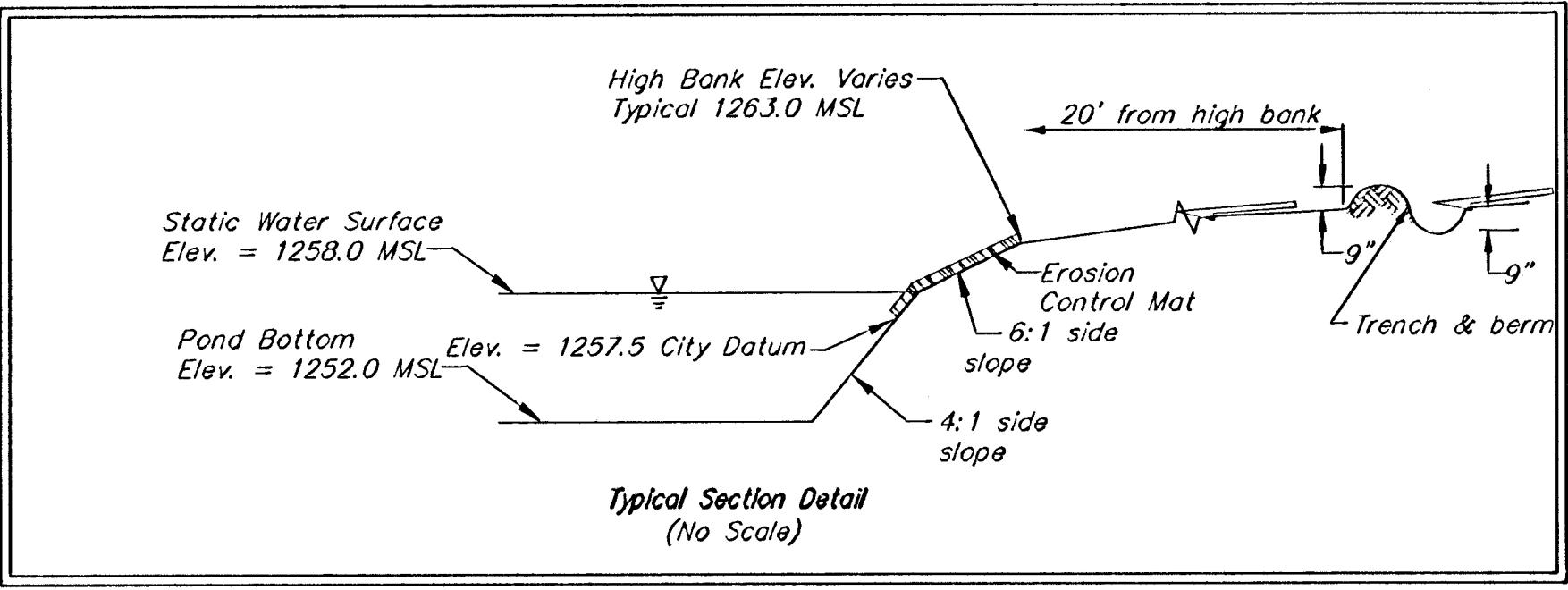
Install 107.0 L.F. 60"x38"
HERCOP with end sections
and concrete apron both
sides, per detail this
sheet.

--- (1265) --- Existing Grade
 --- 1265 --- Proposed Grade
 ~~~~~ Cut-off Trench  
 [Hatched Box] Erosion Control Mat

| <u>EARTH WORK TOTALS</u> |            |         |
|--------------------------|------------|---------|
|                          | EXCAVATION | FILL    |
| LOT GRADING              | 18,633     | 164,764 |
| BERM RES. G              | 138        | 19,252  |
| POND RES. F              | 7,024      | 208     |
| TOTAL                    | 25,795     | 184,224 |

*Earthwork quantities do not include correction factors and are for reference only. All cost associated with mass grading shall be included in the bid item "Mass Grading".*

|                                                                                       |                                                                                                                                                 |                         |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|  | MEADOWLAKE BEACH ADDITION<br><b>POND PLANS</b><br>WICHITA, KANSAS                                                                               |                         |
|                                                                                       | Baughman<br>Engineering, P.A. 315 Elm St. Wichita, KS 67201 F 315-262-2771 F 315-262-2149<br>NO 1 SURVEYING / PLANNING / LANDSCAPE ARCHITECTURE |                         |
| PROJECT NO.<br>468-84302                                                              | DRAWING NUMBER<br>0307                                                                                                                          | DESIGN AID<br>TMS       |
| REVISIONS                                                                             | APPROVED<br>DATE<br>03/07                                                                                                                       | SCALE<br>Noted<br>SHEET |
| 6 OF 22                                                                               |                                                                                                                                                 | 06-10-1976              |



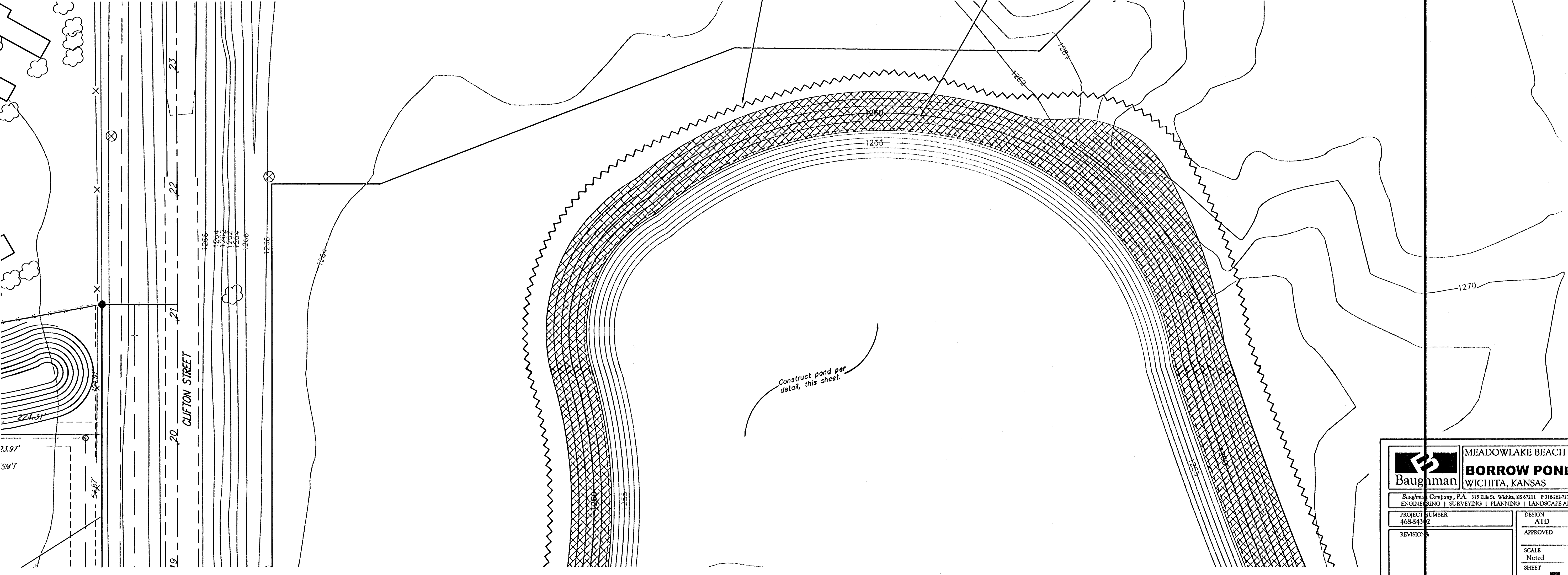
Scale: 1" = 40'

- NOTES:
1. Pond is groundwater controlled and will not have a clay liner.
  2. Install Erosion Control Mat Curlex II or approved equal) from 2' below the water surface to top bank.
  3. Entire Borrow Pond supplies approximately 425,583 C.Y. of excavation. Contractor shall excavate what is needed to complete grading at Meadowlake Beach Addition, beginning at the north end and working south. See sheet 3 for earthwork quantities.

Construct 2,940 L.F. cut-off trench per detail, this sheet.

Install 10,967 S.Y. Curlex II, or approved equal. Erosion control mat shall be installed and anchored per manufacturer's specifications. Note: This quantity does not include excess material necessary for overlap and anchoring.

Construct pond per detail, this sheet.



**Baughman**

MEADOWLAKE BEACH ADDITION

**BORROW POND PLAN**

WICHITA, KANSAS

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149

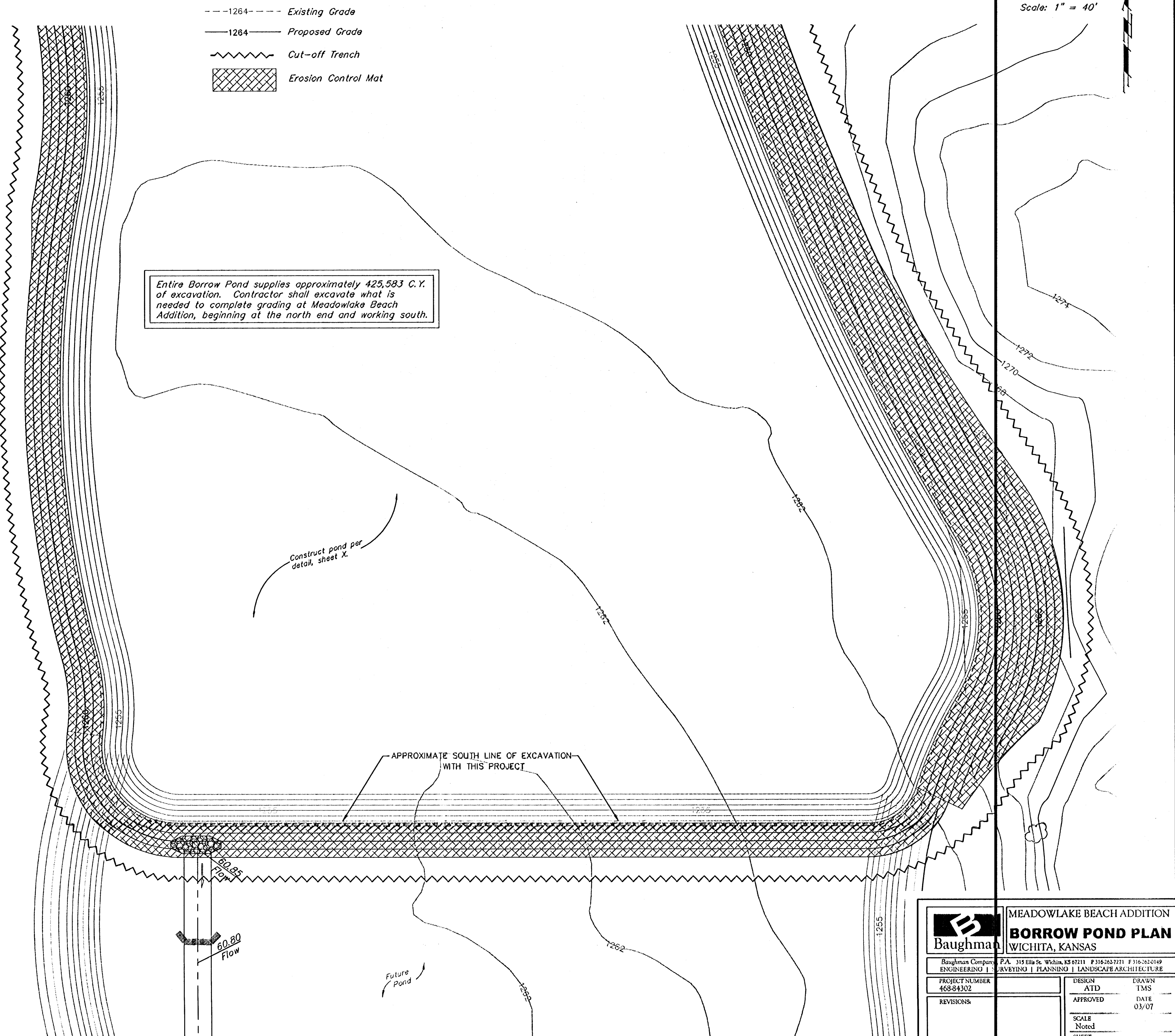
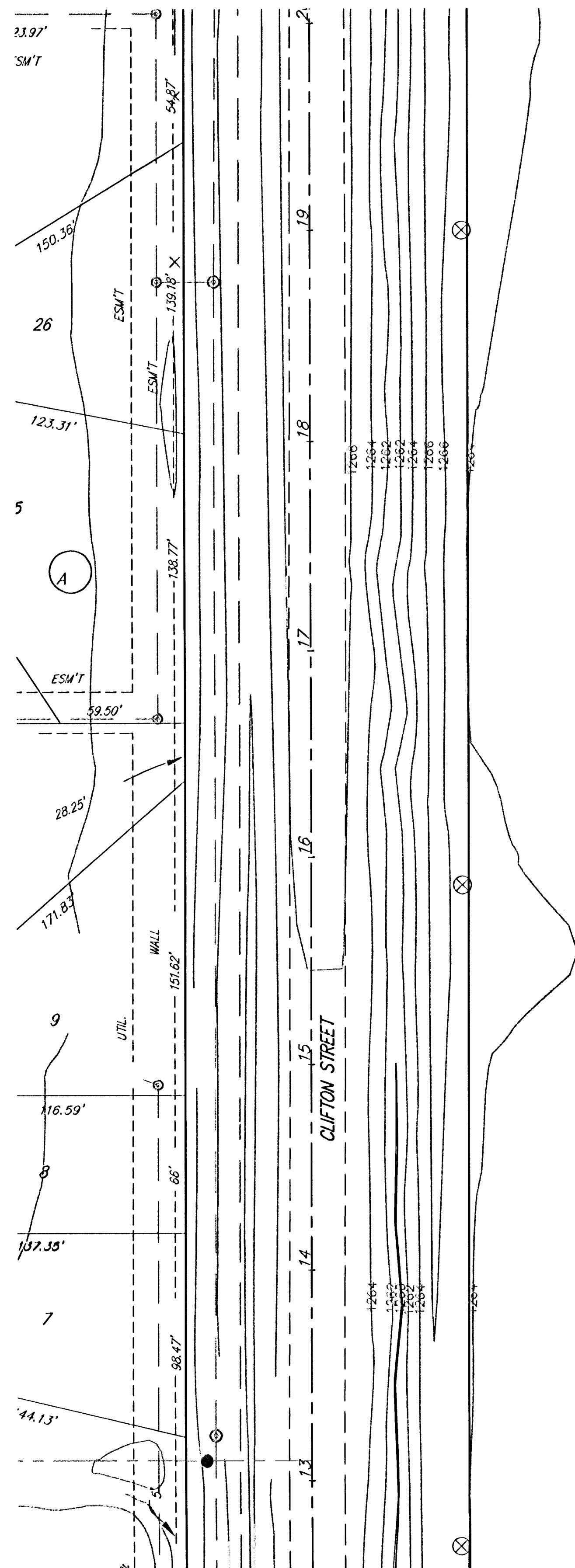
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

|                |          |       |
|----------------|----------|-------|
| PROJECT NUMBER | DESIGN   | DRAWN |
| 468-843-2      | ATD      | TMS   |
| REVISIONS      | APPROVED | DATE  |
|                |          | 03/07 |
|                | SCALE    |       |
|                | Noted    |       |
|                | SHEET    |       |

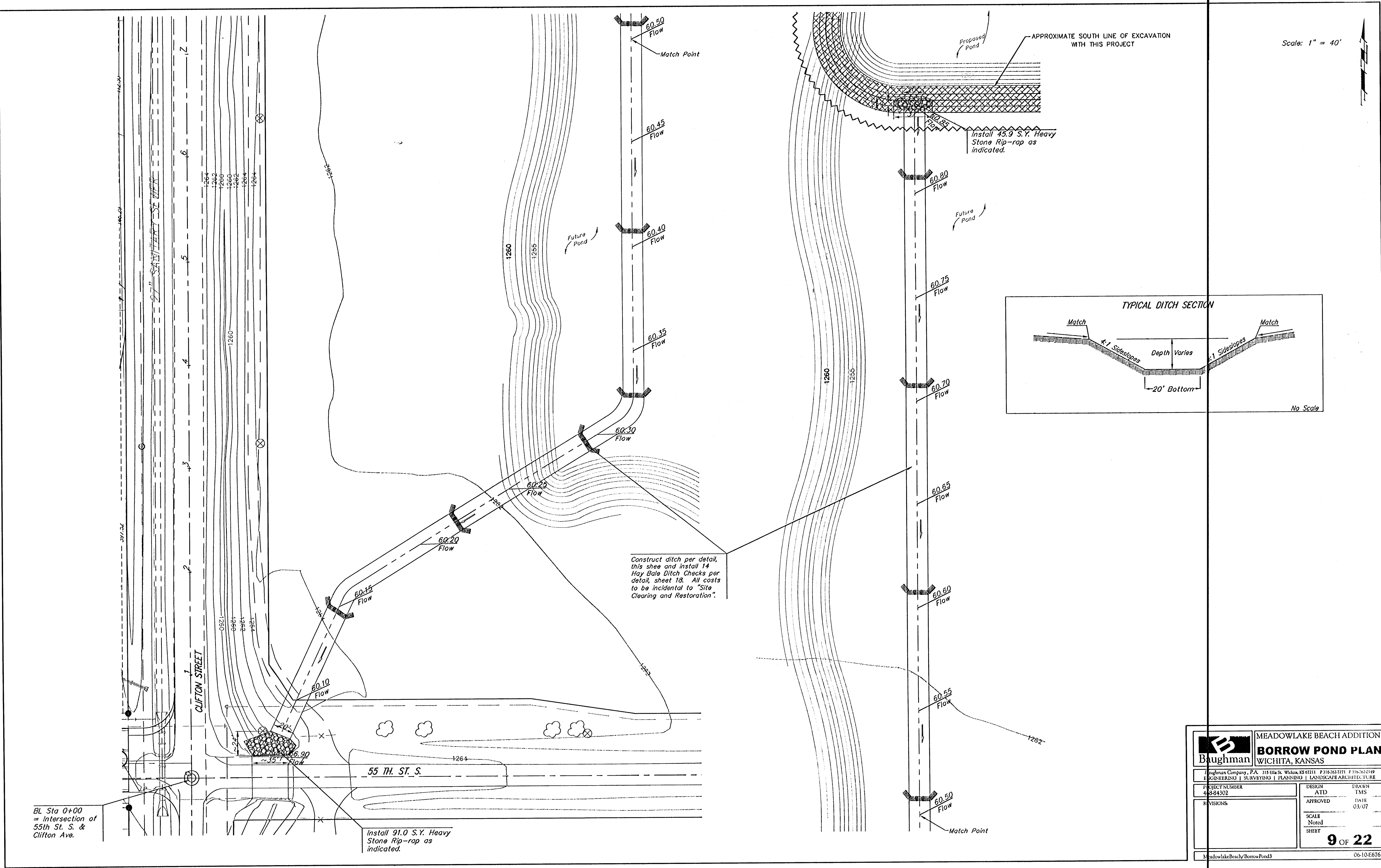
7 OF 22

Meadowlake Beach/Borrow Pond1

06-10-E676



|                                             |                |                                                                                                                     |                                |
|---------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------|
|                                             |                | <b>MEADOWLAKE BEACH ADDITION</b><br><b>BORROW POND PLAN</b><br><b>WICHITA, KANSAS</b>                               |                                |
| Baughman Company<br>ENGINEERING & SURVEYING |                | P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149<br>SURVEYING   PLANNING   LANDSCAPE ARCHITECTURE |                                |
| PROJECT NUMBER<br>468-84302                 | DESIGN<br>ATD  | DRAWN<br>TMS                                                                                                        | DATE<br>03/07                  |
| REVISIONS:                                  | SCALE<br>Noted | SHEET<br>8 OF 22                                                                                                    | MEADOWLAKE BEACH / BORROW POND |



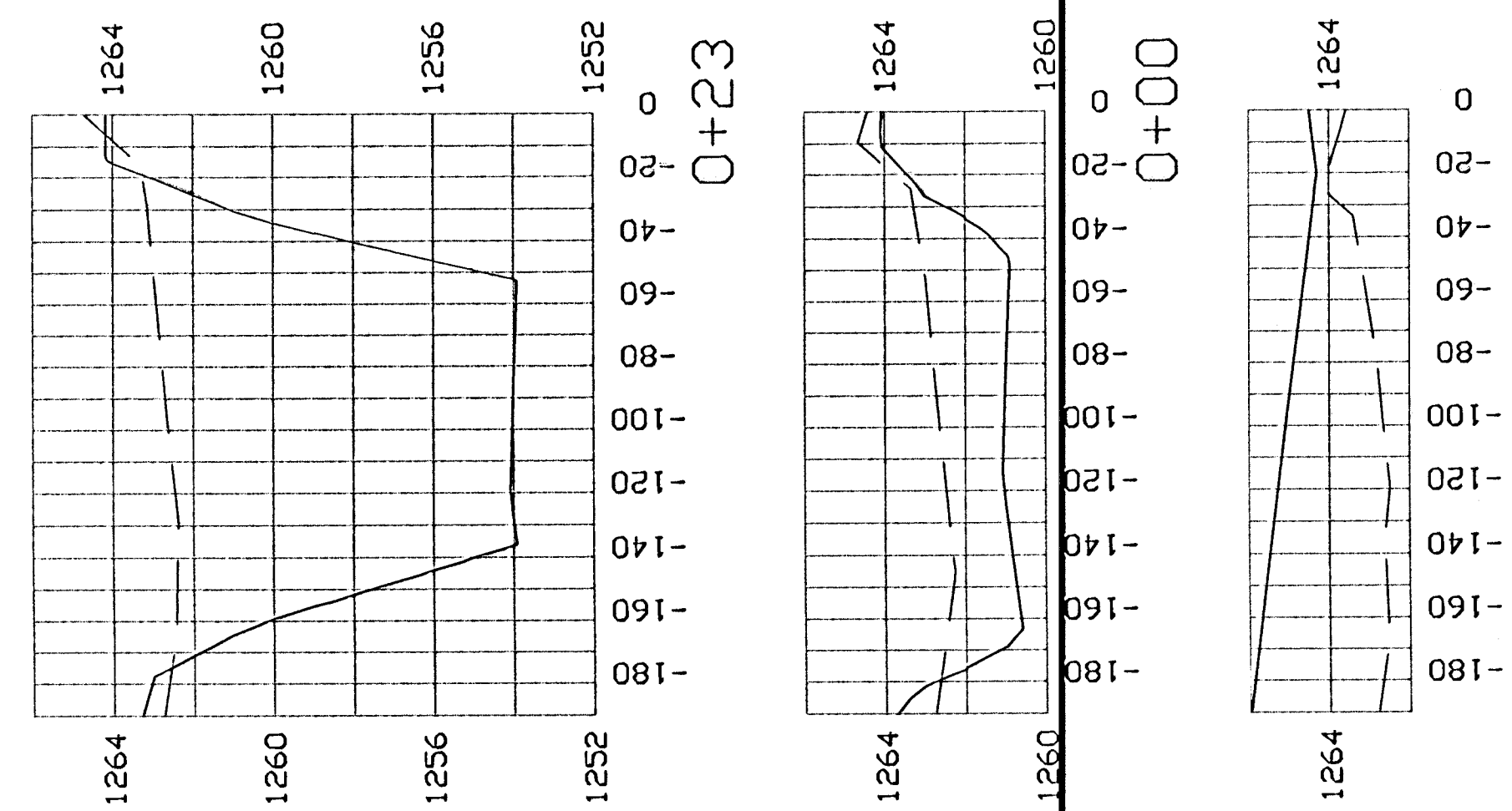
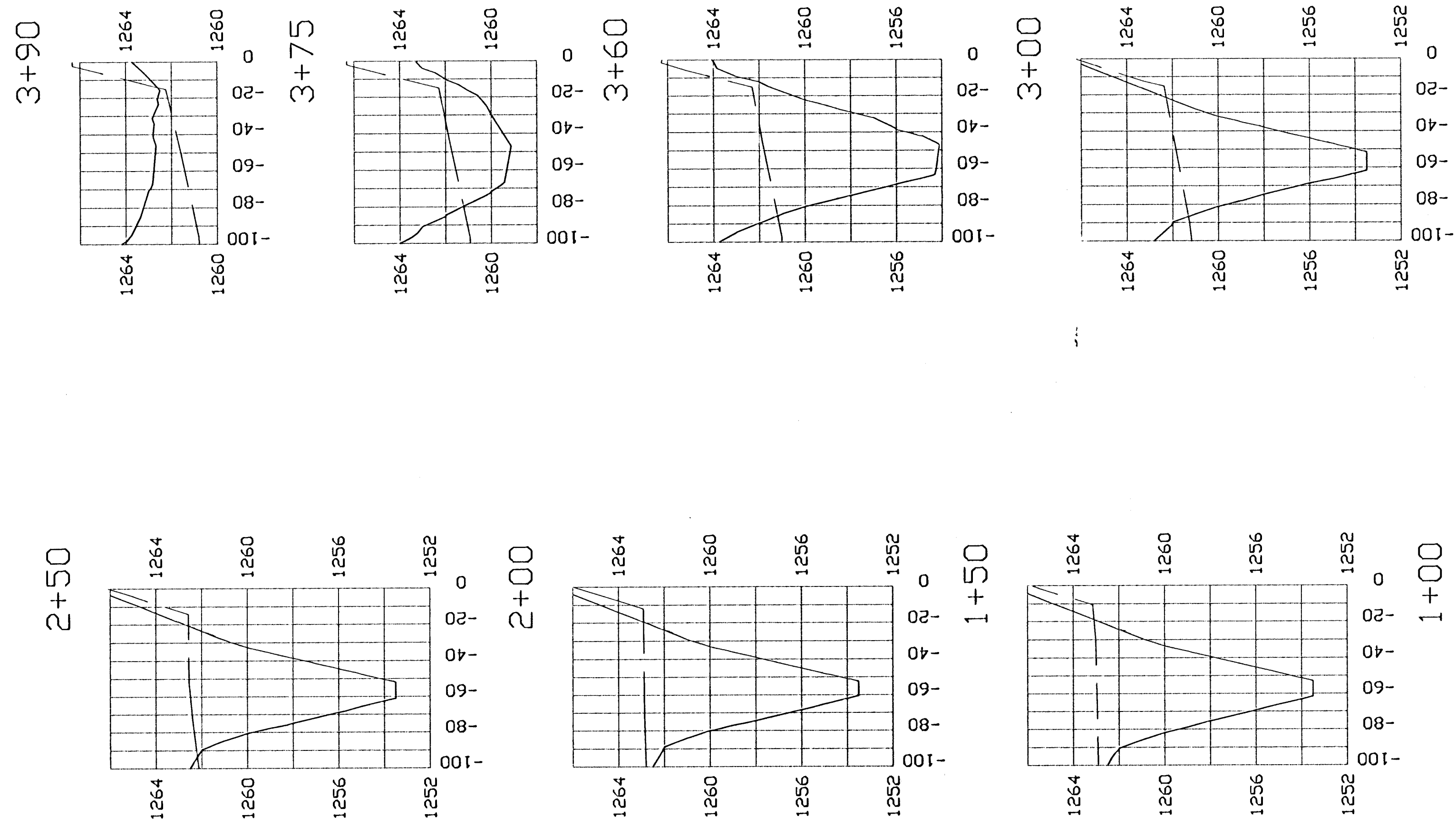
**Baughman**

MEADOWLAKE BEACH ADDITION  
**BORROW POND PLAN**  
WICHITA, KANSAS

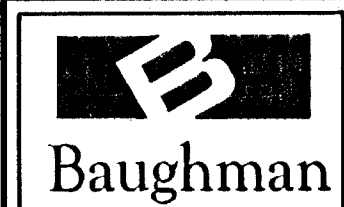
Engineering Company, P.A. 315 E. 11th St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149  
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

|                             |               |                  |
|-----------------------------|---------------|------------------|
| PROJECT NUMBER<br>4-8-84302 | DESIGN<br>ATD | DRAWN<br>TMS     |
| REVISIONS                   | APPROVED      | DATE<br>03/07    |
| SCALE<br>Noted              |               | SHEET<br>9 OF 22 |

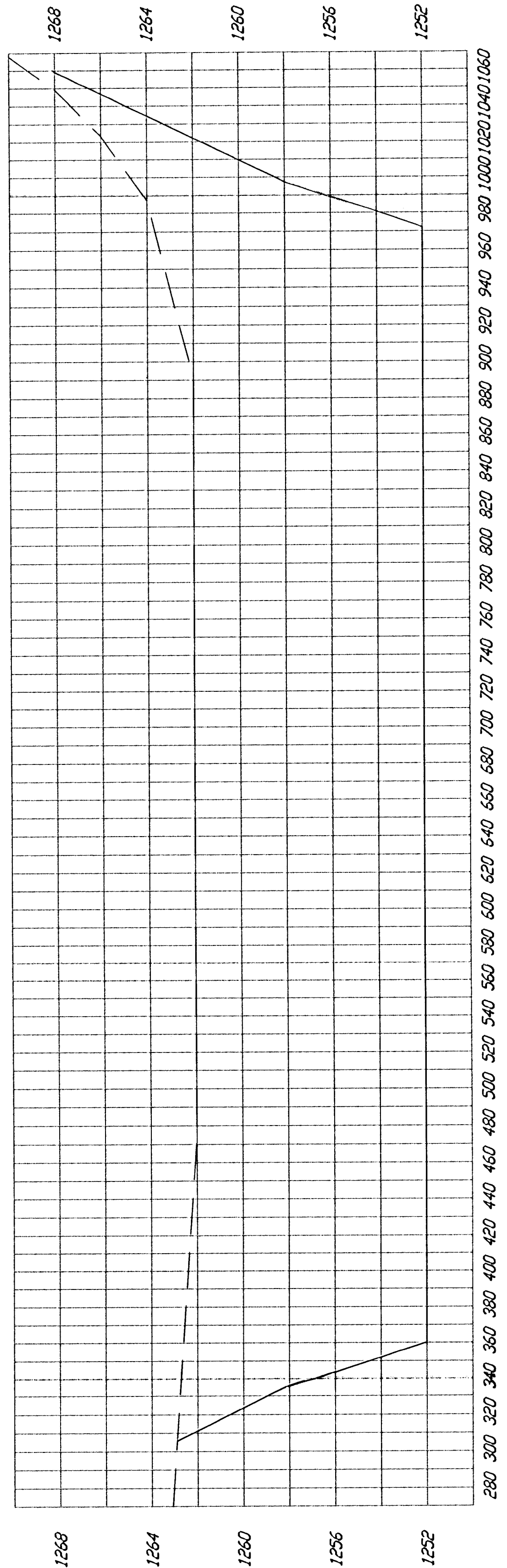
Meadowlake Beach/Borrow Pond3 06-10-E676



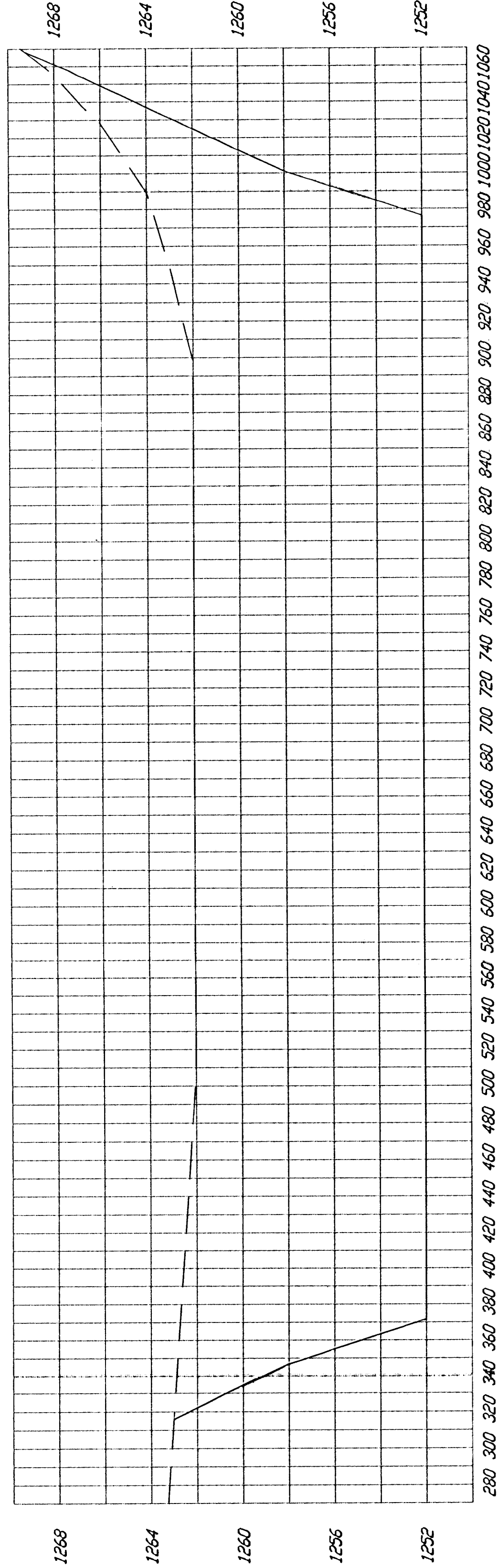
Pond Res. "E"



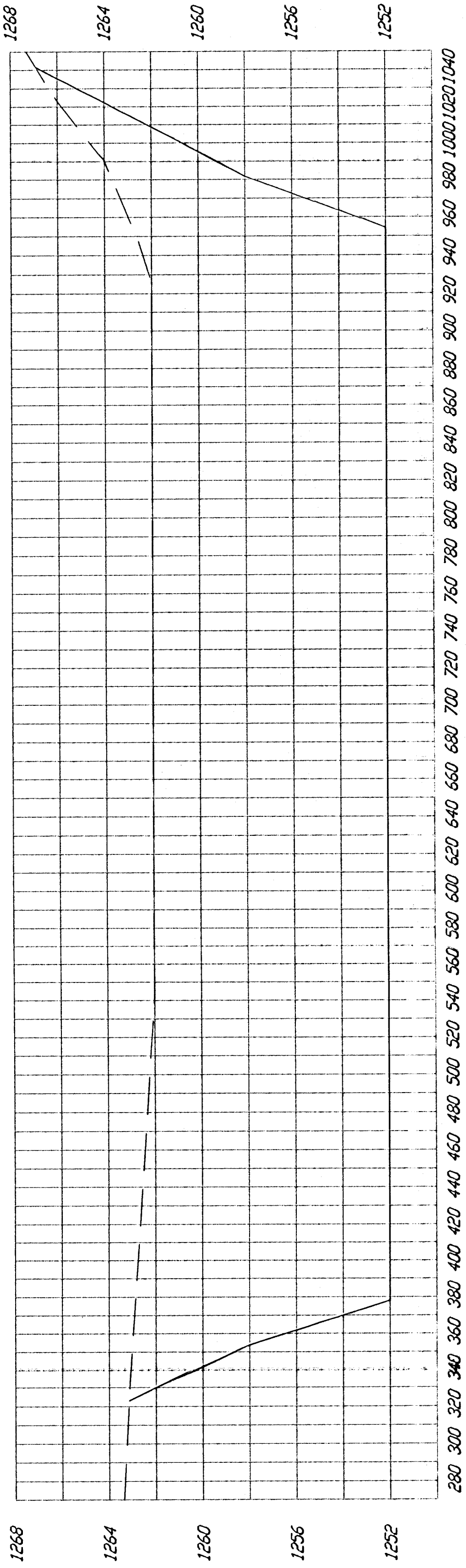
16+00



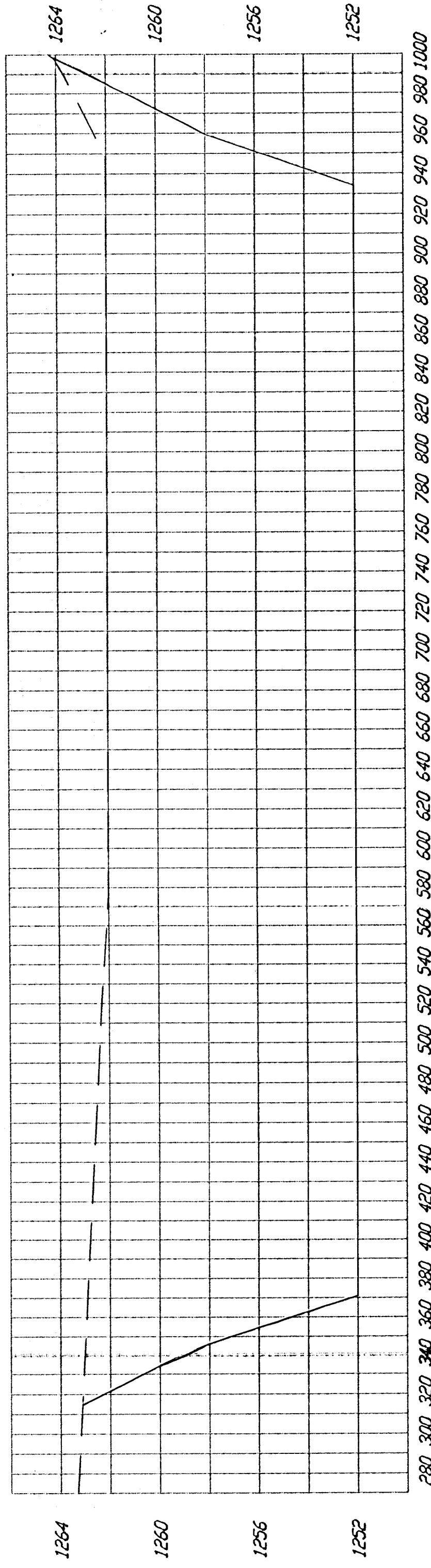
15+50



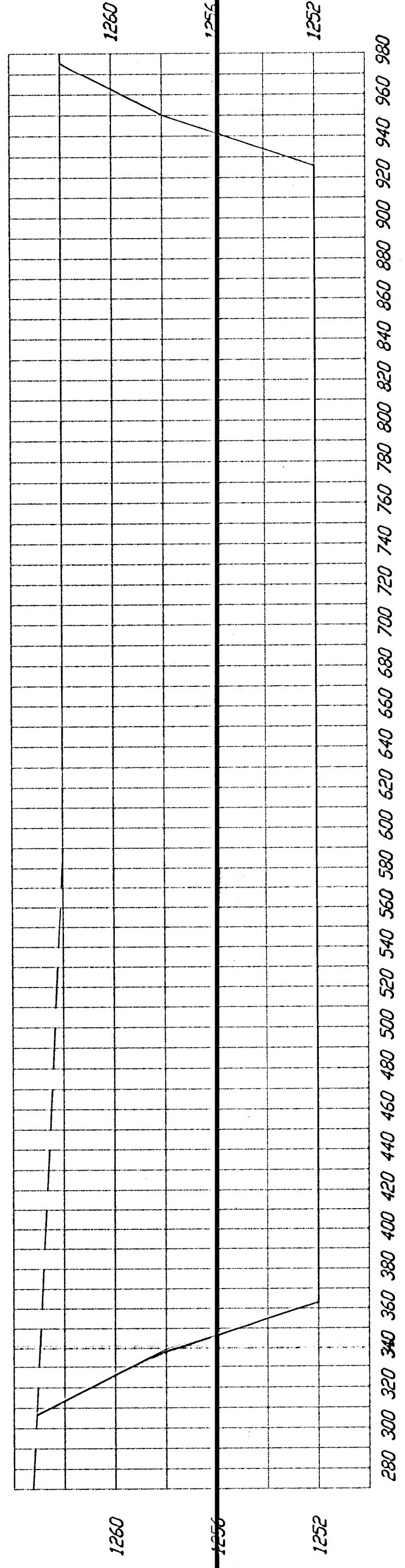
15+00



14+50



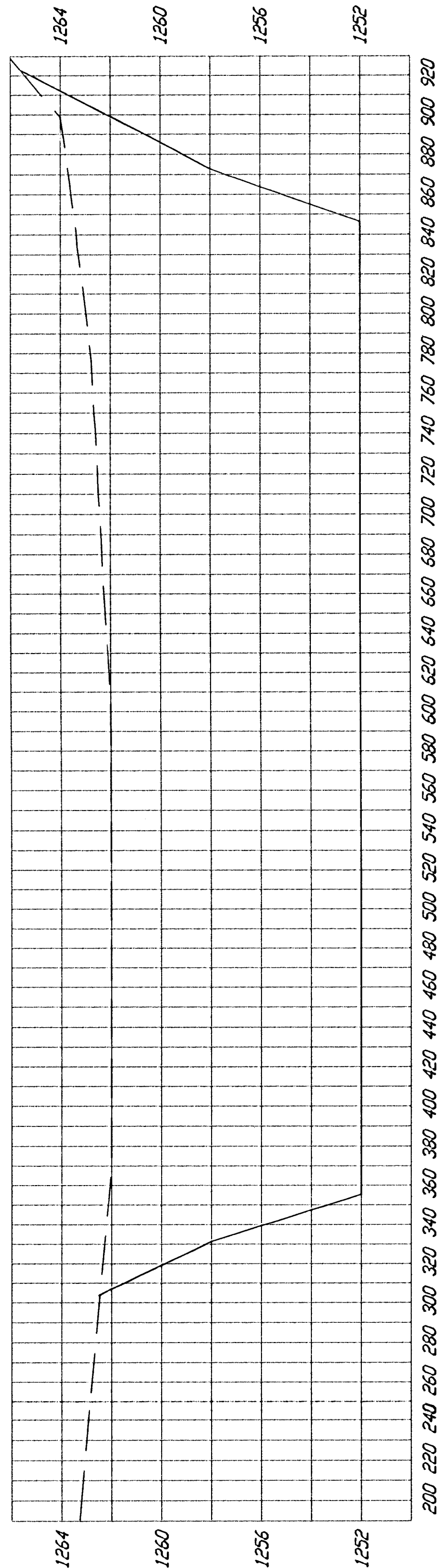
14+20



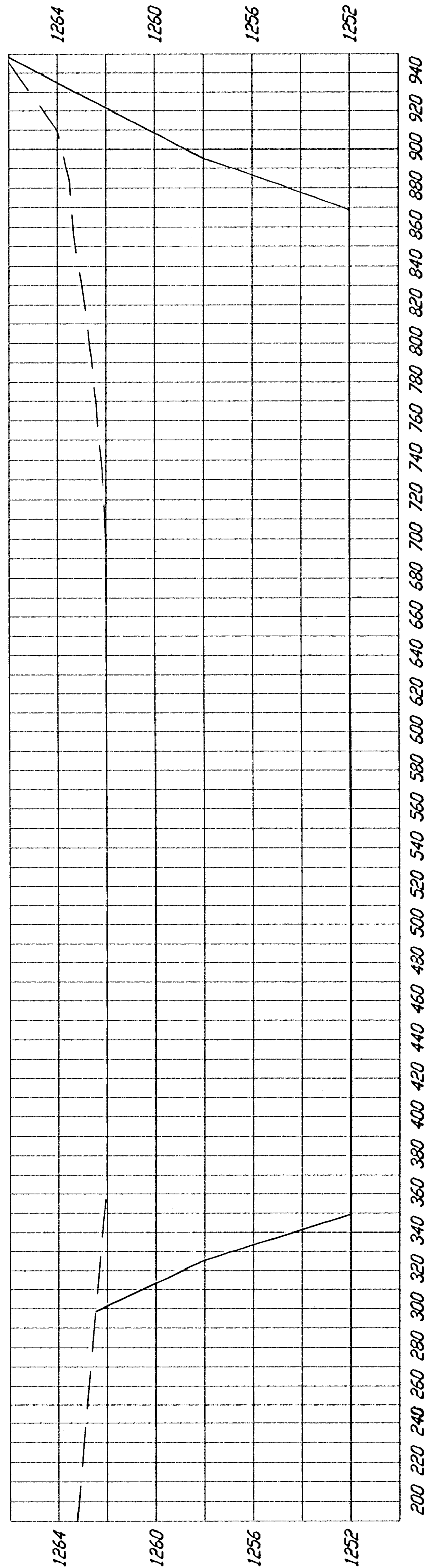
Borrow Excavation Pond



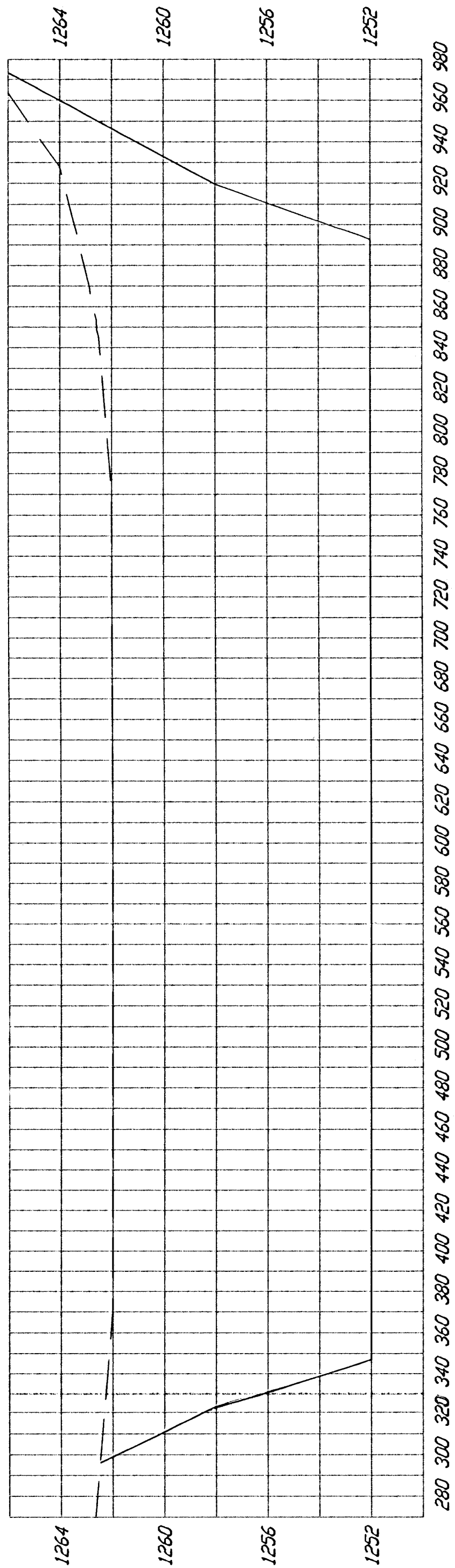
18+50



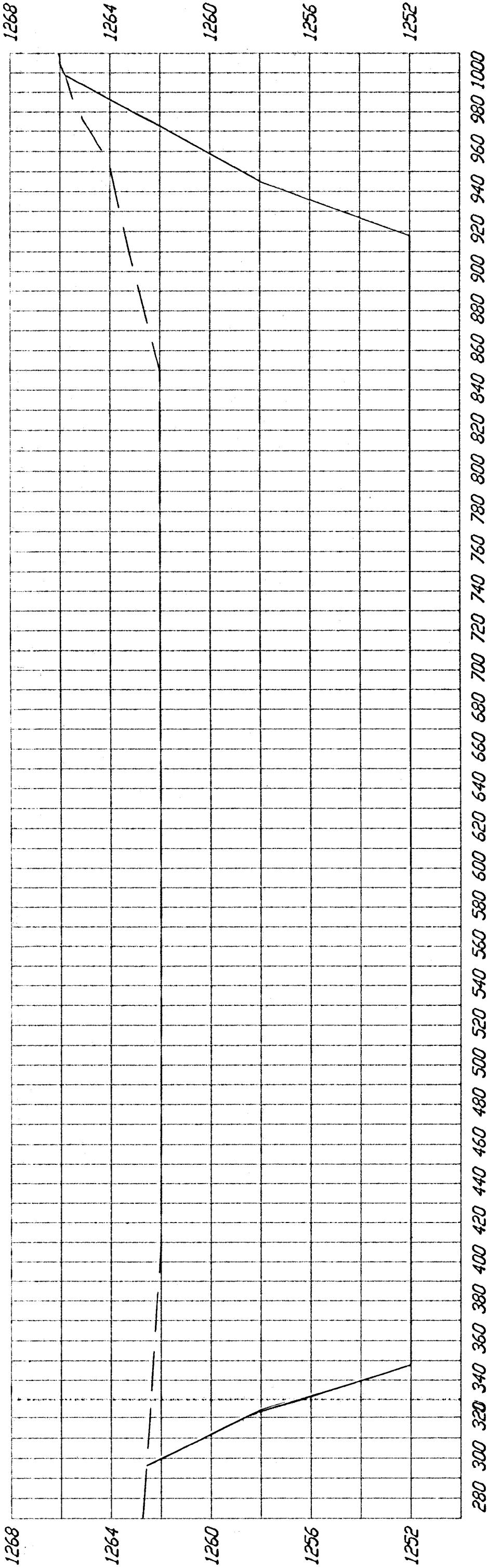
18+00



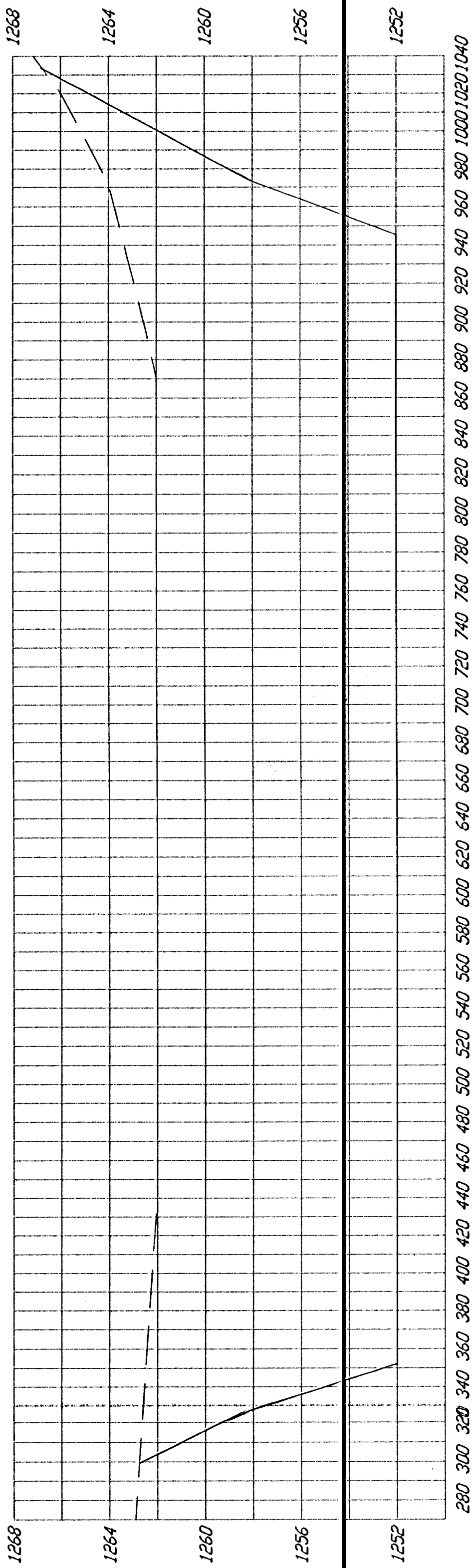
17+50



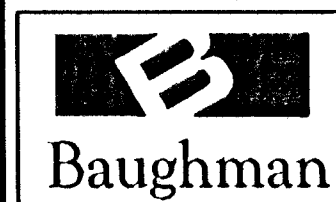
17+00



16+50

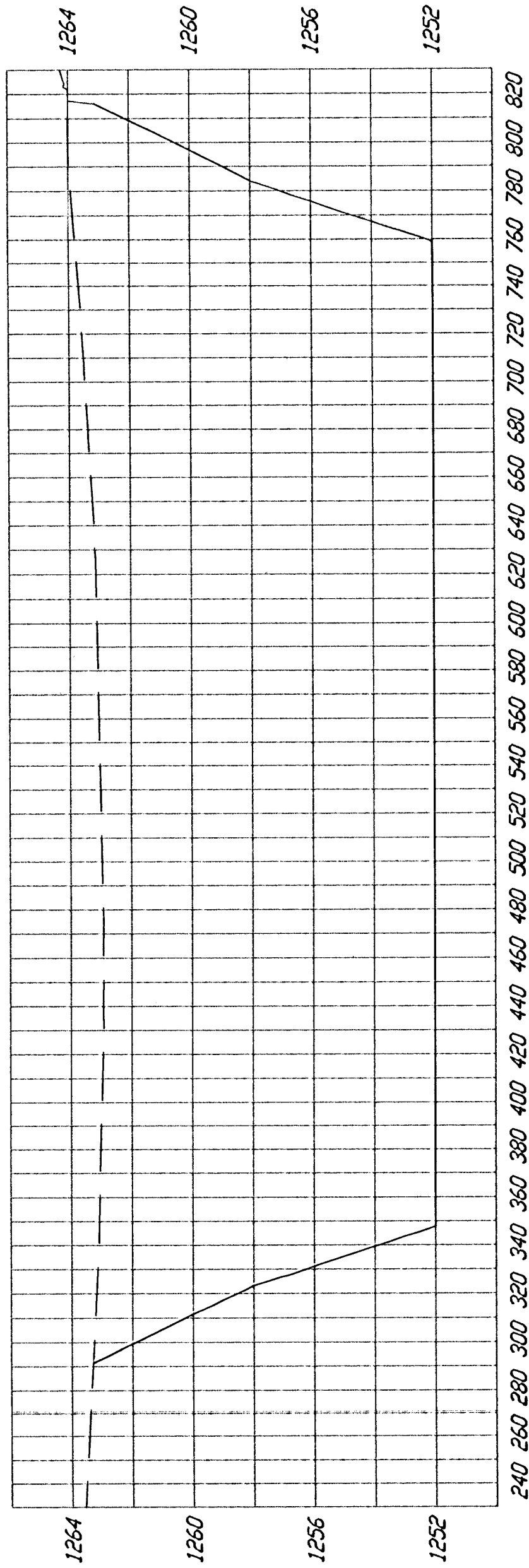


Borrow Excavation Pond

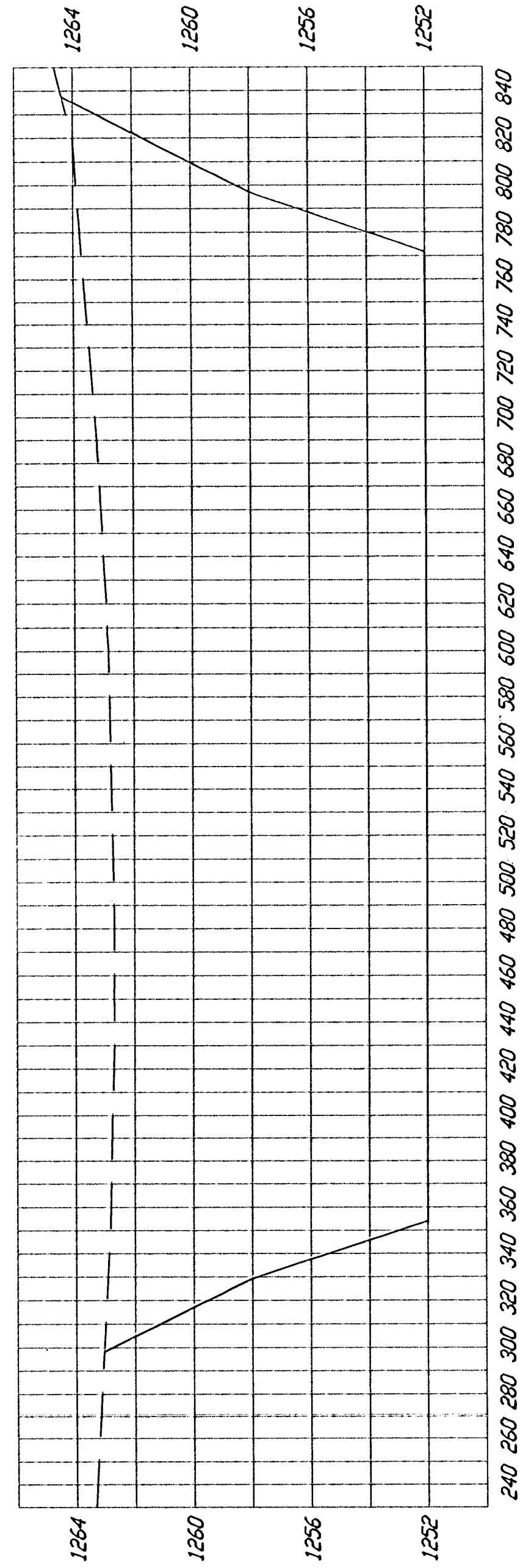


|                                                                                      |  |          |
|--------------------------------------------------------------------------------------|--|----------|
| Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149 |  |          |
| ENGINEERING   SURVEYING   PLANNING   LANDSCAPE ARCHITECTURE                          |  |          |
| PROJECT NUMBER<br>4884302                                                            |  | SHEET    |
| MeadowlakeBeach\J\0610E676                                                           |  | 12 OF 22 |

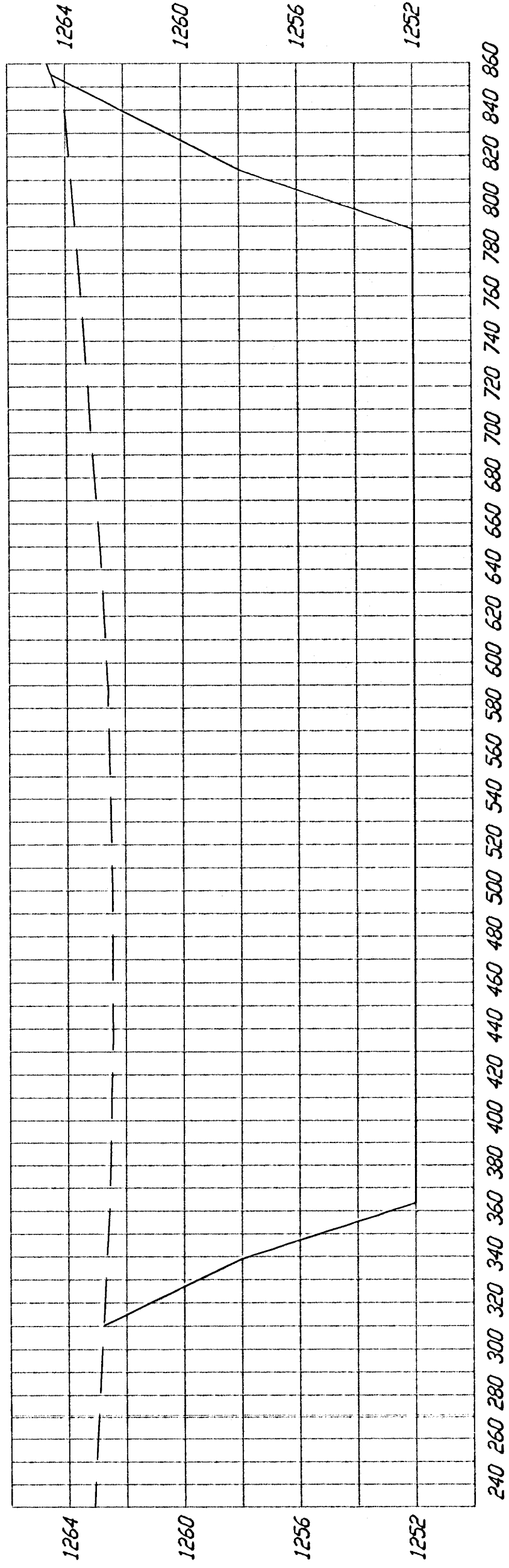
21+00



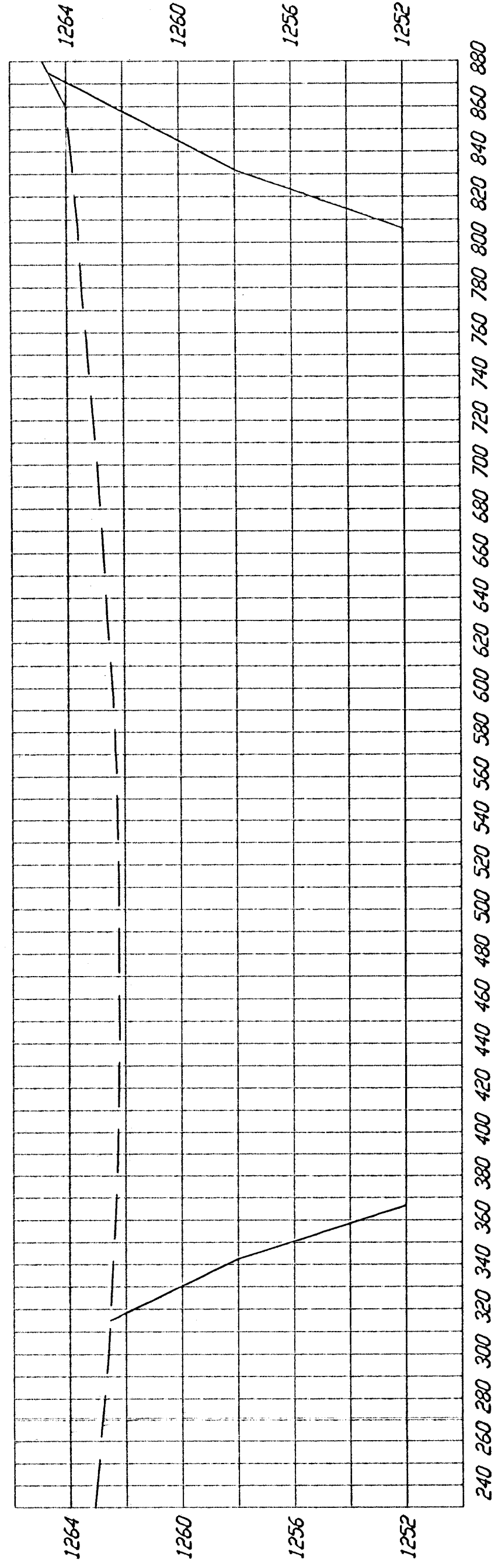
20+50



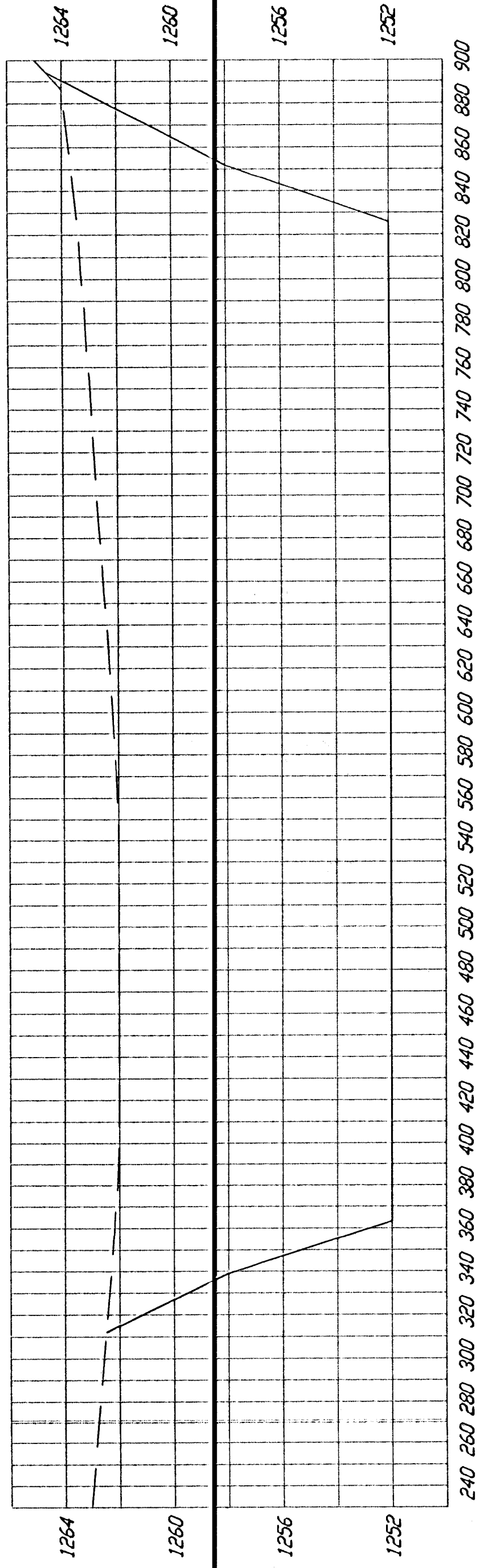
20+00



19+50



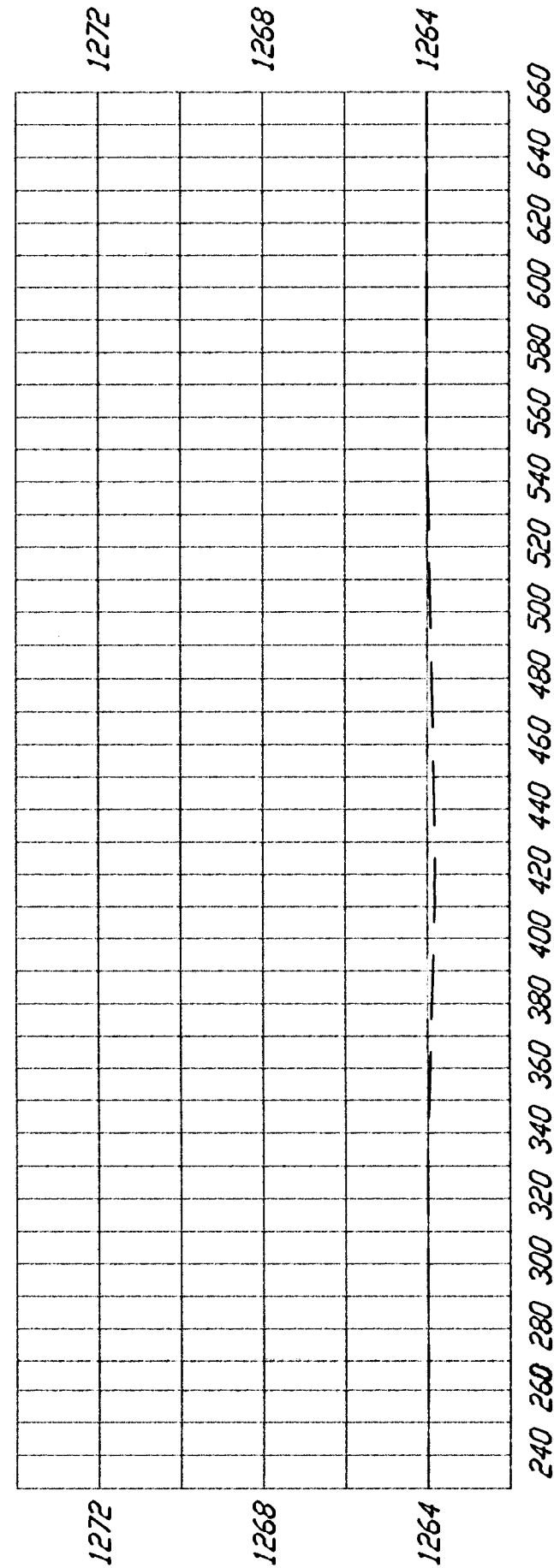
19+00



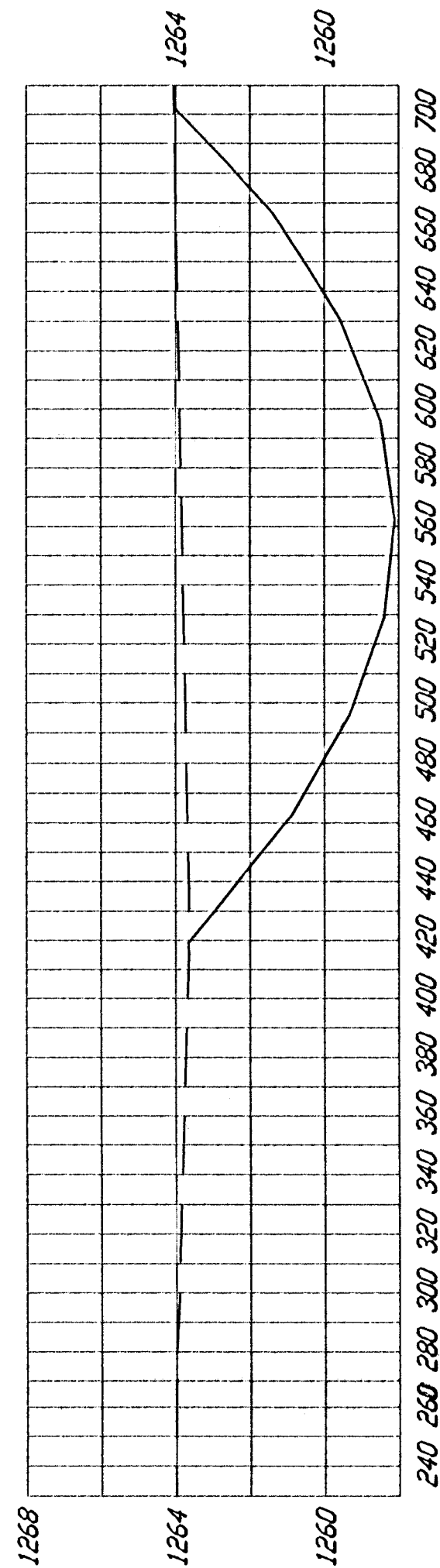
Borrow Excavation Pond



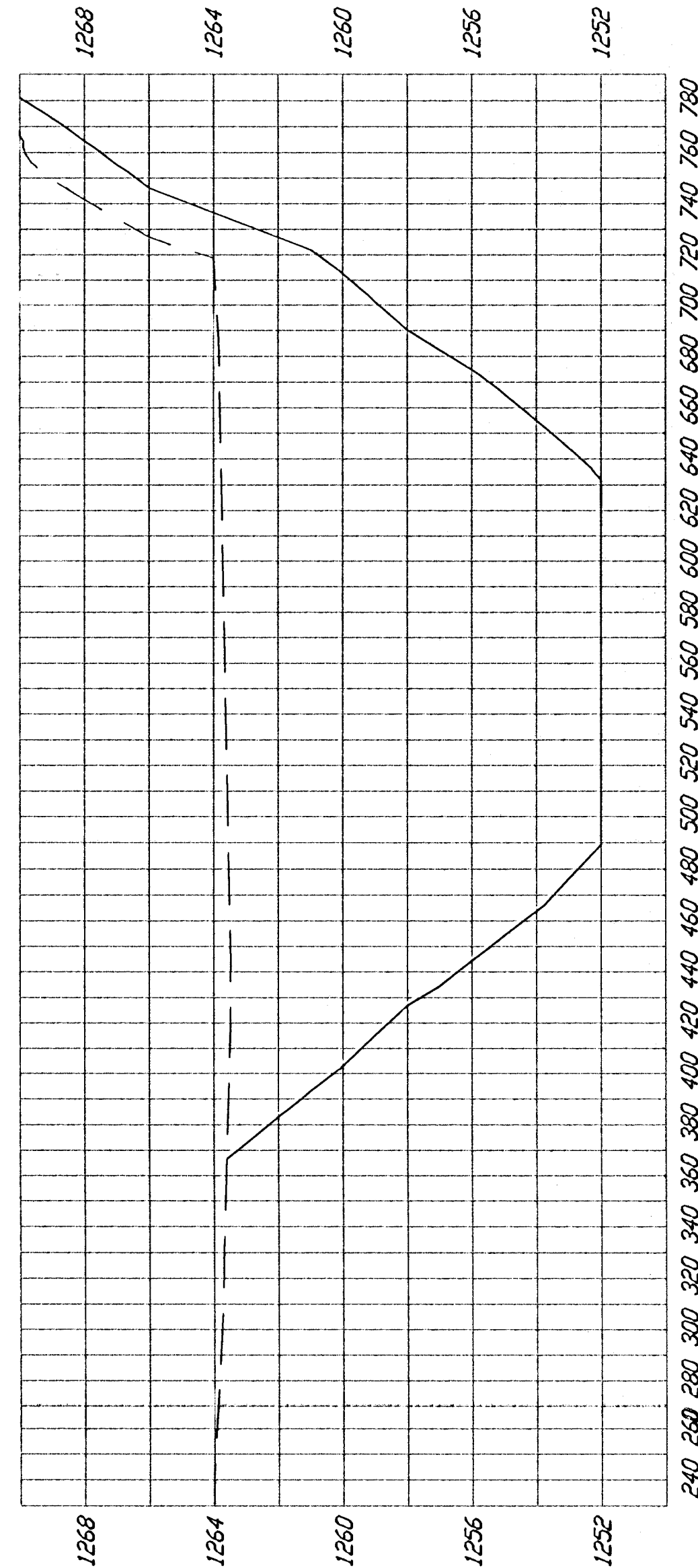
22+90



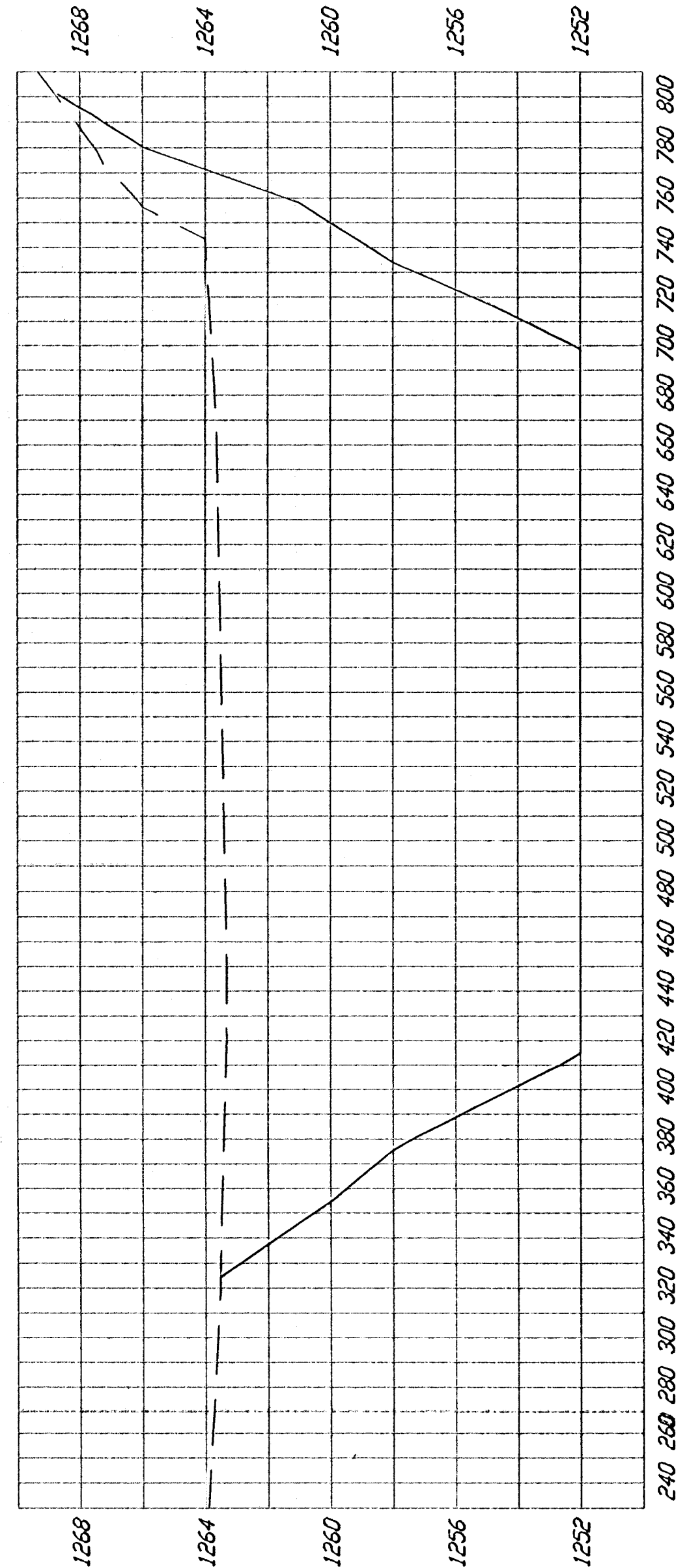
22+55



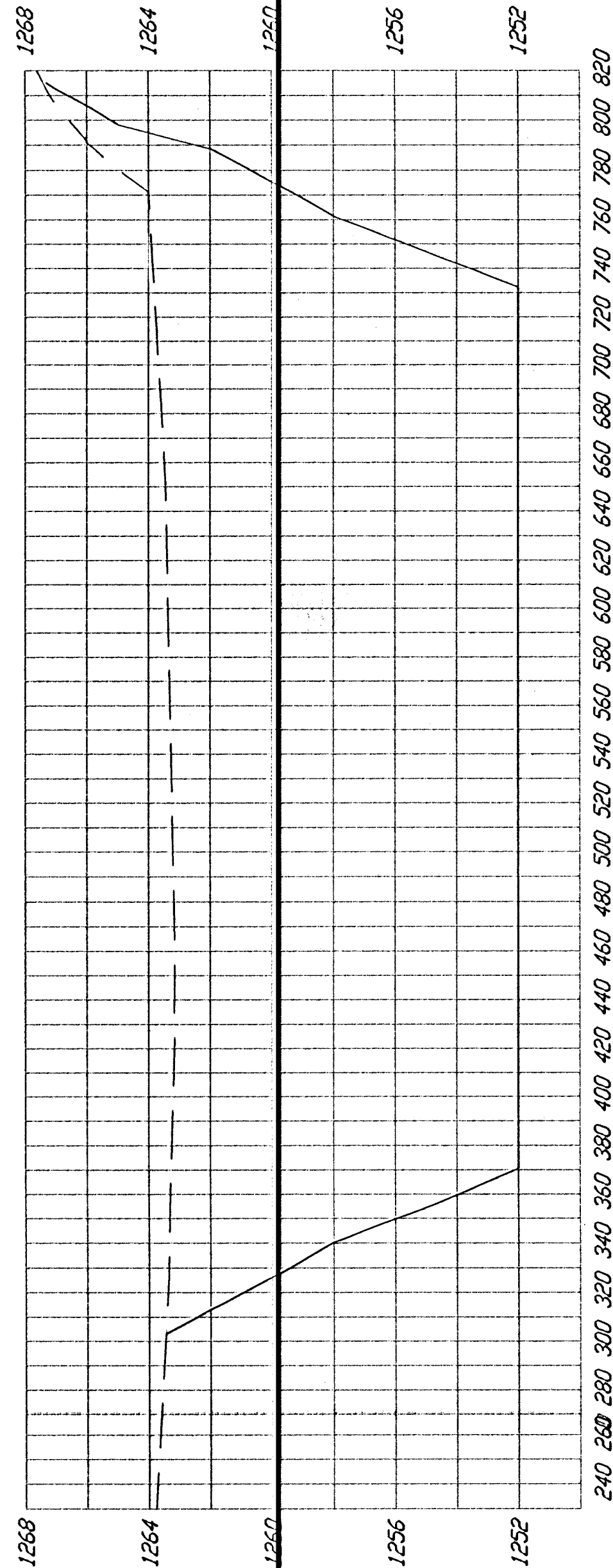
22+20



21+85

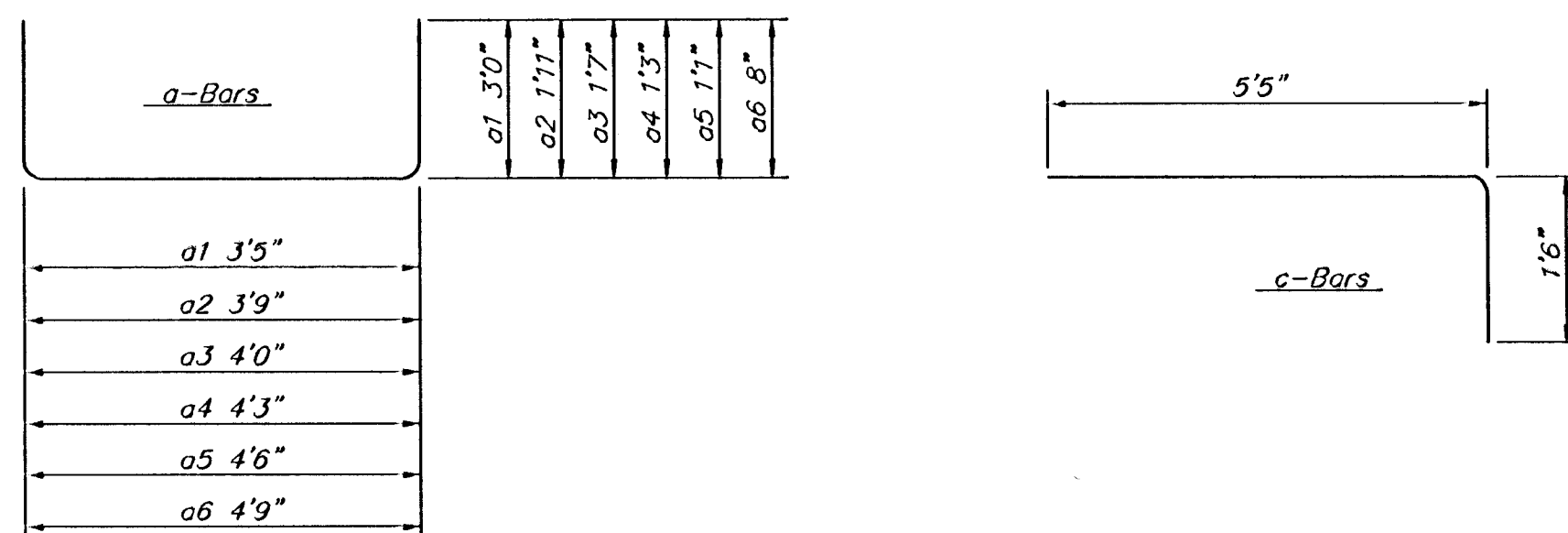
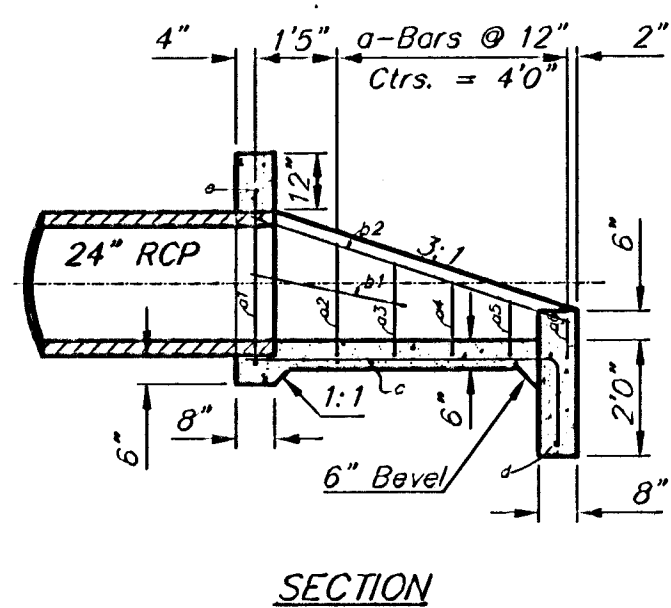
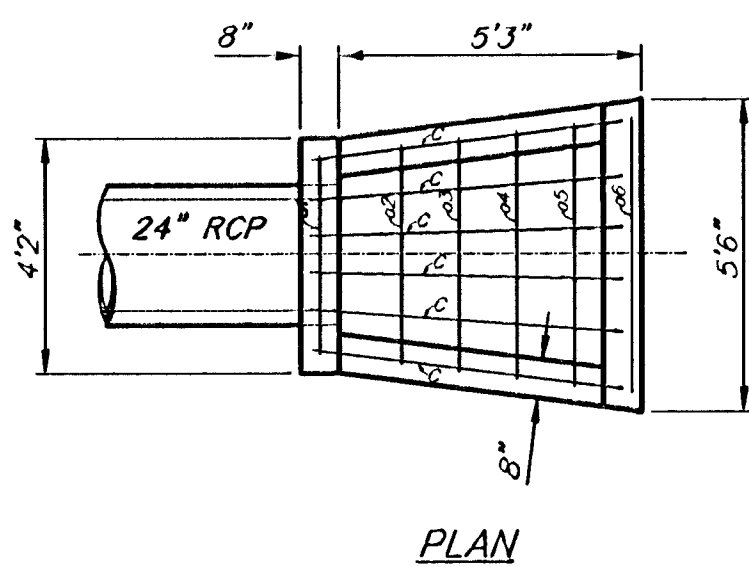


21+50



Borrow Excavation Pond



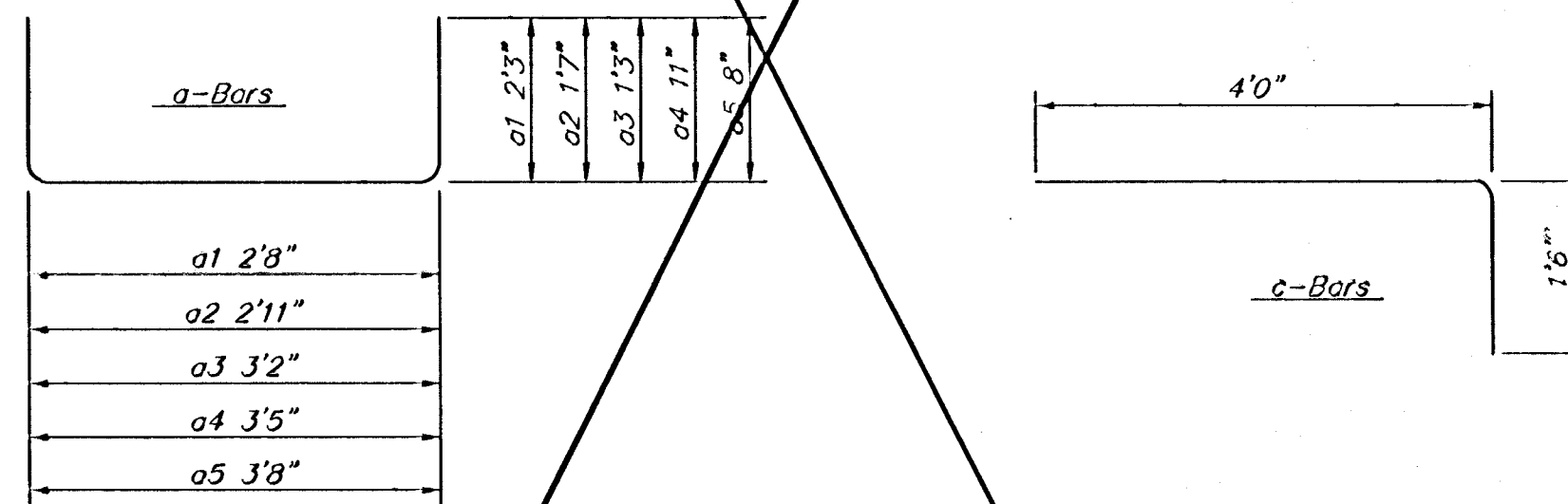
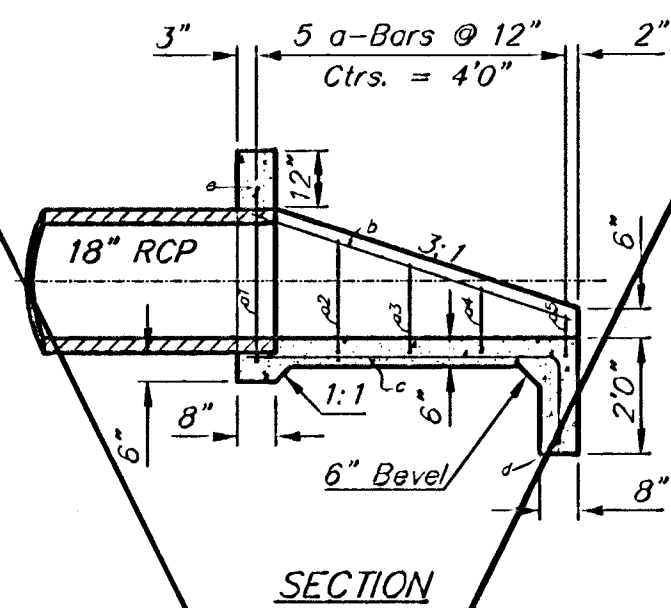
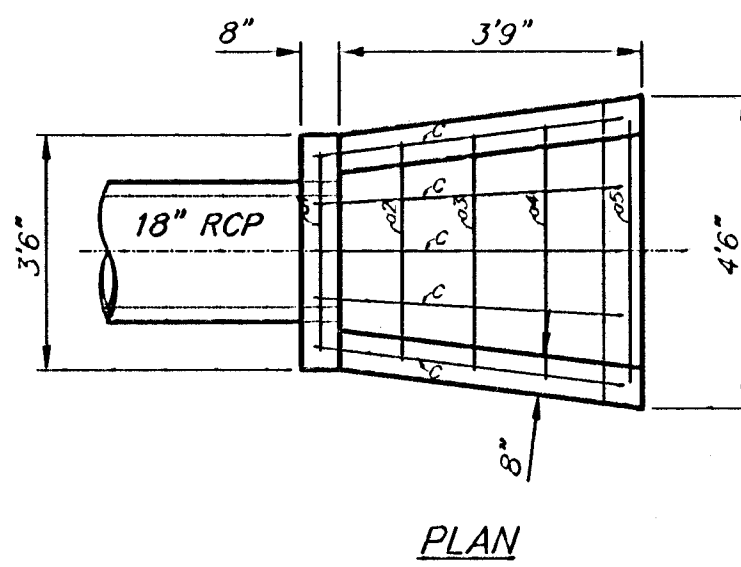


REBAR SCHEDULE

| Bar         | Shape | No. | Length     | Weight |
|-------------|-------|-----|------------|--------|
| a1          |       | 1   | 9'5"       | 6.29   |
| a2          |       | 1   | 7'7"       | 5.07   |
| a3          |       | 1   | 7'2"       | 4.79   |
| a4          |       | 1   | 6'9"       | 4.51   |
| a5          |       | 1   | 6'4"       | 4.23   |
| a6          |       | 1   | 6'1"       | 4.06   |
| b1          |       | 2   | 2'9"       | 3.87   |
| b2          |       | 2   | 5'10"      | 7.79   |
| c           |       | 6   | 6'11"      | 27.72  |
| d           |       | 1   | 5'0"       | 3.37   |
| e           |       | 1   | 3'10"      | 2.56   |
| Total Rebar |       |     | 74.03 Lbs. |        |
| Concrete    |       |     | 1.40 C.Y.  |        |

A Deduction in Concrete Quantities Has Been Made for Pipe Openings Through the Headwall  
 \* Field Bend or Cut Reinforcing as Required for Clearance.  
 All Concrete Reinforcement to be #4 Rebar  
 All Rebar to Have Min. of 1 1/2" Conc. Cover

SPECIAL HEADWALL FOR 24" RCP

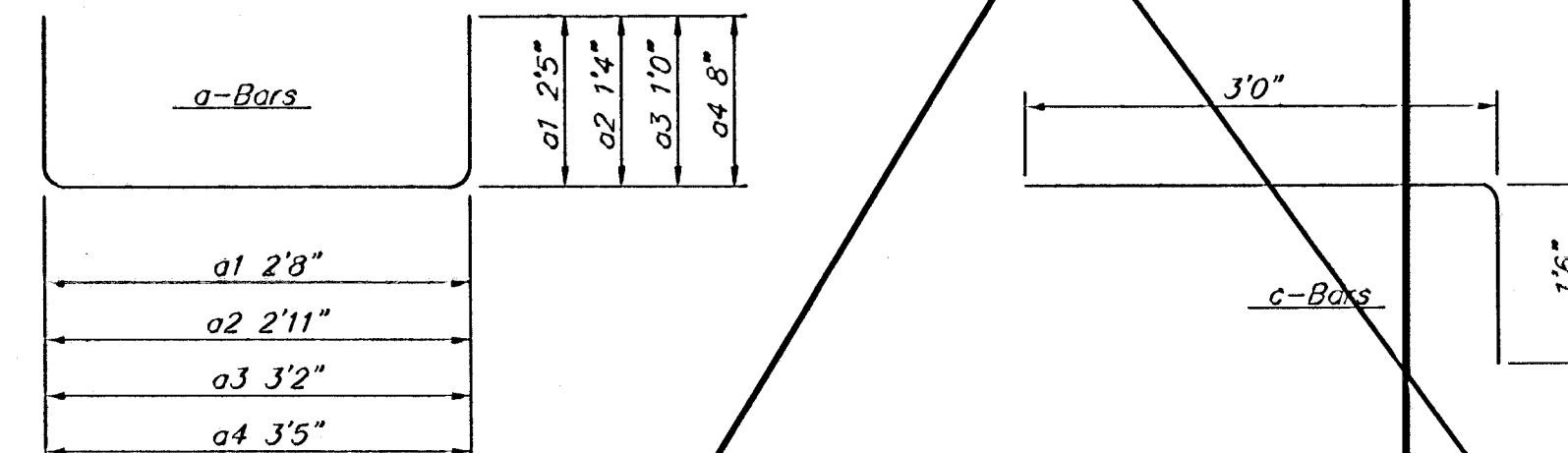
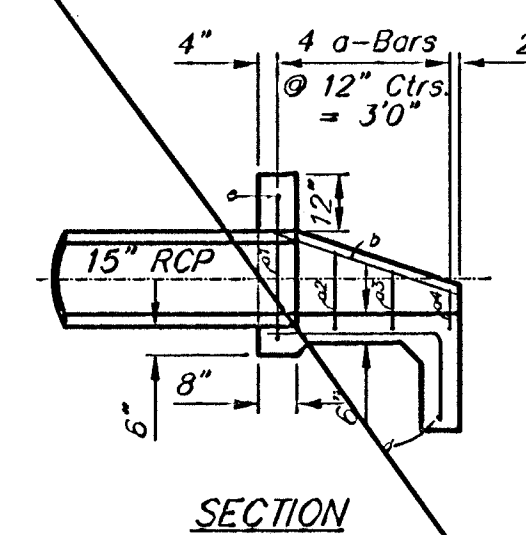
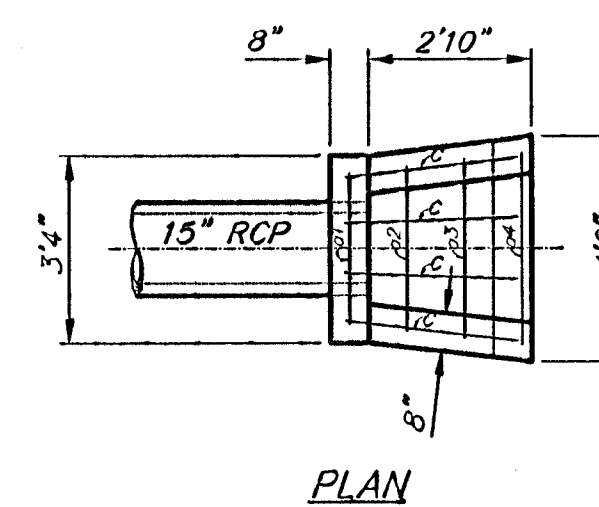


REBAR SCHEDULE

| Bar         | Shape | No. | Length     | Weight |
|-------------|-------|-----|------------|--------|
| a1          |       | 1   | 7'2"       | 4.79   |
| a2          |       | 1   | 6'1"       | 4.06   |
| a3          |       | 1   | 5'8"       | 3.79   |
| a4          |       | 1   | 5'3"       | 3.51   |
| a5          |       | 1   | 5'0"       | 3.34   |
| b           |       | 2   | 4'0"       | 5.34   |
| c           |       | 5   | 3'8"       | 18.37  |
| d           |       | 1   | 4'0"       | 2.67   |
| e           |       | 1   | 3'2"       | 2.12   |
| Total Rebar |       |     | 47.99 Lbs. |        |
| Concrete    |       |     | 0.91 C.Y.  |        |

A Deduction in Concrete Quantities Has Been Made for Pipe Openings Through the Headwall  
 \* Field Bend or Cut Reinforcing as Required for Clearance.  
 All Concrete Reinforcement to be #4 Rebar  
 All Rebar to Have Min. of 1 1/2" Conc. Cover

HEADWALL FOR 18" RCP



REBAR SCHEDULE

| Bar         | Shape | No. | Length     | Weight |
|-------------|-------|-----|------------|--------|
| a1          |       | 1   | 7'6"       | 5.01   |
| a2          |       | 1   | 5'7"       | 3.73   |
| a3          |       | 1   | 5'2"       | 3.45   |
| a4          |       | 1   | 4'9"       | 3.17   |
| b           |       | 2   | 4'0"       | 5.34   |
| c           |       | 2   | 5'8"       | 14.70  |
| d           |       | 1   | 3'9"       | 2.28   |
| e           |       | 1   | 2'8"       | 1.78   |
| Total Rebar |       |     | 39.46 Lbs. |        |
| Concrete    |       |     | 0.67 C.Y.  |        |

A Deduction in Concrete Quantities Has Been Made for Pipe Openings Through the Headwall  
 \* Field Bend or Cut Reinforcing as Required for Clearance.  
 All Concrete Reinforcement to be #4 Rebar  
 All Rebar to Have Min. of 1 1/2" Conc. Cover

HEADWALL FOR 15" RCP

- GENERAL NOTES**
- ALL PIPES SHALL BE FLUSH CUT PRIOR TO BEING CAST INTO CONCRETE HEADWALL.
  - CONCRETE USED IN HEADWALL CONSTRUCTION SHALL BE SAME AS PER CITY STANDARD PAVING MIX EXCEPT THAT IT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
  - ALL EXPOSED EDGES SHALL BE BEVELED 1/2".
  - REINFORCING STEEL SHALL COMPLY TO A.S.T.M. DESIGNATION A615 GRADE 60. ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BAR UNLESS OTHERWISE NOTED.
  - THE "REIN. CONC. HEADWALL" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH IN PLACE WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EXCAVATION, CONCRETE, REINFORCING STEEL AND ALL OTHER INCIDENTAL ITEMS NECESSARY TO COMPLETE THE WORK. MATERIAL QUANTITIES SHOWN ARE FOR INFORMATION ONLY.

**HEADWALL DETAIL**

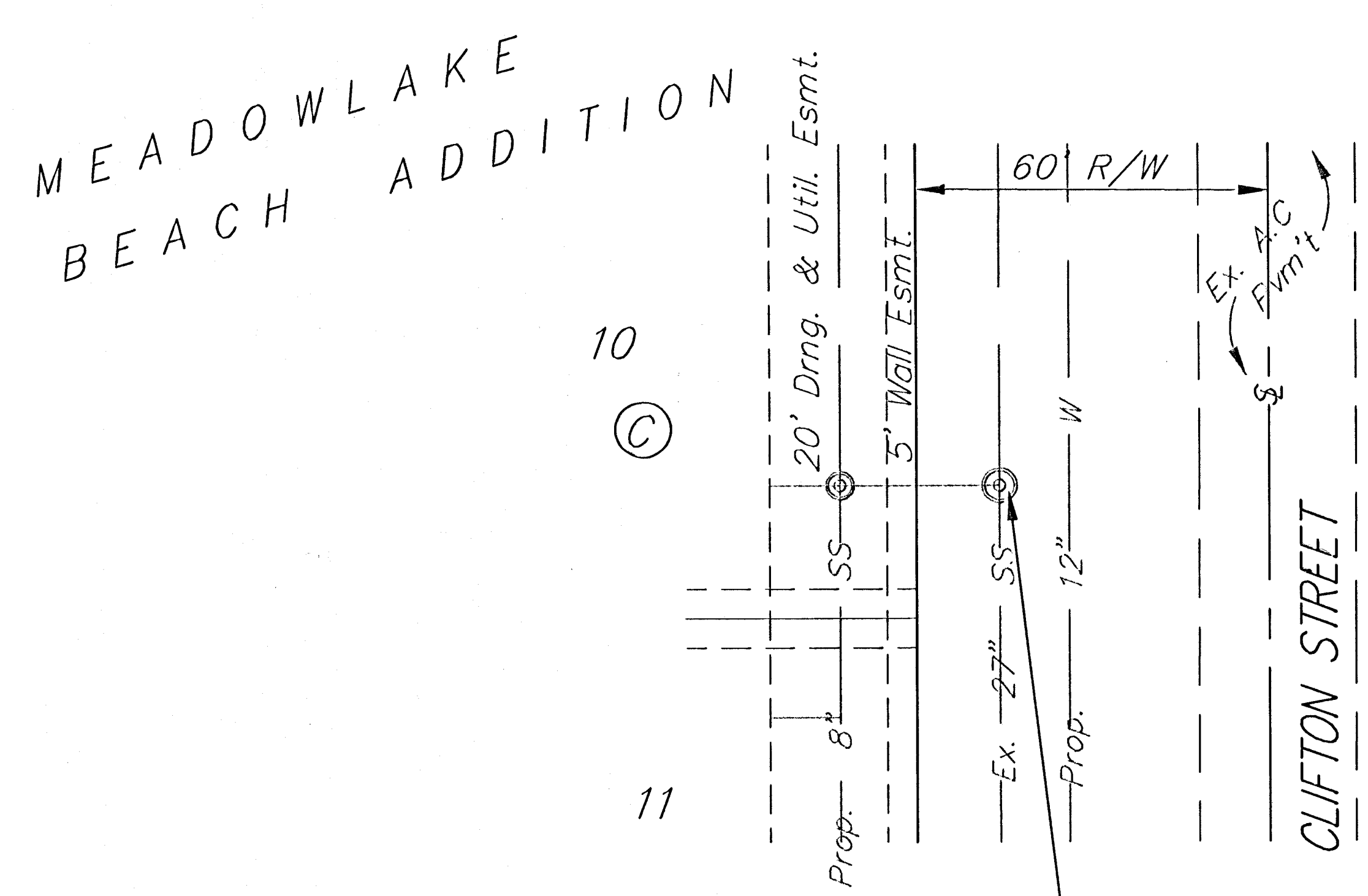
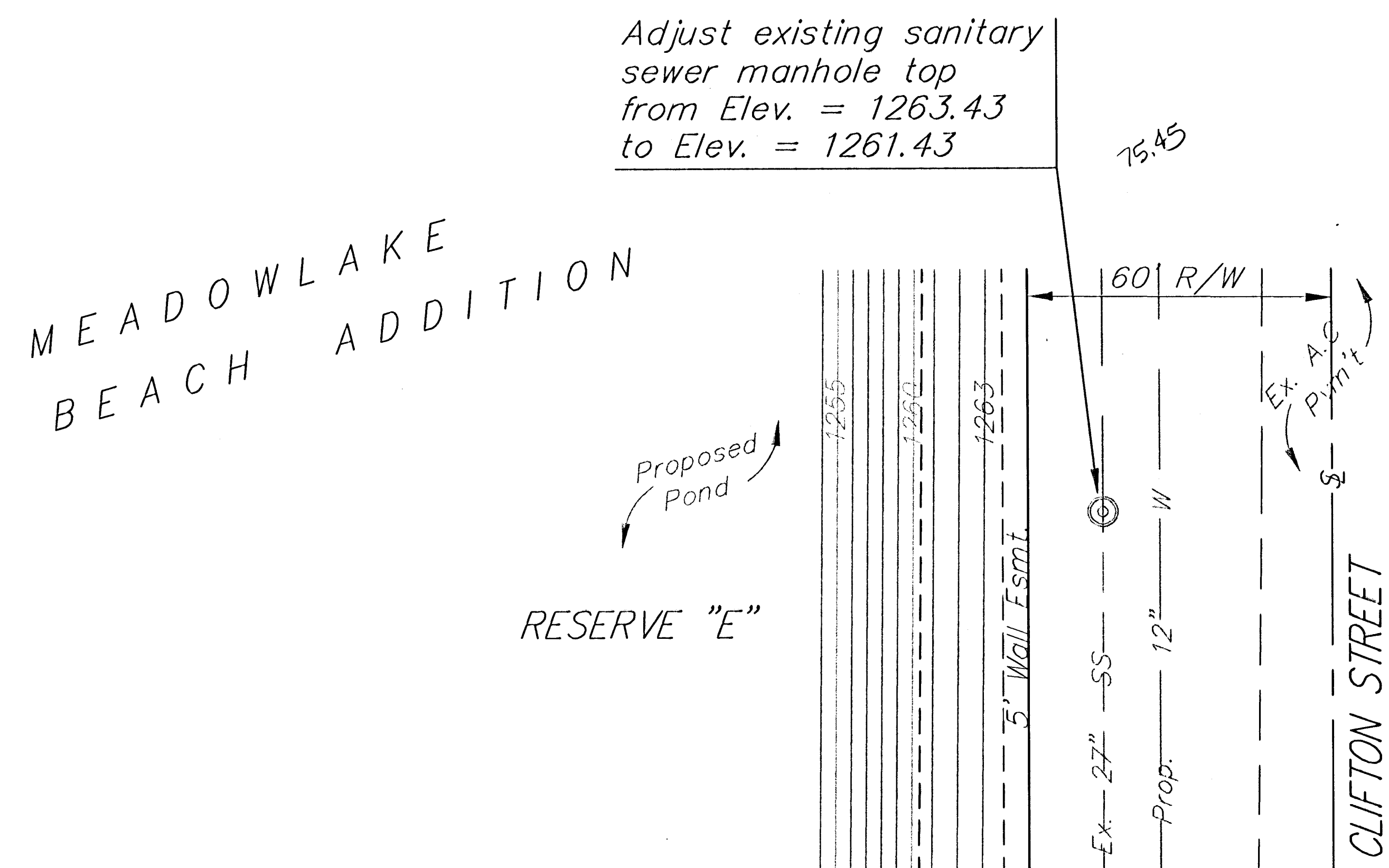
Baughman Company, P.A. 315 Elm St. Woburn, MA 01801 P 316-262-7171 F 316-262-0149  
 ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

|                             |                   |                   |
|-----------------------------|-------------------|-------------------|
| PROJECT NUMBER<br>468-04-02 | DESIGN<br>BEP/DMV | DRAWN<br>JAK      |
| REVISIONS                   | APPROVED          | DATE<br>03/07     |
| SCALE<br>Noted              |                   | SHEET<br>15 OF 22 |

Hdwldet



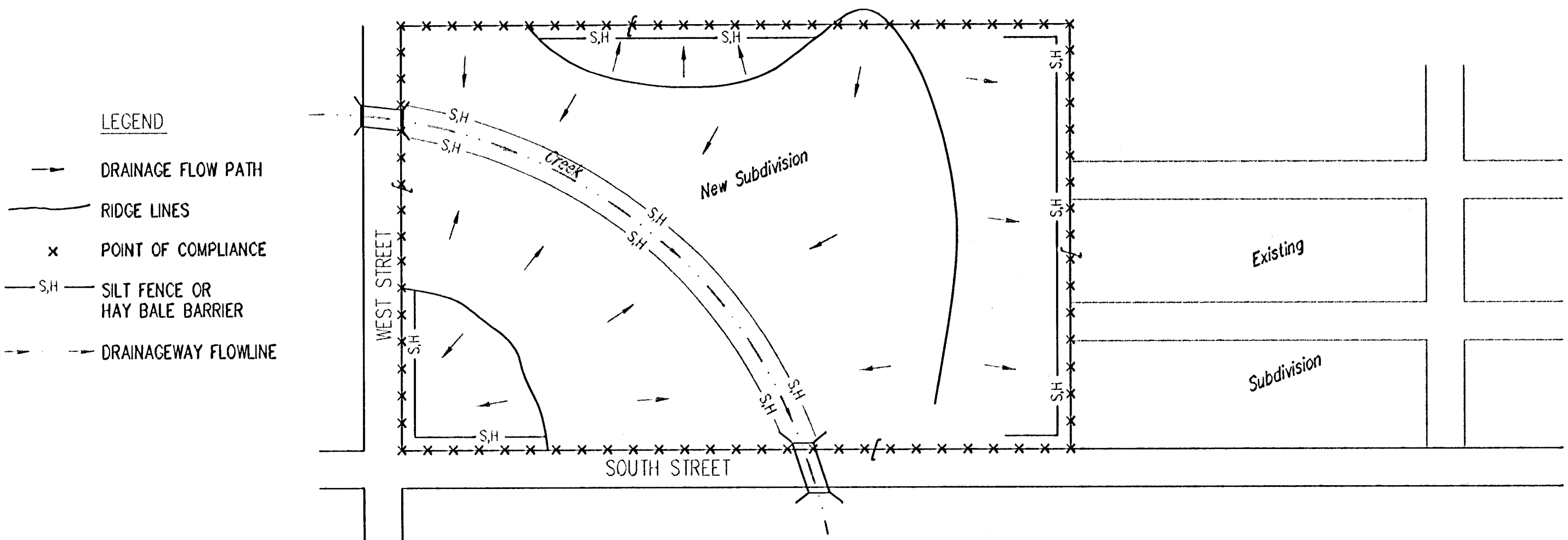
Scale: 1" = 20' Horizontal  
• = Iron



Adjust existing sanitary sewer manhole top from Elev. = 1263.91 to Elev. = 1261.91

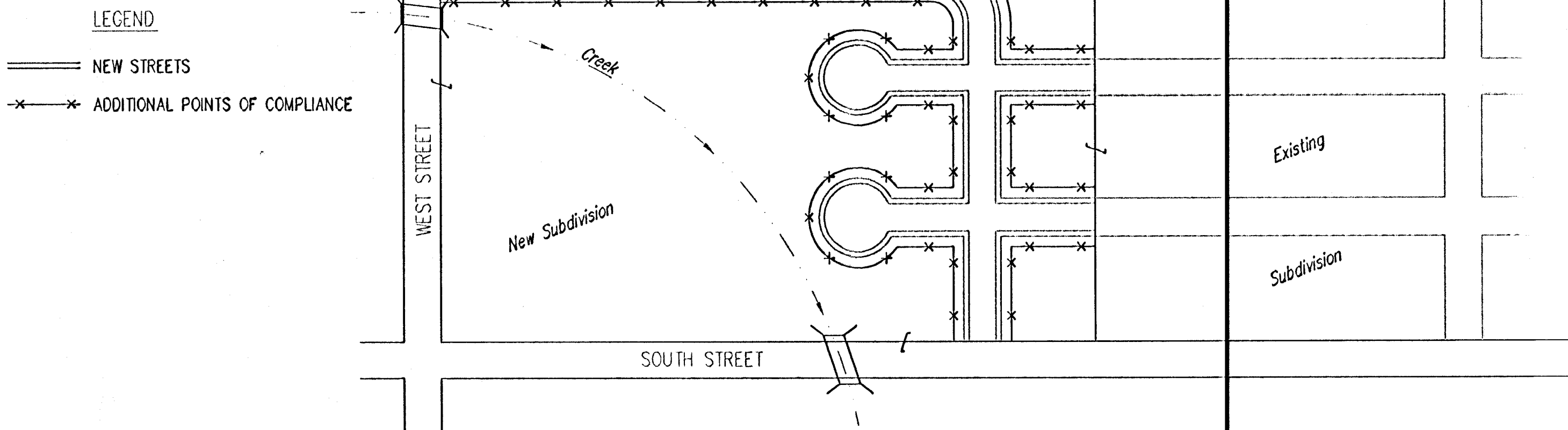
|                                                                                                                                                                    |                |                                |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------|--|
|                                                                               |                | MEADOWLAKE BEACH ADDITION      |  |
|                                                                                                                                                                    |                | <b>SS MANHOLE ADJUSTMENTS</b>  |  |
|                                                                                                                                                                    |                | STORM WATER DRAIN IMPROVEMENTS |  |
| <small>Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316-262-7271 F 316-262-0149<br/>ENGINEERING   SURVEYING   PLANNING   LANDSCAPE ARCHITECTURE</small> |                |                                |  |
| PROJECT NUMBER<br>44844302                                                                                                                                         | DESIGN<br>ATD  | DRAWN<br>TMS                   |  |
| REVISIONS                                                                                                                                                          | APPROVED       | DATE<br>03/07                  |  |
|                                                                                                                                                                    | SCALE<br>Noted |                                |  |
|                                                                                                                                                                    | SHEET          |                                |  |
|                                                                                                                                                                    |                | <b>16 OF 22</b>                |  |
| <small>MeadowlakeBeach\SWD\SSAdjustment</small>                                                                                                                    |                | <small>06-10-E676</small>      |  |

PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



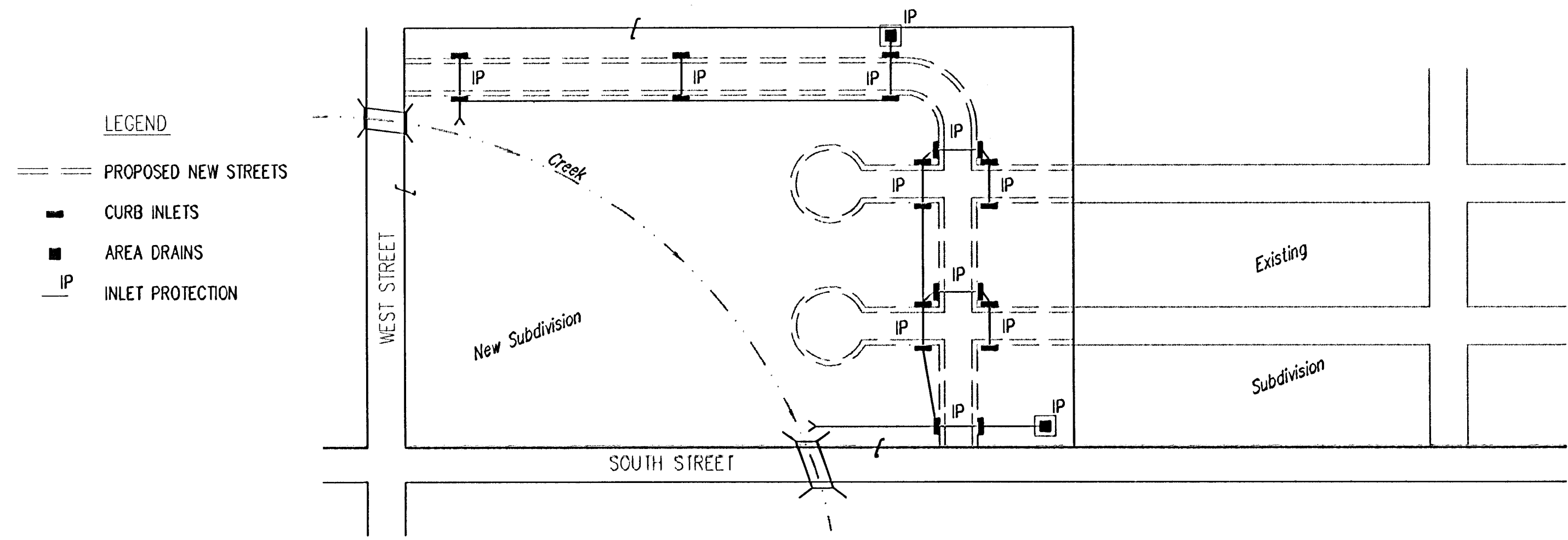
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
8. WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

PHASE 3 – STREET CONSTRUCTION



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
  - A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
  - B. NON-SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), ADDITIONAL DEVICES WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

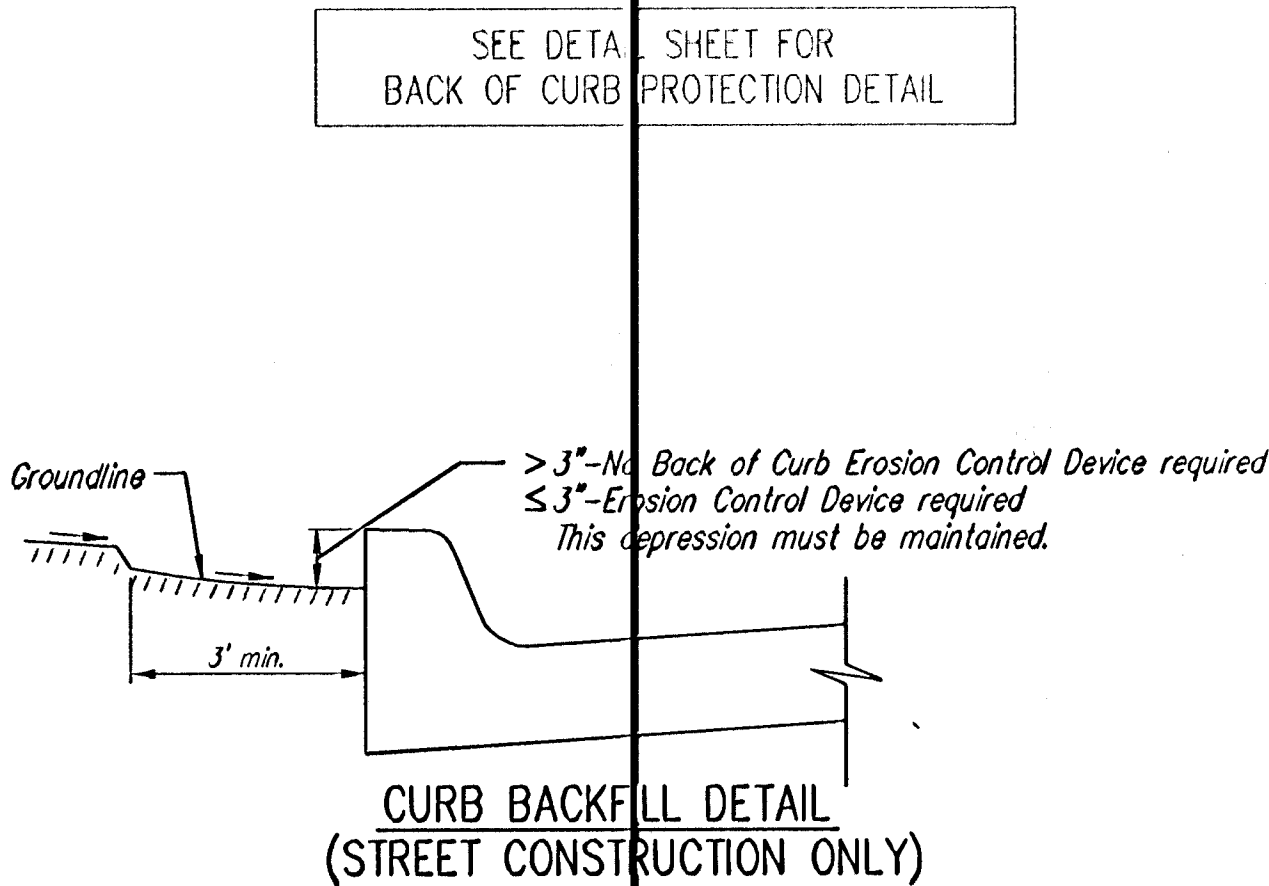
PHASE 2 – INSTALLATION OF STORM SEWER



1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
7. ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS OF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
8. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

GENERAL NOTES:

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, LAKES, STREETS OR ANY OTHER OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON SOIL EROSION BMP'S DETAIL SHEETS.
4. PERSONS DESTROYING EROSION CONTROL DEVICES SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT DEVICES.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 1 ACRE OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL DEVICES ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLANS.
6. FOR SUBDIVISIONS SMALLER THAN 1 ACRE, SOIL EROSION DEVICES ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN SOIL EROSION DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE DEVICES OTHER THAN THAT SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.



SOIL EROSION BMPs

SUBDIVISION  
DEVELOPMENT  
PROJECTS

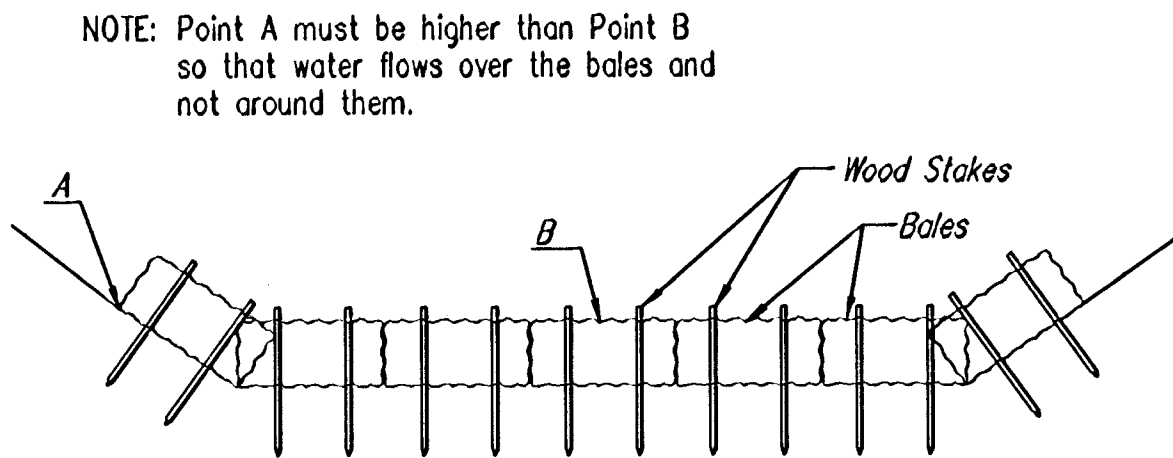
JIM ARMOUR, P.E.  
CITY ENGINEER

PROJECT NUMBER  
468-84302

OCA NO.  
751444

DATE  
MAR 2007

SHEET 17 OF 22



#### STRAW BALE DITCH CHECKS

##### Material Specification:

Bale ditch checks may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture. The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Optional: The downstream scour apron should be constructed of a double-netted straw erosion-control blanket at least 6' wide. Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

##### Placement:

Bale ditch checks should be placed perpendicular to the flowline of the ditch. The ditch check should extend far enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. This prevents water from flowing around the check. Straw bale ditch checks should not be placed in ditches where high flows are expected. Rock checks should be used instead. Bales should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used. The following table provides check spacing for a given ditch grade:

| Ditch grade (%) | Check Spacing (feet) |
|-----------------|----------------------|
| 0.5             | 200                  |
| 1.0             | 200                  |
| 2.0             | 100                  |
| 3.0             | 65                   |
| 4.0             | 50                   |
| 5.0             | 40                   |
| 6.0             | 30                   |

##### Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is 4" deep and a bale's width wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench—it will be used later. Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch. Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground. Once all the bales have been installed and anchored, place the excavated soil against the upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

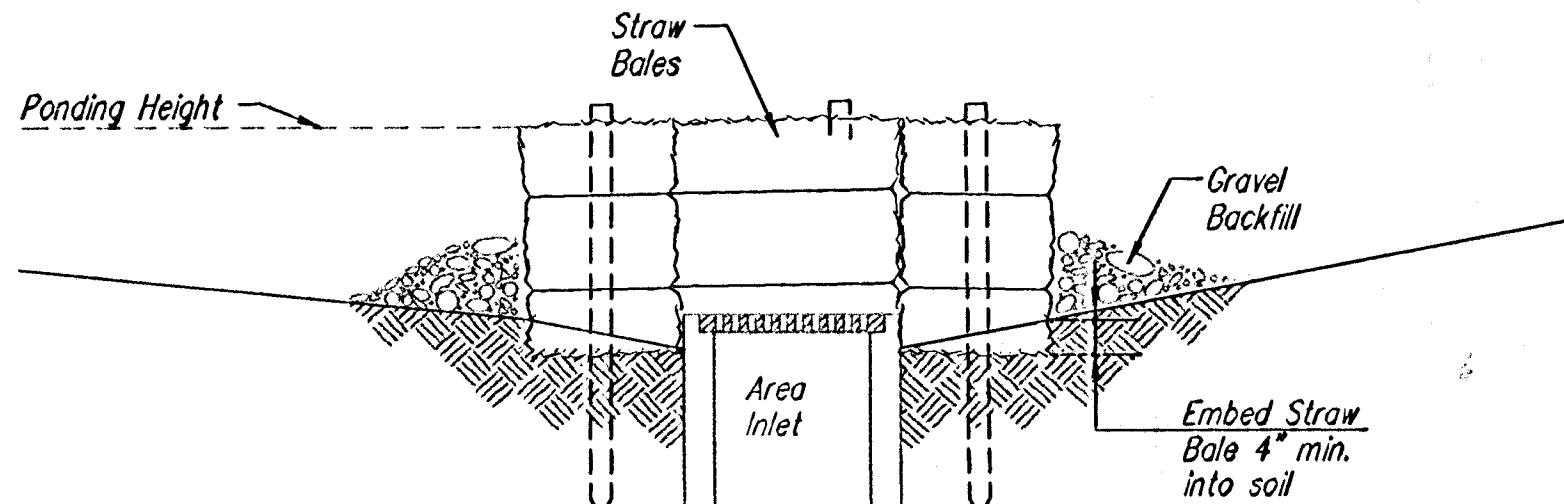
##### List of common placement/installation mistakes to avoid:

Do not place a bale ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow. Do not place bale ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow. Follow prescribed ditch-check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks. Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. Do not place bale ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out. Bale ditch checks must be dug into the ground. Bales at ground level do not work because they allow water to flow under the check.

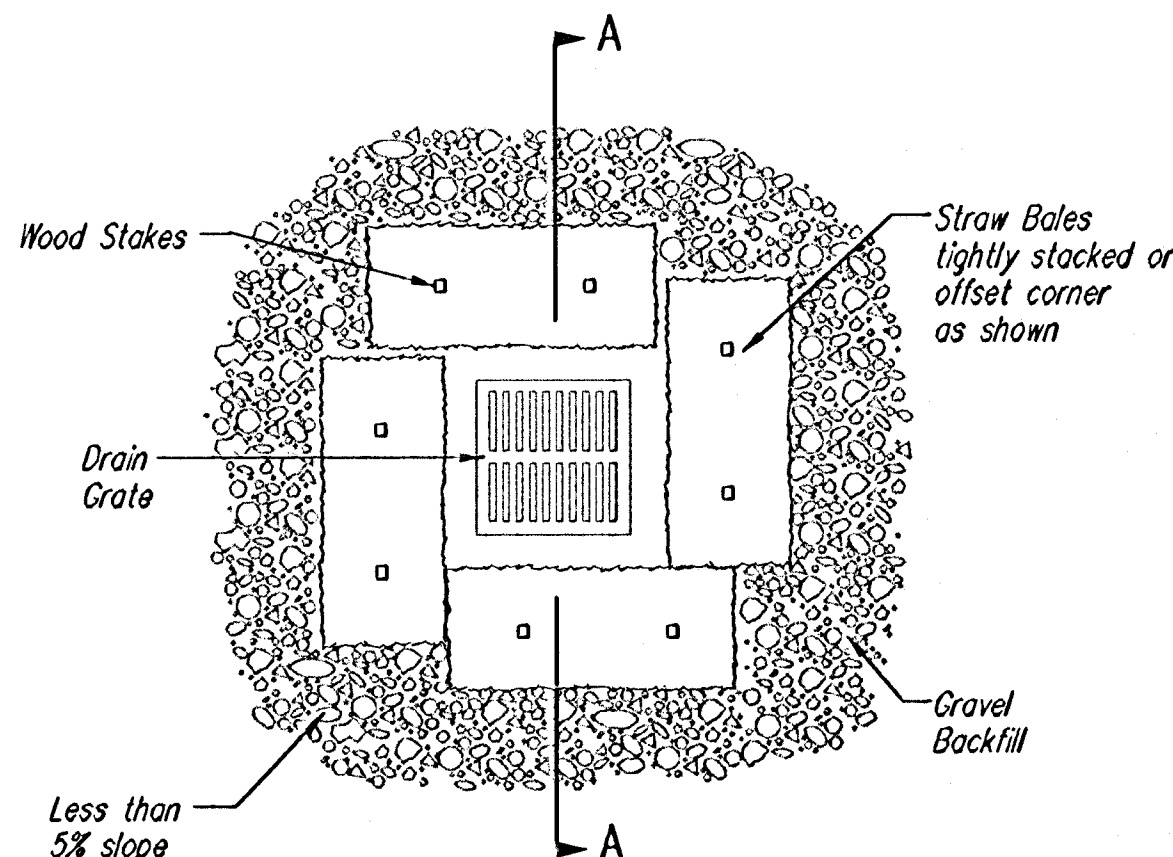
##### Inspection and Maintenance:

Bale ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?  
Does water flow under the ditch check?  
Does water flow through spaces between abutting bales?  
Are any bales and/or scour aprons (optional) dislodged?  
Are bales decomposing due to age and/or water damage?  
Does sediment need to be removed from behind the ditch check?



#### SECTION A-A



#### STRAW BALE BARRIERS FOR AREA INLETS

(INLET PROTECTION)

##### Material Specification:

Bale area inlet barriers should be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture. The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Twine should be used to bind bales. The use of wire binding is prohibited because it does not biodegrade readily.

##### Placement:

Bale area inlet barriers should be placed directly around the perimeter of a drop inlet. When a bale area inlet barrier is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

##### Proper Installation Method:

Excavate a trench around the perimeter of the area inlet that is at least 4" deep by a bale's width wide. Place the bales in the trench, making sure that they are butted tightly. Some bales may need to be shortened to fit into the trench around the area inlet. Two stakes should be driven through each bale, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground. Once all the bales have been installed and anchored, place the excavated soil against the receiving side of the barrier and compact it. The compacted soil should be no more than 3" to 4" deep. Note: When a bale area inlet barrier is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

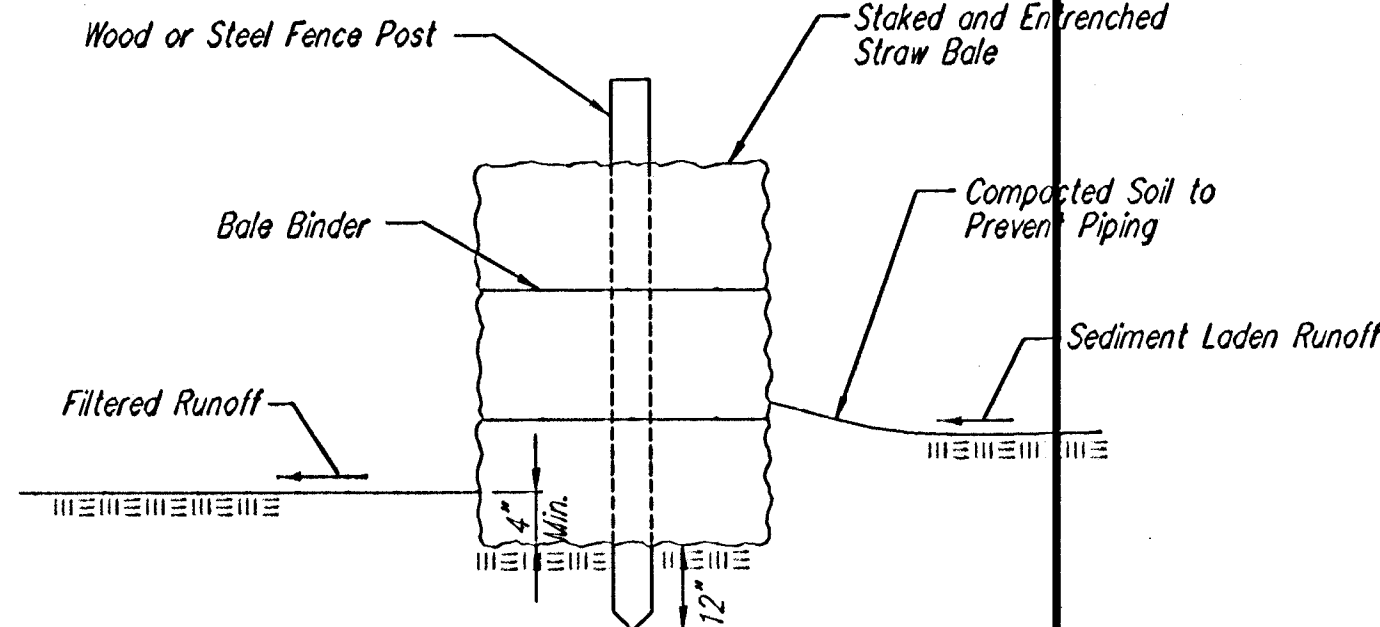
##### List of common placement installation mistakes to avoid:

Bales should be placed directly against the perimeter of the area inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil causing scour. Bale area inlet barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

##### Inspection and Maintenance:

Bale area inlet barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the area inlet barrier?  
Does water flow through spaces between abutting bales?  
Are any bales dislodged?  
Are bales decomposing due to age and/or water damage?  
Does sediment need to be removed from behind the area inlet barrier?



#### STRAW BALE BARRIERS

##### Material Specification:

Bale slope barriers may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture. The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Twine should be used to bind bales. The use of wire binding is prohibited because it does not biodegrade readily.

##### Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment. When practicable, bale slope barriers should be placed along contours to avoid a concentration of flow. Bale slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

##### Proper installation method:

Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use. Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground. Once all the bales have been installed and anchored, place the excavated soil against the upslope side of the check and compact it. The compacted soil should be no more than 3" to 4" deep.

##### List of common placement/installation mistakes to avoid:

When practical, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier fails. Do not place bale slope barriers in areas with shallow soils underlain by rock. If the barrier is not anchored sufficiently, it will wash out. Bale slope barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

##### Inspection and Maintenance:

Bale slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Are there any points along the slope barrier where water is concentrating?  
Does water flow under the slope barrier?  
Does water flow through spaces between abutting bales?  
Are any bales dislodged?  
Are bales decomposing due to age and/or water damage?  
Does sediment need to be removed from behind the slope barrier?



SOIL EROSION BMPs

STRAW BALE  
DITCH CHECK  
AND  
BARRIER DETAIL

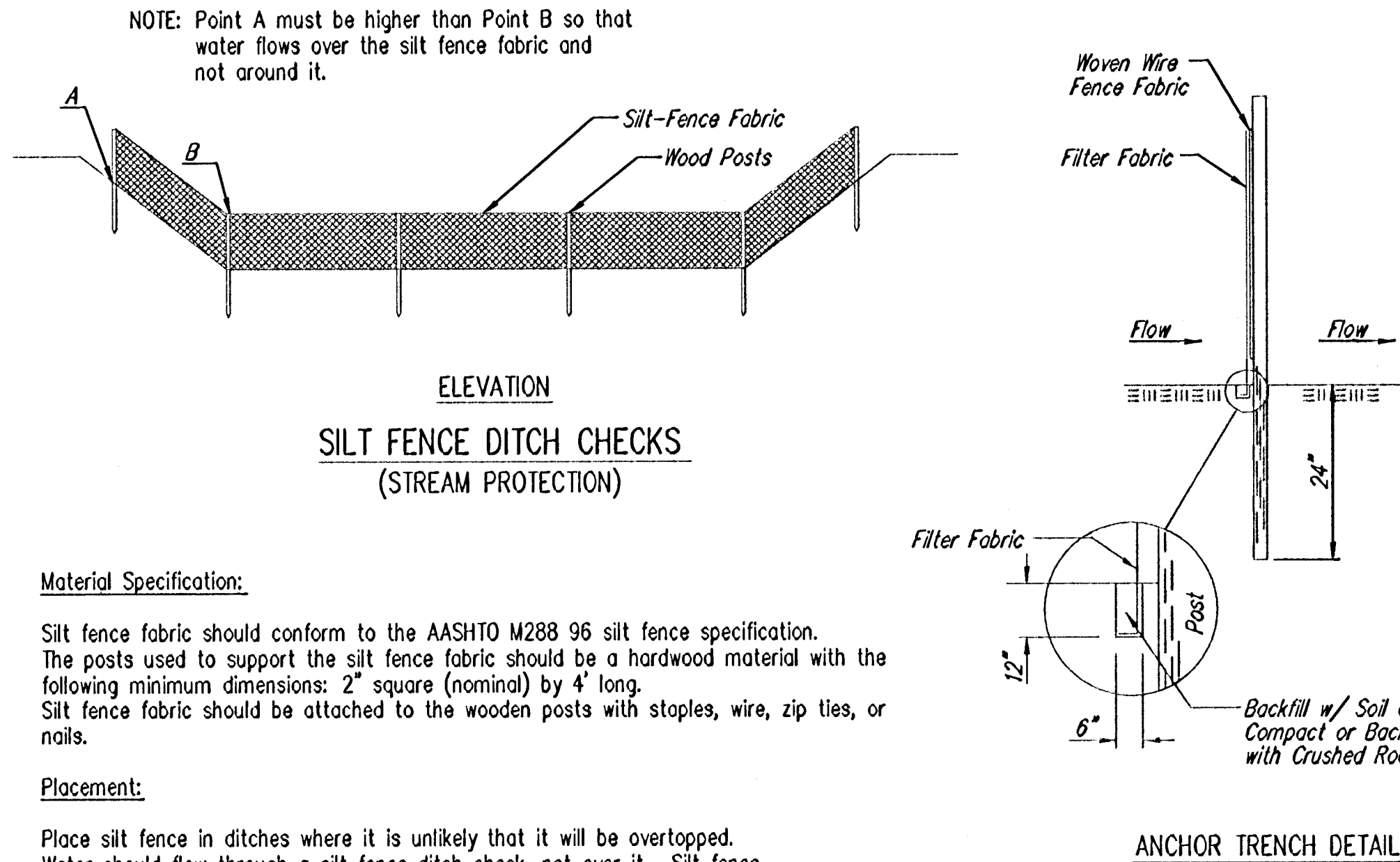
JIM ARMOUR, P.E.  
CITY ENGINEER

PROJECT NUMBER  
468-84302

QA NO.  
751444

DATE  
MAR 2007

SHEET 18 OF 22



Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

Place silt fence in ditches where it is unlikely that it will be overtopped. Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped. Silt fence ditch checks should be placed perpendicular to the flowline of the ditch. The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check. Silt fence ditch checks should not be placed in ditches where high flows are expected. Rock checks should be used instead. Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

| Ditch Check<br>Ditch grade<br>(%) | Spacing<br>Check<br>Spacing<br>(feet) |
|-----------------------------------|---------------------------------------|
| 0.5                               | 200                                   |
| 1.0                               | 200                                   |
| 2.0                               | 100                                   |
| 3.0                               | 65                                    |
| 4.0                               | 50                                    |
| 5.0                               | 40                                    |
| 6.0                               | 30                                    |

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench for later use. Roll out a continuous length of silt fence fabric on the downstream side of the trench. Place the edge of the fabric in the trench starting at the top upstream edge of the trench. Line two sides of the trench with the fabric as shown on detail. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed. Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart. Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

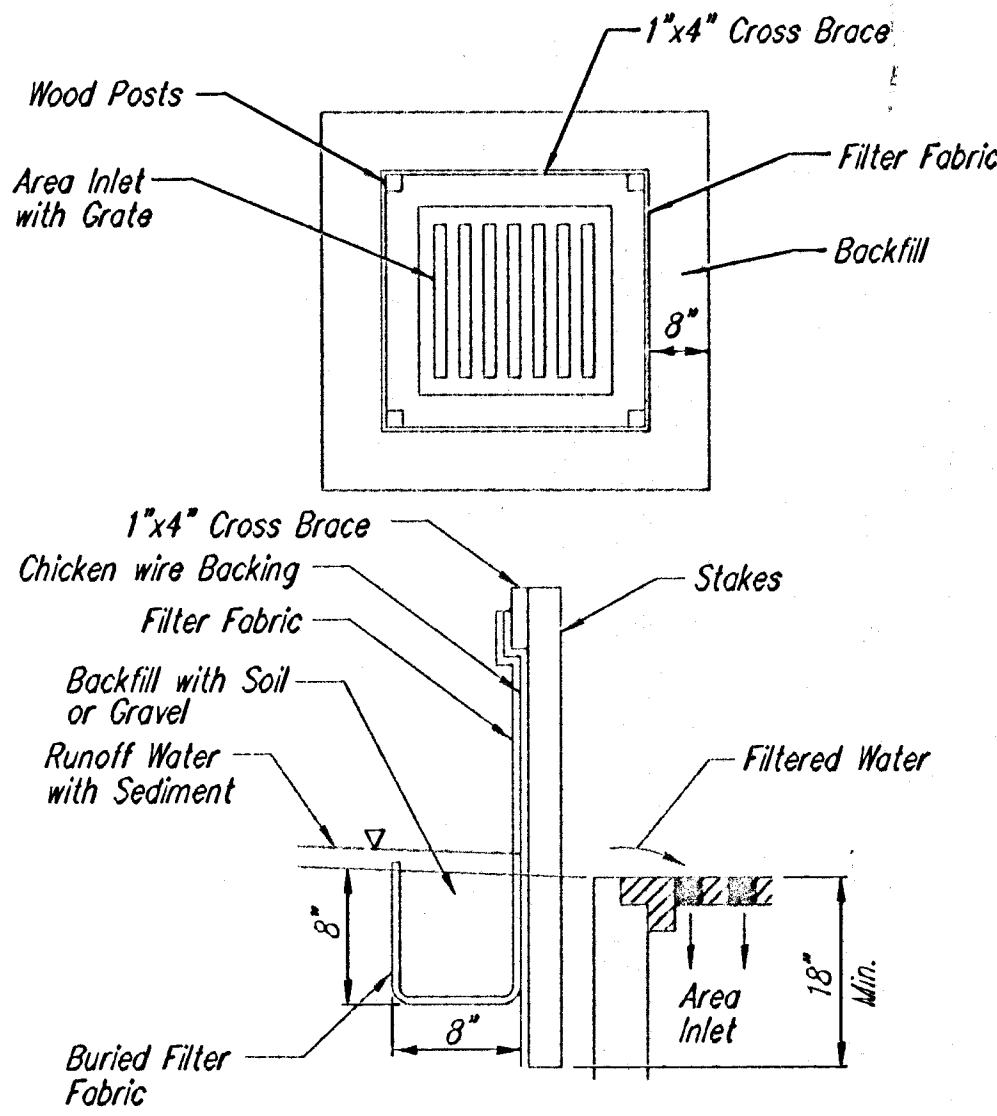
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence ditch check—not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them. Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail. Do not place a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow. Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow. Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks. Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence. Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.

Inspection and Maintenance:

Silt fence ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?  
Does water flow under the ditch check?  
Does the silt fence sag excessively?  
Has the silt fence torn or become detached from the posts?  
Does sediment need to be removed from behind the ditch check?



Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. The material used to frame the tops of the posts should be 1" by 4" boards. Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped. Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped. When used as a barrier for area inlets, silt fence fabric and posts must be supported at the top by a wooden frame. When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide. Drive posts to a depth of at least 18" around the perimeter of the area inlet. The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them. Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening. Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails. Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed. Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

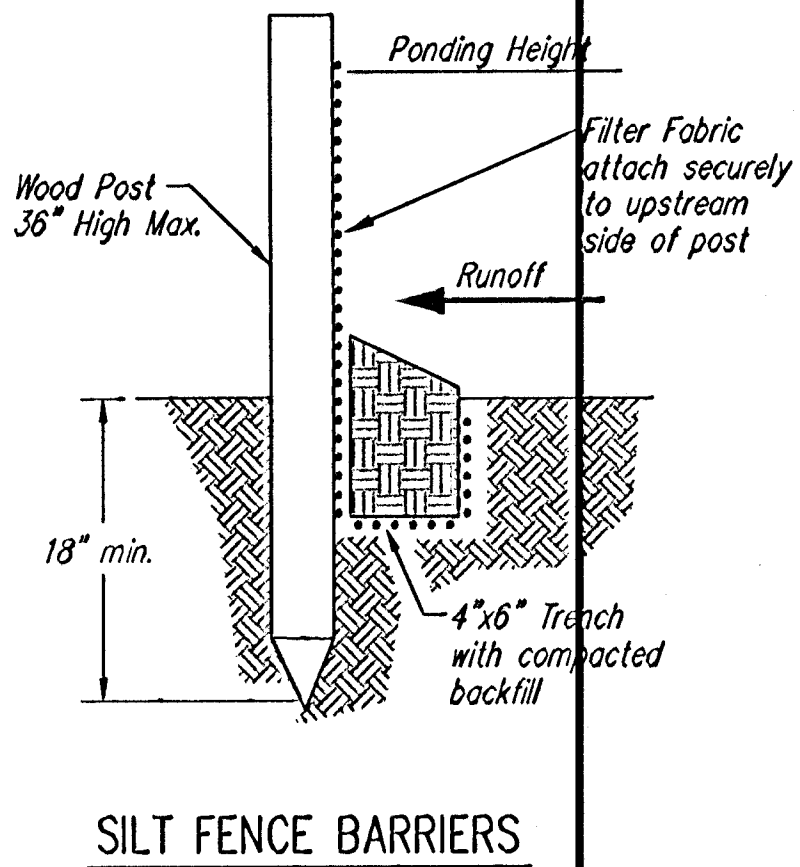
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence barrier for area inlet—not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped. Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail. Do not install silt fence barrier for area inlets without framing the top of the posts. The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance:

Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the silt fence?  
Does the silt fence sag excessively?  
Has the silt fence torn or become detached from the posts?  
Does sediment need to be removed from behind the area inlet barrier?



Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment. When practicable, silt fence slope barriers should be placed along contours to avoid a concentration of flow. Silt fence slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 6" deep by 4" wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use. Roll out a continuous length of silt fence fabric on the downslope side of the trench. Place the edge of the fabric in the trench starting at the top upslope edge. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt-fence fabric should remain exposed. Lay the exposed silt fence upslope of the trench to clear an area for driving in the posts. Just downslope of the trench, drive posts into the ground to a depth of at least 18". Place posts no more than 4' apart. Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

List of common placement/installation mistakes to avoid:

When practicable, do not place silt fence slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. When the flow concentrates, it overtops the barrier and the silt fence slope barrier quickly deteriorates. Do not place silt-fence posts on the upslope side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail. Do not place silt fence slope barriers in areas with shallow soils underlain by rock. If the barrier is not sufficiently anchored, it will wash out. Silt fence slope barriers must be dug into the ground—silt fence at ground level does not work because water will flow underneath.

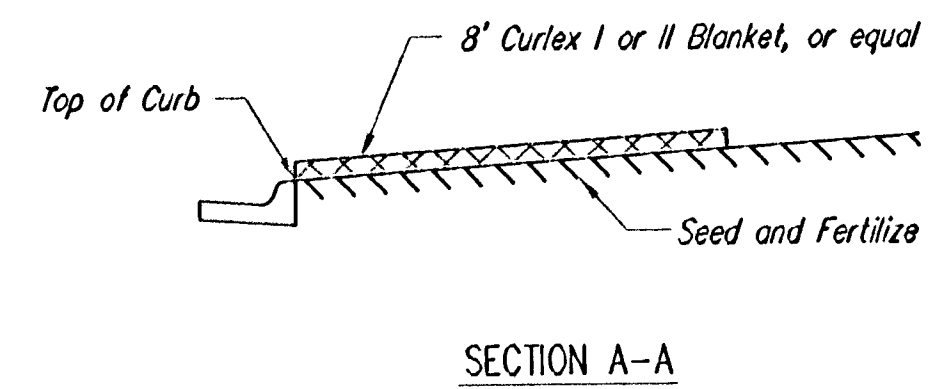
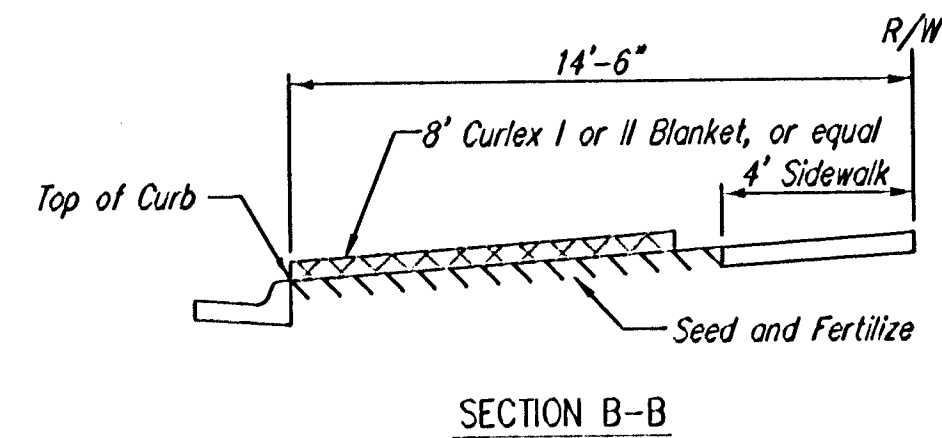
Inspection and Maintenance:

Silt fence slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

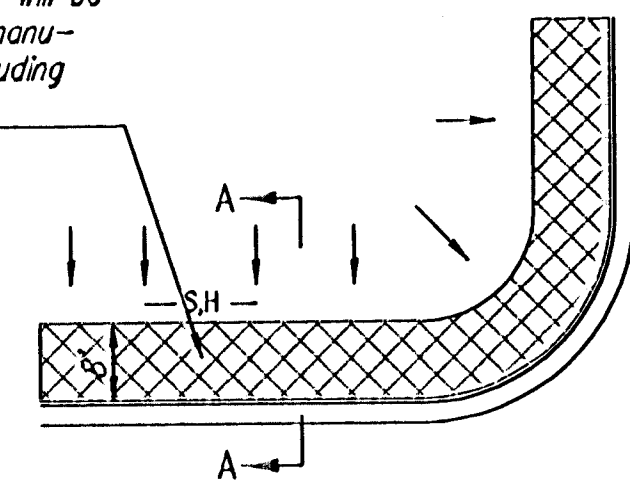
Are there any points along the slope barrier where water is concentrating?  
Does water flow under the slope barrier?  
Do the silt fences sag excessively?  
Has the silt fence torn or become detached from the posts?  
Does sediment need to be removed from behind the slope barrier?



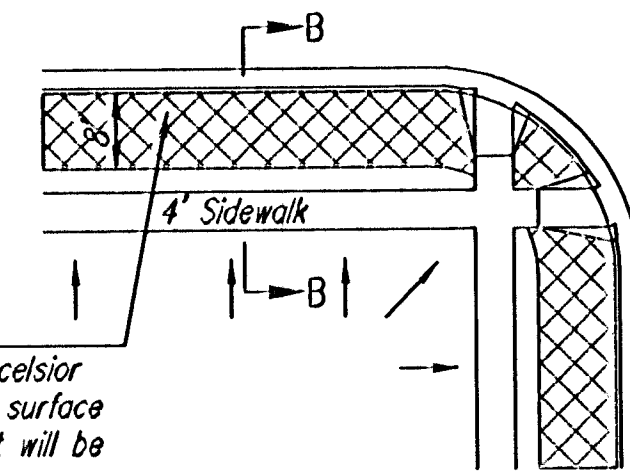
|                                                    |                   |
|----------------------------------------------------|-------------------|
| SOIL EROSION BMPs                                  |                   |
| SILT FENCE<br>DITCH CHECK<br>AND<br>BARRIER DETAIL |                   |
| JIM ARMOUR, P.E.<br>CITY ENGINEER                  |                   |
| PROJECT NUMBER<br>468-84302                        | OCA NO.<br>751444 |
| DATE<br>MAR 2007                                   | SHEET 19 OF 22    |



Install 8' wide Curlex I or II Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturer's recommendation, including staples. (See detail)



SOUTH STREET

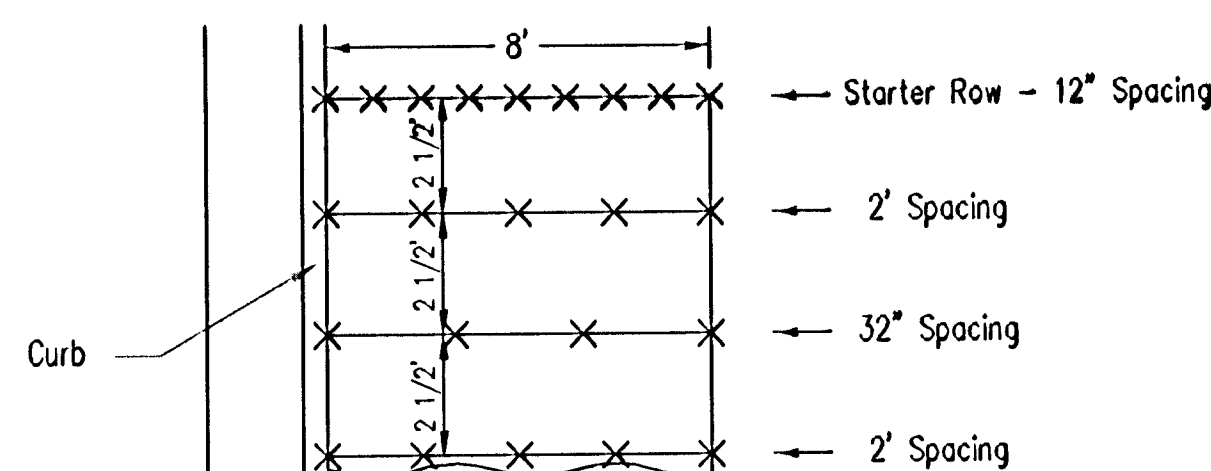


Install 8' wide Curlex I or II Excelsior Blanket, or equal, on prepared surface back of curb. Edge of blanket will be at back of curb. Install per manufacturer's recommendation, including staples. (See detail)

#### NOTES:

1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

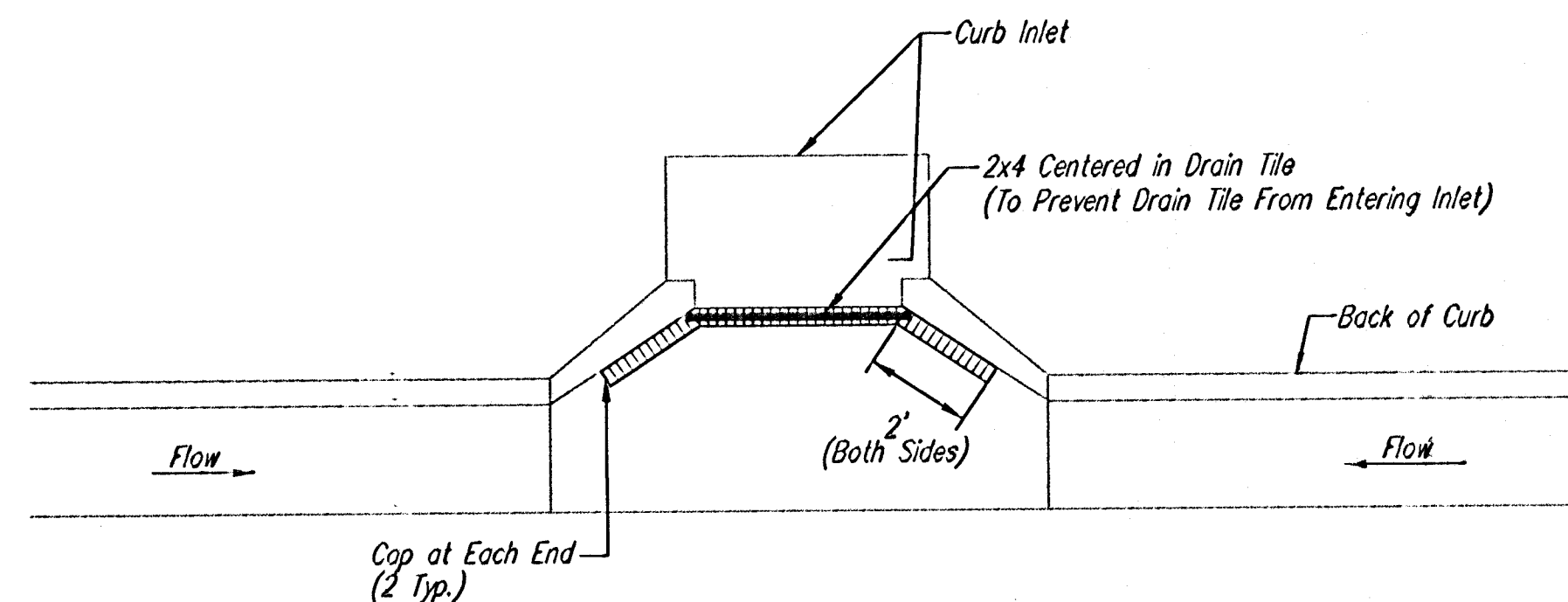
#### BACK OF CURB PROTECTION DETAIL



#### STAPLE PATTERN

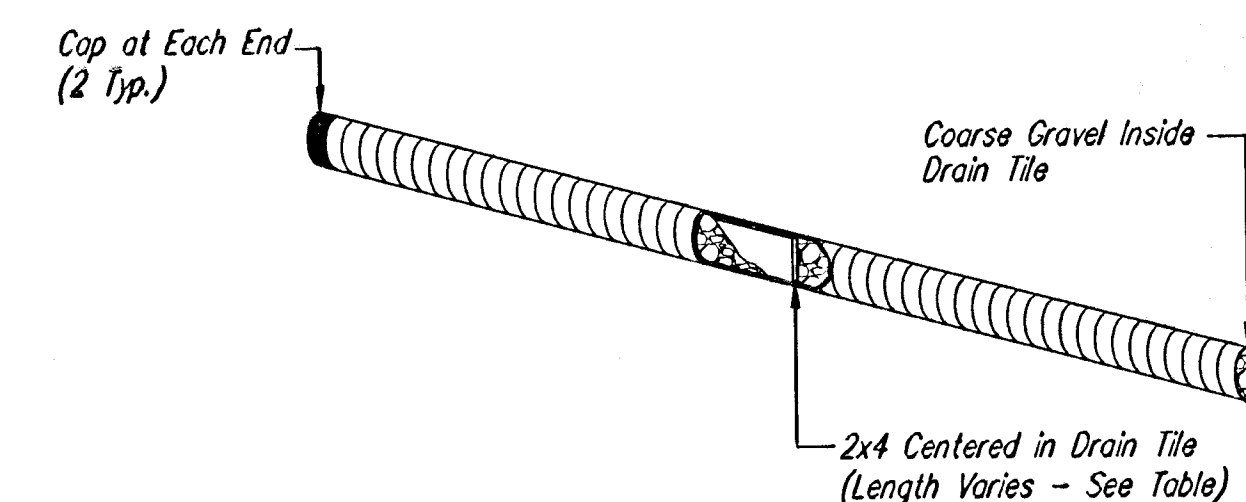
NOTES: Use 6" seam overlap

#### DETAILS FOR CURLEX I OR II BLANKETS



Note: Place 4" perforated PVC pipe, filled with 1/2"-1" dia. gravel, in front of curb inlet as shown.

| 2x4 LENGTH | INLET TYPE | INLET OPENING |
|------------|------------|---------------|
| 5'-6"      | 1-A        | 5'-0"         |
| 10'-6"     | 1-A        | 10'-0"        |
| 15'-6"     | 1-A        | 15'-0"        |



#### CURB INLET PROTECTION

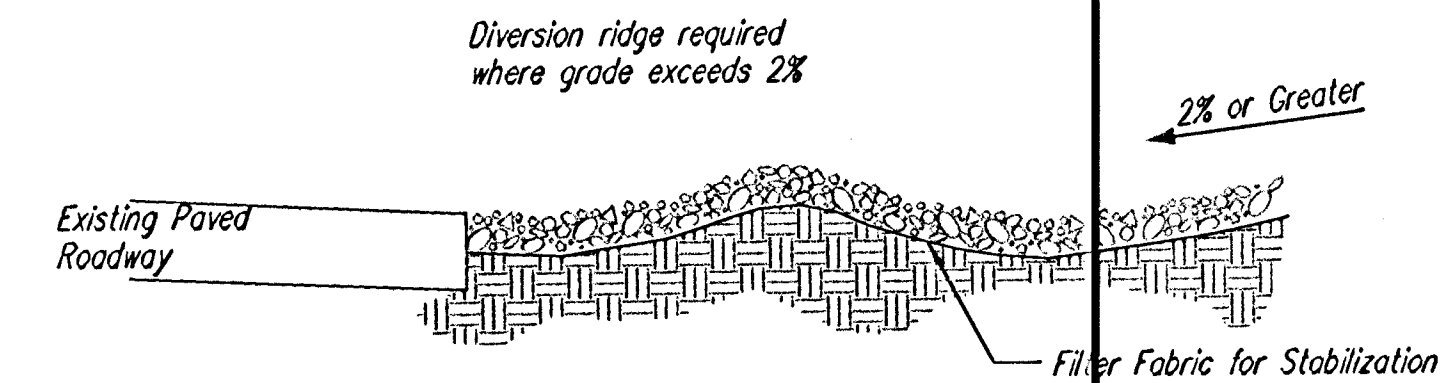
4" PERFORATED PIPE W/ GRAVEL

#### EROSION CONTROL QUANTITIES:

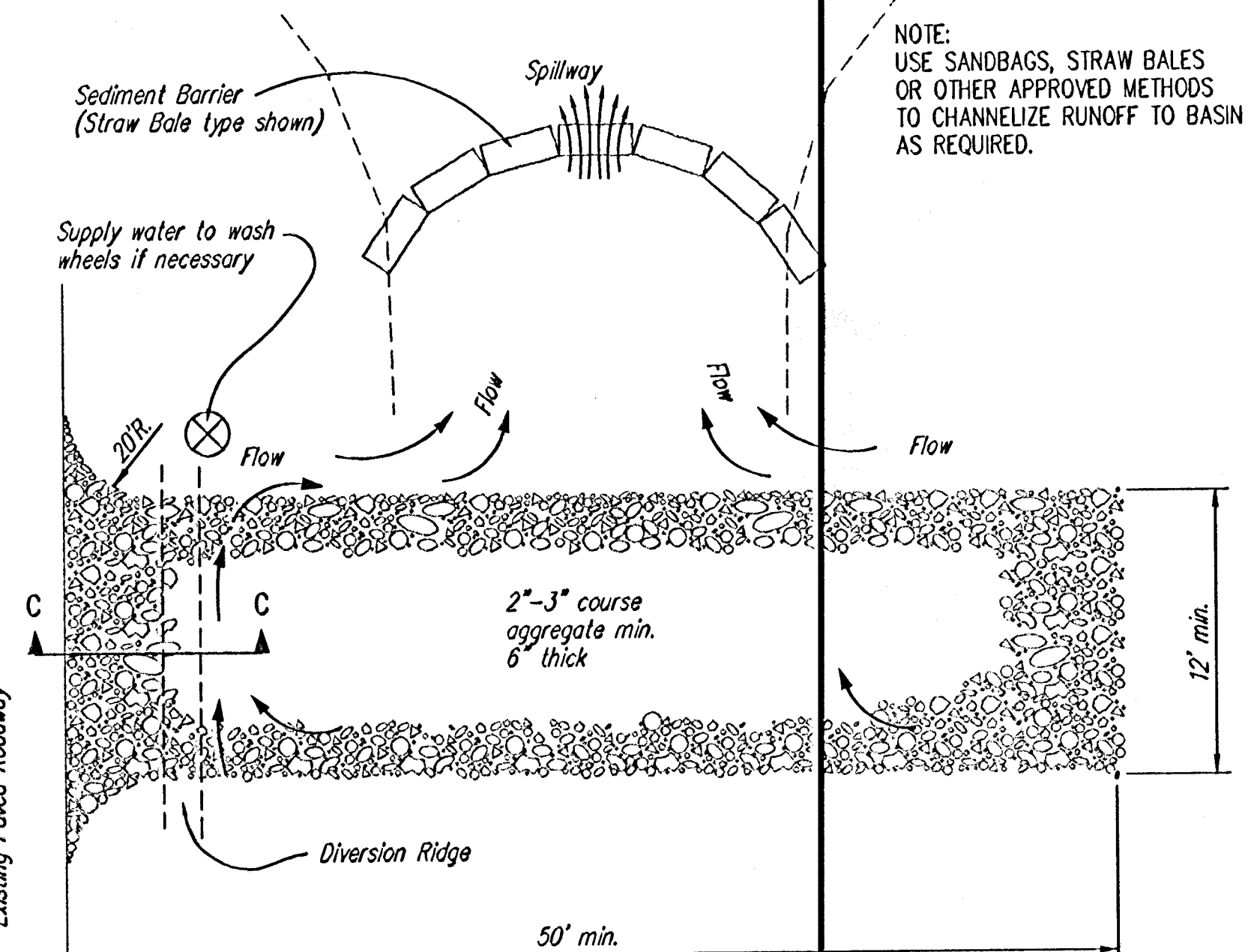
##### EROSION CONTROL MEASURES TO BE INSTALLED:

4,938 L.F. SILT FENCE  
53 EA. DITCH CHECKS  
10,235 S.Y. EROSION CONTROL MAT  
4,555 L.F. CUT-OFF TRENCH  
TEMPORARY DITCHING  
1 EA. STABILIZED CONSTRUCTION ENTRANCE

\* ALL EXISTING BMPs INCLUDING CONSTRUCTION ENTRANCE, SEDIMENT BARRIERS, SILT FENCE, CUT-OFF TRENCH, AND EROSION CONTROL MAT SHALL BE MAINTAINED AND REPAIRED IF NECESSARY. MAINTENANCE, REPLACEMENT, OR REMOVAL OF EROSION CONTROL MEASURES TO BE PAID FOR BY L.S. BID ITEM "SITE CLEARING & RESTORATION"



#### SECTION C-C



#### STABILIZED CONSTRUCTION ENTRANCE

#### NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.



#### SOIL EROSION BMPs

BACK OF CURB PROTECTION  
CURB INLET PROTECTION  
AND  
CONSTRUCTION ENTRANCE

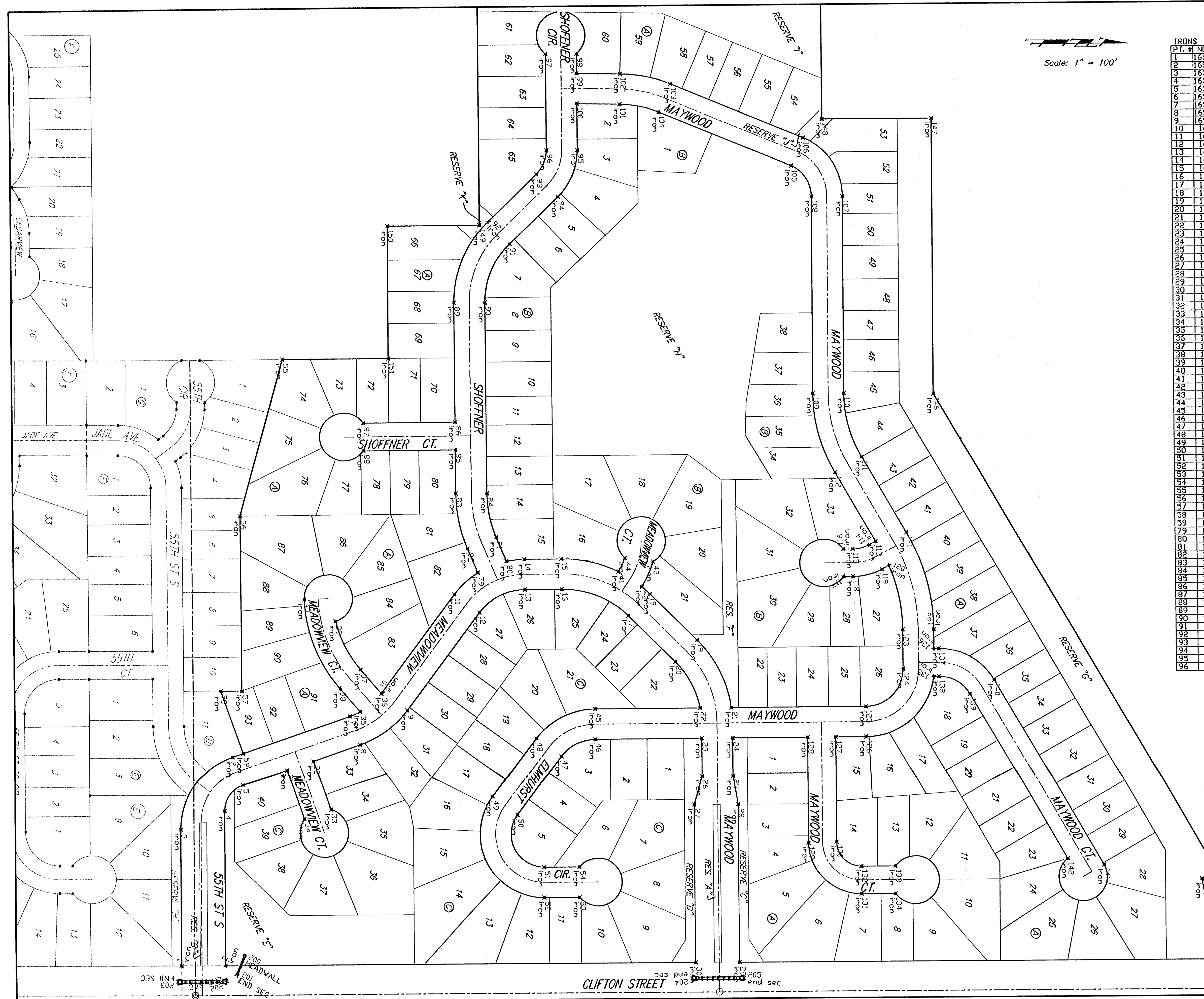
JIM ARMOUR, P.E.  
CITY ENGINEER

PROJECT NUMBER  
468-84302

DCA NO.  
751444

DATE  
MAR 2007

SHEET 20 OF 22



Scale: 1" = 100'

| IRON  |            |            |      |
|-------|------------|------------|------|
| PT. # | NORTHING   | EASTING    | DESC |
| 1     | 1631306.32 | 1631697.04 | iron |
| 2     | 1631307.52 | 1631697.19 | iron |
| 3     | 1631306.51 | 1631417.02 | iron |
| 4     | 1631397.51 | 1631379.01 | iron |
| 5     | 1631435.50 | 1631325.54 | iron |
| 6     | 1631414.45 | 1631265.10 | iron |
| 7     | 1631657.14 | 1631180.54 | iron |
| 8     | 1631618.20 | 1631240.98 | iron |
| 9     | 1631776.22 | 1631169.00 | iron |
| 10    | 1631724.86 | 1631130.82 | iron |
| 11    | 1631875.58 | 1630928.07 | iron |
| 12    | 1631926.93 | 1630966.23 | iron |
| 13    | 1632021.29 | 1630918.65 | iron |
| 14    | 1632021.10 | 1630854.65 | iron |
| 15    | 1632097.30 | 1630854.42 | iron |
| 16    | 1632097.49 | 1630918.42 | iron |
| 17    | 1632234.54 | 1630974.95 | iron |
| 18    | 1632279.79 | 1630929.69 | iron |
| 19    | 1632376.23 | 1631026.13 | iron |
| 20    | 1632330.98 | 1631071.34 | iron |
| 21    | 1632446.11 | 1631167.38 | iron |
| 22    | 1632381.37 | 1631167.57 | iron |
| 23    | 1632384.40 | 1631231.56 | iron |
| 24    | 1632448.40 | 1631231.37 | iron |
| 25    | 1632448.64 | 1631312.12 | iron |
| 26    | 1632484.64 | 1631312.32 | iron |
| 27    | 1632367.82 | 1631372.35 | iron |
| 28    | 1632458.82 | 1631372.09 | iron |
| 29    | 1632459.80 | 1631697.16 | iron |
| 30    | 1632368.80 | 1631697.16 | iron |
| 31    | 1631926.64 | 1631293.78 | iron |
| 32    | 1631591.41 | 1631274.70 | iron |
| 33    | 1631617.32 | 1631377.77 | iron |
| 34    | 1631562.55 | 1631396.85 | iron |
| 35    | 1631678.70 | 1631170.98 | iron |
| 36    | 1631722.89 | 1631133.41 | iron |
| 37    | 1631680.57 | 1631083.63 | iron |
| 38    | 1631636.38 | 1631121.20 | iron |
| 39    | 1631698.45 | 1630982.60 | iron |
| 40    | 1631565.10 | 1630936.28 | iron |
| 41    | 1632214.73 | 1630882.43 | iron |
| 42    | 1632263.11 | 1630914.42 | iron |
| 43    | 1632286.58 | 1630861.65 | iron |
| 44    | 1632228.55 | 1630853.61 | iron |
| 45    | 1632164.26 | 1631168.22 | iron |
| 46    | 1632164.43 | 1631232.22 | iron |
| 47    | 1632094.09 | 1631267.72 | iron |
| 48    | 1632042.73 | 1631229.54 | iron |
| 49    | 1631951.15 | 1631352.73 | iron |
| 50    | 1632002.32 | 1631390.91 | iron |
| 51    | 1632057.09 | 1631499.48 | iron |
| 52    | 1632057.09 | 1631563.48 | iron |
| 53    | 1632129.88 | 1631563.48 | iron |
| 54    | 1632129.88 | 1631499.48 | iron |
| 55    | 1631524.37 | 1630434.85 | iron |
| 56    | 1631434.36 | 1630760.26 | iron |
| 57    | 1631434.50 | 1631125.74 | iron |
| 58    | 1631590.61 | 1631125.76 | iron |
| 59    | 1631436.48 | 1631257.42 | iron |
| 60    | 1631924.36 | 1630882.83 | iron |
| 61    | 1631983.63 | 1630858.67 | iron |
| 62    | 1631963.03 | 1630808.16 | iron |
| 63    | 1631903.77 | 1630832.35 | iron |
| 64    | 1631981.05 | 1630717.33 | iron |
| 65    | 1631945.05 | 1630717.14 | iron |
| 66    | 1631880.77 | 1630625.60 | iron |
| 67    | 1631880.60 | 1630567.60 | iron |
| 68    | 1631691.06 | 1630568.17 | iron |
| 69    | 1631691.23 | 1630626.17 | iron |
| 70    | 1631879.85 | 1630320.55 | iron |
| 71    | 1631943.85 | 1630320.36 | iron |
| 72    | 1631995.98 | 1630198.21 | iron |
| 73    | 1631951.83 | 1630151.87 | iron |
| 74    | 1632052.25 | 1630056.22 | iron |
| 75    | 1632056.39 | 1630102.56 | iron |
| 76    | 1632077.35 | 1630007.00 | iron |
| 77    | 1632073.35 | 1630006.99 | iron |

| IRON (CONT.) |            |             |      |
|--------------|------------|-------------|------|
| PT. #        | NORTHING   | EASTING     | DESC |
| 97           | 1632019.37 | 16329803.66 | iron |
| 98           | 1632137.37 | 16329803.66 | iron |
| 99           | 1632137.37 | 16329844.75 | iron |
| 100          | 1632137.36 | 16329908.76 | iron |
| 101          | 1632225.85 | 16329910.65 | iron |
| 102          | 1632227.21 | 16329846.67 | iron |
| 103          | 1632331.10 | 16329868.90 | iron |
| 104          | 1632306.16 | 16329927.84 | iron |
| 105          | 1632379.20 | 1630043.38  | iron |
| 106          | 1632604.14 | 16329984.44 | iron |
| 107          | 1632684.70 | 1630106.00  | iron |
| 108          | 1632620.70 | 1630106.00  | iron |
| 109          | 1632620.71 | 1630512.77  | iron |
| 110          | 1632684.71 | 1630512.77  | iron |
| 111          | 1632720.63 | 1630646.79  | iron |
| 112          | 1632665.21 | 1630678.79  | iron |
| 113          | 1632747.69 | 1630821.62  | iron |
| 114          | 1632733.01 | 1630829.38  | iron |
| 115          | 1632700.05 | 1630837.61  | iron |
| 116          | 1632680.85 | 1630837.67  | iron |
| 117          | 1632681.03 | 1630895.67  | iron |
| 118          | 1632700.22 | 1630895.61  | iron |
| 119          | 1632760.11 | 1630880.66  | iron |
| 120          | 1632774.46 | 1630873.08  | iron |
| 121          | 1632811.19 | 1630803.60  | iron |
| 122          | 1632865.74 | 1631007.12  | iron |
| 123          | 1632801.74 | 1631007.12  | iron |
| 124          | 1632801.74 | 1631088.54  | iron |
| 125          | 1632723.97 | 1631166.54  | iron |
| 126          | 1632724.17 | 1631230.54  | iron |
| 127          | 1632661.39 | 1631230.73  | iron |
| 128          | 1632603.40 | 1631230.90  | iron |
| 129          | 1632604.06 | 1631452.63  | iron |
| 130          | 1632662.06 | 1631450.96  | iron |
| 131          | 1632713.06 | 1631559.81  | iron |
| 132          | 1632713.06 | 1631501.81  | iron |
| 133          | 1632783.46 | 1631501.80  | iron |
| 134          | 1632783.47 | 1631559.80  | iron |
| 135          | 1632864.79 | 1631104.91  | iron |
| 136          | 1632865.74 | 1631046.91  | iron |
| 137          | 1632875.74 | 1631046.91  | iron |
| 138          | 1632875.74 | 1631104.91  | iron |
| 139          | 1632939.46 | 1631141.69  | iron |
| 140          | 1632982.68 | 1631112.68  | iron |
| 141          | 1633214.94 | 1631502.05  | iron |
| 142          | 1633139.63 | 1631488.32  | iron |
| 143          | 1633446.93 | 1631697.13  | iron |
| 144          | 1633417.01 | 1631532.71  | iron |
| 145          | 1633447.32 | 1631515.21  | iron |
| 146          | 1632862.71 | 1630515.01  | iron |
| 147          | 1632869.69 | 1629945.01  | iron |
| 148          | 1632643.69 | 1629945.02  | iron |
| 149          | 1631933.58 | 1630139.31  | iron |
| 150          | 1631743.63 | 1630159.56  | iron |
| 151          | 1631743.73 | 1630434.56  | iron |

| SVS   |            |            |          |
|-------|------------|------------|----------|
| PT. # | NORTHING   | EASTING    | DESC     |
| 200   | 1631435.02 | 1631680.86 | HEADWALL |
| 201   | 1631420.39 | 1631715.99 | END SEC  |
| 202   | 1631398.44 | 1631729.19 | END SEC  |
| 203   | 1631298.44 | 1631729.20 | END SEC  |
| 204   | 1632360.90 | 1631729.17 | end sec  |
| 205   | 1632467.90 | 1631729.16 | end sec  |

MEADOWLAKE BEACH ADDITION  
**COORDINATE SHEET**  
STORM WATER DRAIN IMPROVEMENTS

Baughman Company, P.A. 315 Ella St. White, NJ 07071 P 908-262-7271 F 908-262-0149  
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER  
46884302

DESIGN  
ATD  
APPROVED  
DATE  
03/07

SCALE  
Noted  
SHEET

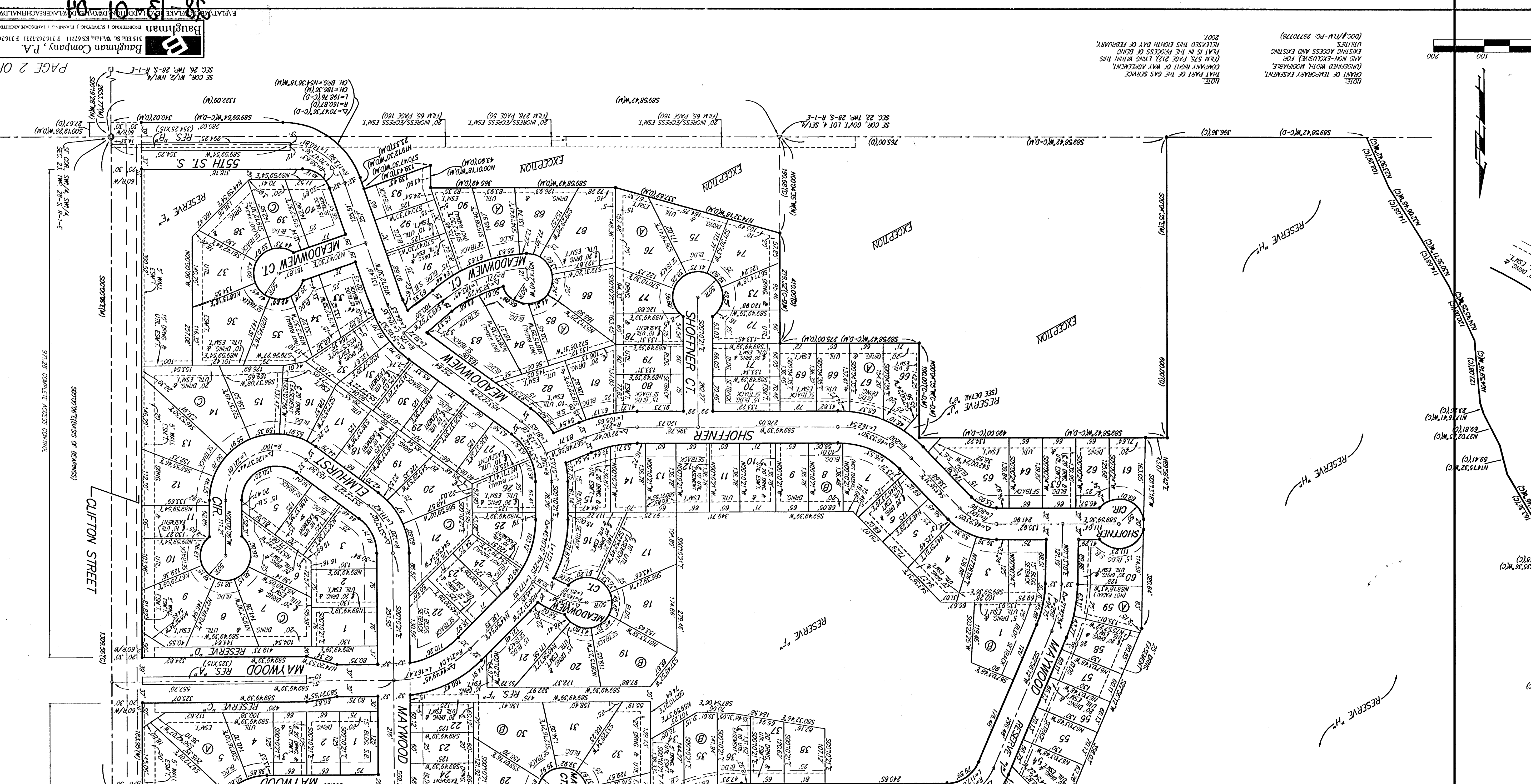
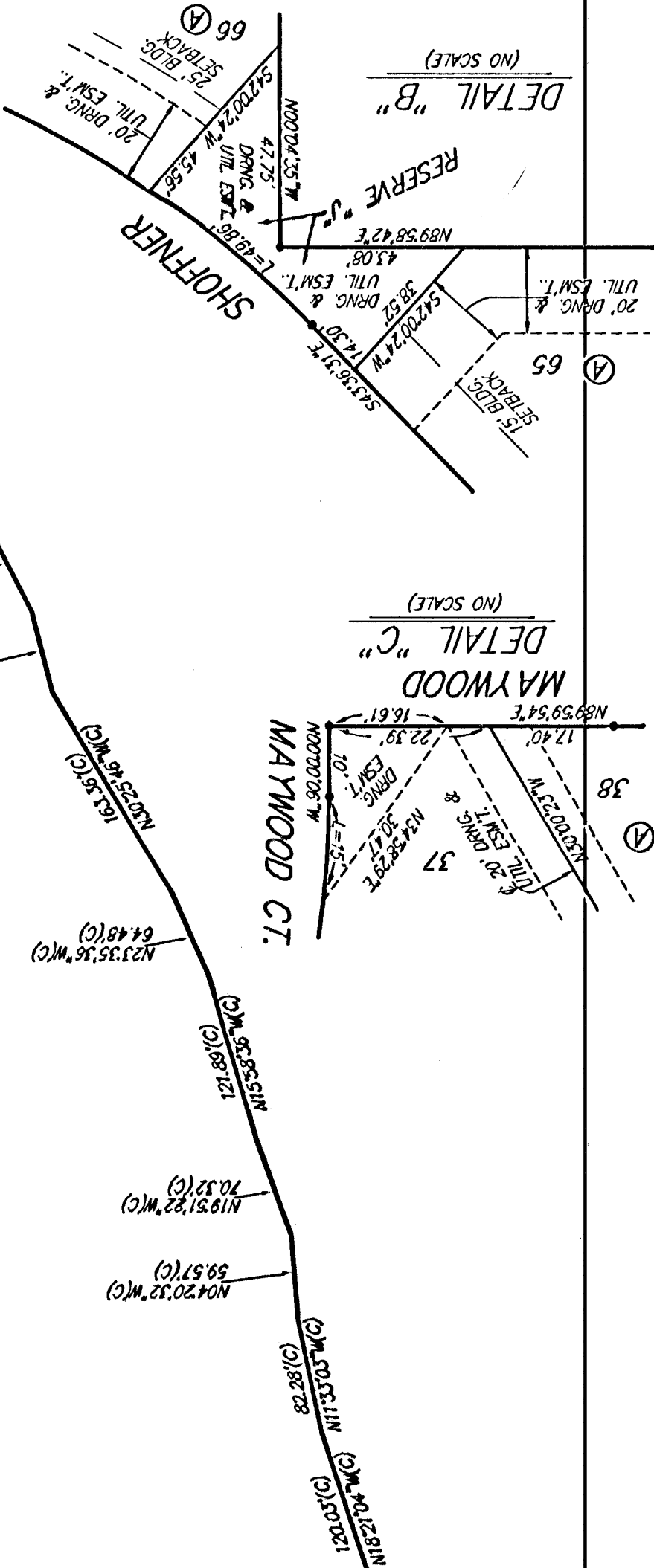
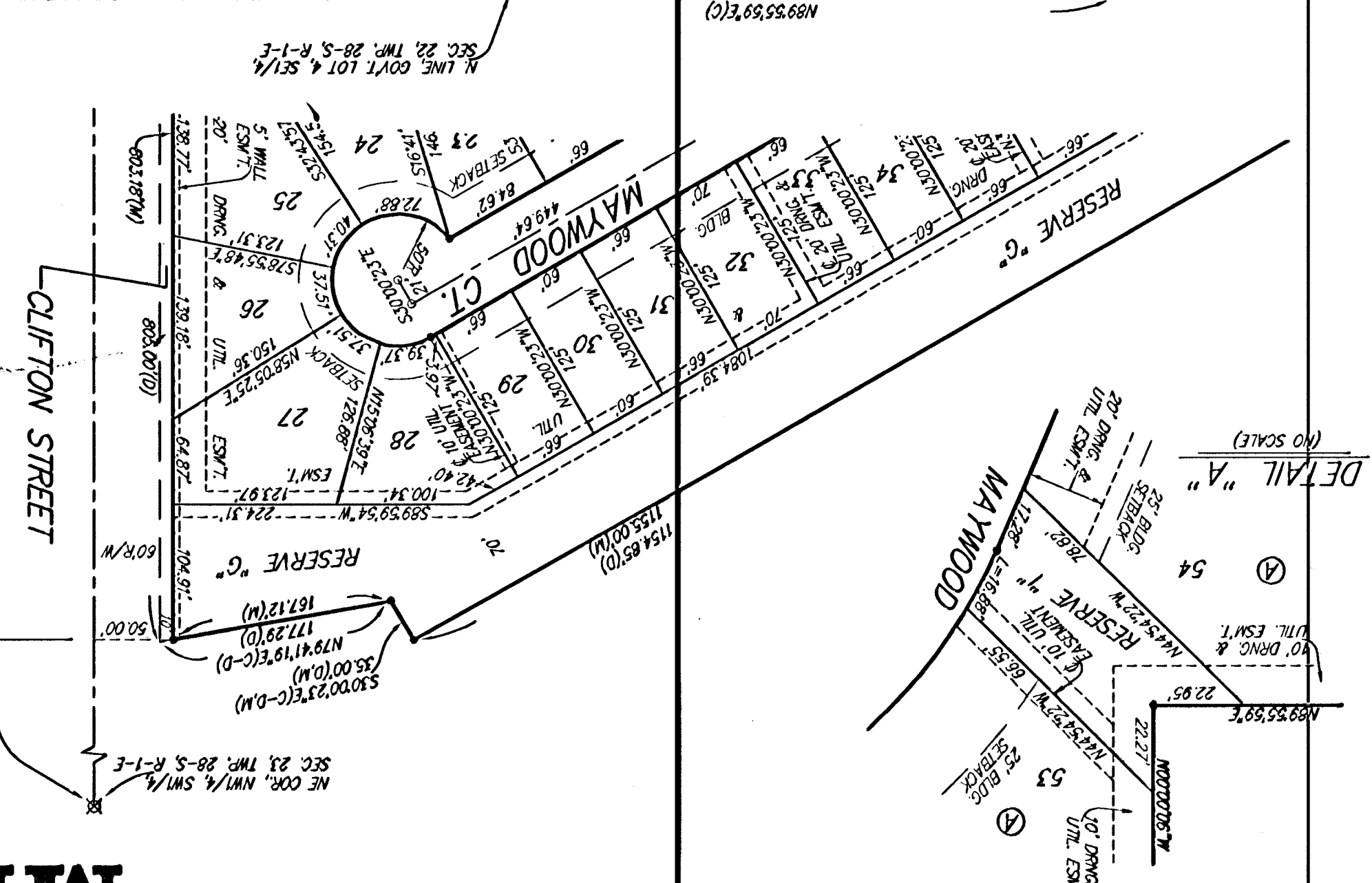
**21 OF 22**

MeadowlakeBeach/SWDrains

06-10-E676

**MEADOWLAKE BEACH ADDITION**  
WICHITA, SEDGWICK COUNTY, KANSAS

| LOWEST OBTAINING PAID THE STRUCTURES FOR |                                  |
|------------------------------------------|----------------------------------|
| ELEVATION                                | 101                              |
| BLOCK                                    |                                  |
| M30259                                   | 1-83                             |
| A                                        | 1-10                             |
| B                                        | 11-15                            |
| B                                        | 14-16, 19-22, 24-32, 34-38       |
| B                                        | 12, 18, 33                       |
| B                                        | 1-5, 6, 14, 17-20, 22, 35-40     |
| C                                        | 4, 7, 9, 22, 23, 28, 31, 34      |
| C                                        | 8, 28                            |
| C                                        | 9-13, 15, 16, 21, 25, 26, 30, 31 |
| C                                        | 1265.0                           |
| C                                        | 1266.0                           |



**B**  
Baughman Company, P.A.  
315 Ellis St., Wichita, KS 67211 P 316-262-7271 F 316-262-0149  
EMPLOYMENT | SURVEILLANCE | INVESTIGATION | LABORATORY ANALYTICAL SERVICES  
316-262-0149 FAX 316-262-0149