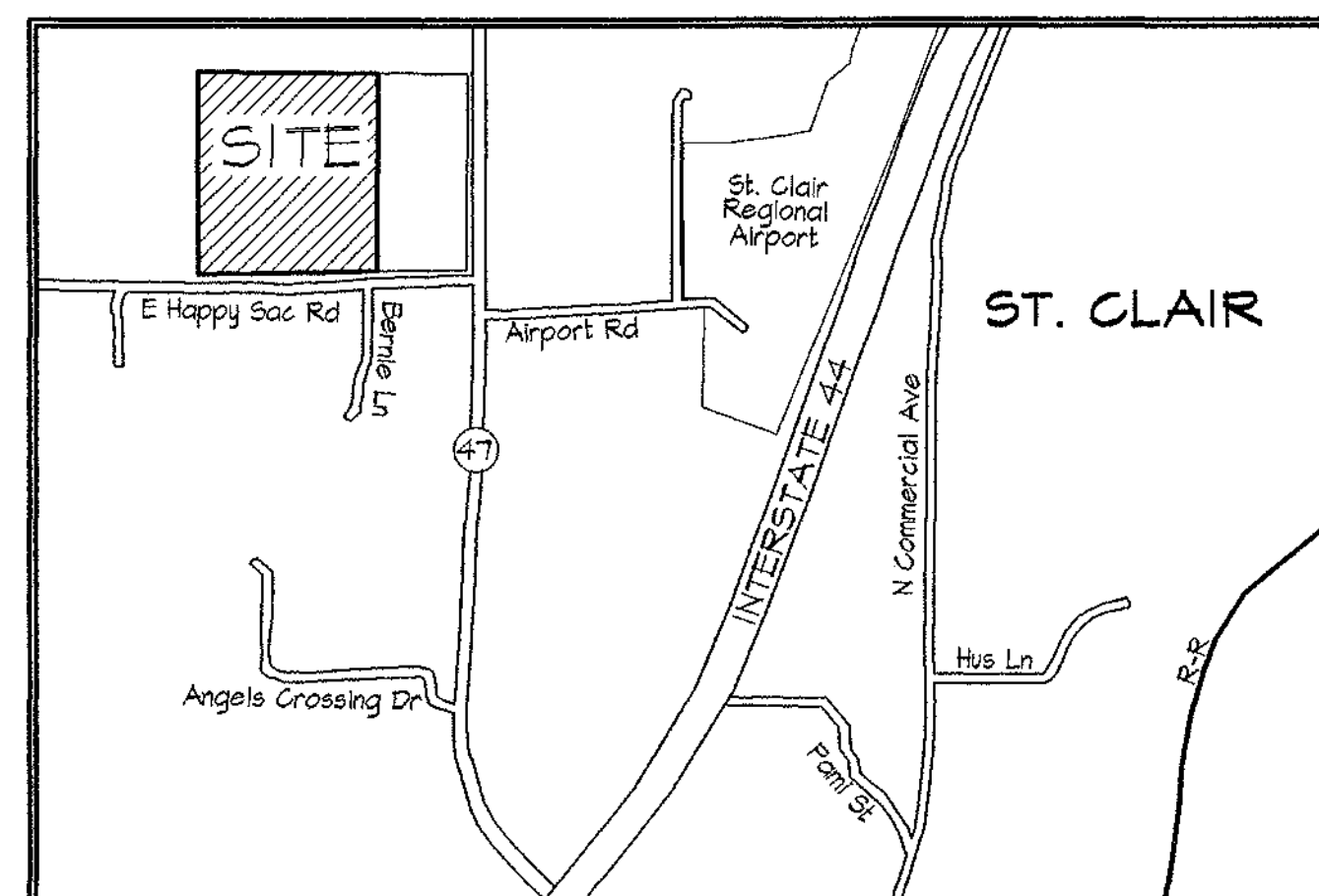


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| C1 | EXISTING TOPOGRAPHY PLAN |
| C2 | EXISTING TOPOGRAPHY PLAN |
| C3 | CLEARING AND EROSION PLAN |
| C4 | CLEARING AND EROSION PLAN |
| C5 | STREET GRADING PLAN |
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| C17 | STORM AND SANITARY SEWER PROFILE |
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| C19 | SANITARY SEWER PROFILE |
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| C21 | STREET CROSS SECTIONS |
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| C26 | STREET CROSS SECTIONS |
| C27 | DETAIL SHEET |
| C28 | DETAIL SHEET |
| C29 | DETAIL SHEET |
| C30 | DETAIL SHEET |



LOCATION PLAN

PROJECT DEVELOPER
47 AIRPORT ROAD, LLC

PROJECT ENGINEER
WASHINGTON ENGINEERING AND ARCHITECTURE

PROJECT SURVEYOR
MUSER AND ASSOCIATES

Remember!
Call Before You Dig!
1-800-DIG-RITE
(1-800-344-7483)

Township 42 N
Range 1 W
Section 13/24
1/4 Section SW/4

Set No. :

RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

1. *Chlorophyll a* (Chl a) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl a is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy in the form of ATP and NADPH.

COVER SHEET

C

PROJECT #2430

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responsibility of the undersigned.

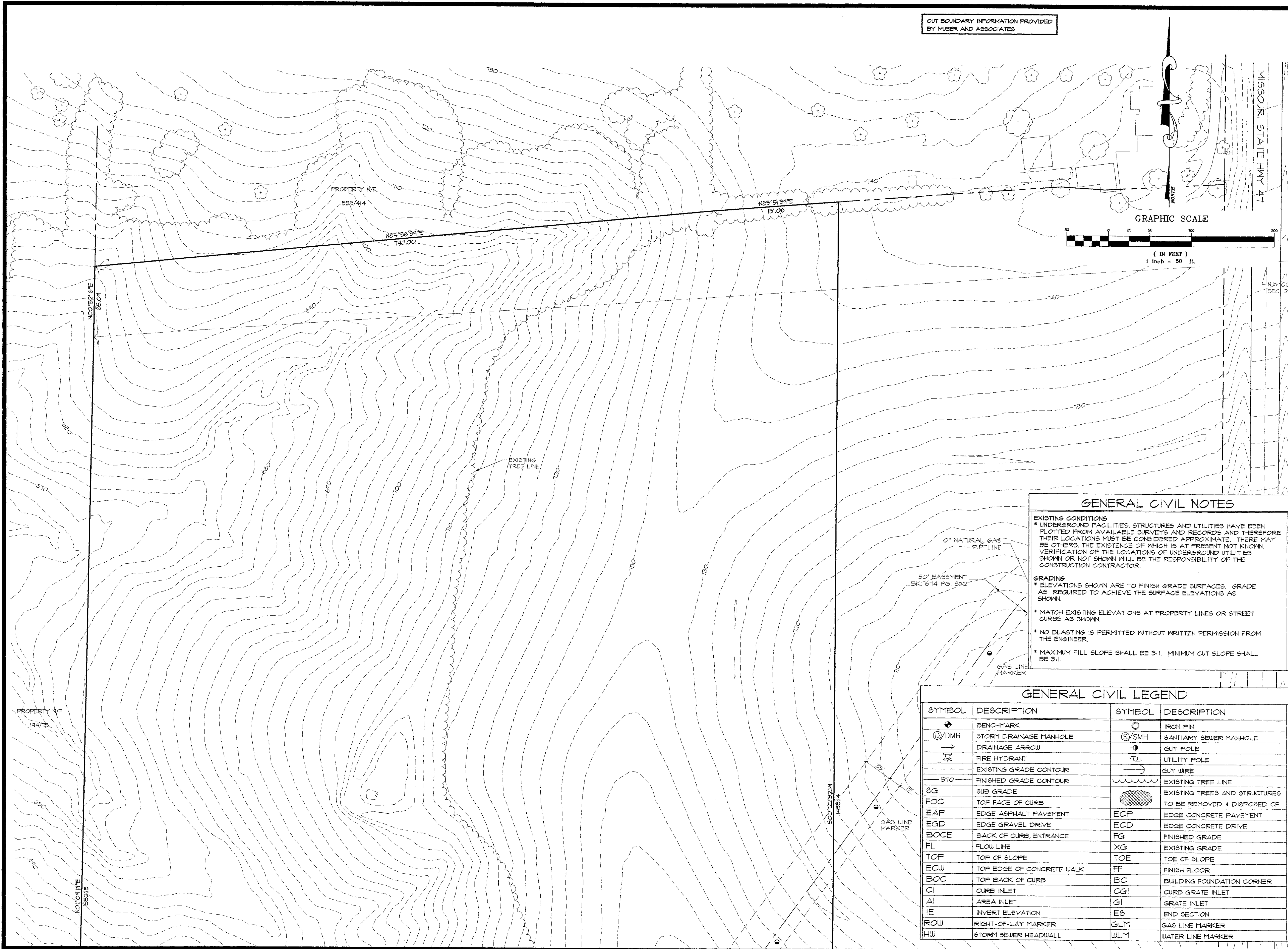
Mark A. Harriman

STATE OF MISSOURI
MARK A. HARRIMAN
REGISTERED PROFESSIONAL ENGINEER
NUMBER
E-2000162109
3/14/02



**WASHINGTON ENGINEERING
& ARCHITECTURE, P.C.**
GARY TERSCHLUSE, P.E.

\\c:\-Project\2439 Job Wessels, Dev on 47, St. Clair\100 - DRAWINGS\100 - Civil\2439-CZ.dwg, CS, 3/14/2006 2:41:40 PM, BUS

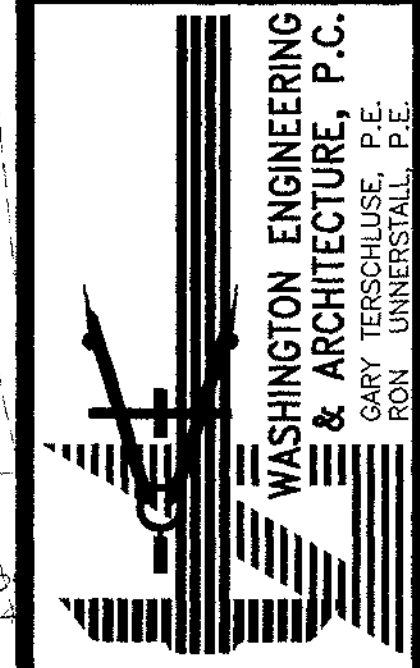


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REGISTERED PROFESSIONAL ENGINEER
NUMBER
E-2000162109

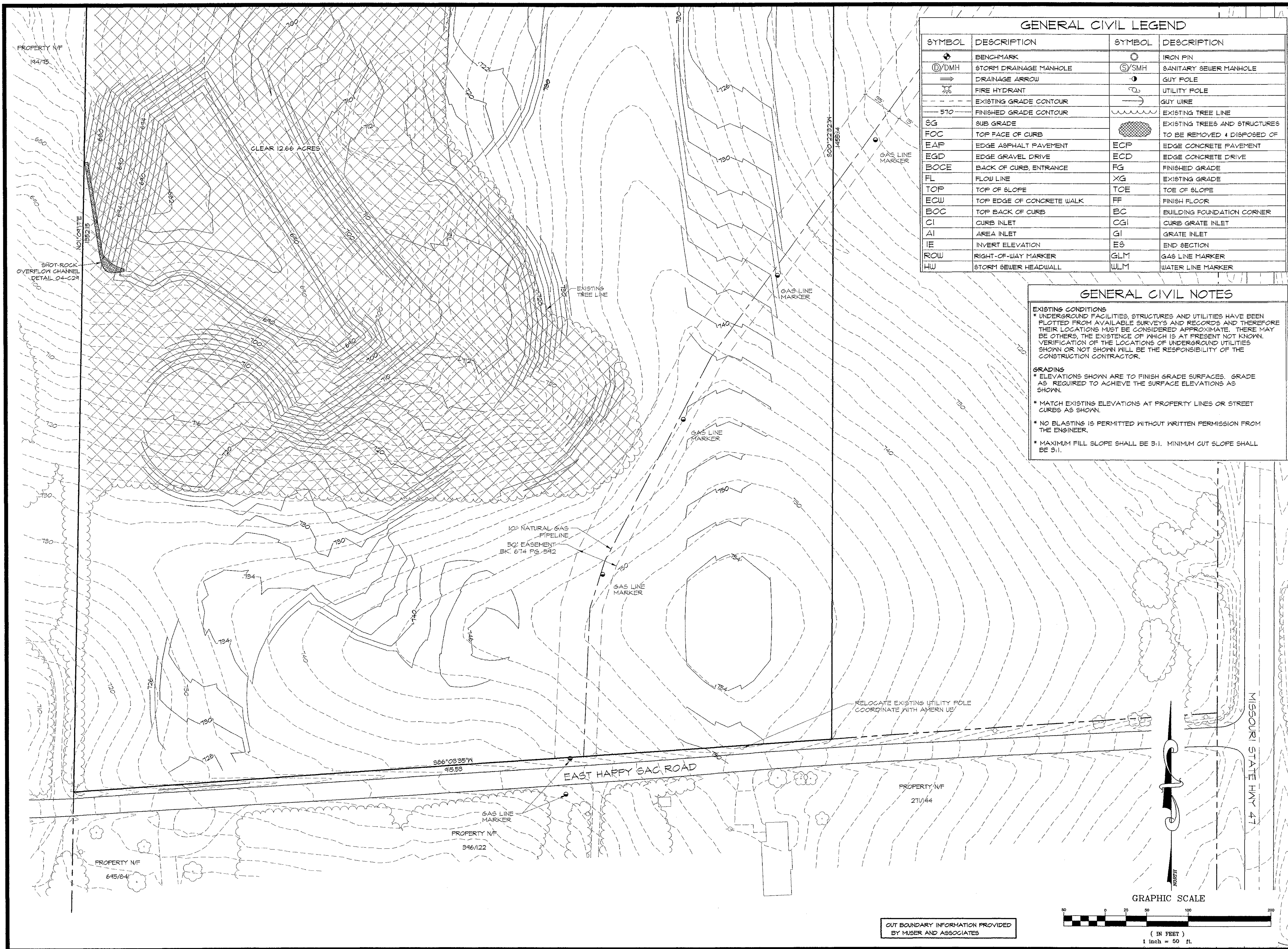


RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

EXISTING TOPOGRAPHY PLAN		
DATE	REVISION	DESCRIPTION
5/14/08		PRELIMINARY PLAN
PROJECT #2434		OF 30

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\\Project\2439 - Westside, Devon 47, St. Clair\100 - DRAWINGS\100 - CIVIL\2439-CL.dwg, CL.dwg, 3/14/2009 2:43:12 PM, BJS



GENERAL CIVIL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCHMARK		IRON PIN
	STORM DRAINAGE MANHOLE		SANITARY SEWER MANHOLE
	DRAINAGE ARROW		GUY POLE
	FIRE HYDRANT		UTILITY POLE
	EXISTING GRADE CONTOUR		GUY WIRE
	FINISHED GRADE CONTOUR		EXISTING TREE LINE
	SUB GRADE		EXISTING TREES AND STRUCTURES TO BE REMOVED & DISPOSED OF
	TOP FACE OF CURB		EDGE CONCRETE PAVEMENT
	EDGE ASPHALT PAVEMENT		EDGE CONCRETE DRIVE
	EDGE GRAVEL DRIVE		FINISHED GRADE
	BACK OF CURB, ENTRANCE		EXISTING GRADE
	FLOW LINE		TOE OF SLOPE
	TOP OF SLOPE		FINISH FLOOR
	TOP EDGE OF CONCRETE WALK		BUILDING FOUNDATION CORNER
	TOP BACK OF CURB		CURB GRATE INLET
	CURB INLET		GRATE INLET
	AREA INLET		END SECTION
	INVERT ELEVATION		GAS LINE MARKER
	RIGHT-OF-WAY MARKER		WATER LINE MARKER
	STORM SEWER HEADWALL		

GENERAL CIVIL NOTES

EXISTING CONDITIONS

- * UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS AT PRESENT NOT KNOWN. VERIFICATION OF THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN OR NOT SHOWN WILL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.

GRADING

- * ELEVATIONS SHOWN ARE TO FINISH GRADE SURFACES. GRADE AS REQUIRED TO ACHIEVE THE SURFACE ELEVATIONS AS SHOWN.
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- * NO BLASTING IS PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
- * MAXIMUM FILL SLOPE SHALL BE 3:1. MINIMUM CUT SLOPE SHALL BE 3:1.

WASHINGTON ENGINEERING & ARCHITECTURE, P.C.

3/14/09

REGISTERED PROFESSIONAL ENGINEER

HARRIMAN

NUMBER

E-2000162109

GARY TERSCHLUSE, P.E.

RON UNTERSTALL, P.E.

RUNWAY ESTATES

Preliminary Plat

St. Clair, Missouri 63077

DATE	WP	REVISION	DESCRIPTION
3/14/09			PRELIMINARY PLAT

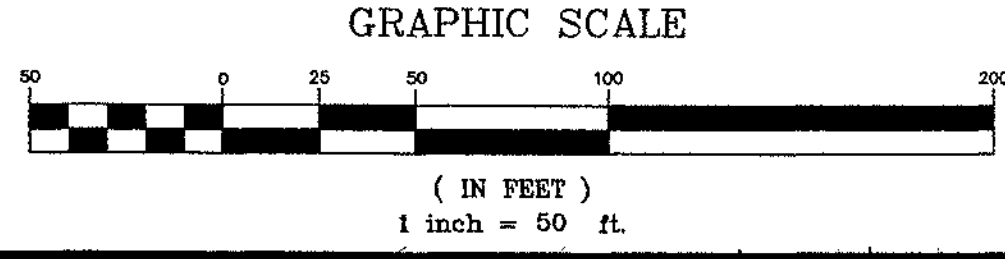
PROJECT #2439

CLEARING AND EROSION PLAN

C3 OF 30

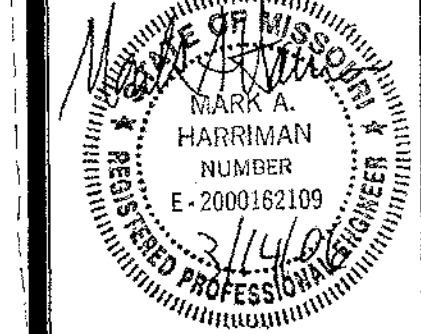
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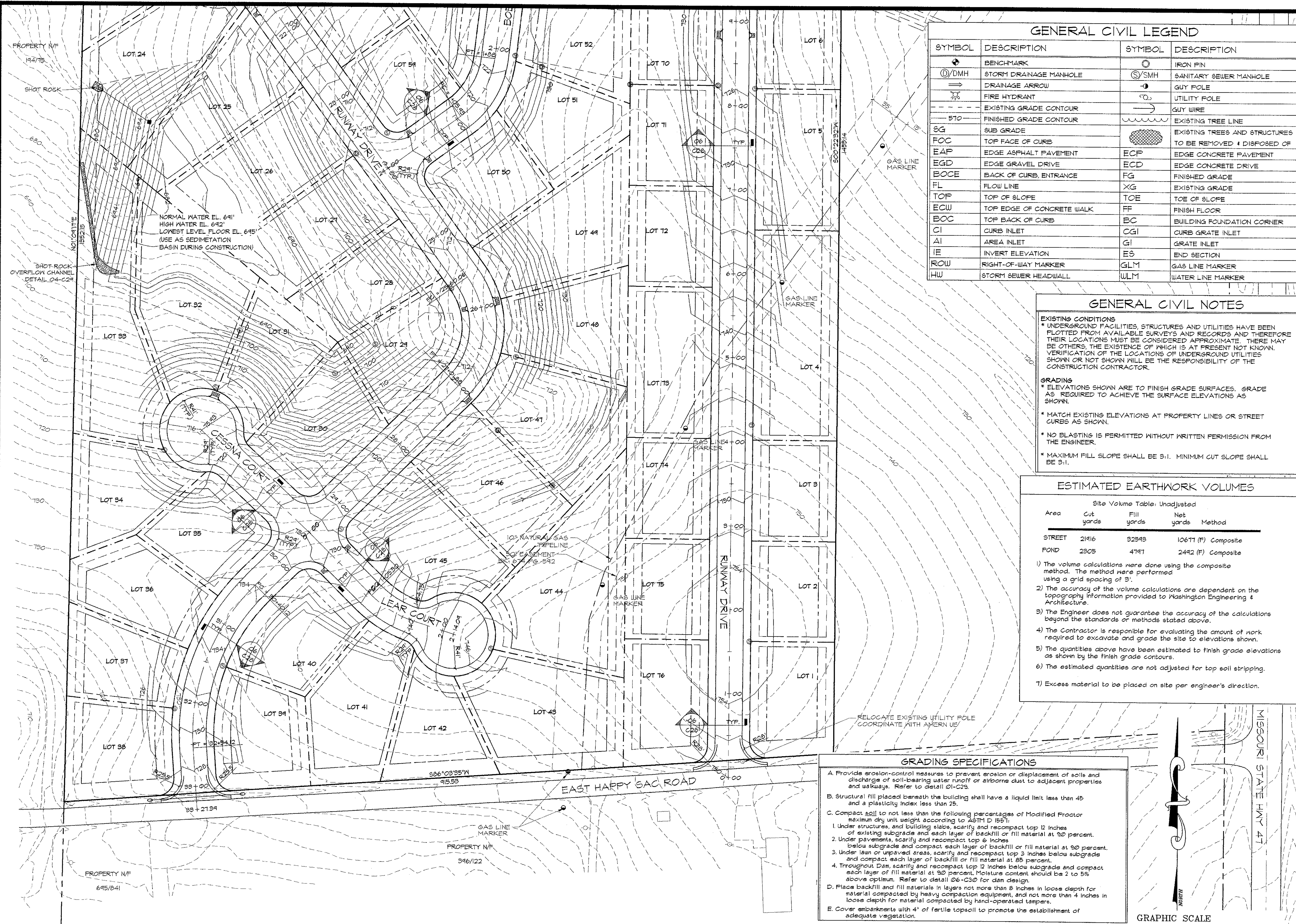
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BON LUNNEPSTAL, P.E.

RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

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CLEARING AND EROSION PLAN

[illegible]



GENERAL CIVIL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCHMARK		IRON PIN
	STORM DRAINAGE MANHOLE		SANITARY SEWER MANHOLE
	DRAINAGE ARROW		GUY POLE
	FIRE HYDRANT		UTILITY POLE
	EXISTING GRADE CONTOUR		GUY WIRE
	FINISHED GRADE CONTOUR		EXISTING TREE LINE
	SUB GRADE		EXISTING TREES AND STRUCTURES TO BE REMOVED & DISPOSED OF
	TOP FACE OF CURB		EDGE CONCRETE PAVEMENT
	EDGE ASPHALT PAVEMENT		EDGE CONCRETE DRIVE
	EDGE GRAVEL DRIVE		FINISHED GRADE
	BACK OF CURB, ENTRANCE		EXISTING GRADE
	FLOW LINE		TOE OF SLOPE
	TOP OF SLOPE		FINISH FLOOR
	TOP EDGE OF CONCRETE WALK		BUILDING FOUNDATION CORNER
	TOP BACK OF CURB		CURB GRATE INLET
	CURB INLET		GRATE INLET
	AREA INLET		END SECTION
	INVERT ELEVATION		GAS LINE MARKER
	RIGHT-OF-WAY MARKER		WATER LINE MARKER
	STORM SEWER HEADWALL		

GENERAL CIVIL NOTES

EXISTING CONDITIONS

- * UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS AT PRESENT NOT KNOWN. VERIFICATION OF THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN OR NOT SHOWN WILL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.

GRADING

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- * MAXIMUM FILL SLOPE SHALL BE 3:1. MINIMUM CUT SLOPE SHALL BE 3:1.

ESTIMATED EARTHWORK VOLUMES				
Area	Site Volume Table: Unadjusted			
	Cut yards	Fill yards	Net yards	Method
STREET	21916	32543	10671 (F)	Composite
POND	2305	4797	2492 (F)	Composite

1) The volume calculations were done using the composite method. The method were performed using a grid spacing of 3'.

2) The accuracy of the volume calculations are dependent on the topography information provided to Washington Engineering & Architecture.

3) The Engineer does not guarantee the accuracy of the calculations beyond the standards or methods stated above.

4) The Contractor is responsible for evaluating the amount of work required to excavate and grade the site to elevations shown.

5) The quantities above have been estimated to finish grade elevations as shown by the finish grade contours.

6) The estimated quantities are not adjusted for top soil stripping.

7) Excess material to be placed on site per engineer's direction.

GRADING SPECIFICATIONS

A. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways. Refer to detail 01-C29.

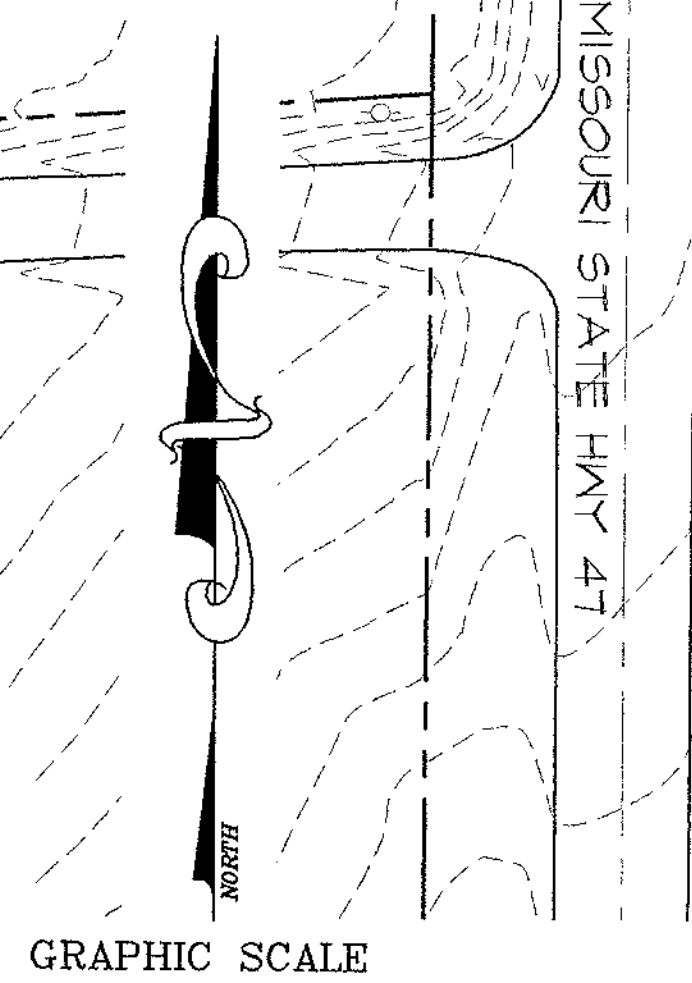
B. Structural fill placed beneath the building shall have a liquid limit less than 45 and a plasticity index less than 25.

C. Compact soil to not less than the following percentages of Modified Proctor maximum dry unit weight according to ASTM D 1557:

1. Under structures, and building slabs, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material at 90 percent.
2. Under pavements, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 90 percent.
3. Under lawn or unpaved areas, scarify and recompact top 3 inches below subgrade and compact each layer of backfill or fill material at 85 percent.
4. Throughout Dam, scarify and recompact top 12 inches below subgrade and compact each layer of fill material at 90 percent. Moisture content should be 2 to 5% above optimum. Refer to detail 06-C30 for dam design.

D. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

E. Cover embankments with 4" of fertile topsoil to promote the establishment of adequate vegetation.



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STREET GRADING PLAN

DATE	REVISION	DESCRIPTION
5/14/06		PRELIMINARY PLAN

PROJECT #2439

C5 OF 30

RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

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GRADING SPECIFICATIONS

control measures to prevent erosion or displacement of soils and soil-bearing water runoff or airborne dust to adjacent properties. Refer to detail 01-C29.

ed beneath the building shall have a liquid limit less than 45 percent and a plasticity index less than 25.

not less than the following percentages of Modified Proctor compaction, according to ASTM D 1557:

- a. subgrade, scarify and recompact top 12 inches
- b. subgrade and each layer of backfill or fill material at 90 percent, scarify and recompact top 6 inches
- c. subgrade and compact each layer of backfill or fill material at 90 percent, scarify and recompact top 3 inches below subgrade
- d. compact each layer of backfill or fill material at 85 percent, scarify and recompact top 12 inches below subgrade and compact each layer of backfill or fill material at 90 percent, should be 2 to 5 percent.

1. Refer to detail 06-C30 for dam design.

fill materials in layers not more than 8 inches in loose depth for compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

to with 4" of fertile topsoil to promote the establishment of vegetation.

(IN FEET)
1 inch = 50 ft.

Site Volume Table: Unadjusted				
Area	Cut yards	Fill yards	Net yards	Method
STREET	21416	32543	10677 (F)	Composite
FOND	2305	4797	2492 (F)	Composite

- 1) The volume calculations were done using the composite method. The method was performed using a grid spacing of 3'.
- 2) The accuracy of the volume calculations are dependent on the topography information provided to Washington Engineering & Architecture.
- 3) The Engineer does not guarantee the accuracy of the calculations beyond the standards or methods stated above.
- 4) The Contractor is responsible for evaluating the amount of work required to excavate and grade the site to elevations shown.
- 5) The quantities above have been estimated to finish grade elevations as shown by the finish grade contours.
- 6) The estimated quantities are not adjusted for top soil stripping.
- 7) Excess material to be placed on site per engineer's direction.

EXISTING CONDITIONS

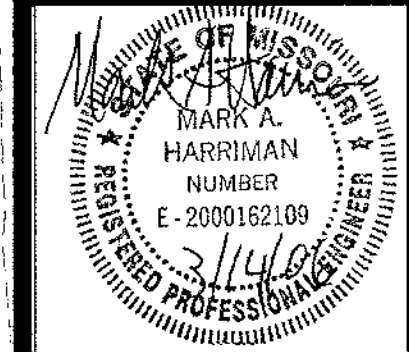
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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCHMARK		IRON PIN
	STORM DRAINAGE MANHOLE		SANITARY SEWER MANHOLE
	DRAINAGE ARROW		GUY POLE
	FIRE HYDRANT		UTILITY POLE
	EXISTING GRADE CONTOUR		GUY WIRE
	FINISHED GRADE CONTOUR		EXISTING TREE LINE
	SUB GRADE		EXISTING TREES AND STRUCTURES TO BE REMOVED & DISPOSED OF
	TOP FACE OF CURB		EDGE CONCRETE PAVEMENT
	EDGE ASPHALT PAVEMENT		EDGE CONCRETE DRIVE
	EDGE GRAVEL DRIVE		FINISHED GRADE
	BACK OF CURB, ENTRANCE		EXISTING GRADE
	FLOW LINE		TOE OF SLOPE
	TOP OF SLOPE		FINISH FLOOR
	TOP EDGE OF CONCRETE WALK		BUILDING FOUNDATION CORNER
	TOP BACK OF CURB		CURB GRATE INLET
	CURB INLET		GRATE INLET
	AREA INLET		END SECTION
	INVERT ELEVATION		GAS LINE MARKER
	RIGHT-OF-WAY MARKER		WATER LINE MARKER
	STORM SEWER HEADWALL		

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BRUNNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

STREET GRADING PLAN

DATE	WP	REVISION	DESCRIPTION
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3/14/06			PRELIMINARY PL
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PROJECT #2439		
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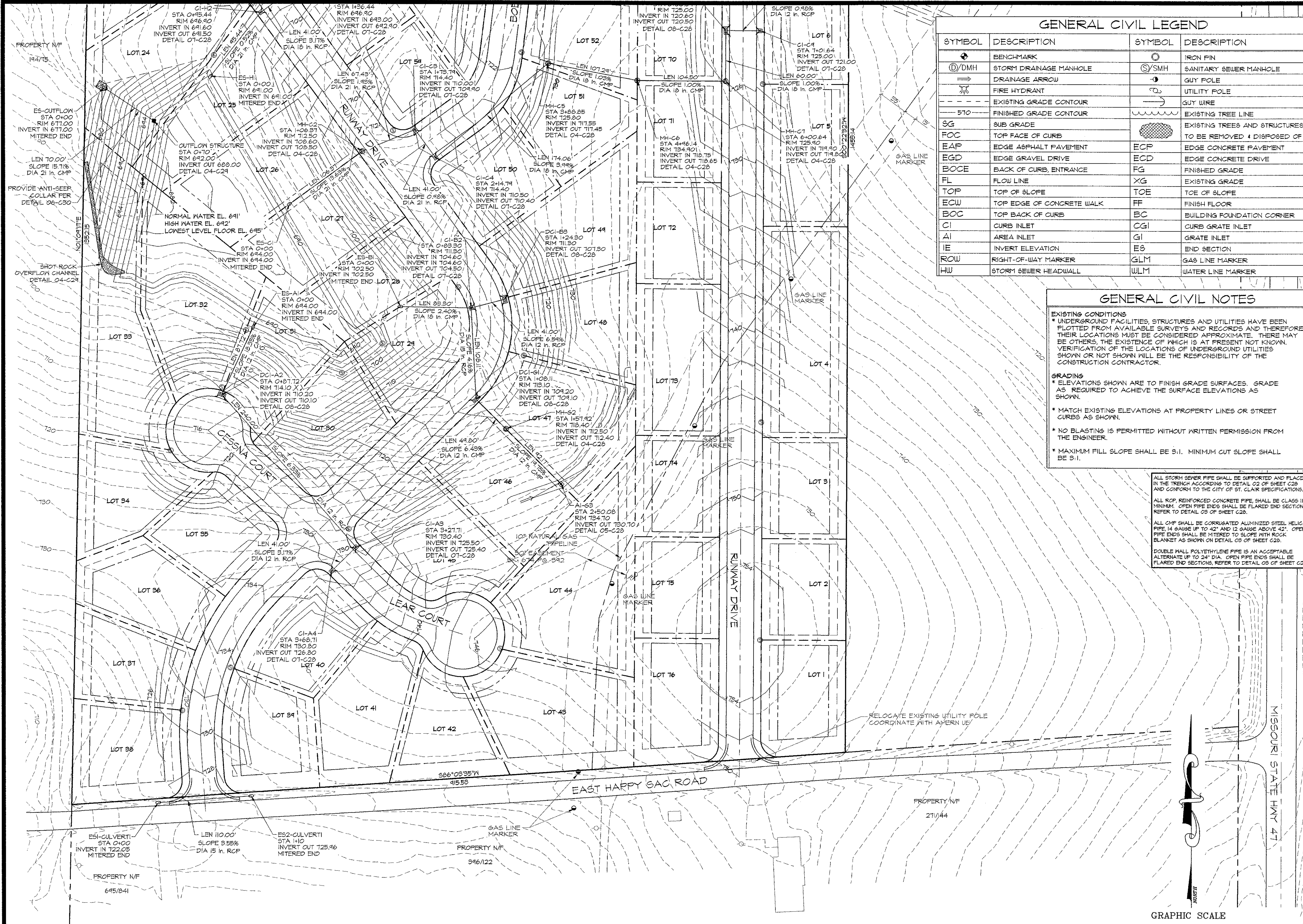
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DATE	WP	REVISION
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3/14/06			
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OF

PROJECT #2439	
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GENERAL CIVIL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⊕	BENCHMARK	⊙	IRON PIN
⊕/DMH	STORM DRAINAGE MANHOLE	⊙/SMH	SANITARY SEWER MANHOLE
→	DRAINAGE ARROW	—	GUY POLE
⊕	FIRE HYDRANT	—	UTILITY POLE
---	EXISTING GRADE CONTOUR	—	GUY WIRE
---	FINISHED GRADE CONTOUR	—	EXISTING TREE LINE
SG	SUB GRADE	—	EXISTING TREES AND STRUCTURES
FOC	TOP FACE OF CURB	—	TO BE REMOVED & DISPOSED OF
EAP	EDGE ASPHALT PAVEMENT	ECP	EDGE CONCRETE PAVEMENT
EGD	EDGE GRAVEL DRIVE	ECD	EDGE CONCRETE DRIVE
BOCE	BACK OF CURB, ENTRANCE	FG	FINISHED GRADE
FL	FLOW LINE	XG	EXISTING GRADE
TOP	TOP OF SLOPE	TOE	TOE OF SLOPE
ECW	TOP EDGE OF CONCRETE WALK	FF	FINISH FLOOR
BOC	TOP BACK OF CURB	BC	BUILDING FOUNDATION CORNER
CI	CURB INLET	CGI	CURB GRATE INLET
AI	AREA INLET	GI	GRATE INLET
IE	INVERT ELEVATION	ES	END SECTION
ROW	RIGHT-OF-WAY MARKER	GLM	GAS LINE MARKER
HW	STORM SEWER HEADWALL	WLM	WATER LINE MARKER

GENERAL CIVIL NOTES

EXISTING CONDITIONS

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GRADING

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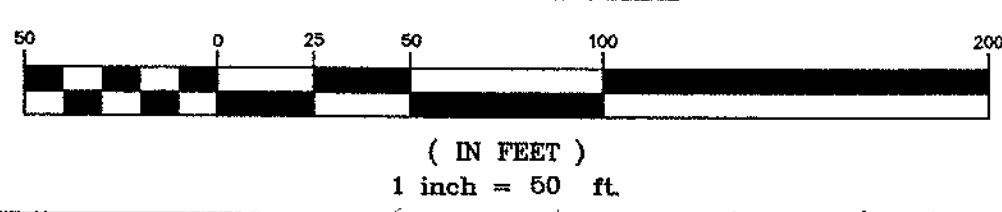
ALL STORM SEWER PIPE SHALL BE SUPPORTED AND PLACED IN THE TRENCH ACCORDING TO DETAIL 02 OF SHEET C28 AND CONFORM TO THE CITY OF ST. CLAIR SPECIFICATIONS.

ALL RCP REINFORCED CONCRETE PIPE, SHALL BE CLASS III MINIMUM. OPEN PIPE ENDS SHALL BE FLARED END SECTIONS, REFER TO DETAIL 03 OF SHEET C28.

ALL CMP SHALL BE CORRUGATED ALUMINIZED STEEL HELICAL PIPE, 14 GAUGE UP TO 42" AND 12 GAUGE ABOVE 42". OPEN PIPE ENDS SHALL BE MITERED TO SLOPE WITH ROCK BLANKET AS SHOWN ON DETAIL 03 OF SHEET C28.

DOUBLE WALL POLYETHYLENE PIPE IS AN ACCEPTABLE ALTERNATE UP TO 24" DIA. OPEN PIPE ENDS SHALL BE FLARED END SECTIONS, REFER TO DETAIL 03 OF SHEET C28.

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RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

STORM SEWER PLAN	
DATE	REVISION
5/14/08	PRELIMINARY PLAT
PROJECT #2439	
C7 OF 30	

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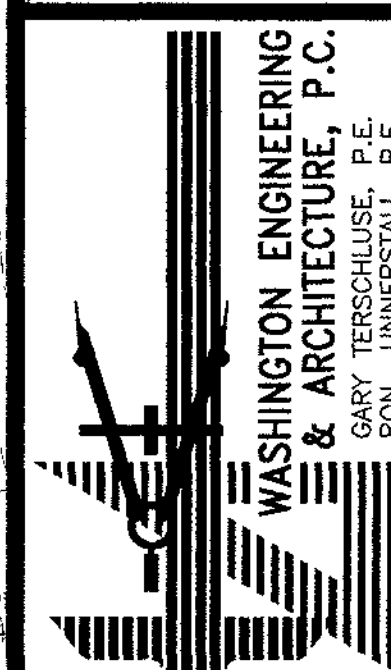
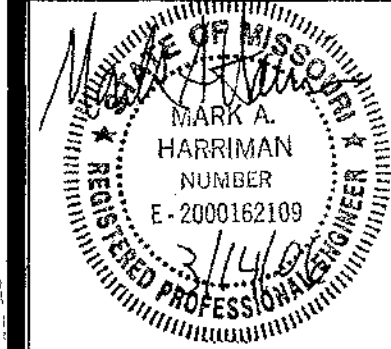
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SANITARY SEWER PLAN

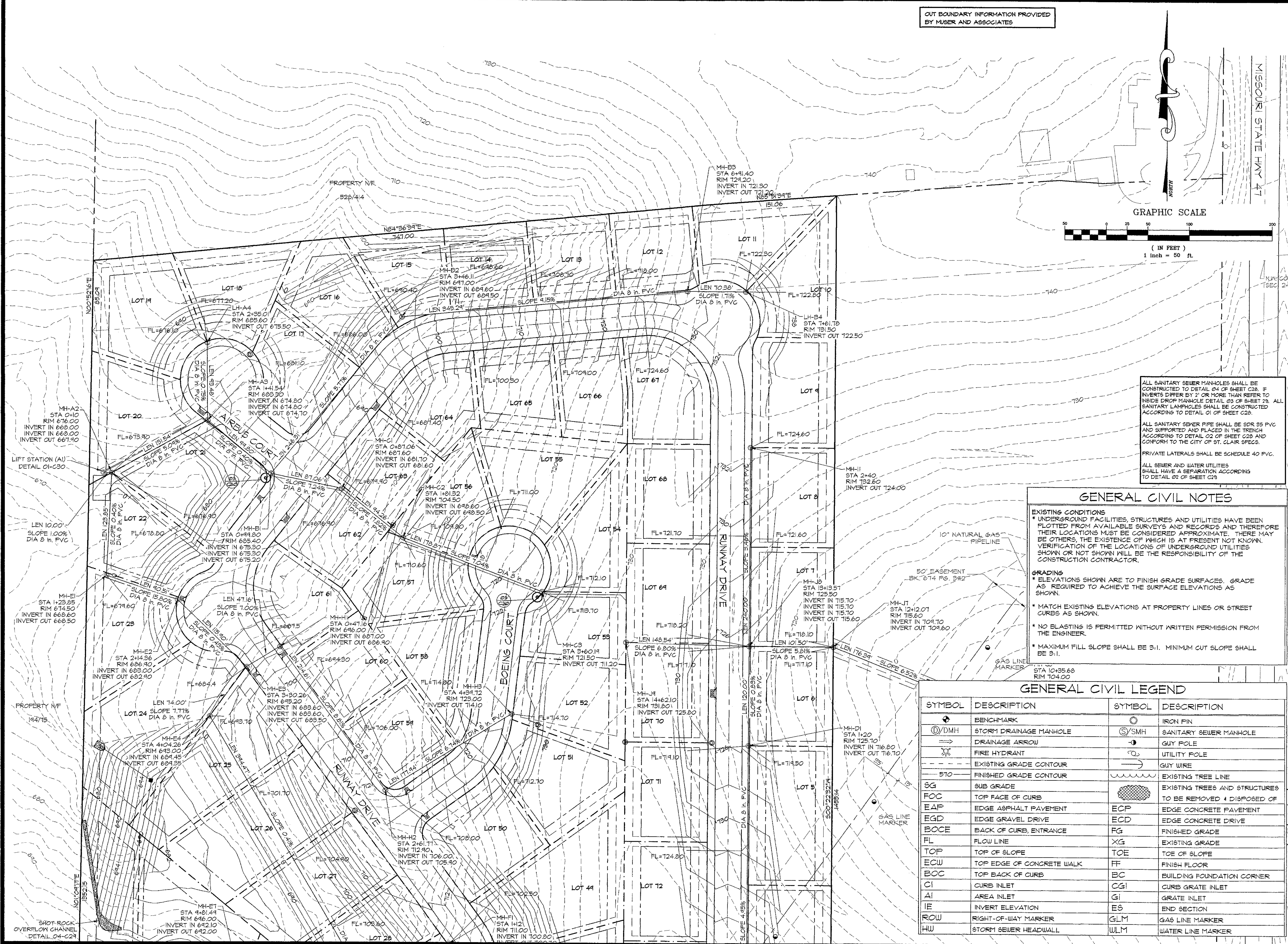
DATE: 3/14/06

REVISION: 1

DESCRIPTION: PRELIMINARY PLAN

PROJECT #2491

C10 OF 30



ALL SANITARY SEWER MANHOLES SHALL BE
CONSTRUCTED TO DETAIL 04 OF SHEET C28. IF
INVERTS DIFFER BY 2' OR MORE THAN REFER TO
INSIDE DROP MANHOLE DETAIL 03 OF SHEET C28. ALL
SANITARY LAMPHOLES SHALL BE CONSTRUCTED
ACCORDING TO DETAIL 01 OF SHEET C28.

ALL SANITARY SEWER PIPE SHALL BE SDR 35 PVC
AND SUPPORTED AND PLACED IN THE TRENCH
ACCORDING TO DETAIL 02 OF SHEET C28 AND
CONFORM TO THE CITY OF ST. CLAIR SPECS.

PRIVATE LATERALS SHALL BE SCHEDULE 40 PVC.

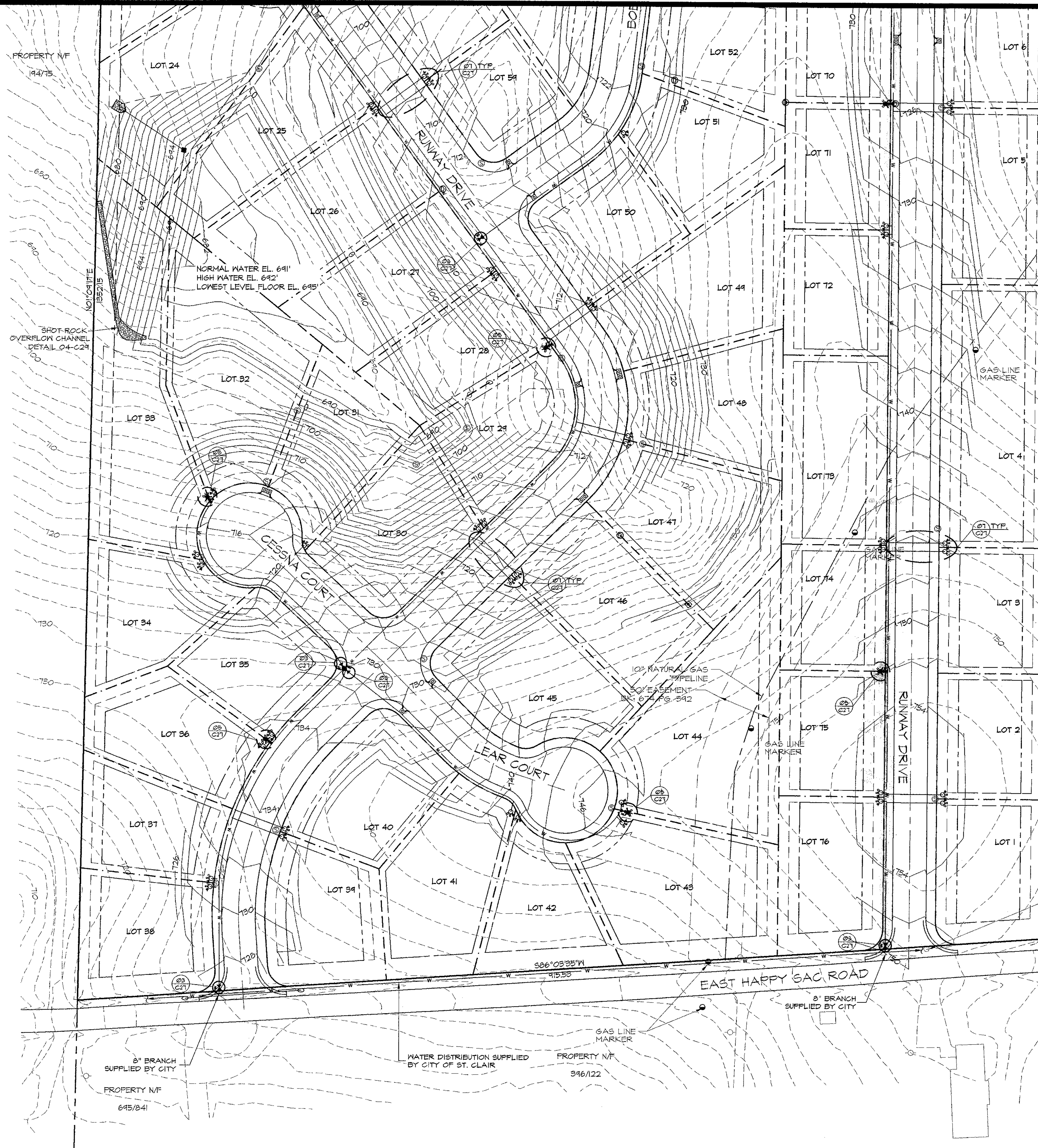
ALL SEWER AND WATER UTILITIES
SHALL HAVE A SEPARATION ACCORDING
TO DETAIL 02 OF SHEET C28.

GENERAL CIVIL NOTES

- EXISTING CONDITIONS**
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 - * MATCH EXISTING ELEVATIONS AT PROPERTY LINES OR STREET CURBS AS SHOWN.
 - * NO BLASTING IS PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
 - * MAXIMUM FILL SLOPE SHALL BE 3:1. MINIMUM CUT SLOPE SHALL BE 3:1.

GENERAL CIVIL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⊕	BENCHMARK	⊙	IRON PIN
⊙/DMH	STORM DRAINAGE MANHOLE	⊙/SMH	SANITARY SEWER MANHOLE
→	DRAINAGE ARROW	⊙	GUY POLE
⊙	FIRE HYDRANT	⊙	UTILITY POLE
---	EXISTING GRADE CONTOUR	⊙	GUY WIRE
STO	FINISHED GRADE CONTOUR	---	EXISTING TREE LINE
SG	SUB GRADE	---	EXISTING TREES AND STRUCTURES TO BE REMOVED & DISPOSED OF
FOC	TOP FACE OF CURB	ECP	EDGE CONCRETE PAVEMENT
EAP	EDGE ASPHALT PAVEMENT	ECD	EDGE CONCRETE DRIVE
EGD	EDGE GRAVEL DRIVE	FG	FINISHED GRADE
BOCE	BACK OF CURB, ENTRANCE	XG	EXISTING GRADE
FL	FLOW LINE	TOE	TOE OF SLOPE
TOP	TOP OF SLOPE	FF	FINISH FLOOR
ECW	TOP EDGE OF CONCRETE WALK	BC	BUILDING FOUNDATION CORNER
BOC	TOP BACK OF CURB	CGI	CURB GRATE INLET
CI	CURB INLET	GI	GRATE INLET
AI	AREA INLET	ES	END SECTION
IE	INVERT ELEVATION	GLM	GAS LINE MARKER
ROW	RIGHT-OF-WAY MARKER	WLM	WATER LINE MARKER
HW	STORM SEWER HEADWALL		



GENERAL CIVIL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCHMARK		IRON PIN
	STORM DRAINAGE MANHOLE		SANITARY SEWER MANHOLE
	DRAINAGE ARROW		GUY POLE
	FIRE HYDRANT		UTILITY POLE
	EXISTING GRADE CONTOUR		GUY WIRE
	FINISHED GRADE CONTOUR		EXISTING TREE LINE
	SUB GRADE		EXISTING TREES AND STRUCTURES TO BE REMOVED & DISPOSED OF
	TOP FACE OF CURB		EDGE CONCRETE PAVEMENT
	EDGE ASPHALT PAVEMENT		EDGE CONCRETE DRIVE
	EDGE GRAVEL DRIVE		FINISHED GRADE
	BACK OF CURB, ENTRANCE		EXISTING GRADE
	FLOW LINE		TOE OF SLOPE
	TOP OF SLOPE		FINISH FLOOR
	TOP EDGE OF CONCRETE WALK		BUILDING FOUNDATION CORNER
	TOP BACK OF CURB		CURB GRATE INLET
	CURB INLET		GRATE INLET
	AREA INLET		END SECTION
	INVERT ELEVATION		GAS LINE MARKER
	RIGHT-OF-WAY MARKER		WATER LINE MARKER
	STORM SEWER HEADWALL		

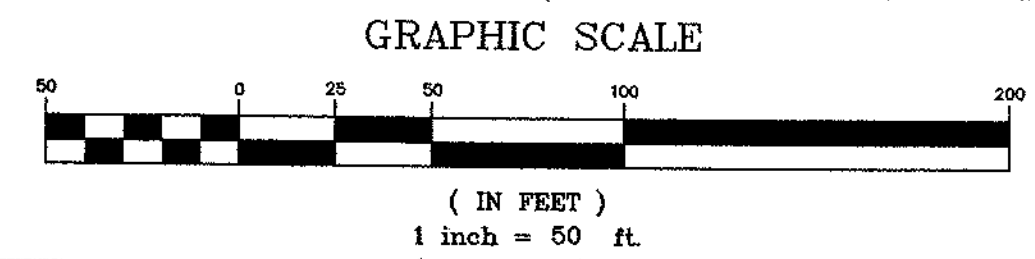
GENERAL CIVIL NOTES

EXISTING CONDITIONS
* UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS AT PRESENT NOT KNOWN. VERIFICATION OF THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN OR NOT SHOWN WILL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.

GRADING
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ALL PUBLIC WATER DISTRIBUTION PIPE SHALL BE ASTM D 2241, SDR 21, CL 200 PVC AND INSTALLED PER DETAIL 06 OF SHEET C21.
ALL HORIZONTAL BENDS SHALL BE THRUST BLOCKED ACCORDING TO DETAILS 01 AND 02 OF SHEET C21.
ALL CURB STOPS SHALL BE BUILT ACCORDING TO DETAIL 04 OF SHEET C21.
ALL SEWER AND WATER UTILITIES SHALL HAVE A SEPARATION ACCORDING TO DETAIL 02 OF SHEET C23.

OUT BOUNDARY INFORMATION PROVIDED BY MUSER AND ASSOCIATES



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1301 West Fifth Street • Washington, MO 63090 • (636)-239-6550

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HARRMAN
NUMBER
E-2000152109
GARY TESSERAUSE, P.E.
RON UNTERSTALL, P.E.

WATER DISTRIBUTION PLAN

DATE	WP	REVISION	DESCRIPTION
5/14/06			PRELIMINARY PLAN

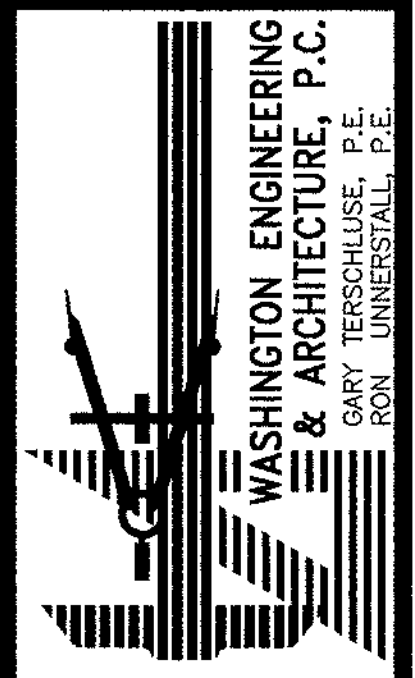
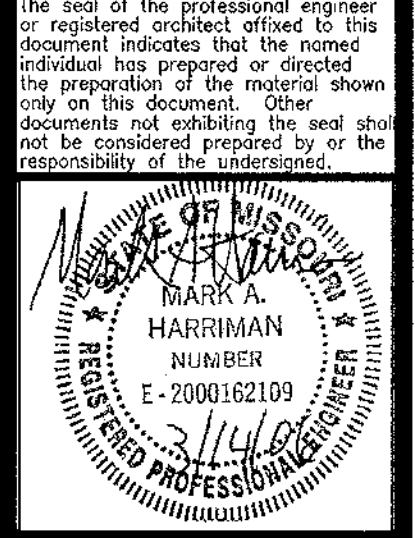
PROJECT #24391

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RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

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BY MUBER AND ASSOCIATES

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PROJECT #2439

C13 OF 30

DATE 8/1/06

REVISION

DESCRIPTION

PRELIMINARY PLAN

WATER DISTRIBUTION PLAN

DATE 8/1/06

REVISION

DESCRIPTION

PRELIMINARY PLAN

WATER DISTRIBUTION PLAN

DATE 8/1/06

REVISION

DESCRIPTION

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REVISION

DESCRIPTION

PRELIMINARY PLAN

WATER DISTRIBUTION PLAN

DATE 8/1/06

REVISION

DESCRIPTION

PRELIMINARY PLAN

WATER DISTRIBUTION PLAN

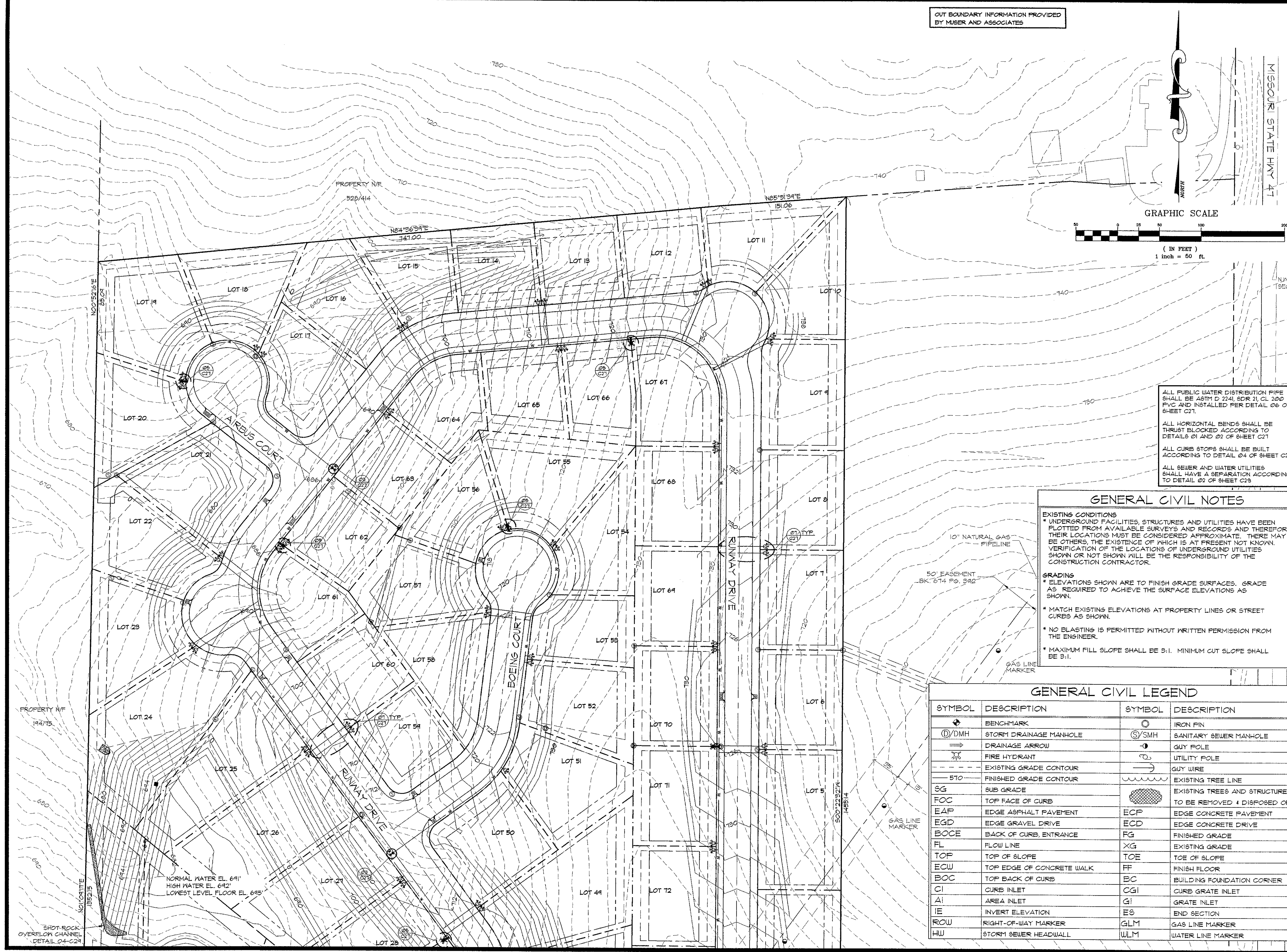
DATE 8/1/06

REVISION

DESCRIPTION

PRELIMINARY PLAN

WATER DISTRIBUTION PLAN



ALL PUBLIC WATER DISTRIBUTION PIPE
SHALL BE ASTM D 2241, SDR 21, CL 200
PVC AND INSTALLED PER DETAIL 06 OF
SHEET C21.

ALL HORIZONTAL BENDS SHALL BE
THRUST BLOCKED ACCORDING TO
DETAILS 01 AND 02 OF SHEET C21.

ALL CURB STOPS SHALL BE BUILT
ACCORDING TO DETAIL 04 OF SHEET C21.

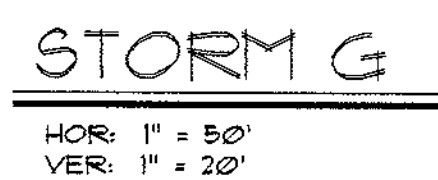
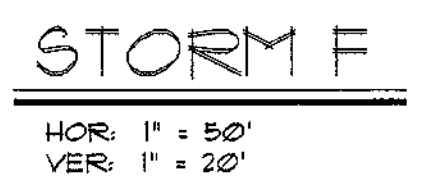
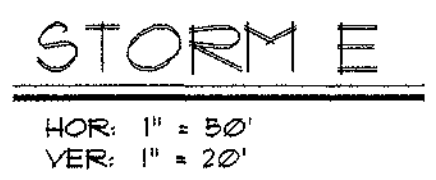
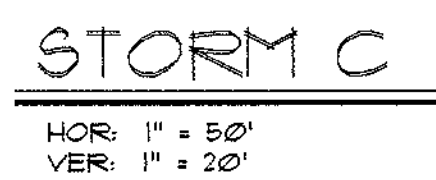
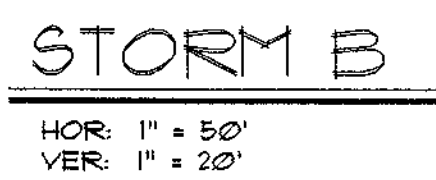
ALL SEWER AND WATER UTILITIES
SHALL HAVE A SEPARATION ACCORDING
TO DETAIL 02 OF SHEET C23.

GENERAL CIVIL NOTES

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GENERAL CIVIL LEGEND

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⇒	DRAINAGE ARROW	○	GUY POLE
⊕	FIRE HYDRANT	○	UTILITY POLE
---	EXISTING GRADE CONTOUR	---	GUY WIRE
STO	FINISHED GRADE CONTOUR	---	EXISTING TREE LINE
SG	SUB GRADE	---	EXISTING TREES AND STRUCTURES TO BE REMOVED & DISPOSED OF
FOC	TOP FACE OF CURB	---	EDGE CONCRETE PAVEMENT
EAP	EDGE ASPHALT PAVEMENT	---	EDGE CONCRETE DRIVE
EGD	EDGE GRAVEL DRIVE	---	FINISHED GRADE
BOCE	BACK OF CURB, ENTRANCE	---	EXISTING GRADE
FL	FLOW LINE	---	TOE OF SLOPE
TOP	TOP OF SLOPE	---	FINISH FLOOR
ECW	TOP EDGE OF CONCRETE WALK	---	BUILDING FOUNDATION CORNER
BOC	TOP BACK OF CURB	---	CURB GRATE INLET
CI	CURB INLET	---	GRATE INLET
AI	AREA INLET	---	END SECTION
IE	INVERT ELEVATION	---	GAS LINE MARKER
ROW	RIGHT-OF-WAY MARKER	---	WATER LINE MARKER
HU	STORM SEWER HEADWALL	---	



STORM SEWER PROFILES			
DATE	WP	REVISION	DESCRIPTION
3/14/06			PRELIMINARY PLAT
PROJECT #2439			

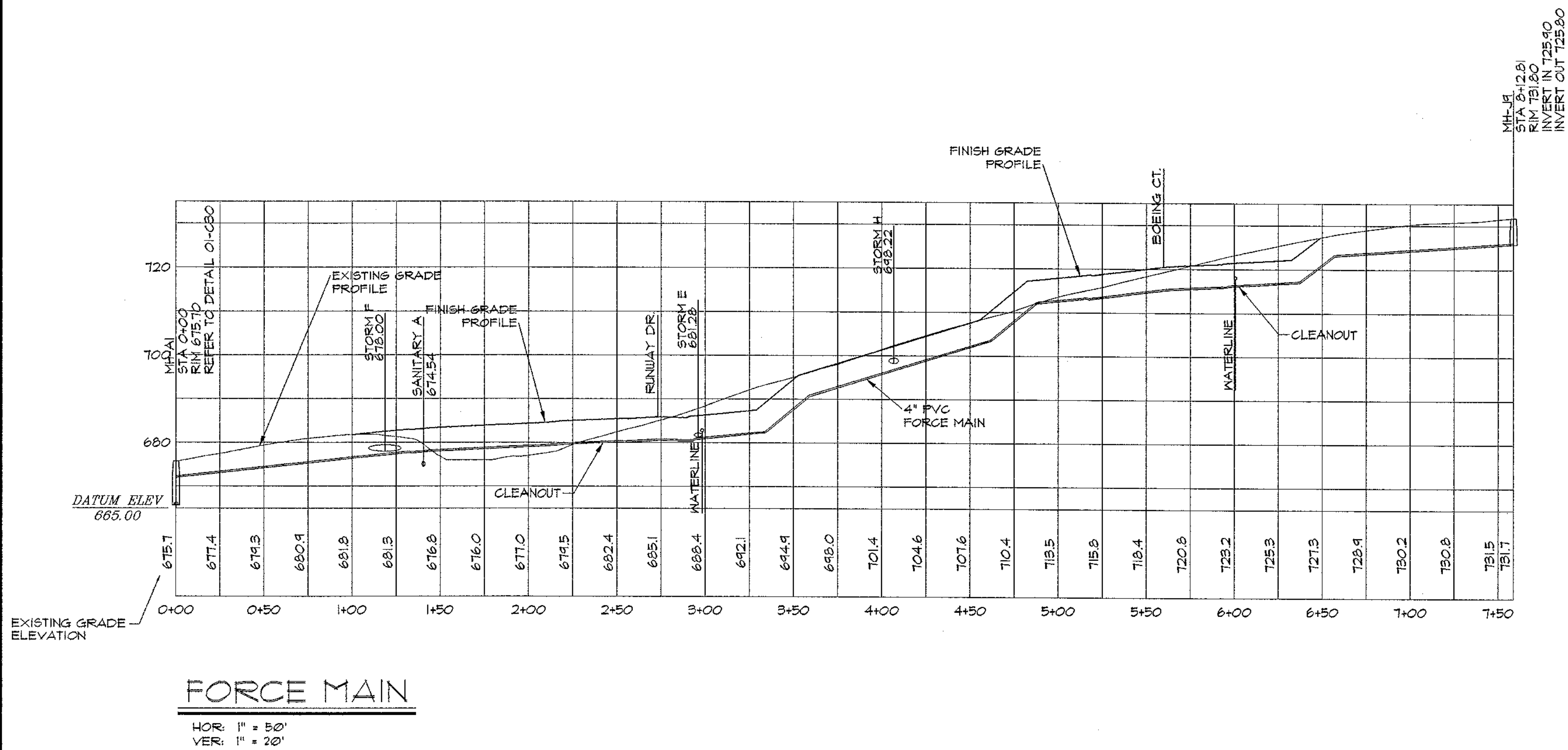
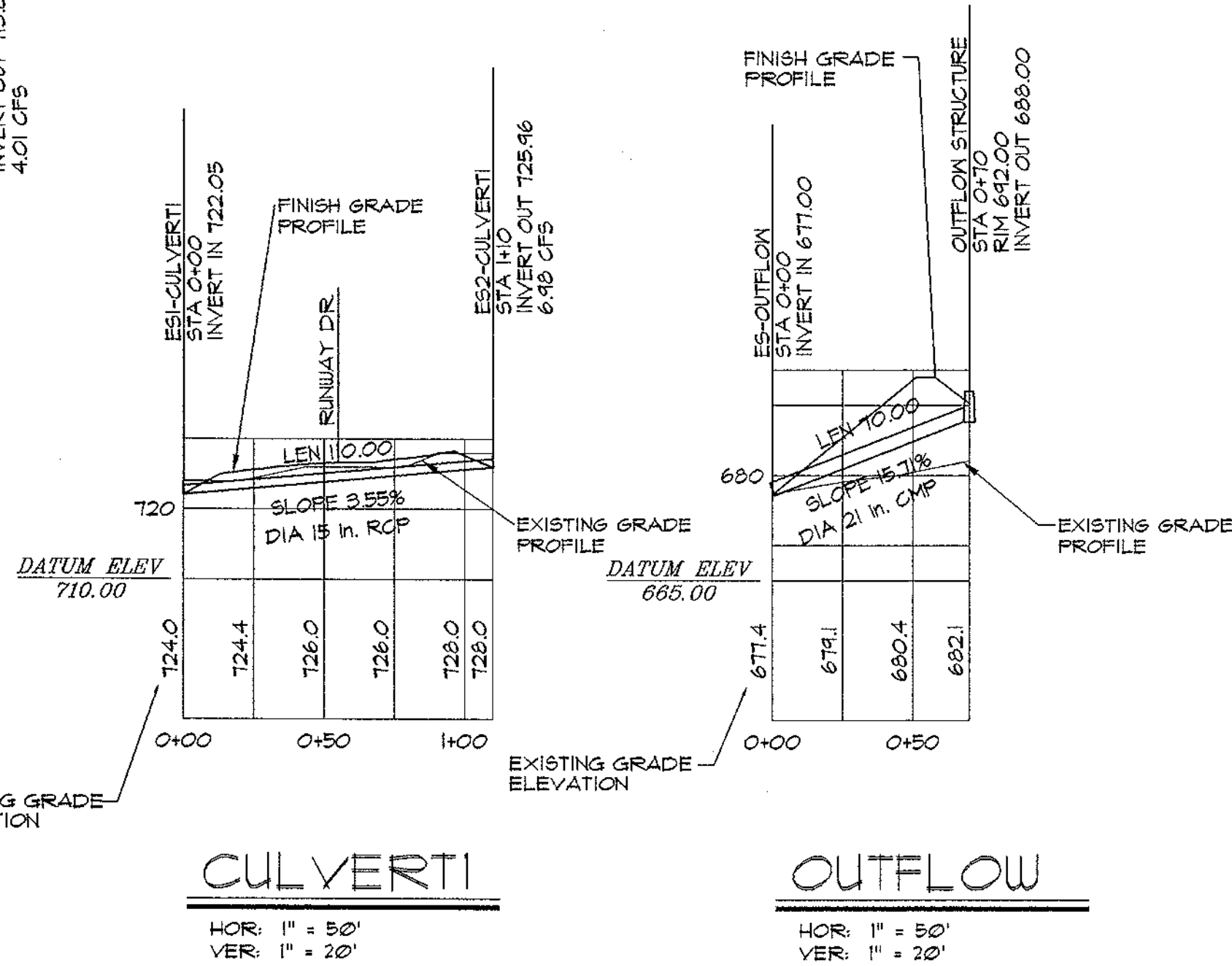
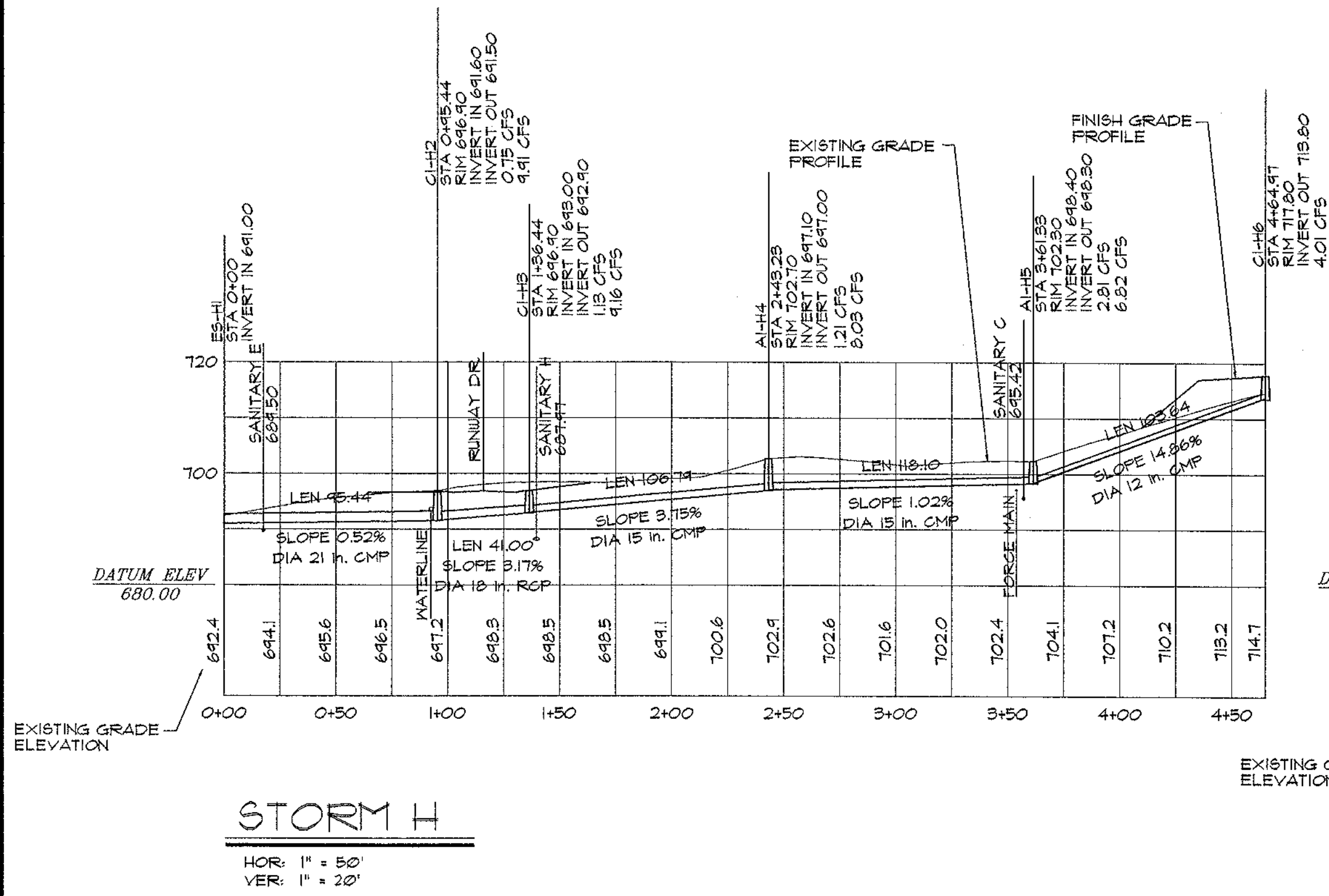
RUNWAY ESTATES
Preliminary Plat
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GARY TERSCHLUSE, P.E.
RON UNNERSTALL, P.E.

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STORM AND SANITARY SEWER PROFILES

DATE	WP	REVISION	DESCRIPTION
9/14/06			PRELIMINARY PLAT

PROJECT #2439

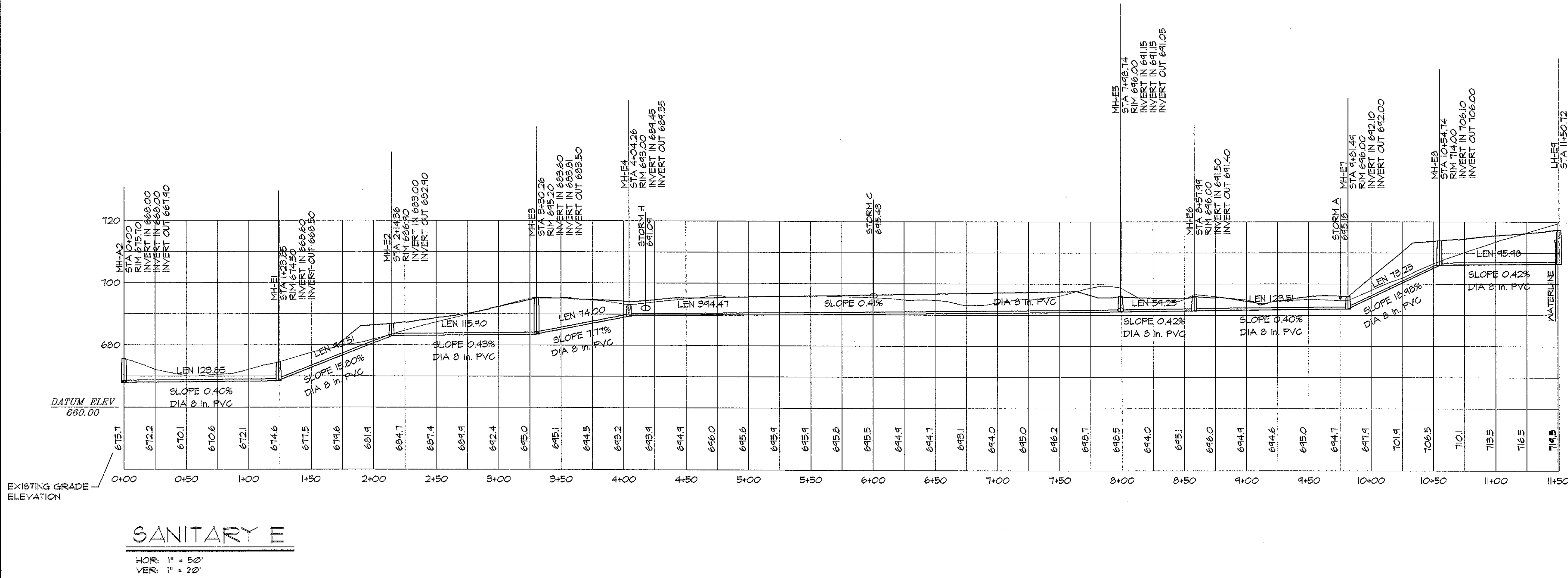
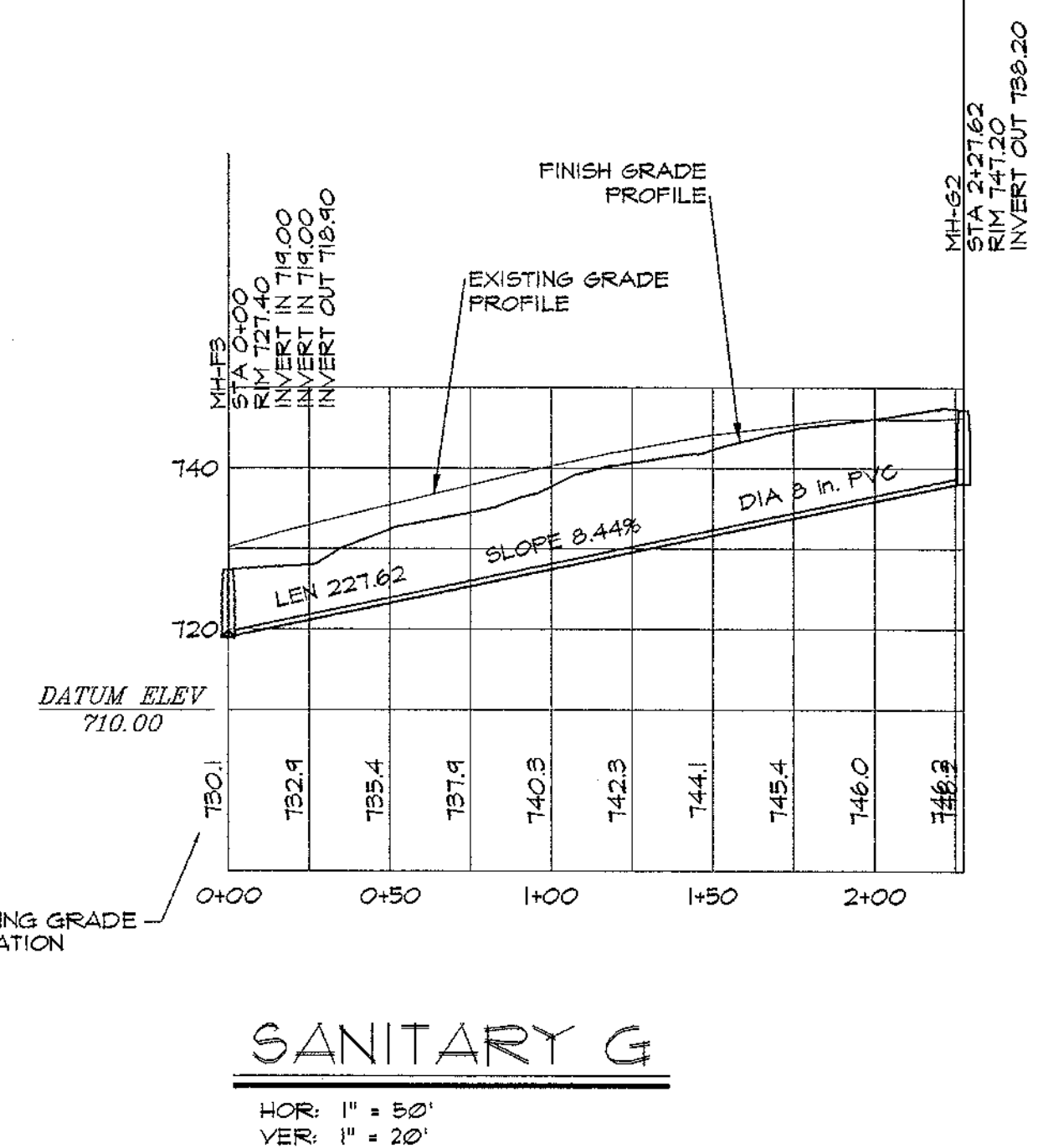
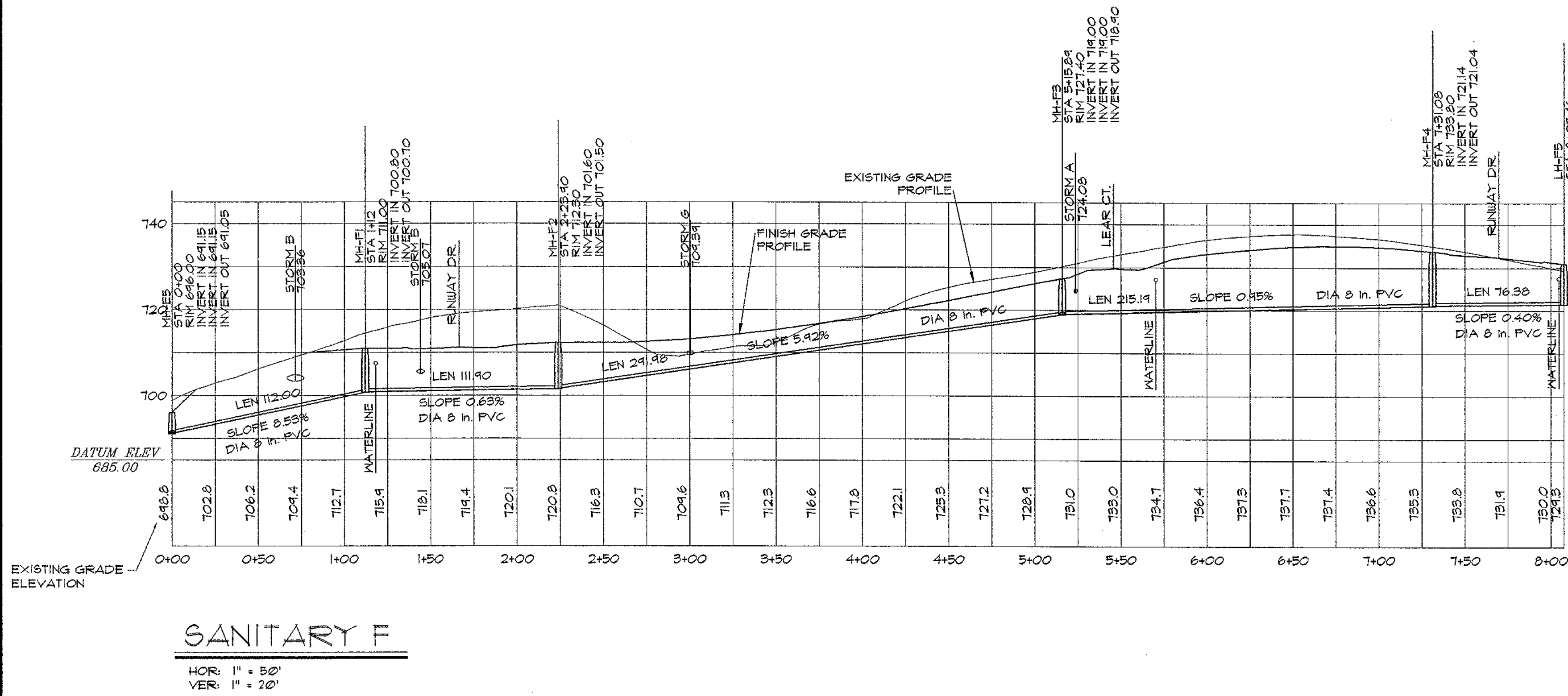
C17 OF 30

RUNWAY ESTATES
Preliminary Plat
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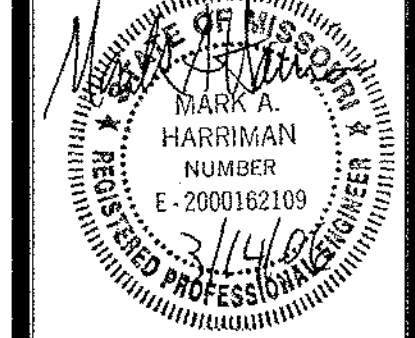
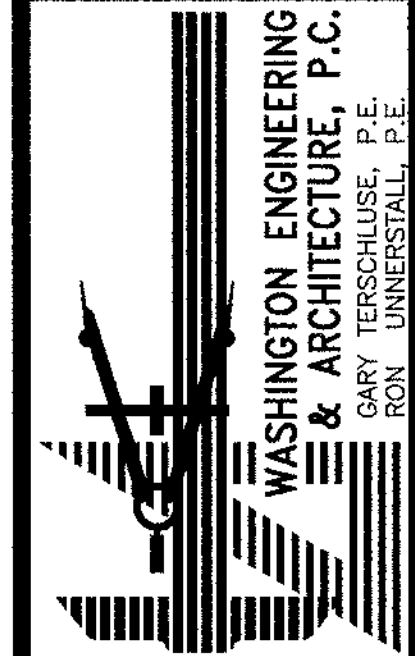
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 MARK A. HARRIMAN
 NUMBER
 E-2600152109

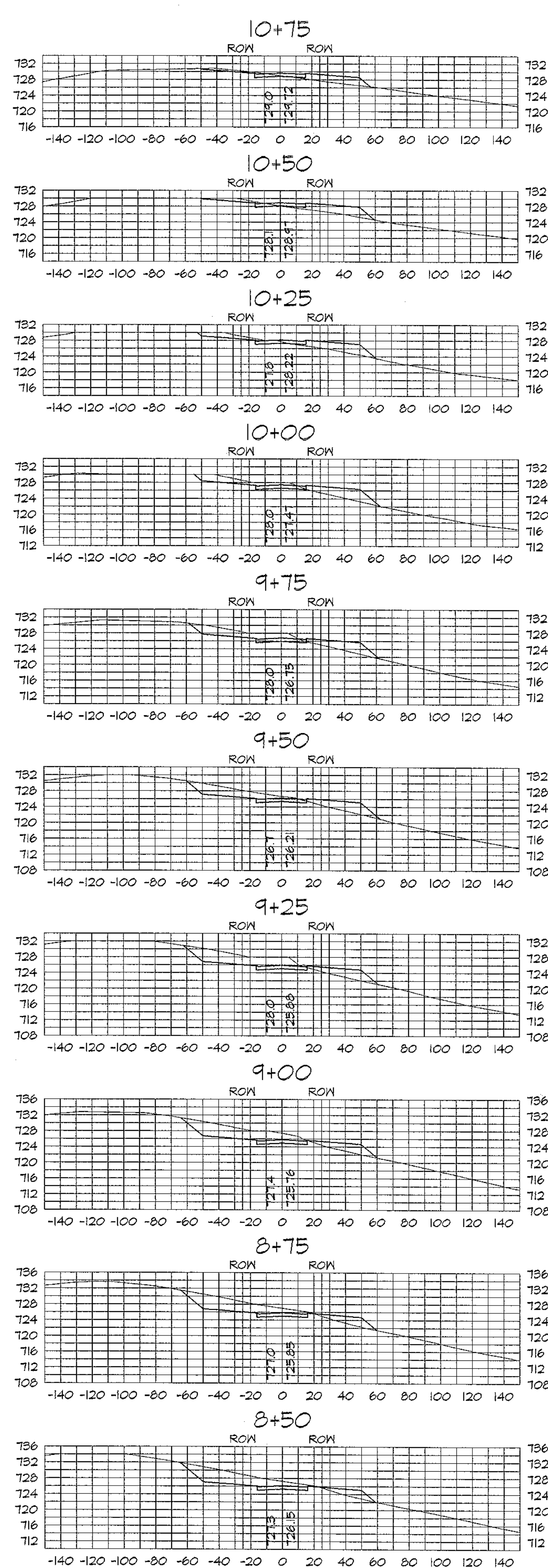
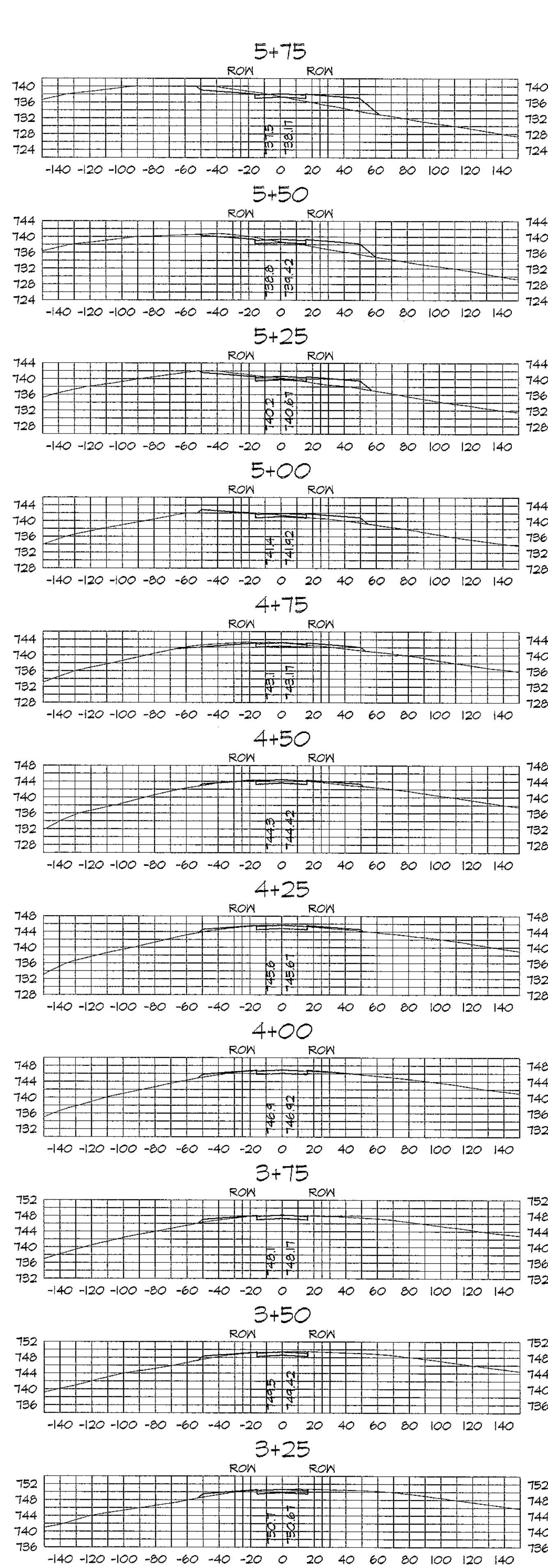
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SANITARY SEWER PROFILES		
DATE	REVISION	DESCRIPTION
01/14/08	1	PRELIMINARY PLAT
01/14/08	2	
01/14/08	3	
01/14/08	4	
01/14/08	5	
01/14/08	6	
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RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077



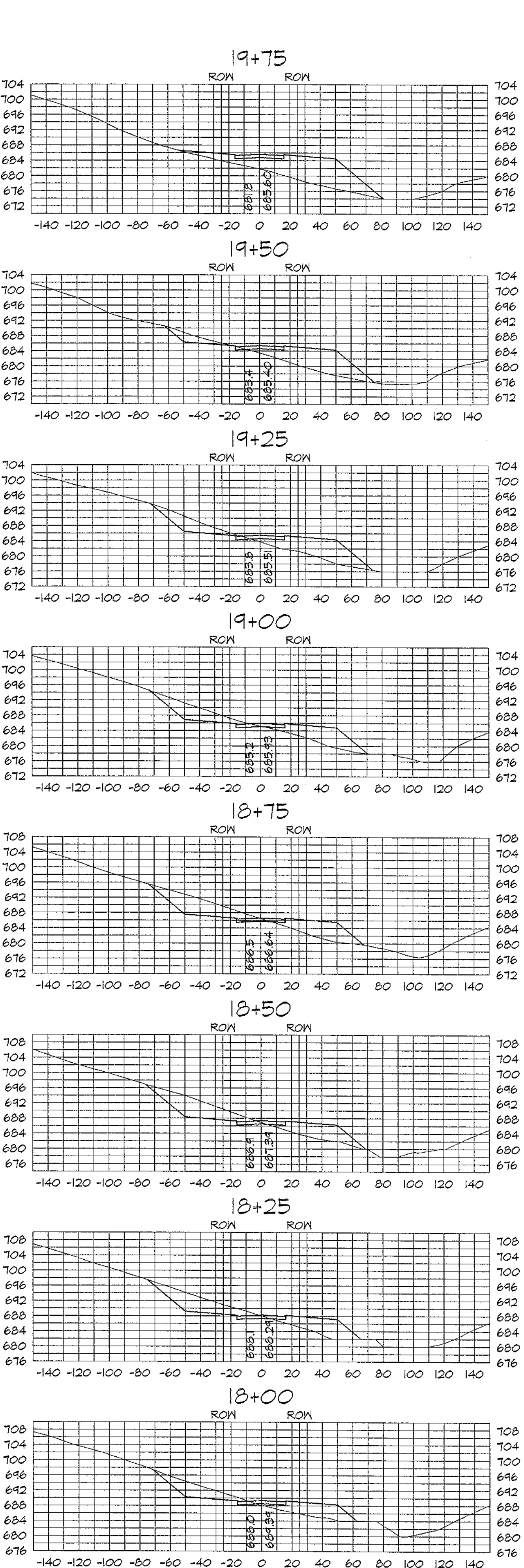
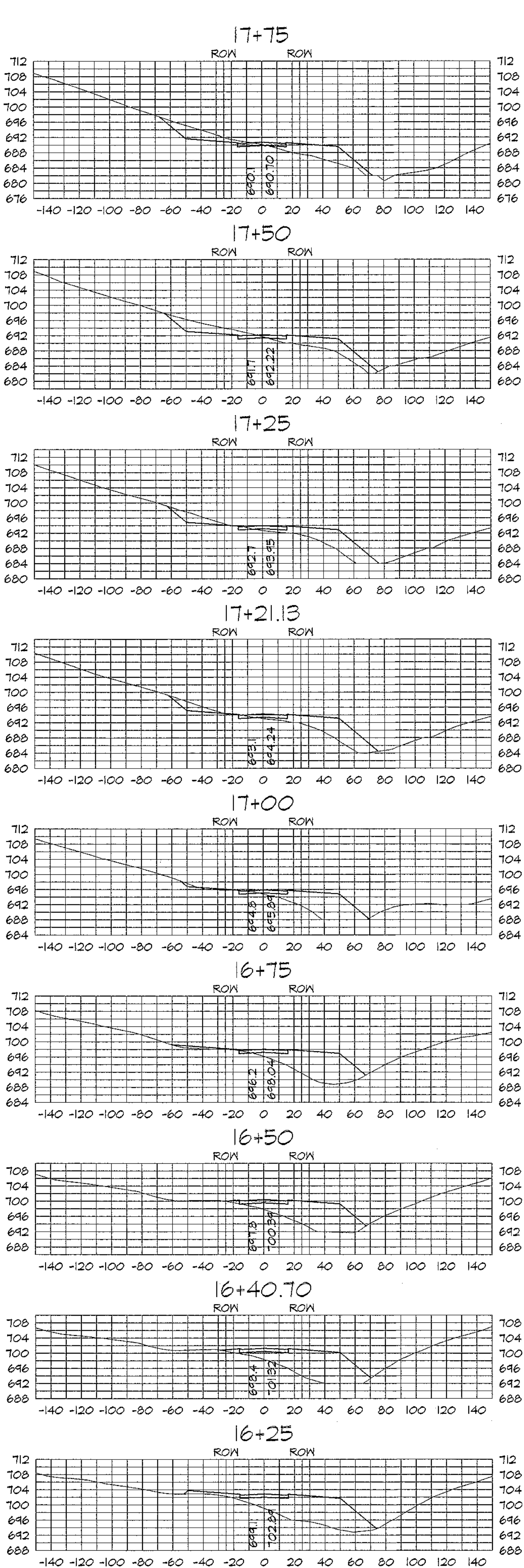
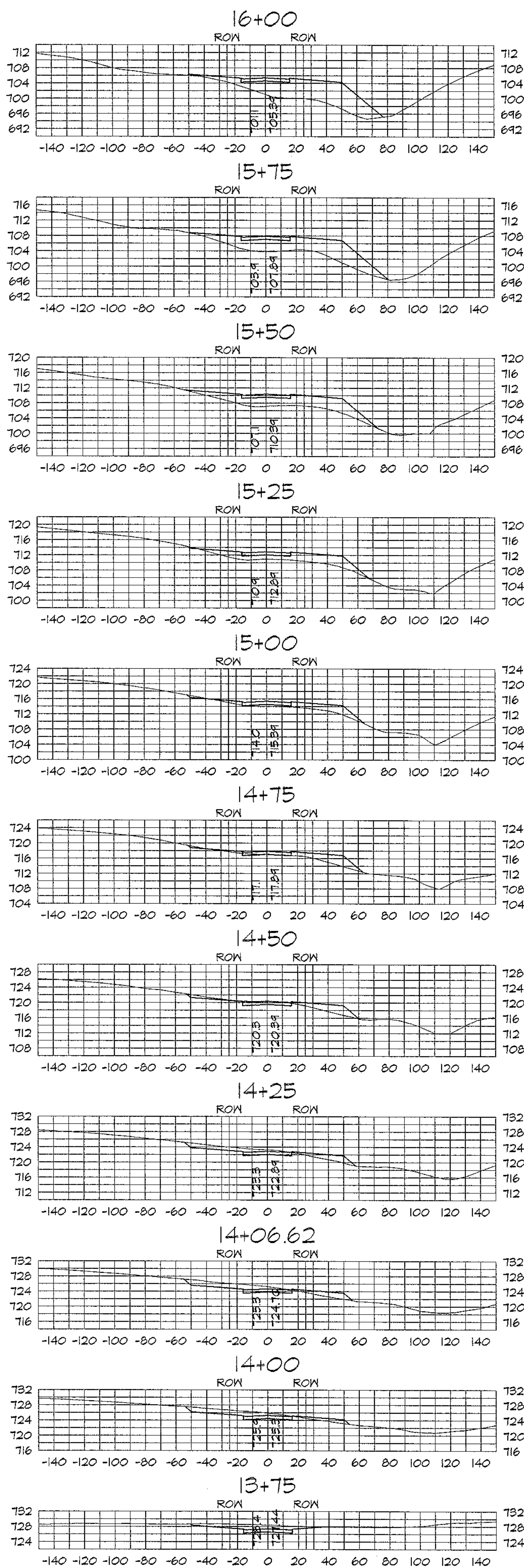
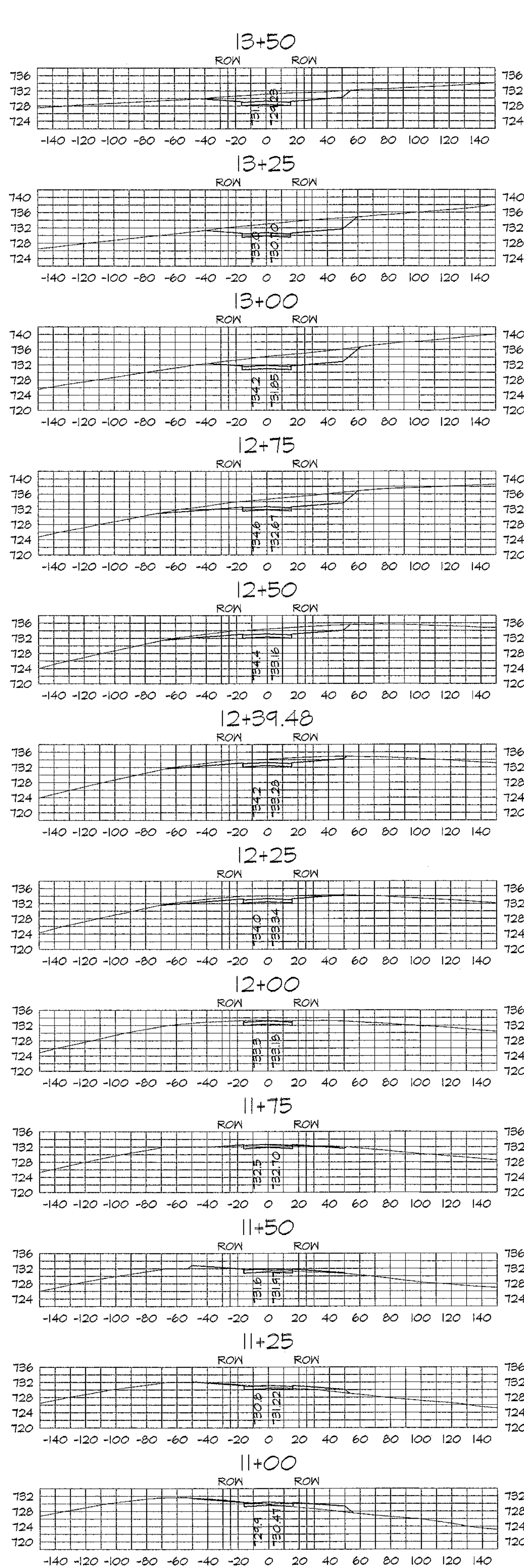


HOR: $I^b = 50$
VER: $I^b = 20^b$

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[illegible]

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RUNWAY DRIVE
HOR: 1" = 50'
VER: 1" = 20'

STREET CROSS SECTIONS

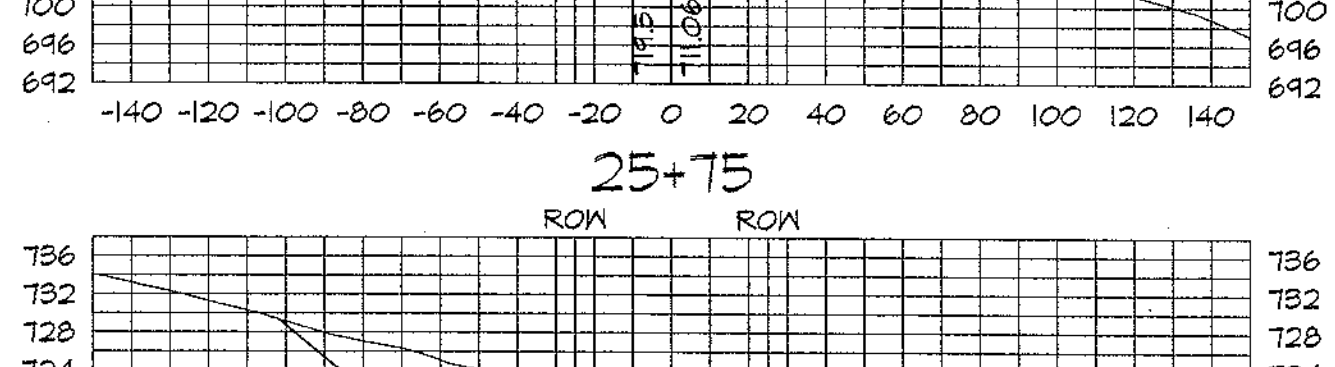
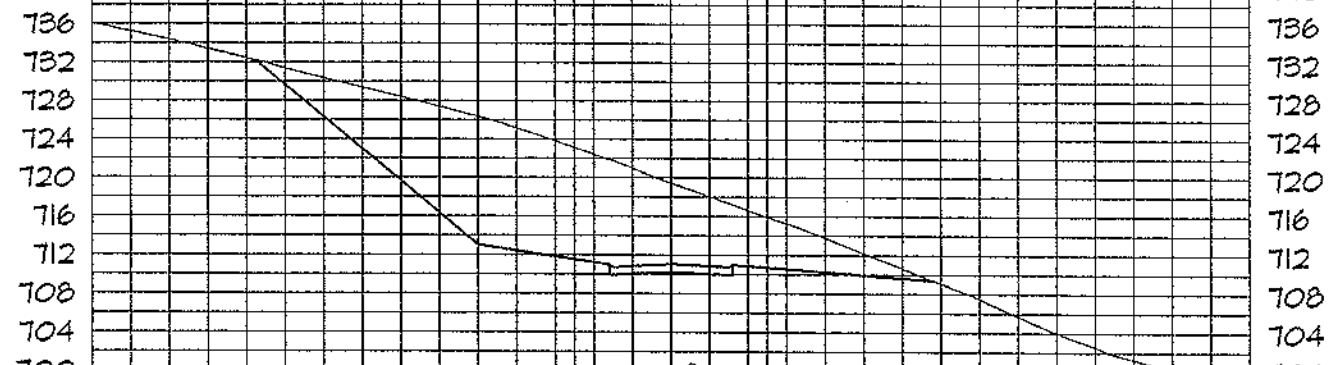
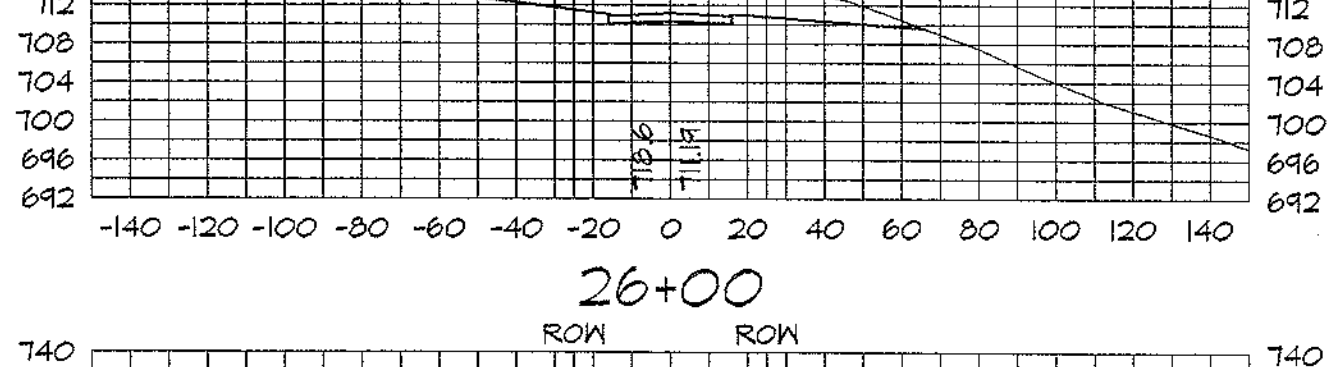
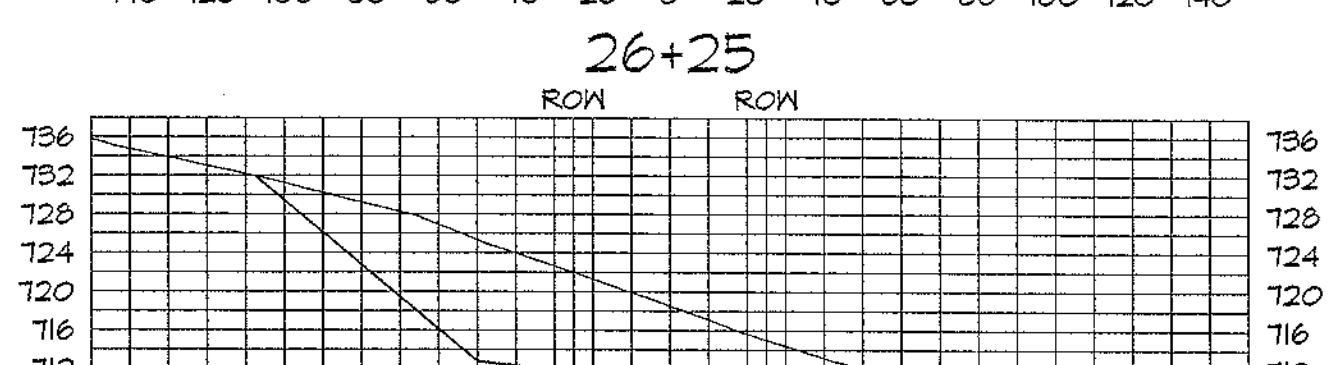
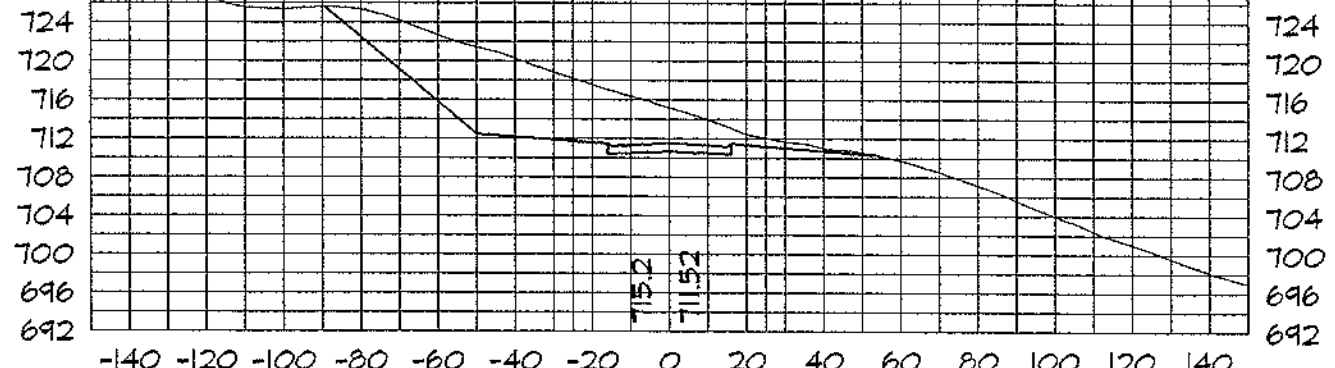
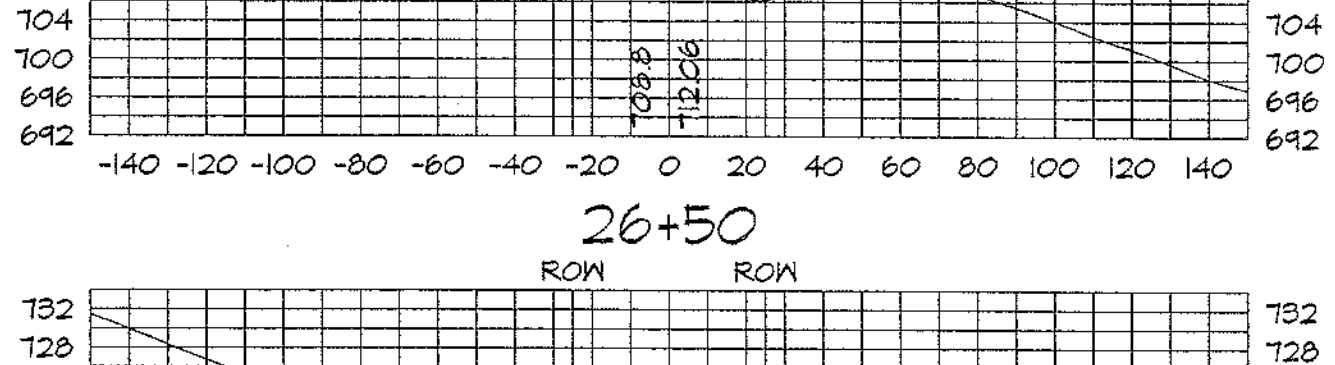
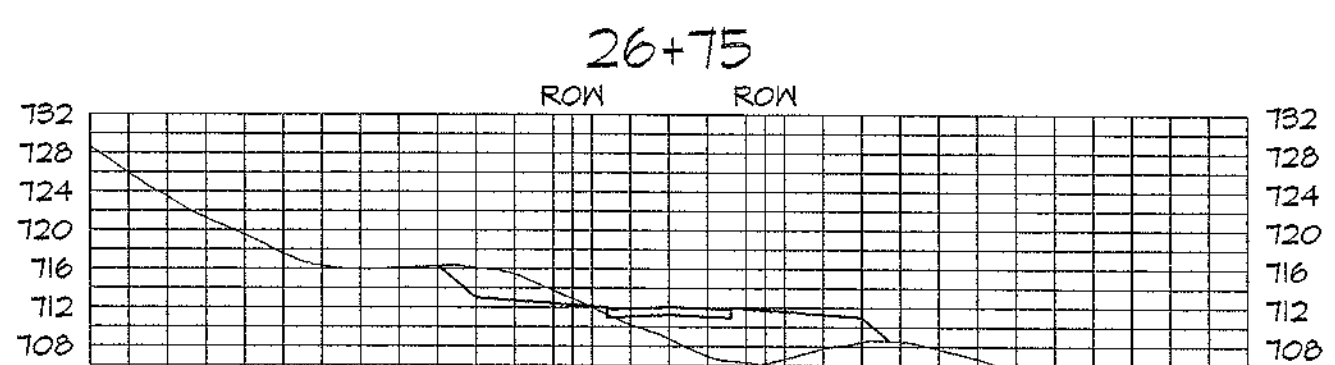
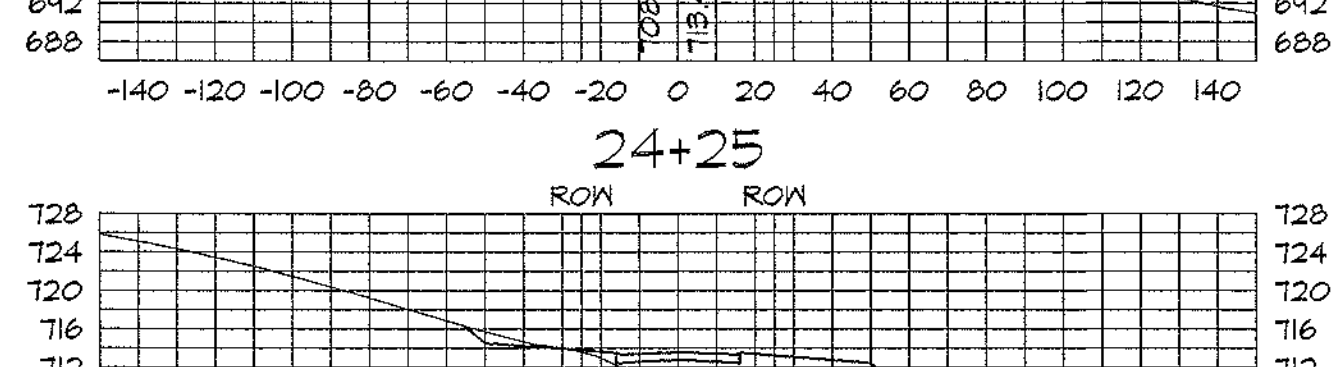
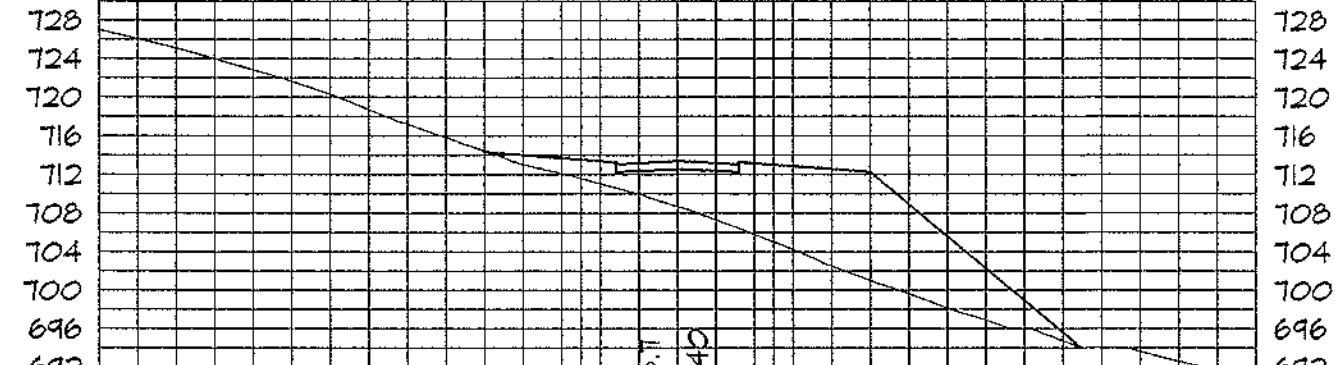
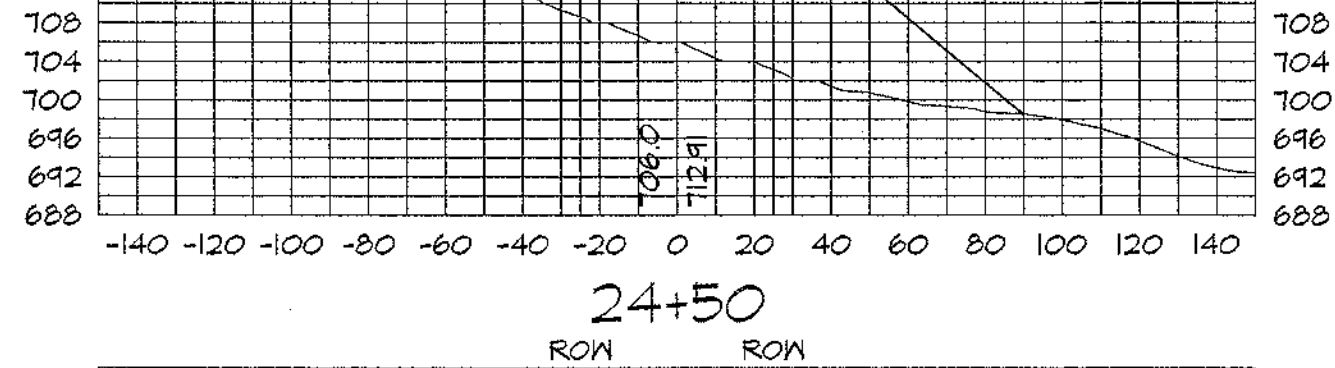
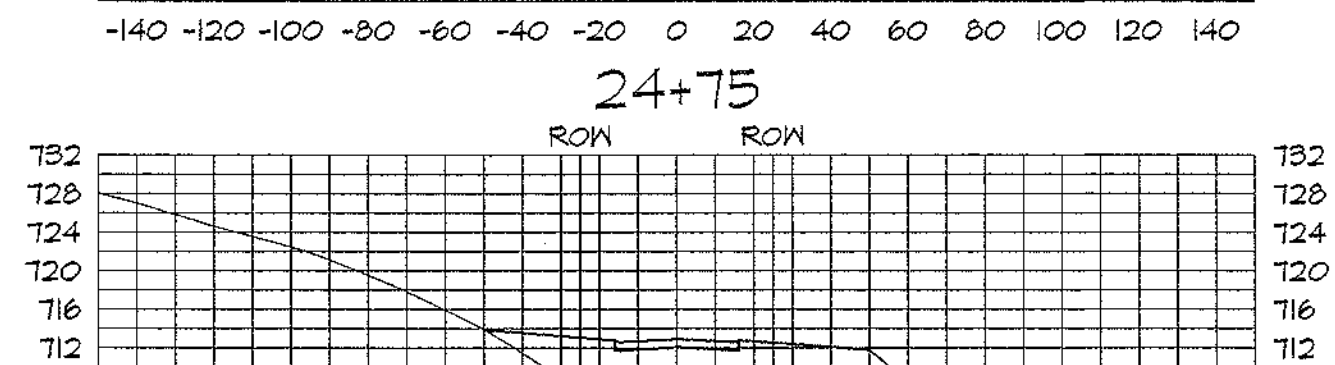
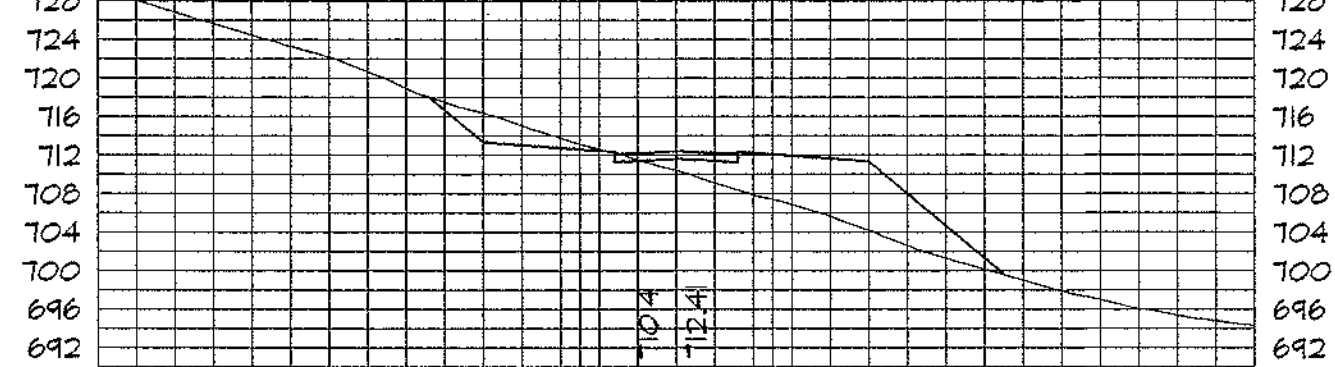
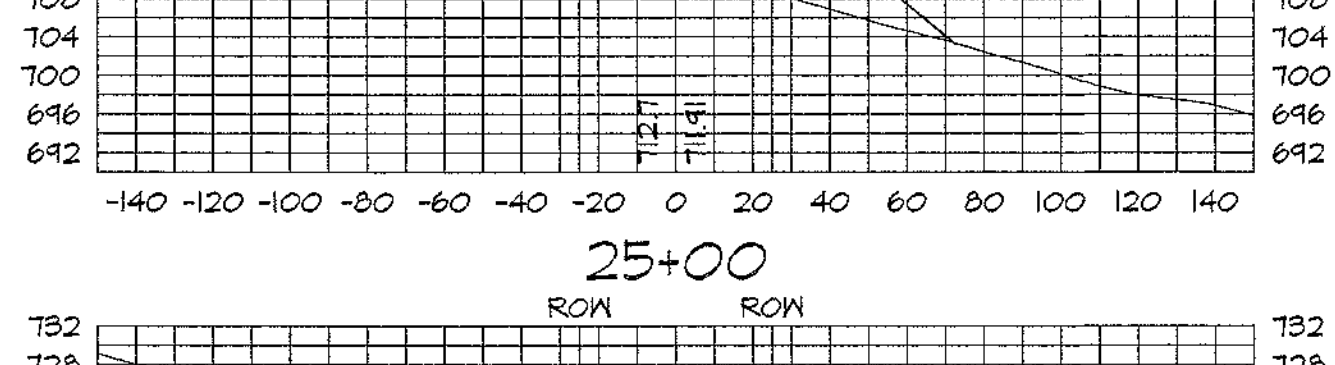
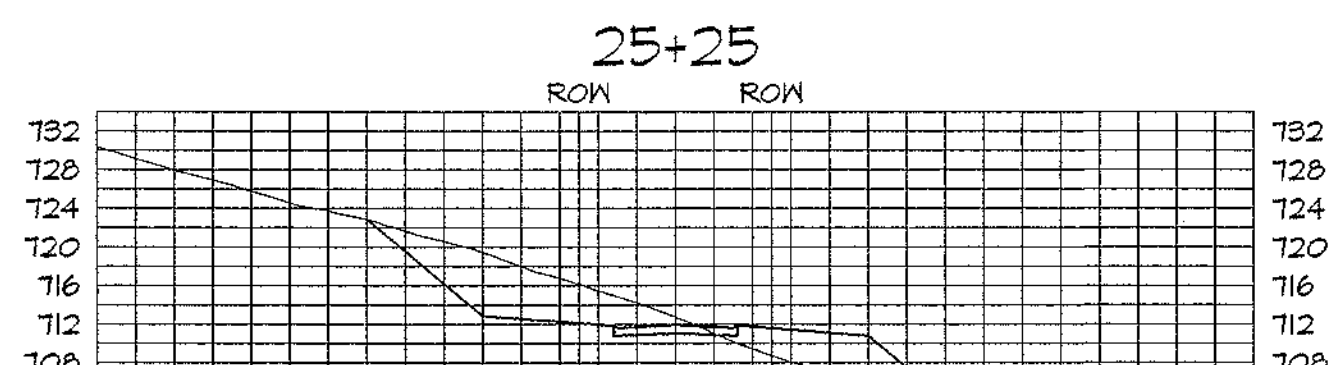
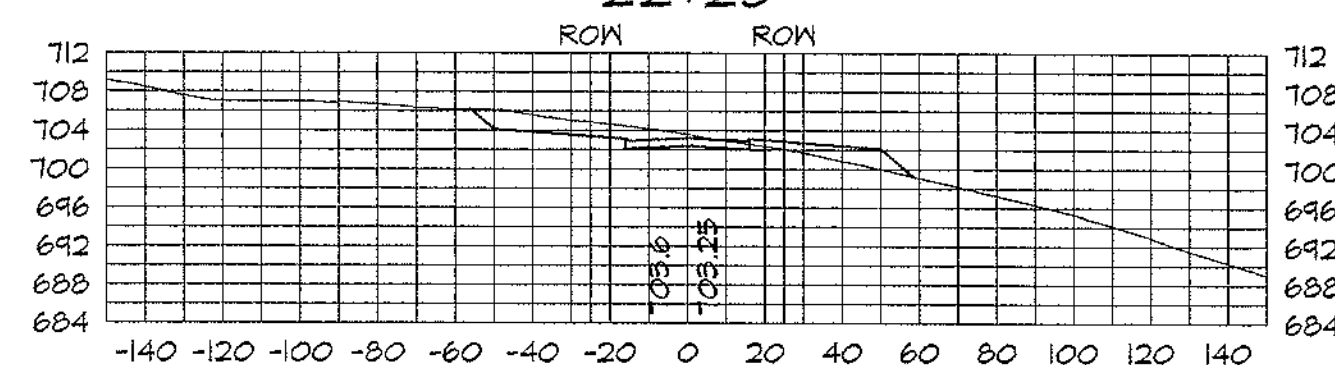
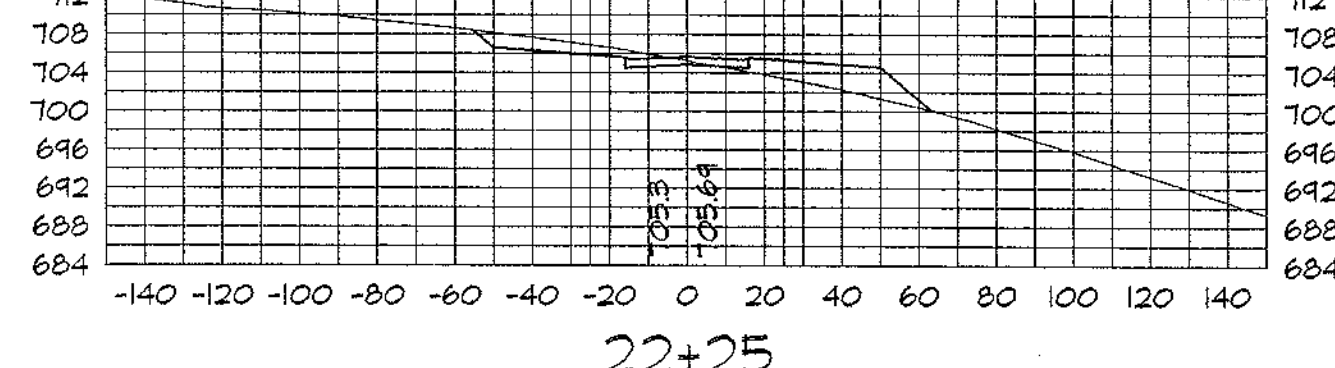
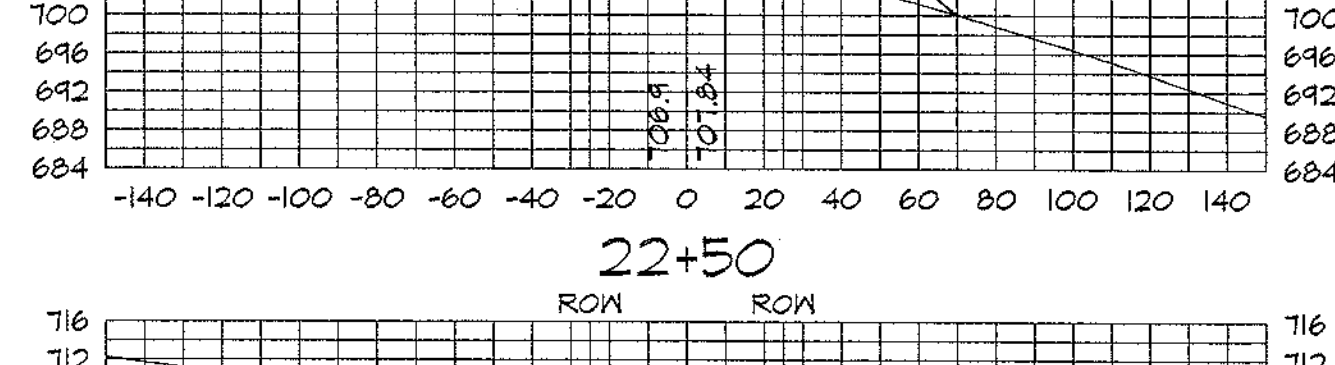
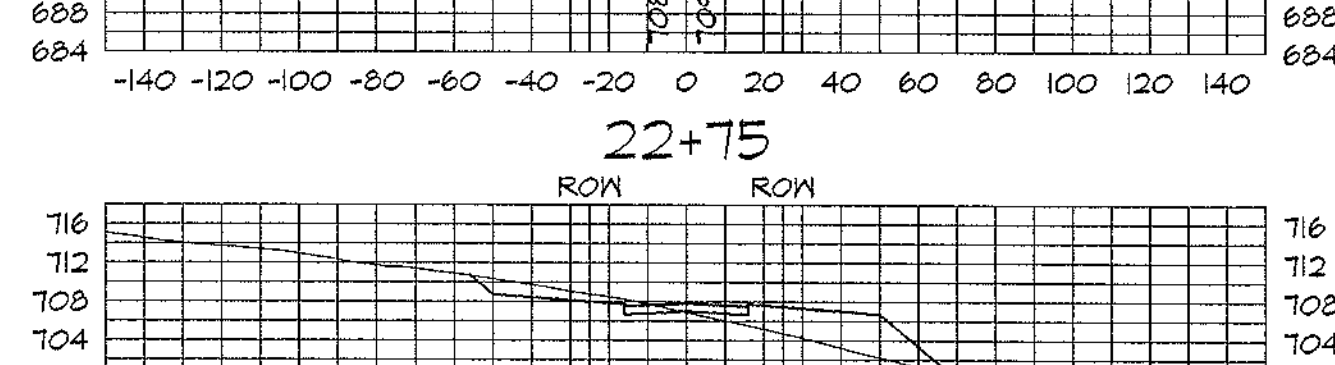
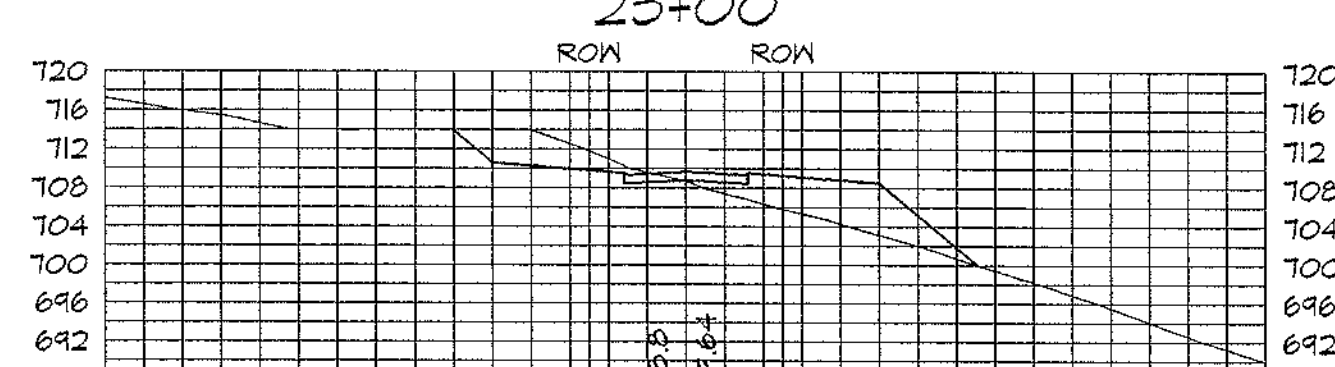
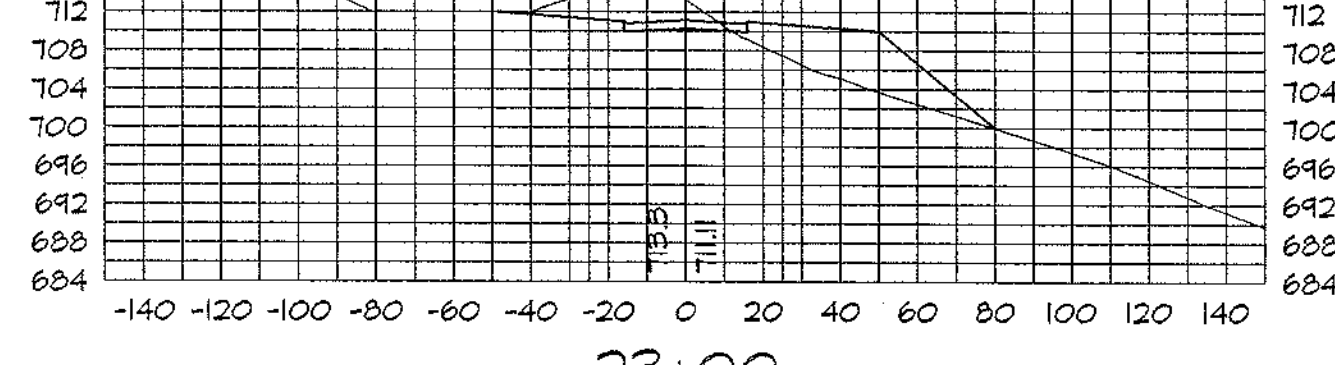
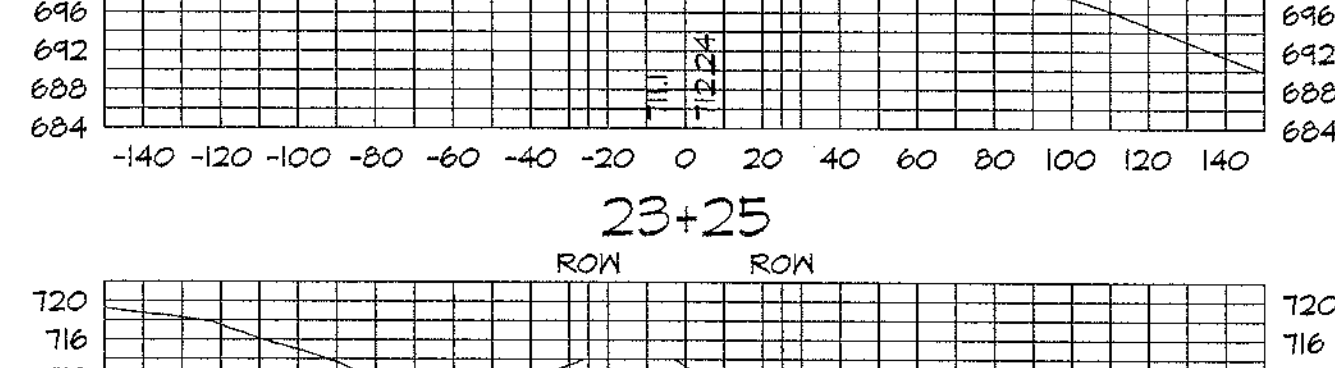
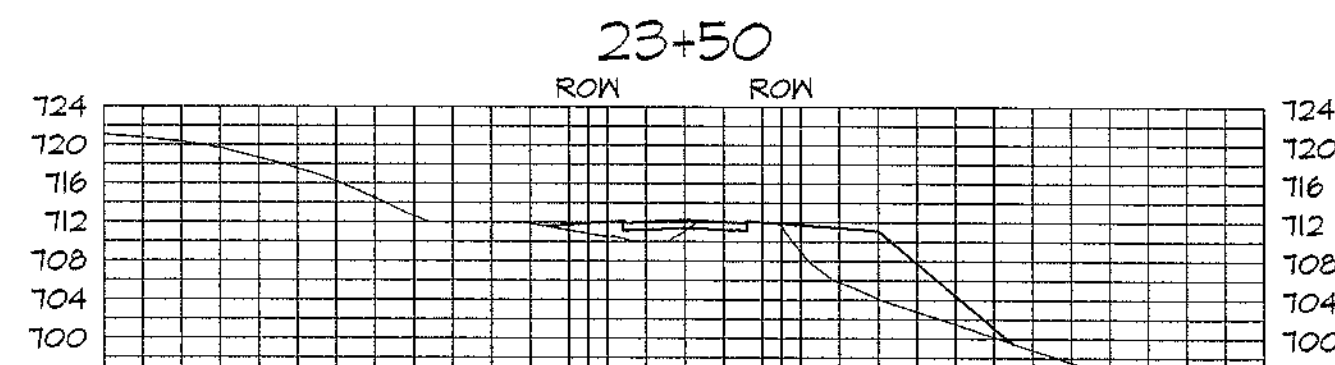
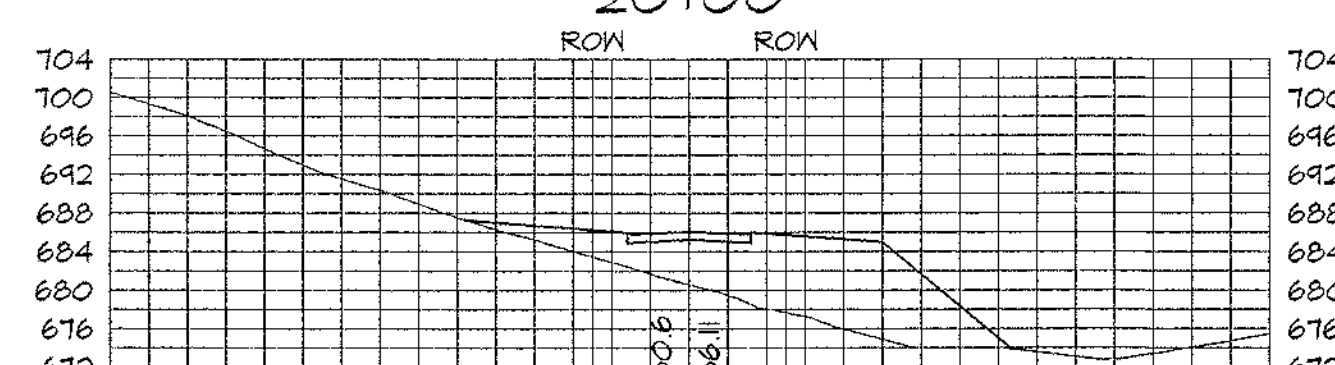
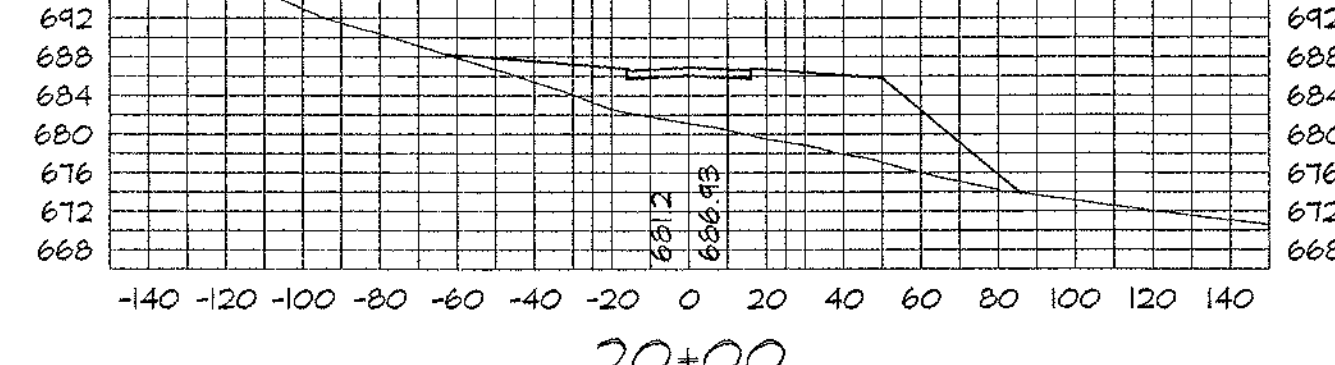
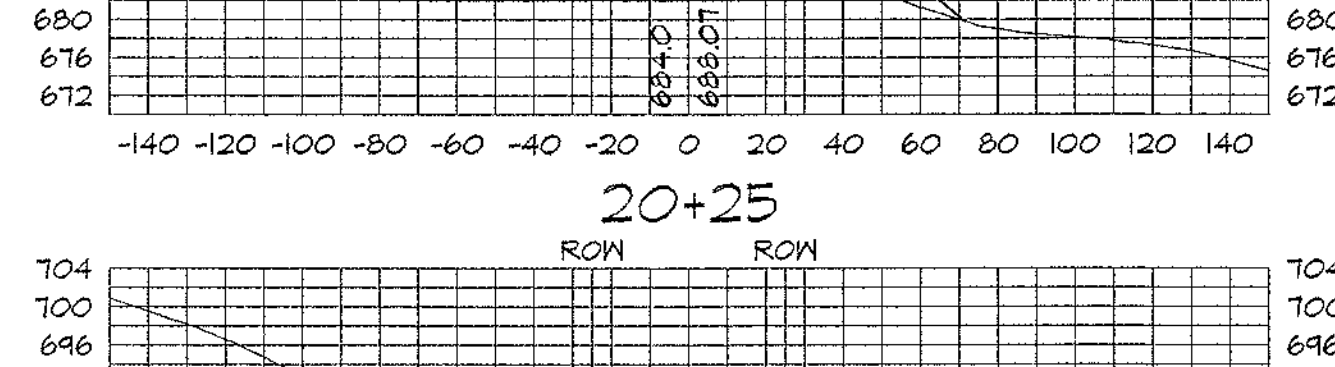
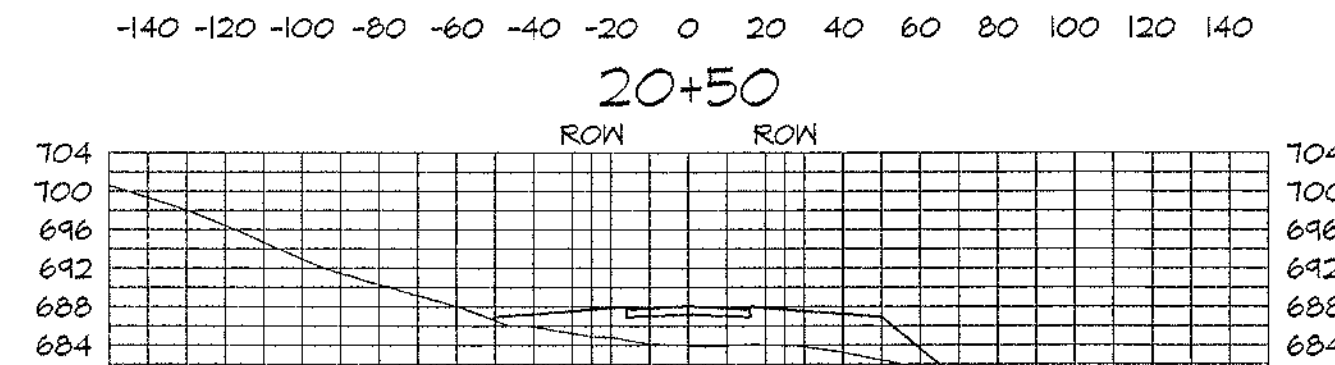
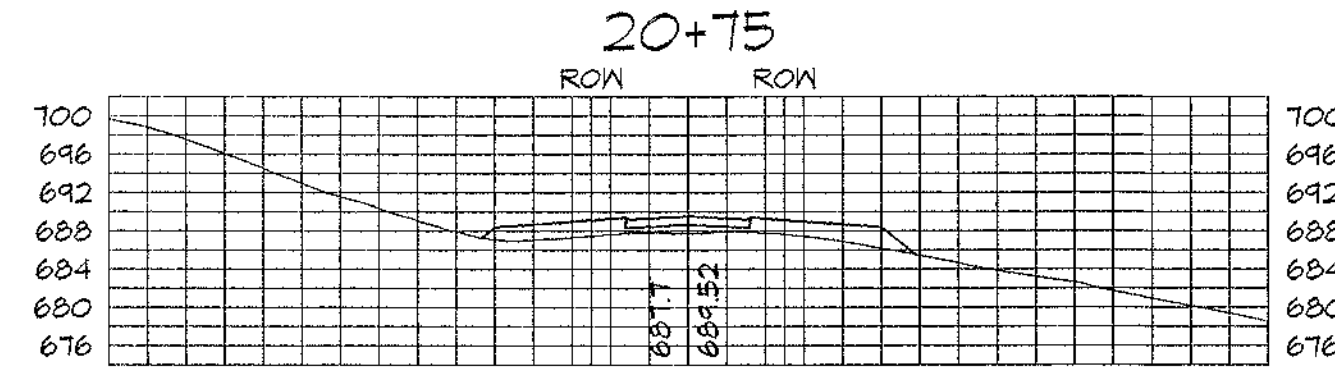
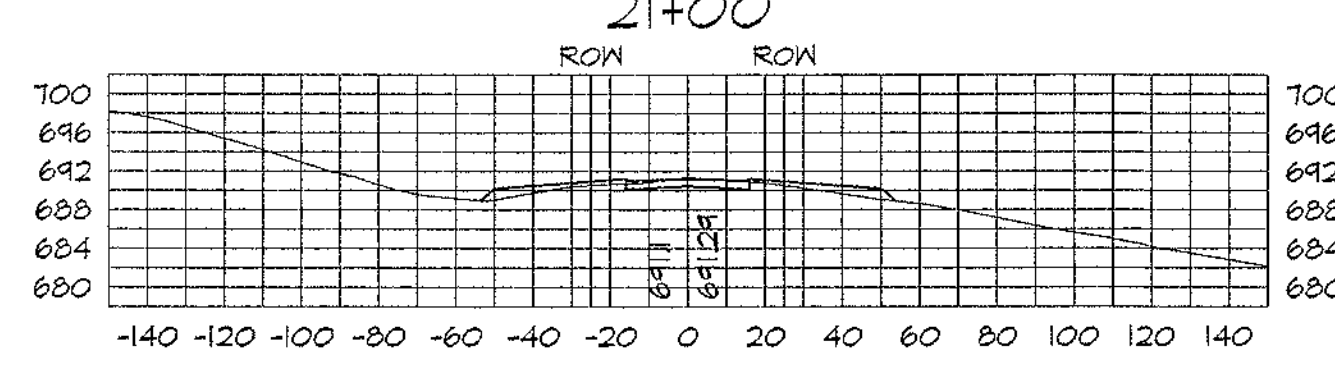
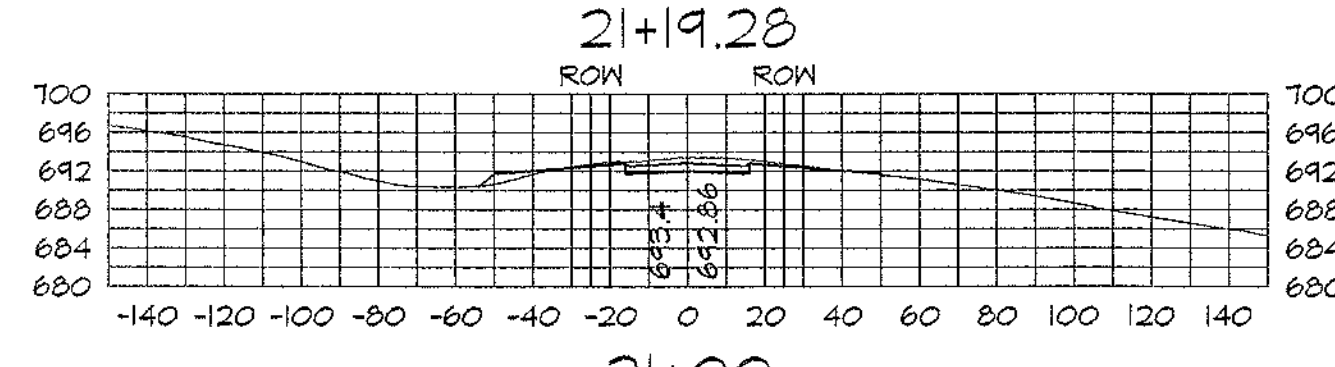
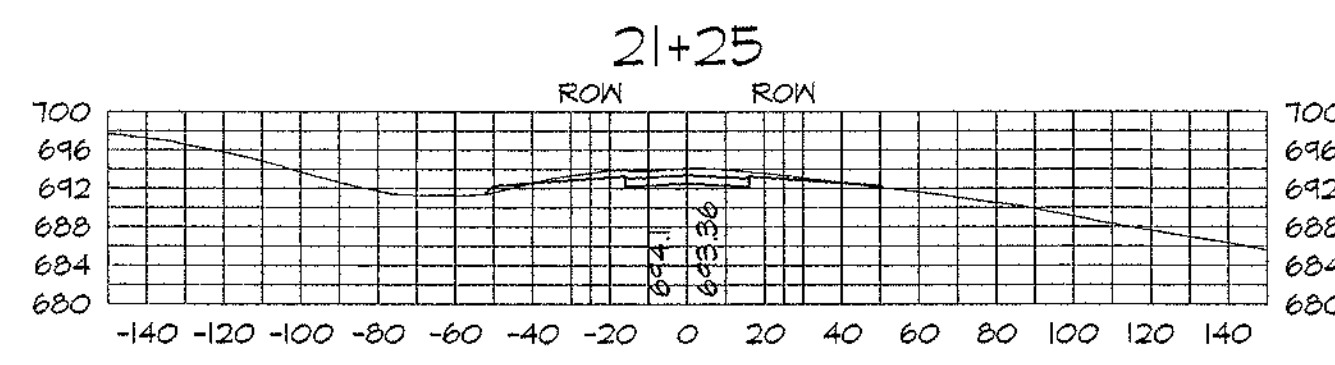
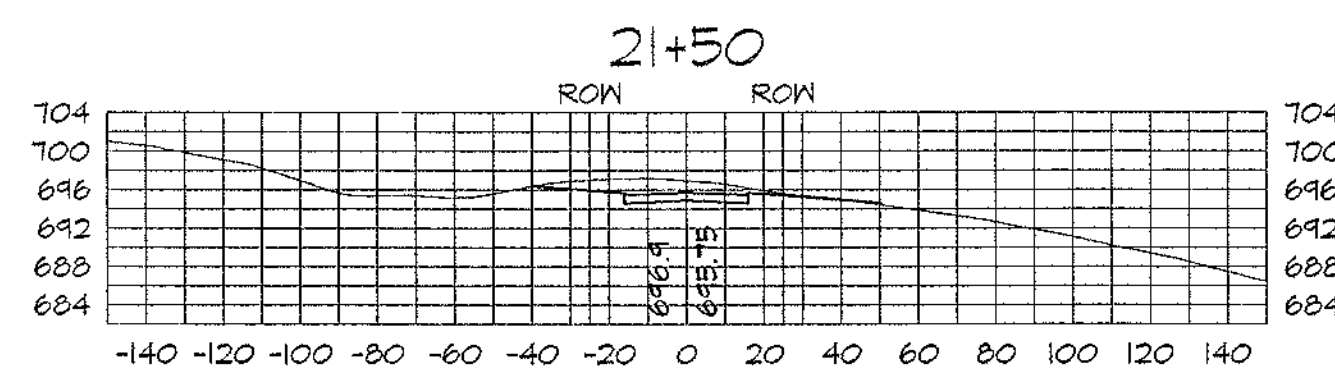
DATE	REVISION	DESCRIPTION
8/14/06		PRELIMINARY PLAT

C22 OF 30

RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

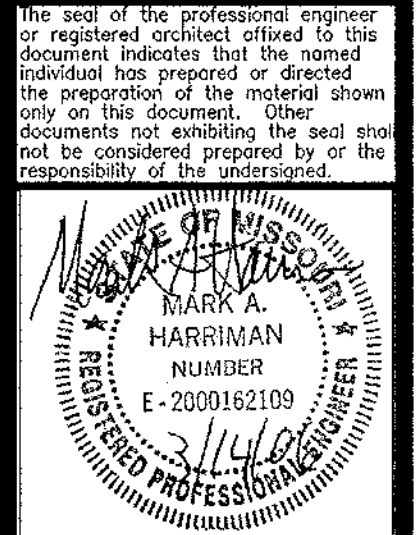
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HARRIMAN
NUMBER
E-2000162109
3/14/06
SEAL OF MISSOURI PROFESSIONAL ENGINEER



HOR: $I^2 = 50$
VER: $I^3 = 20^4$

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GARY TERSCHLUSE, P.E.
RON UNNERSTALL, P.E.

RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

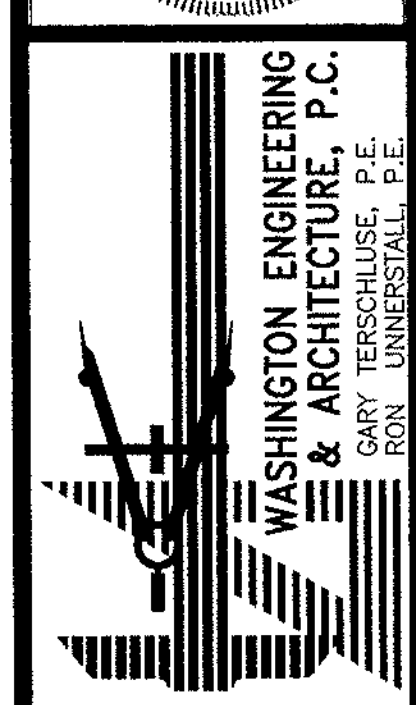
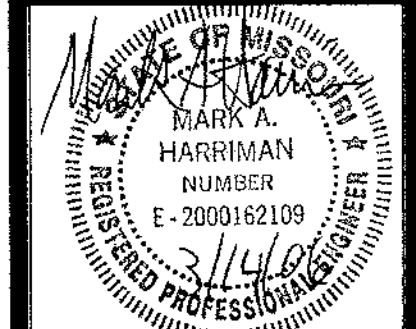
STREET CROSS SECTIONS

DATE	WP	REVISION	DESCRIPTION
3/14/06			PRELIMINARY FLAT
PROJECT #2439			

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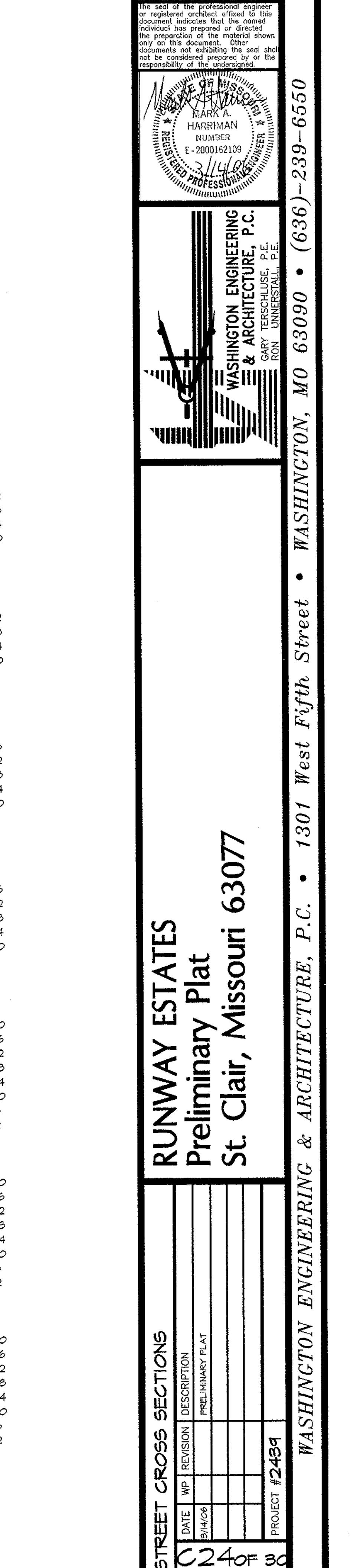
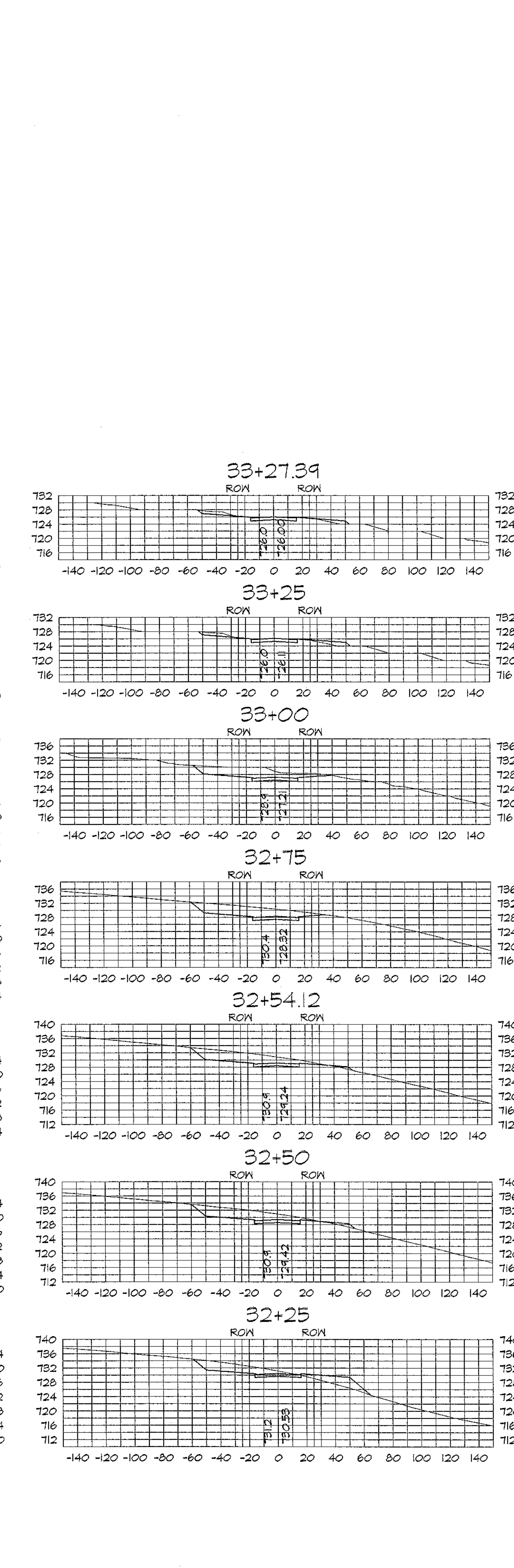
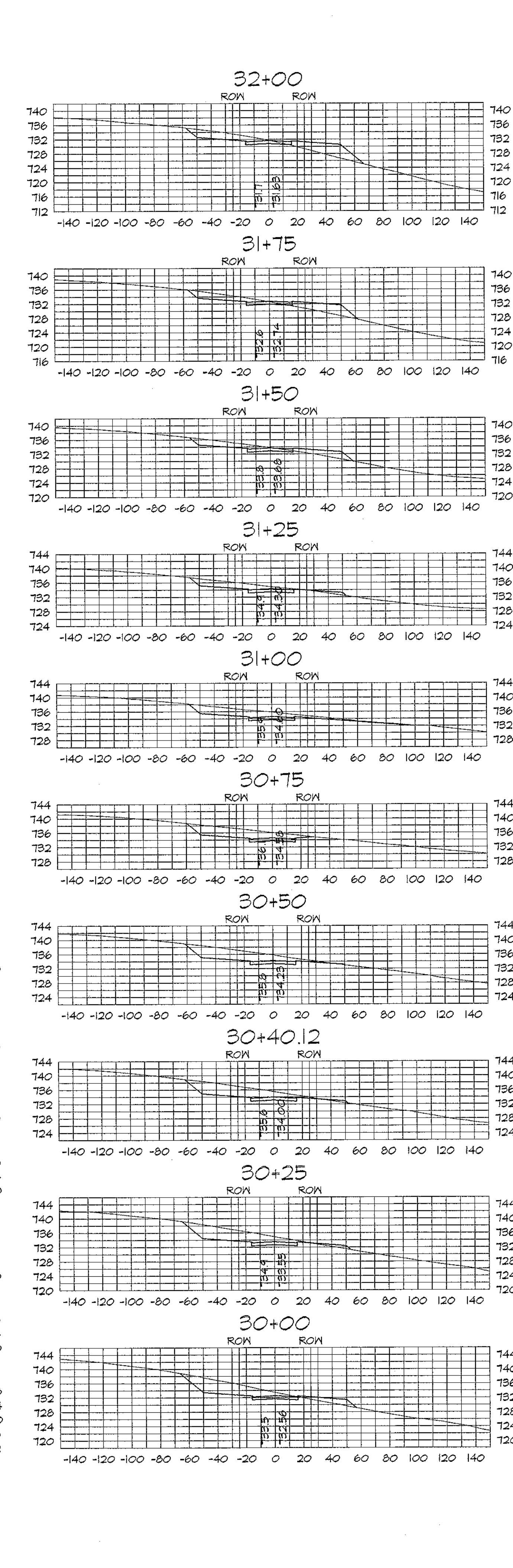
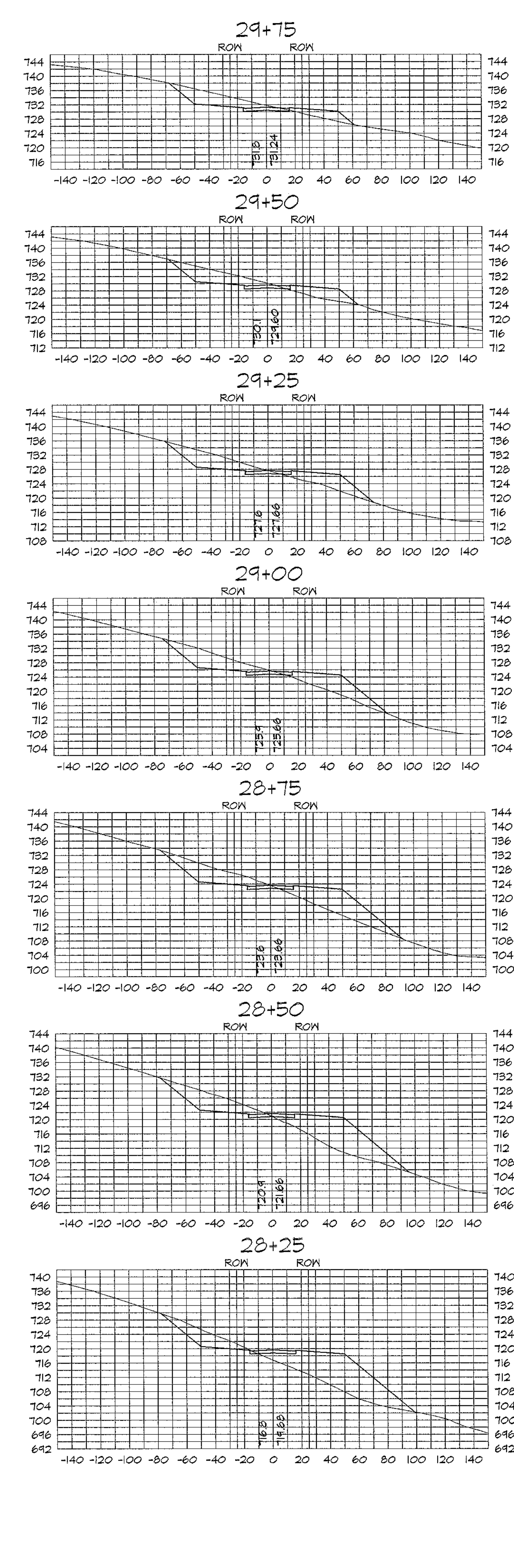
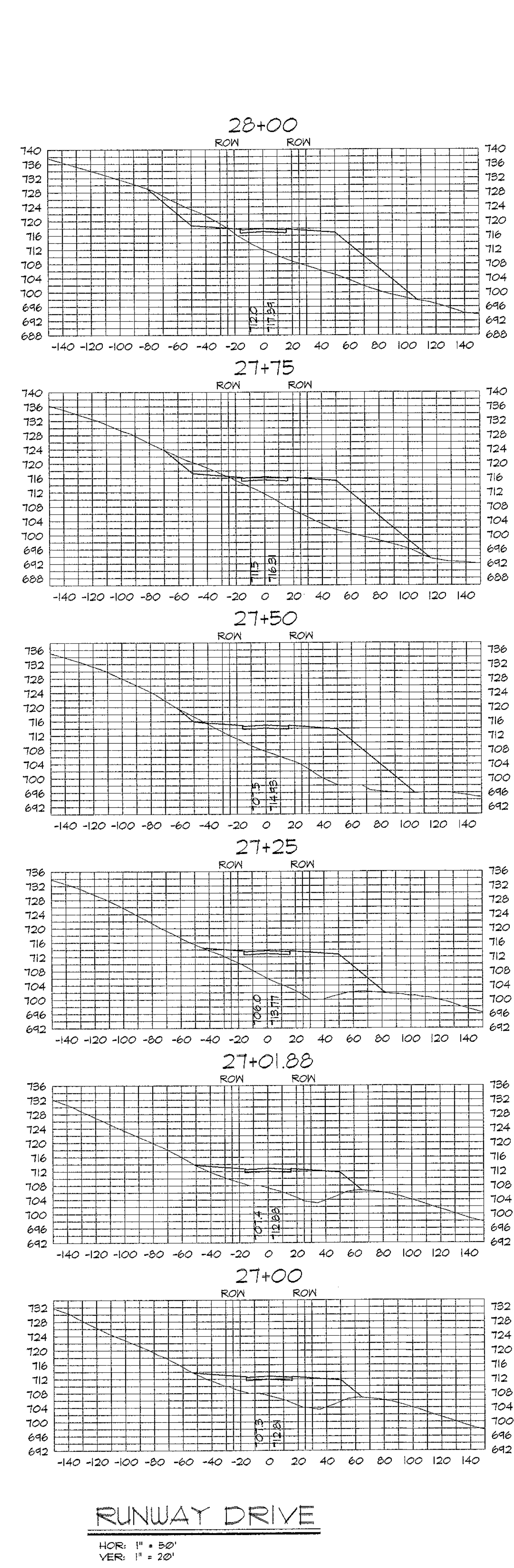


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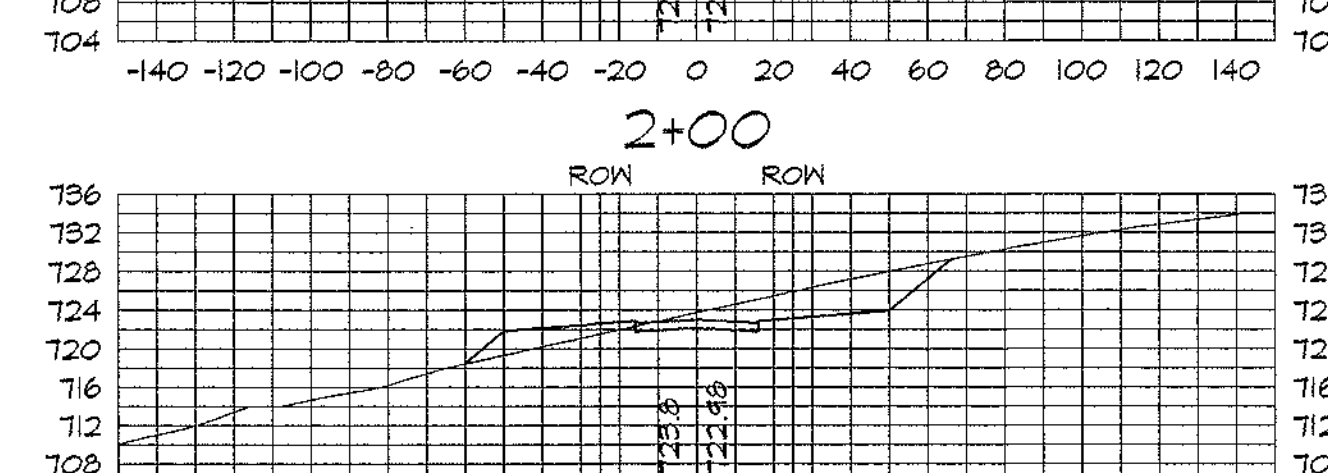
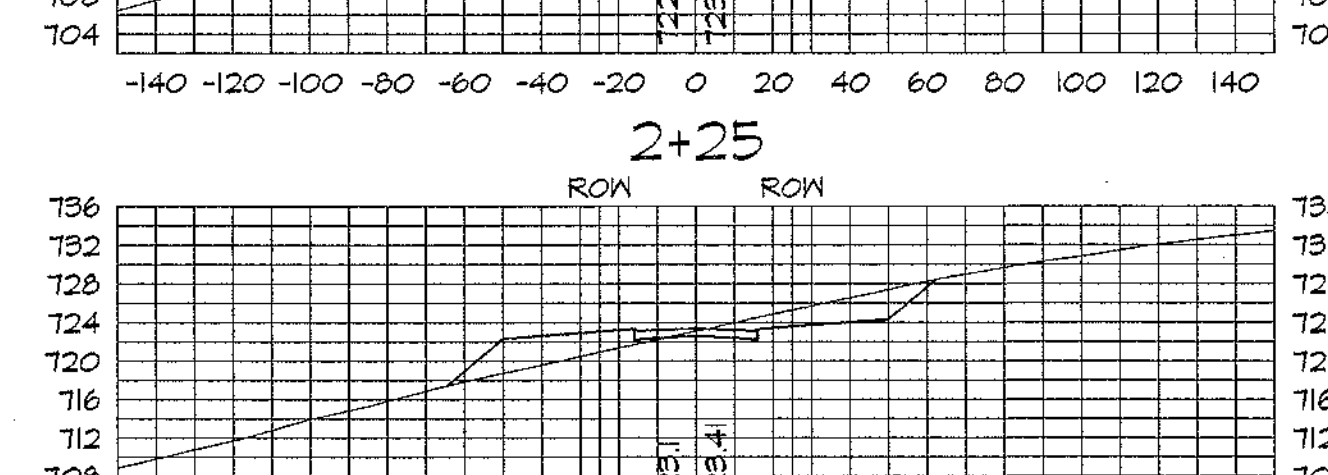
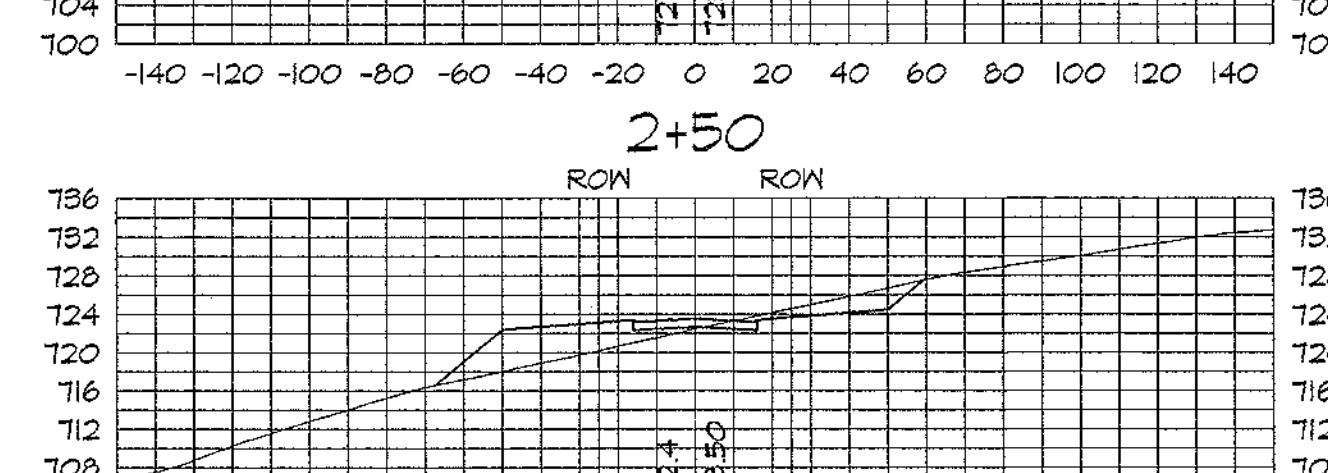
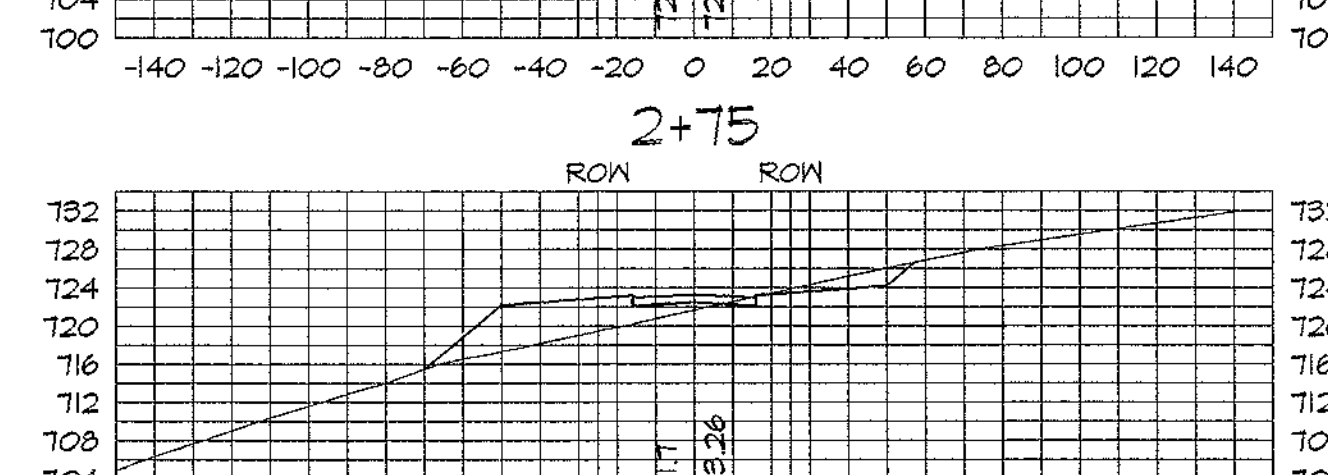
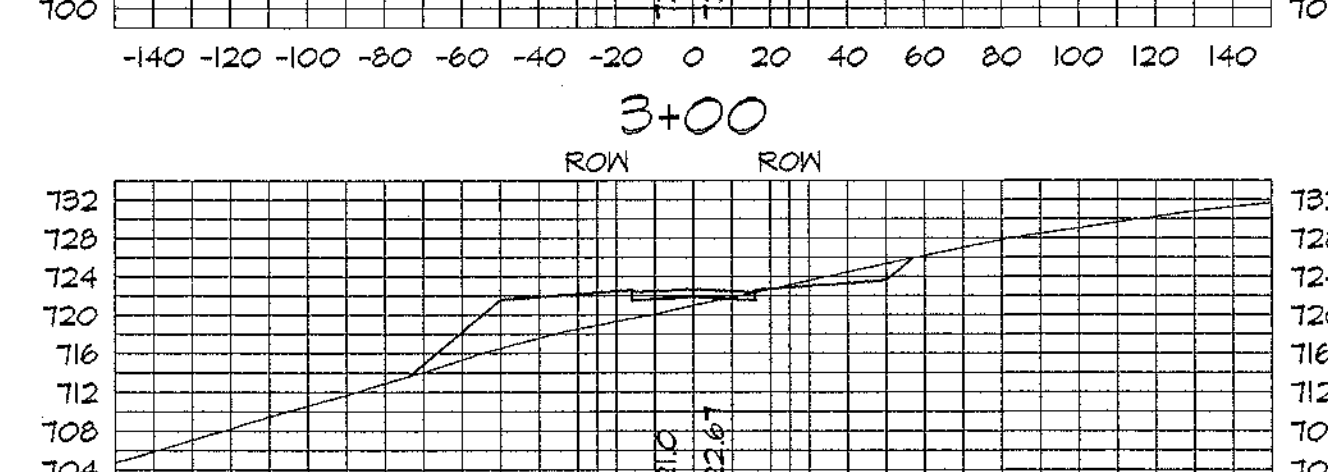
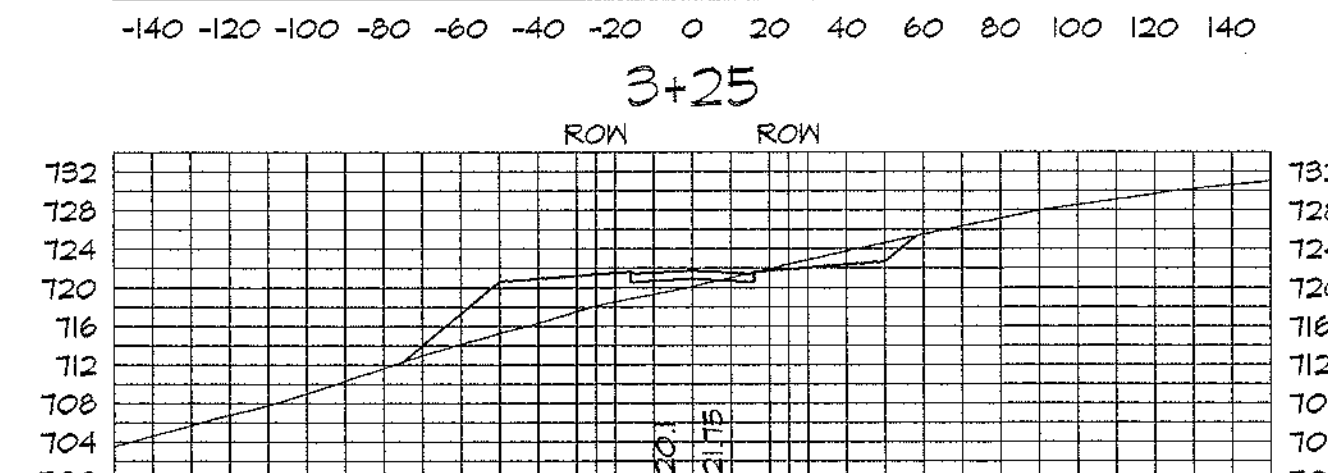
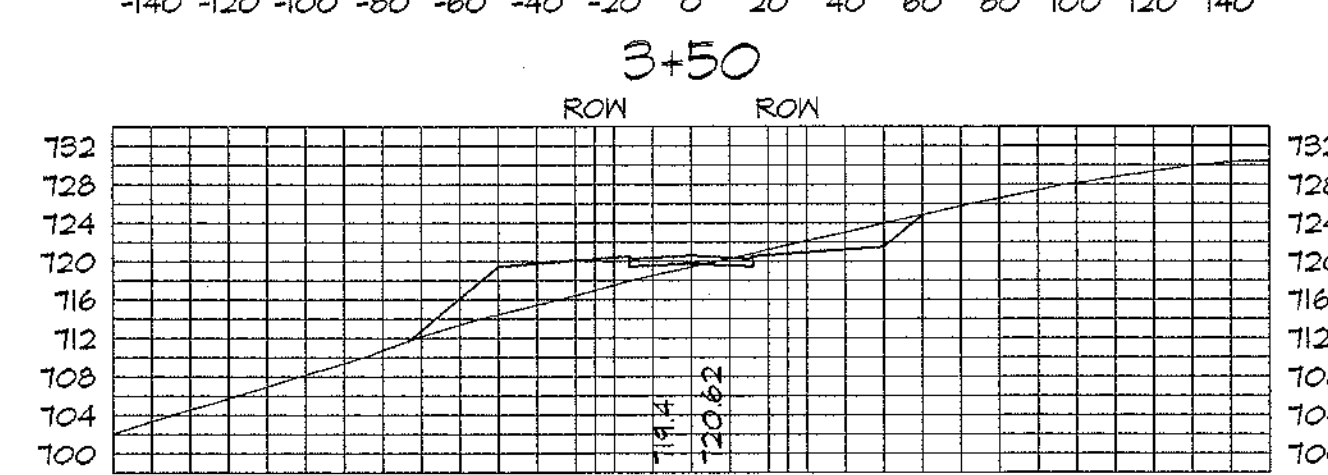
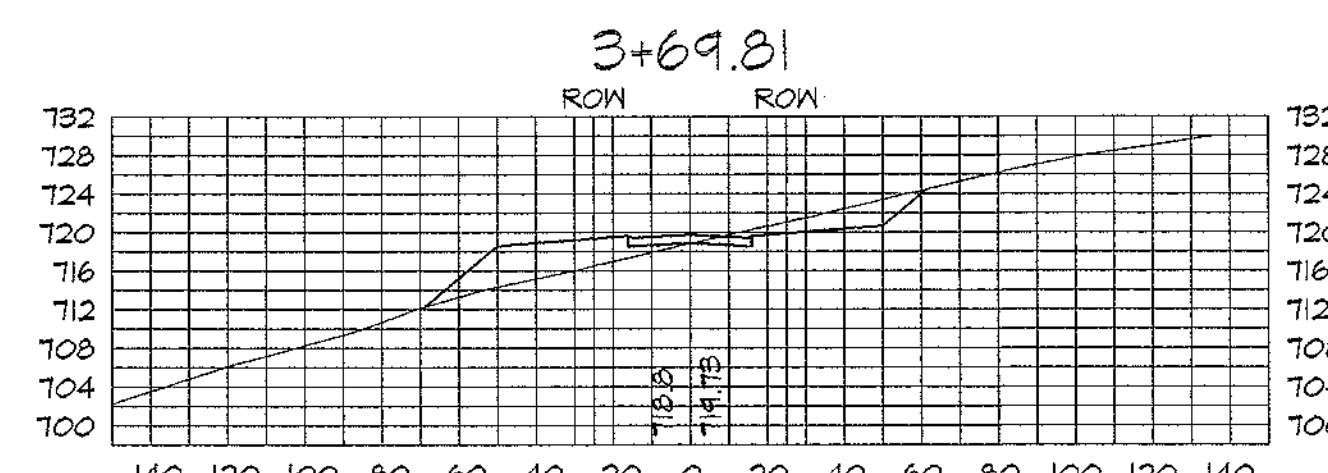
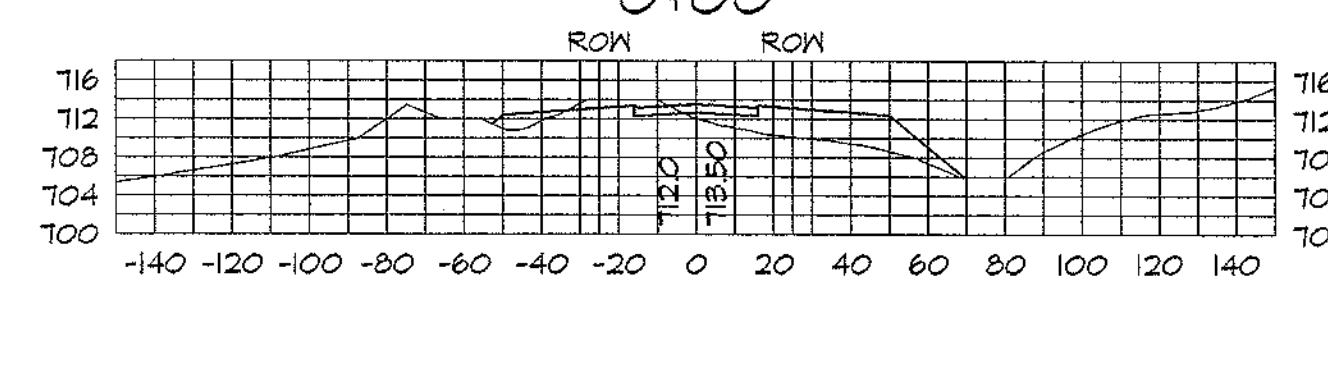
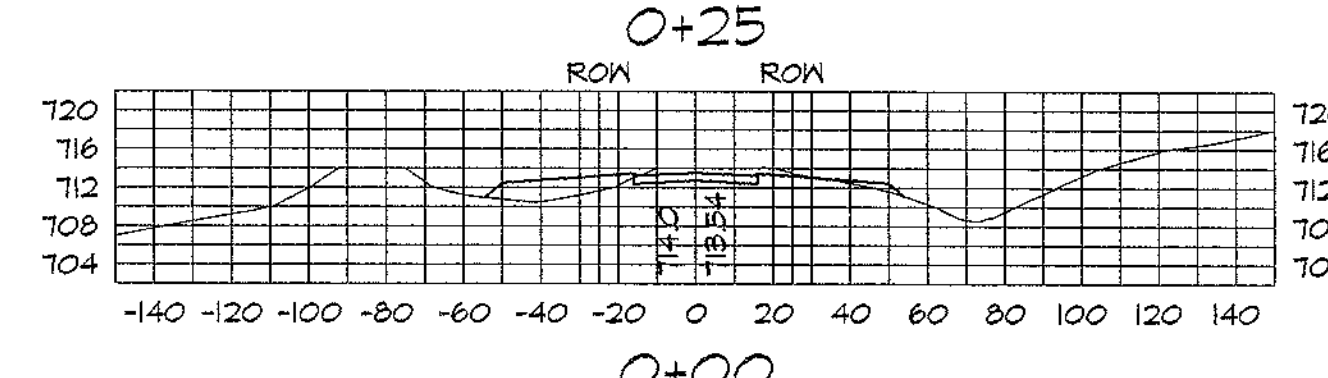
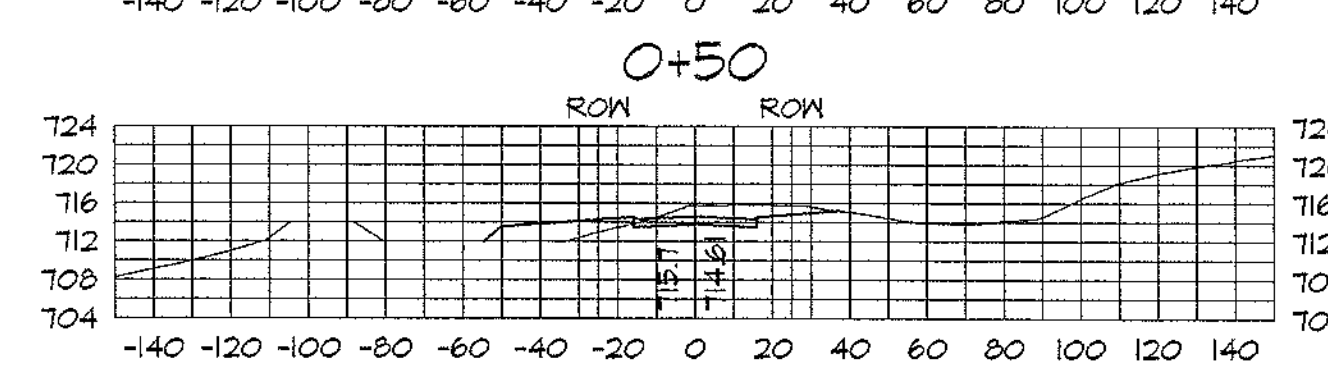
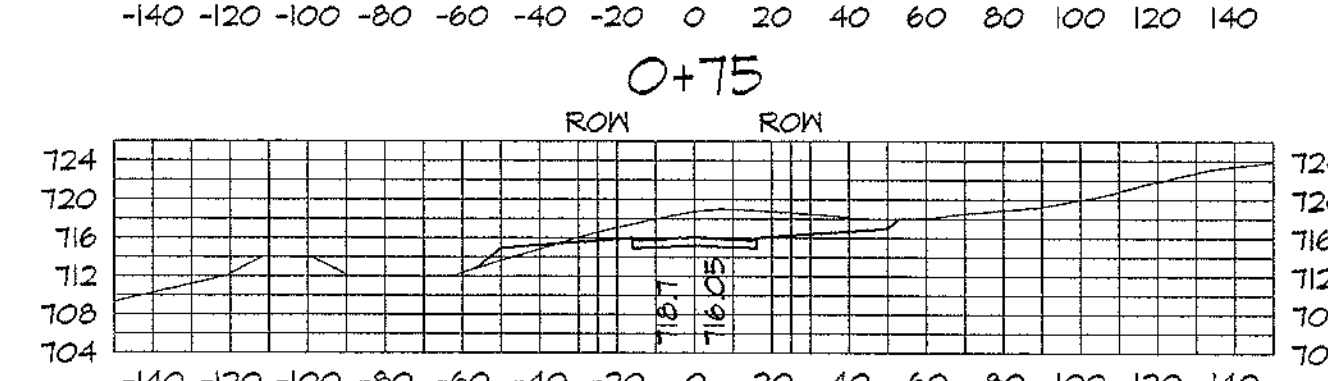
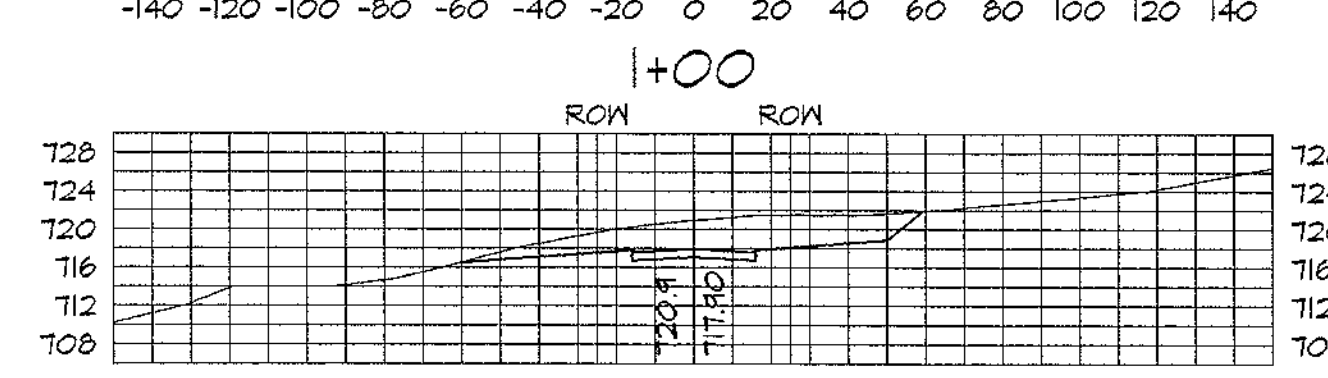
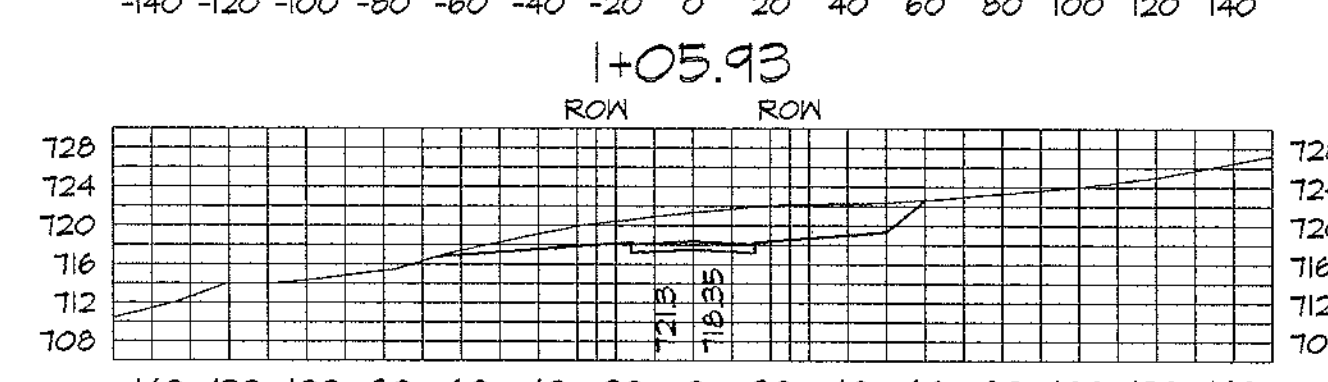
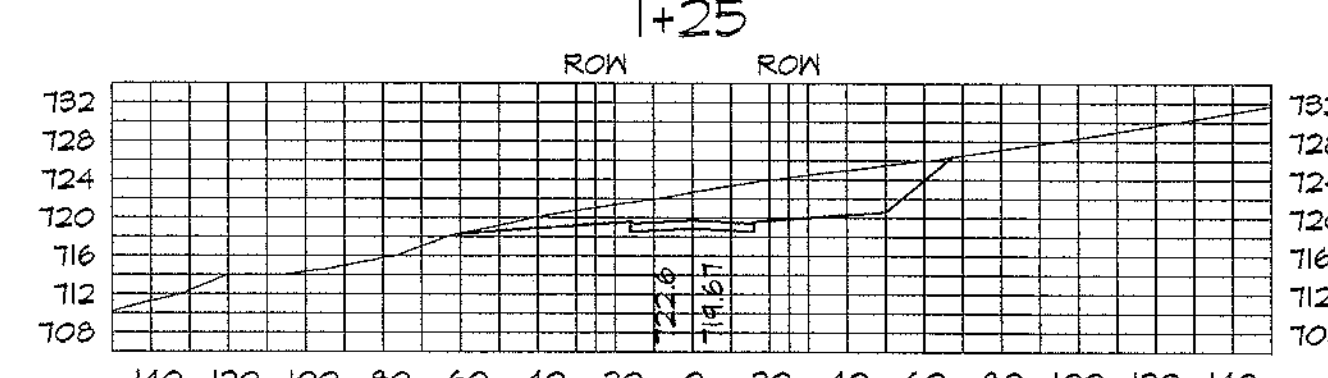
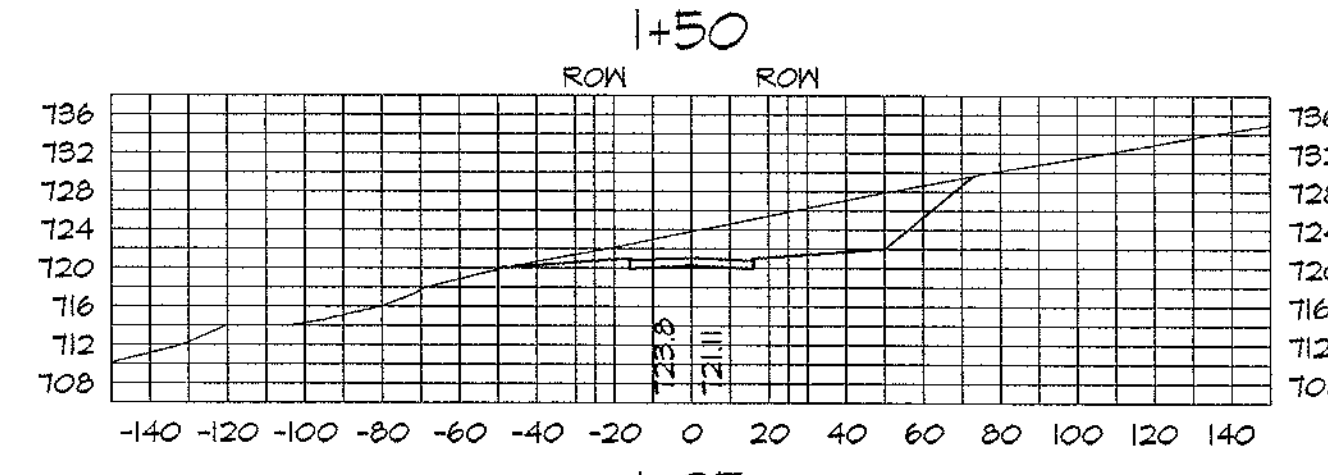
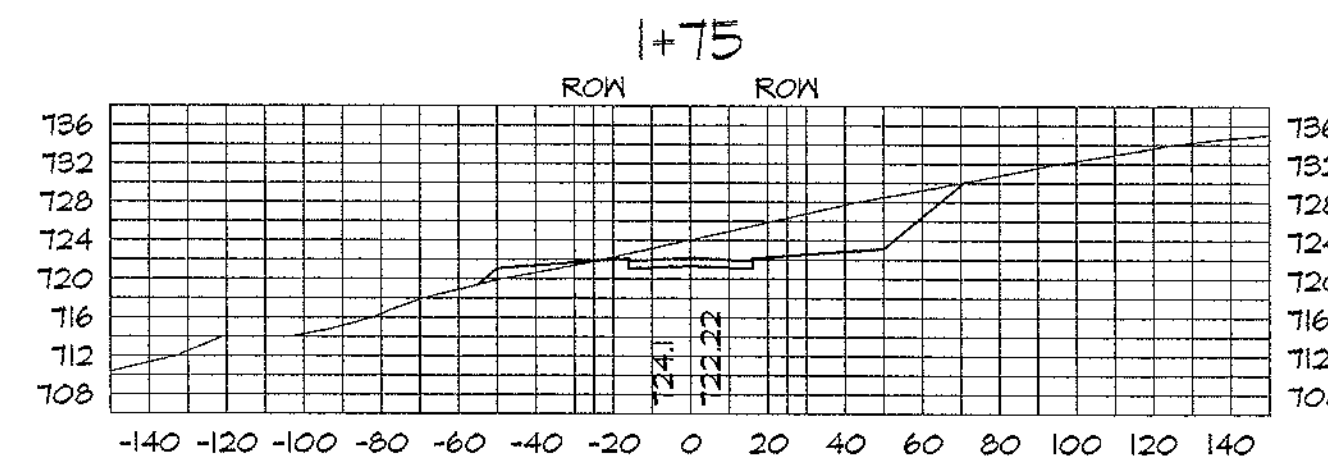
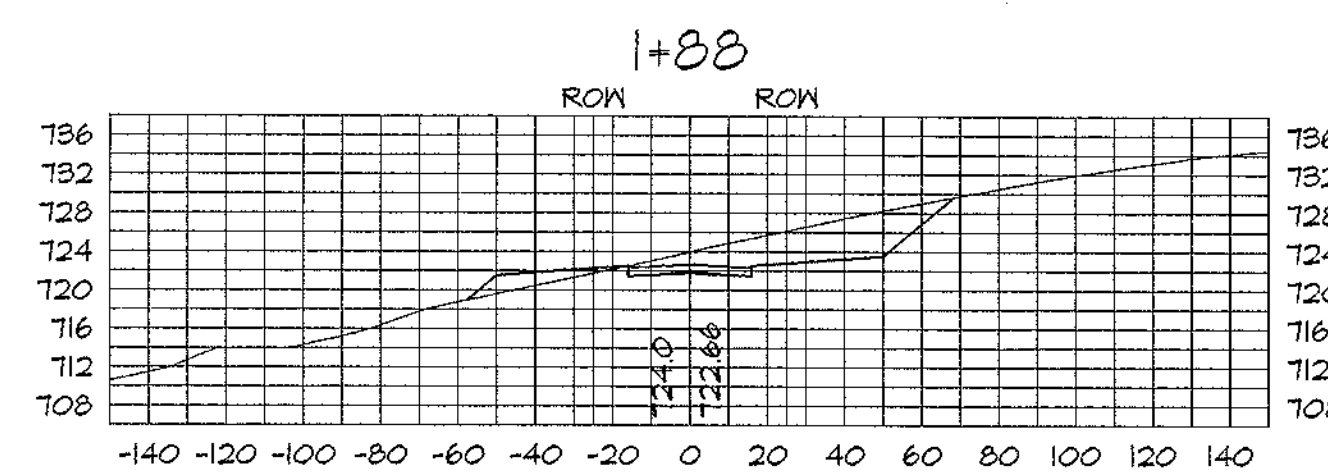
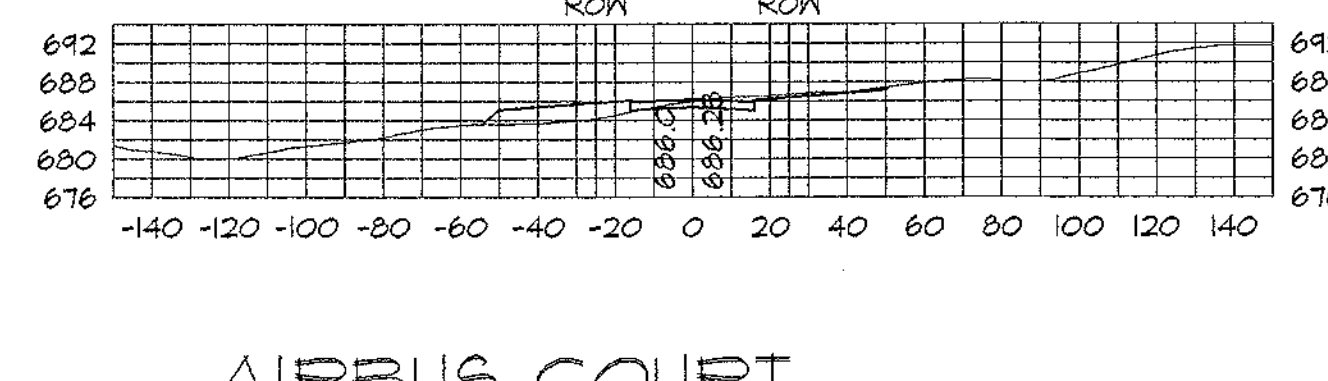
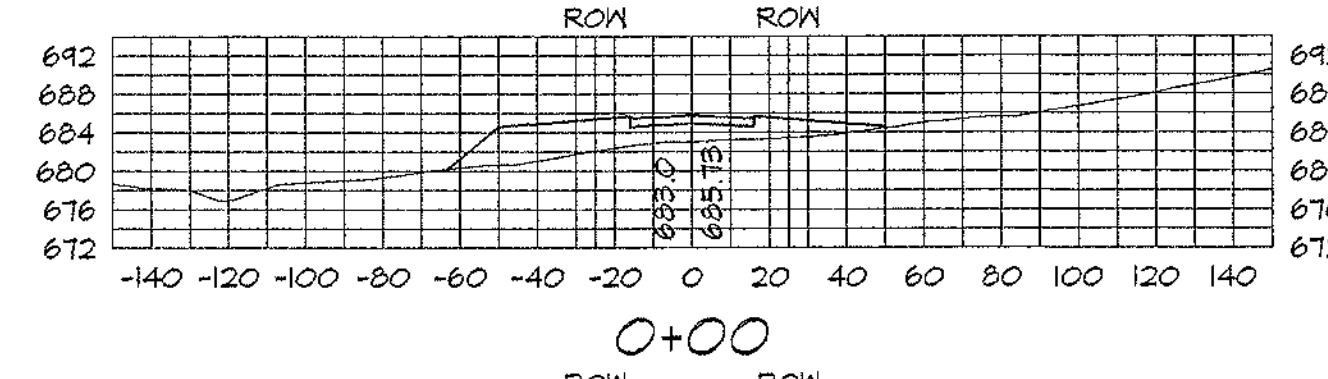
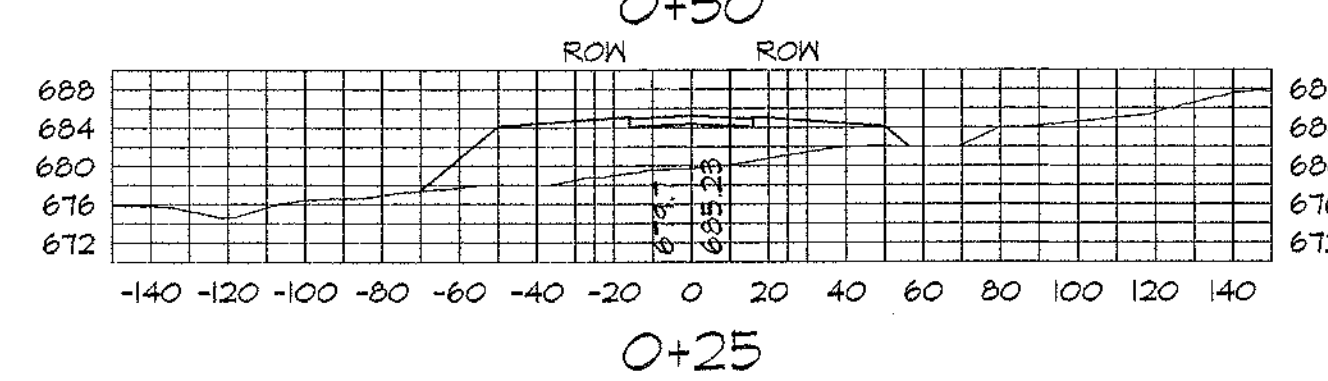
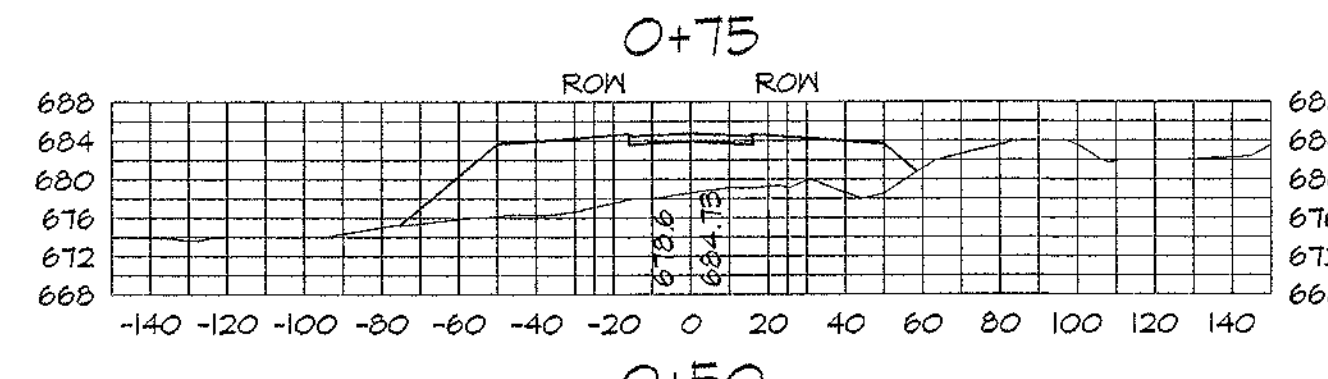
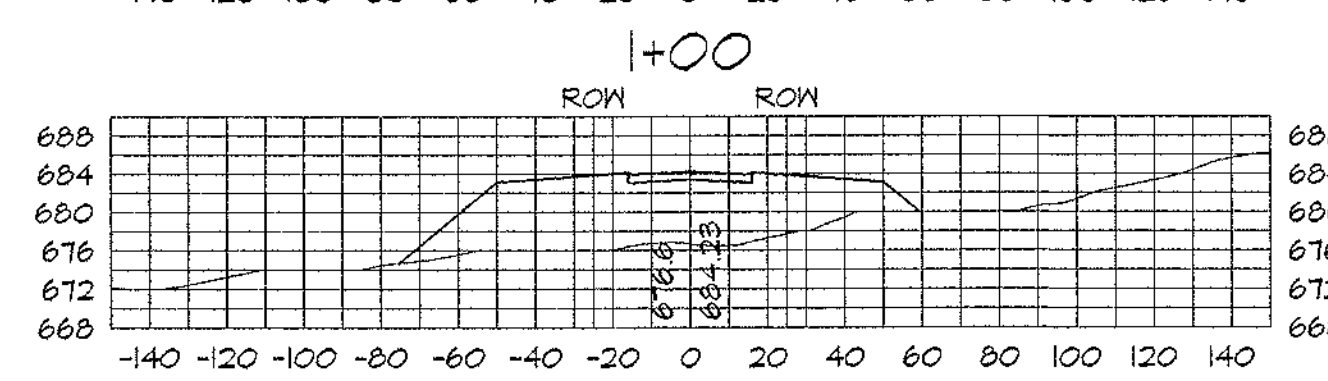
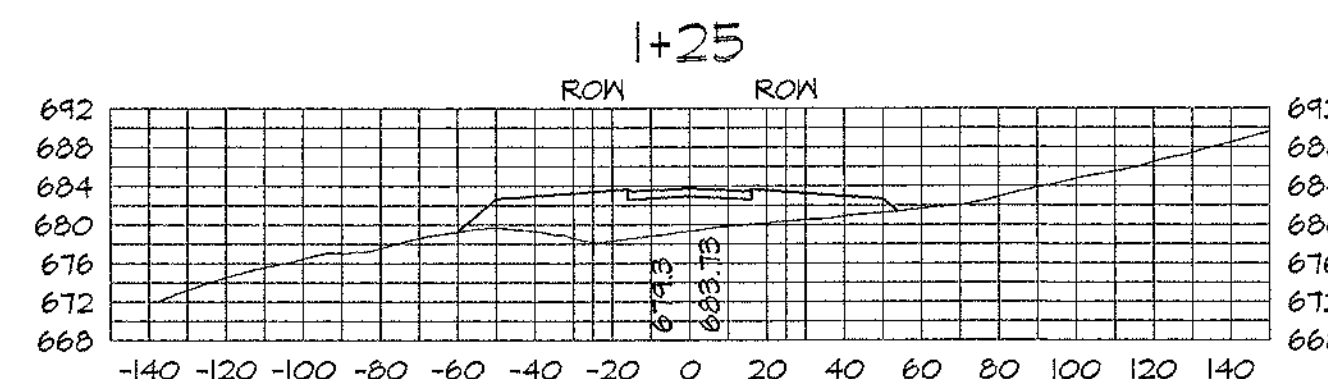
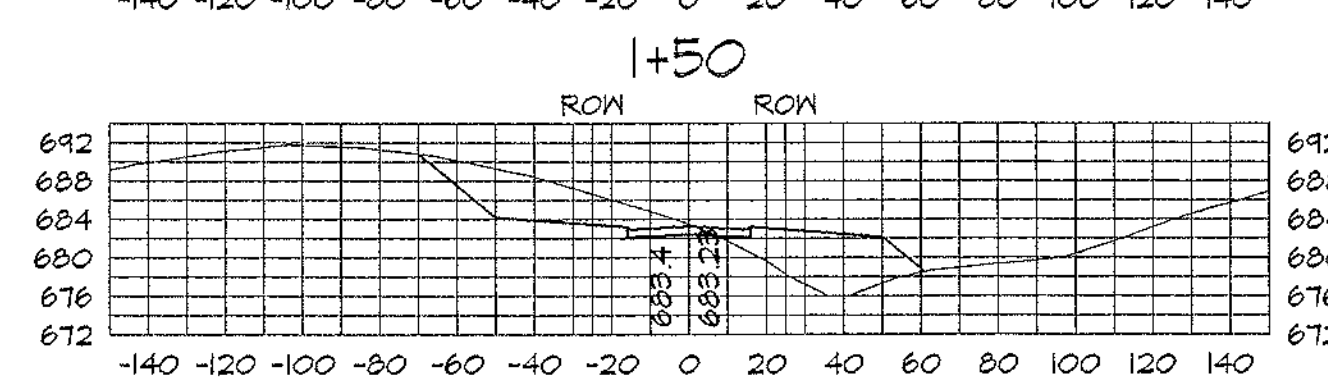
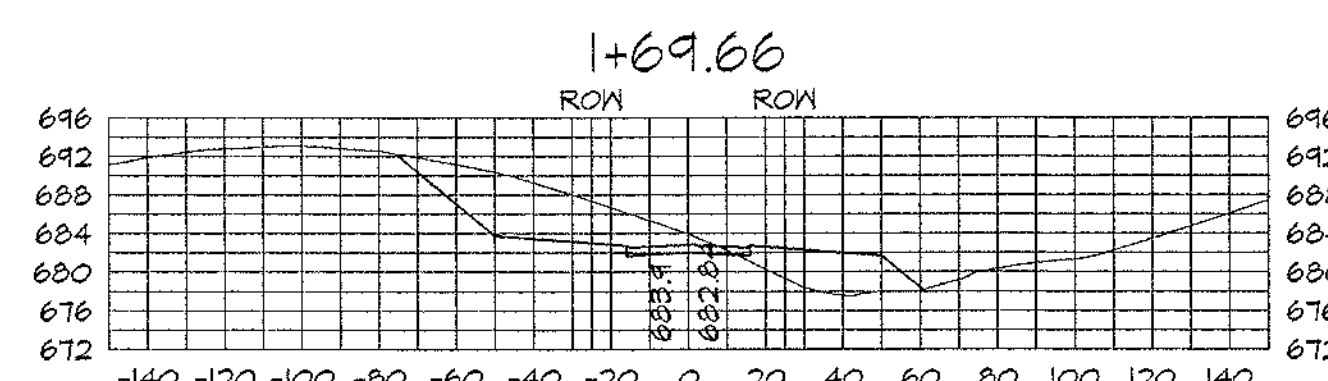
RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

STREET CROSS SECTIONS	
DATE	DESCRIPTION
9/14/06	PRELIMINARY PLAT
PROJECT #2439	

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RUNWAY DRIVE
HOR. 1" = 50'
VER. 1" = 20'



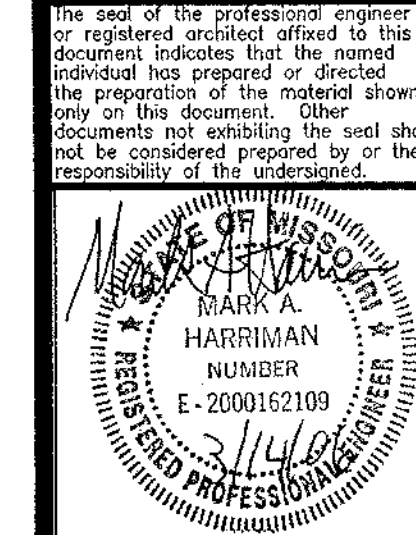
AIRBUS COURT

HOR: $I'' = 50'$
VER: $I'' = 20'$

BOEING COURT

HOR: $1^H = 50$
VER: $1^V = 20^1$

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RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

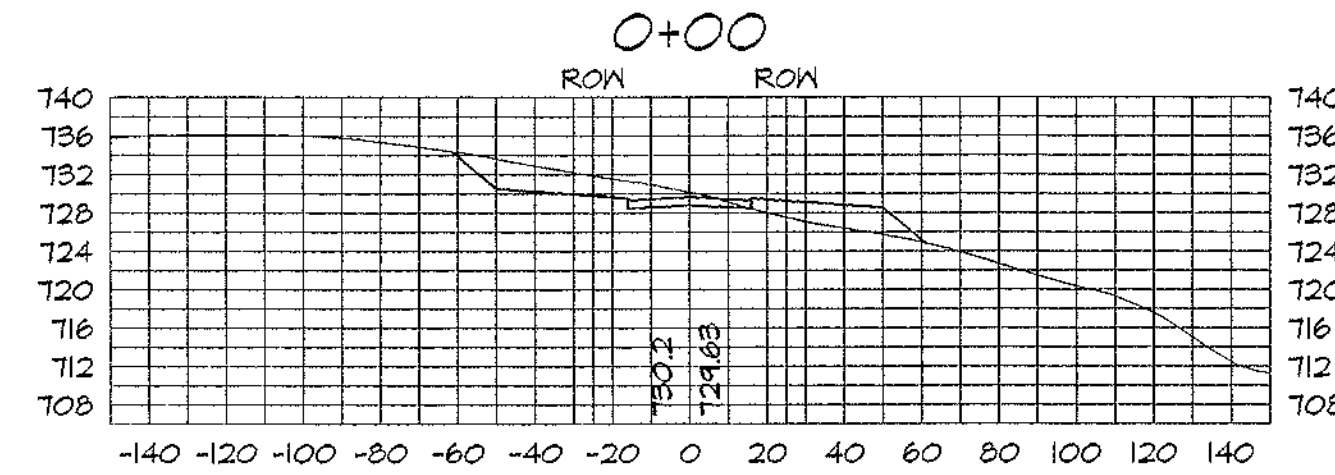
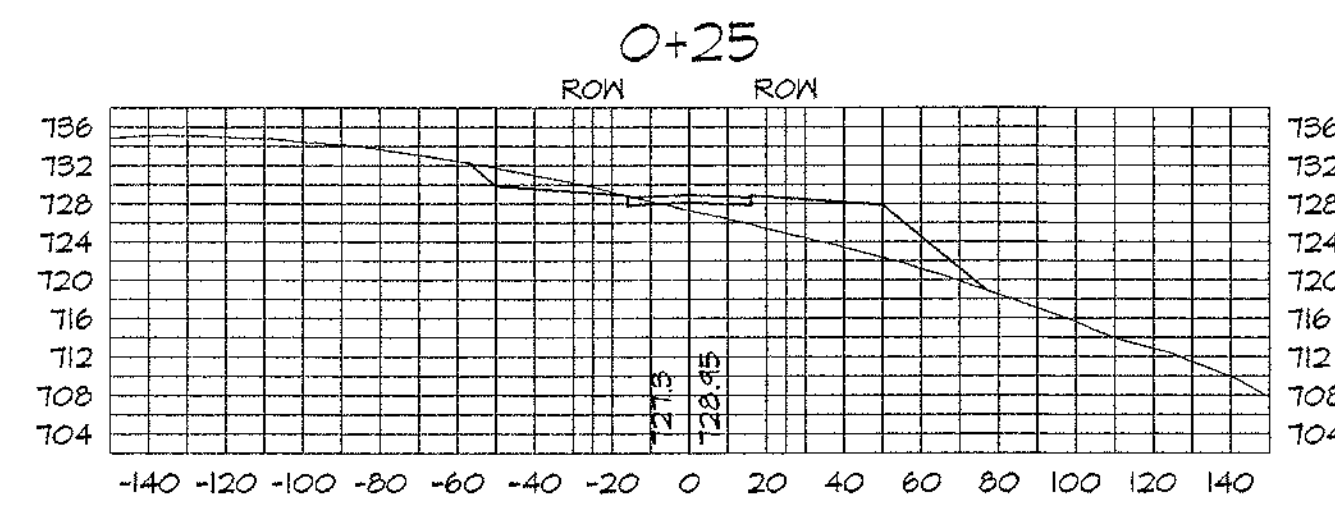
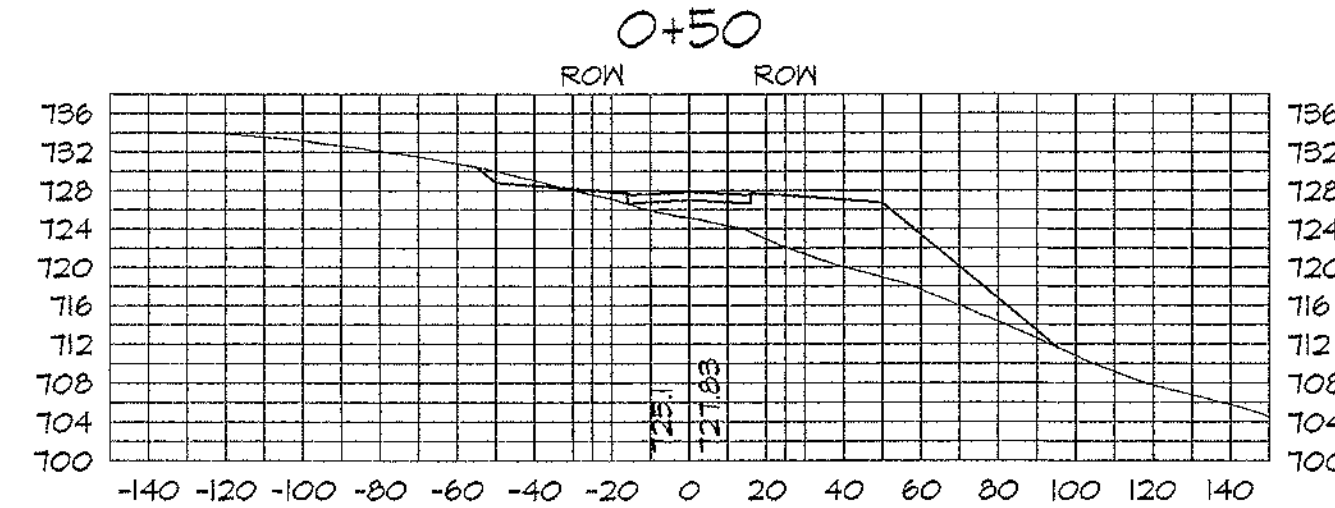
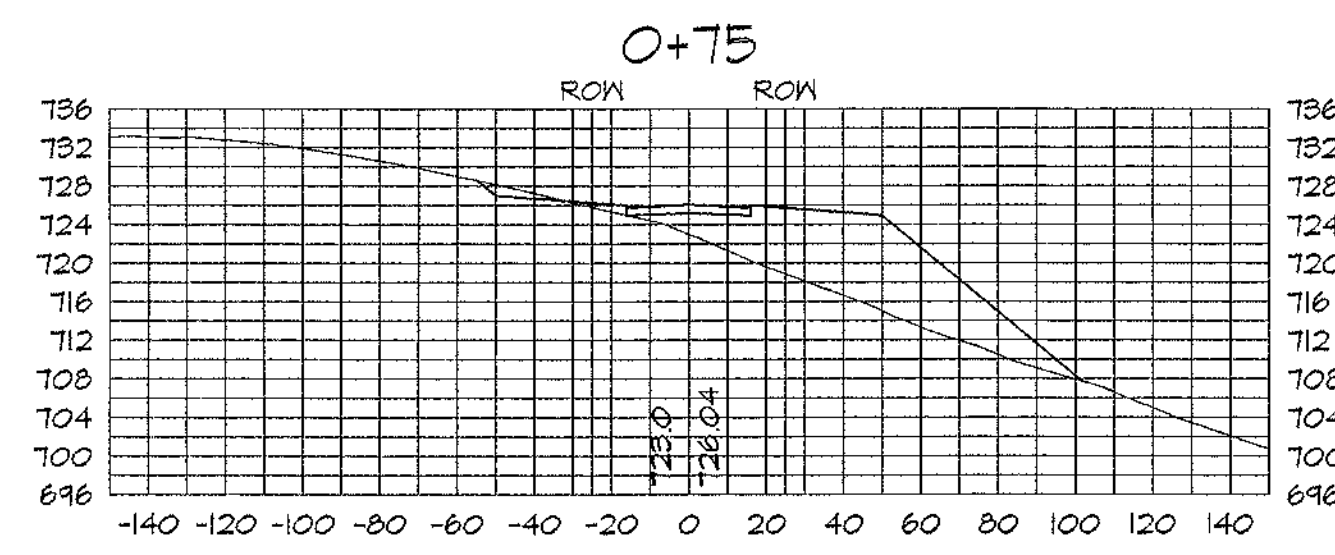
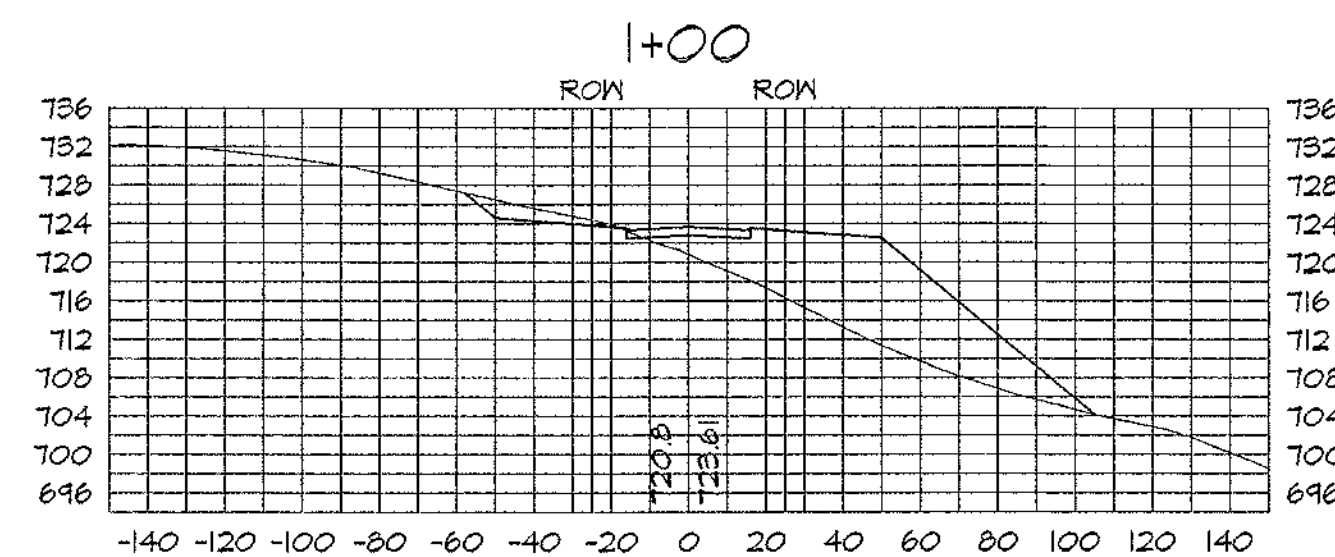
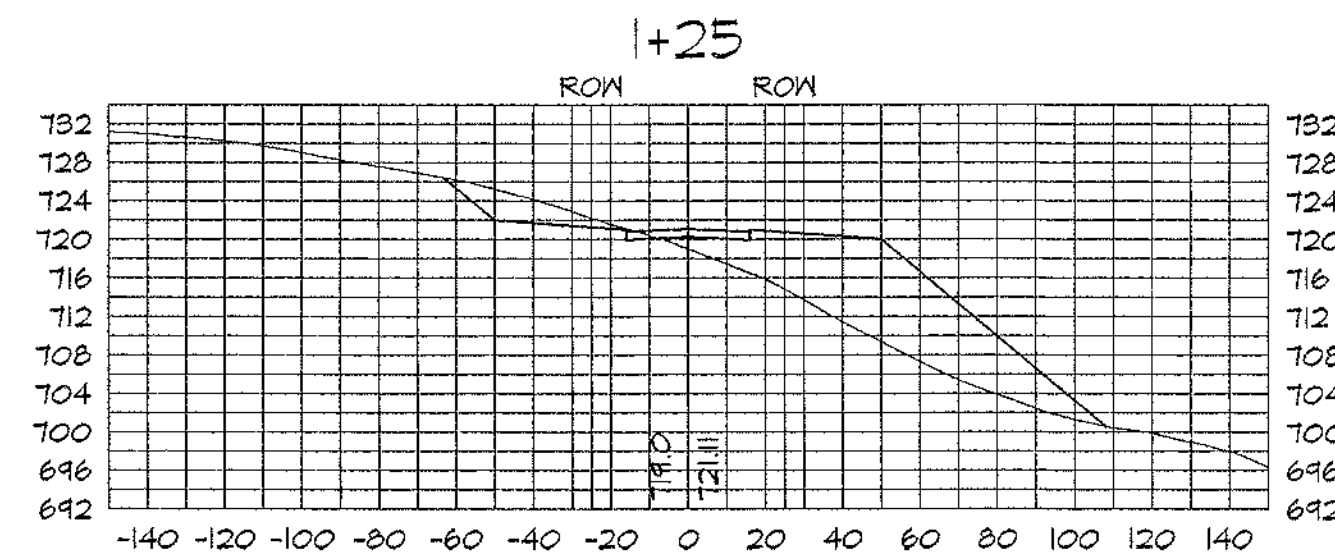
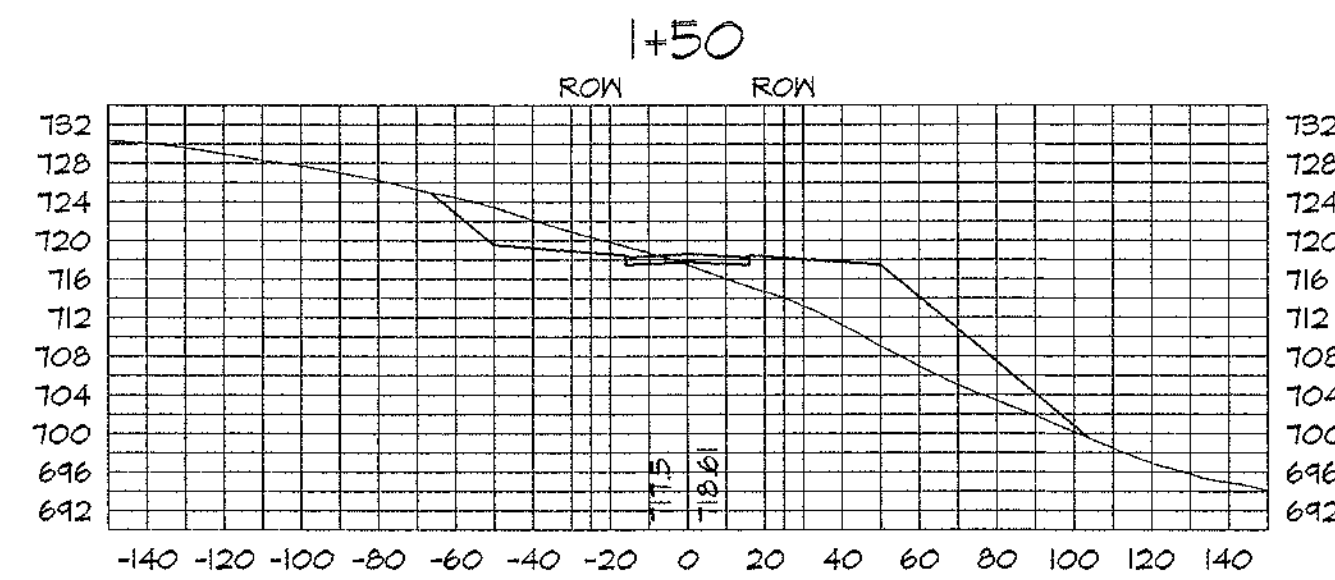
STREET CROSS SECTIONS

DATE	WP	REVISION	DESCRIPTION
3/14/06			PRELIMINARY PLAT

C25 of 3

PROJECT # 7489

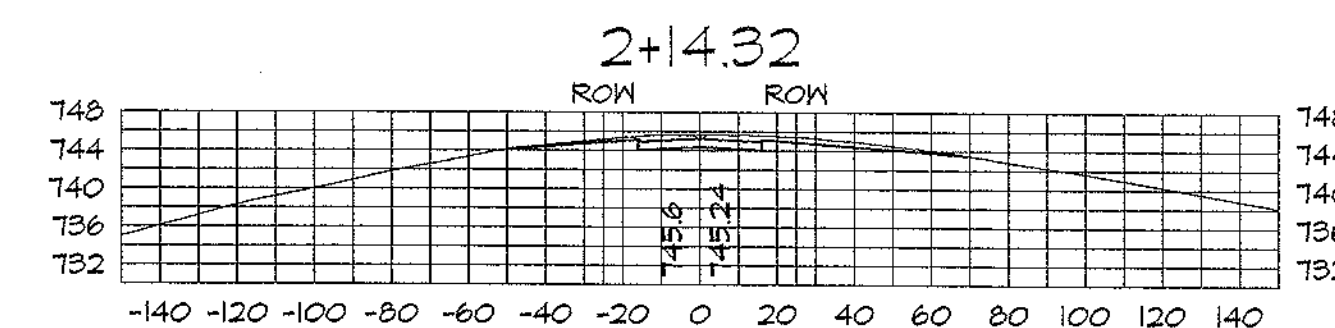
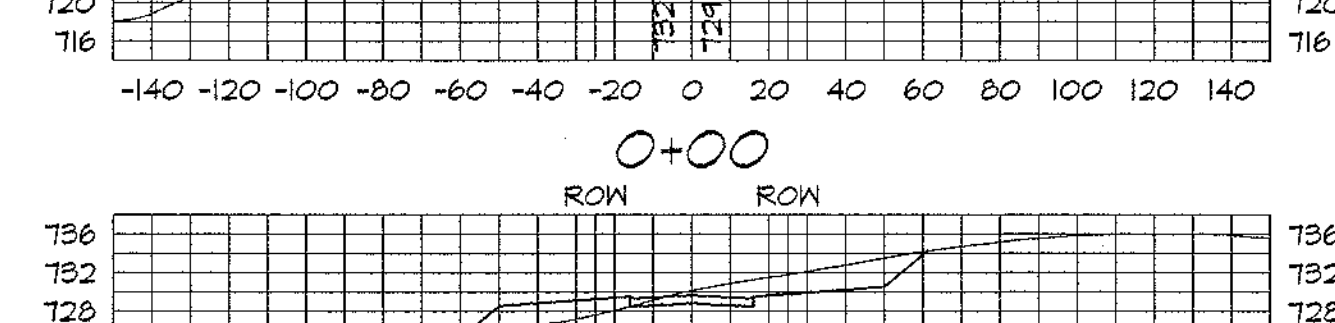
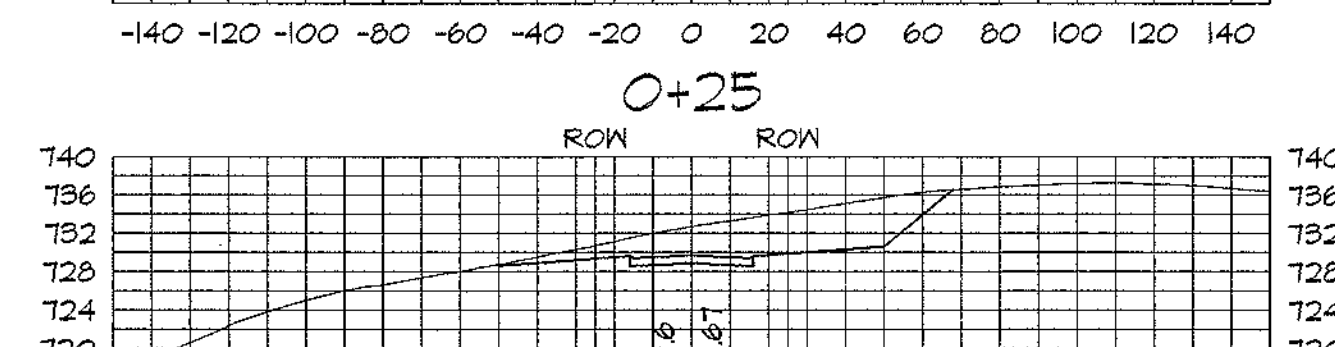
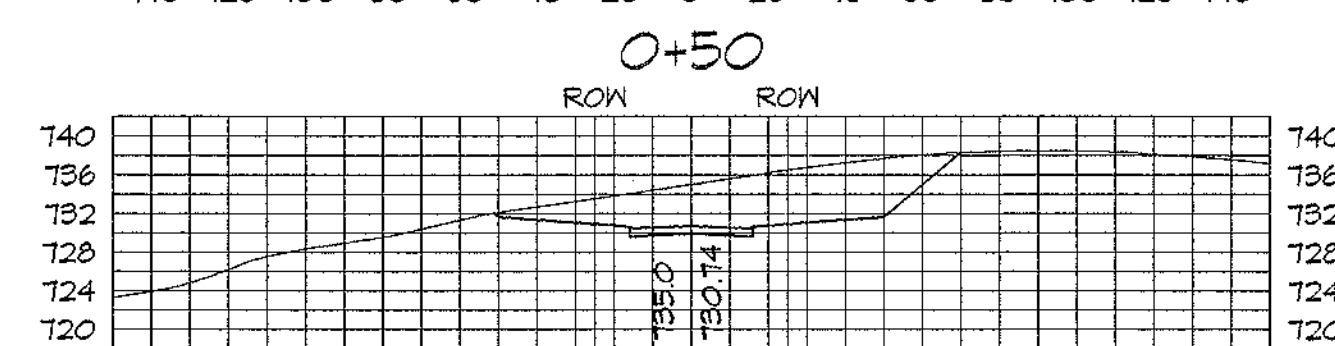
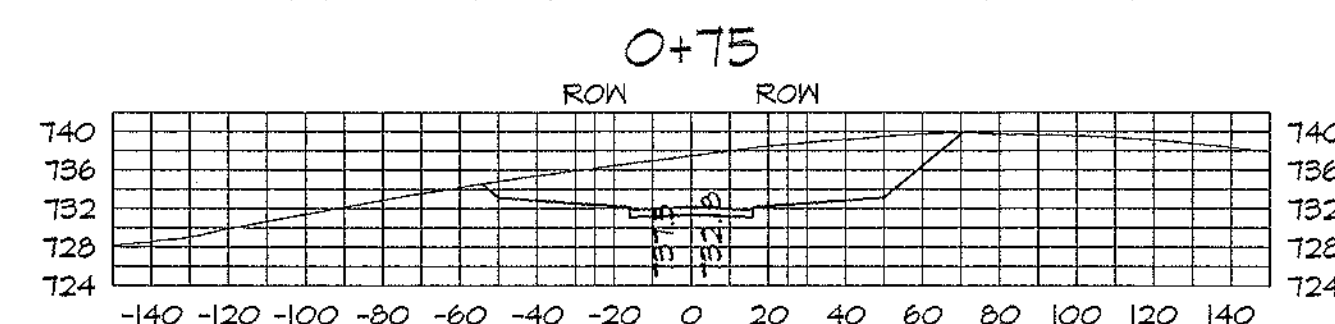
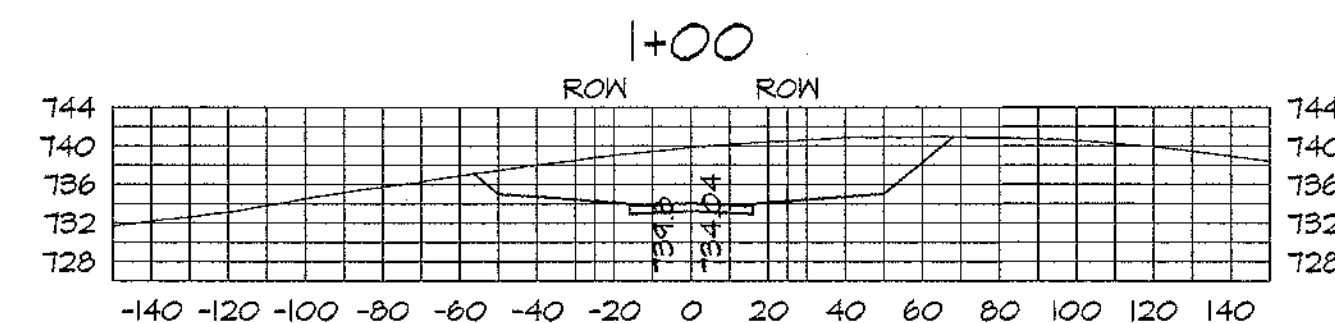
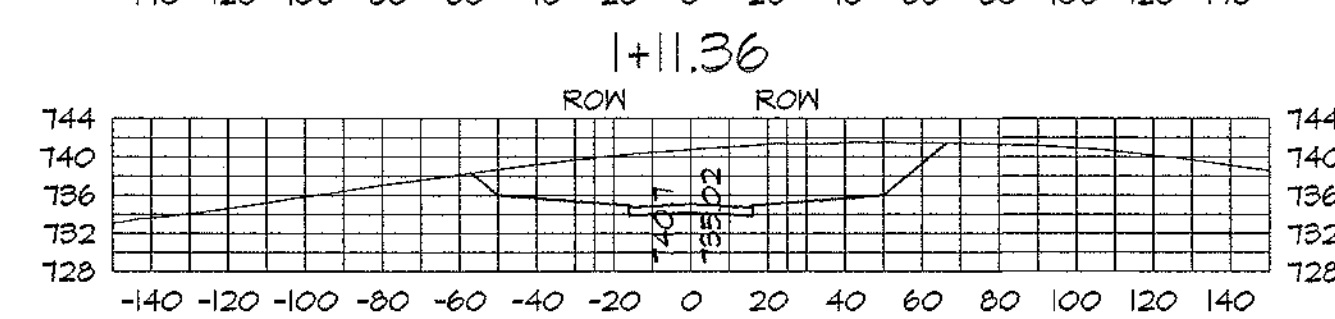
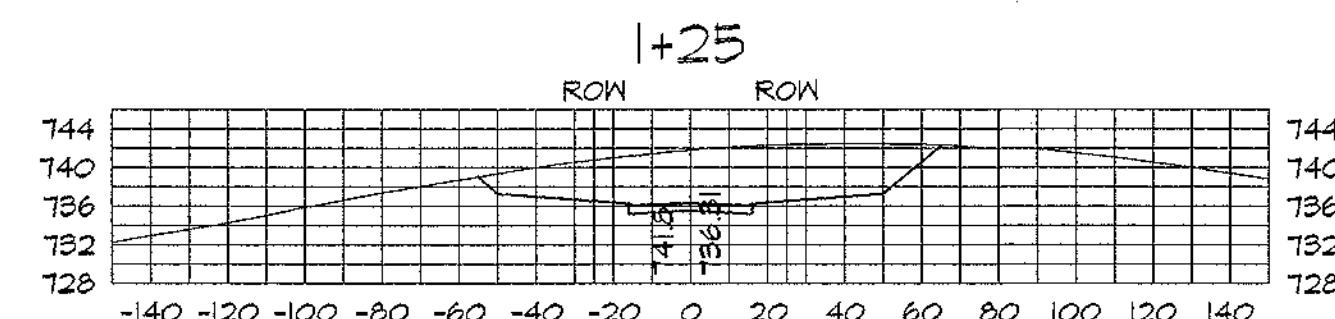
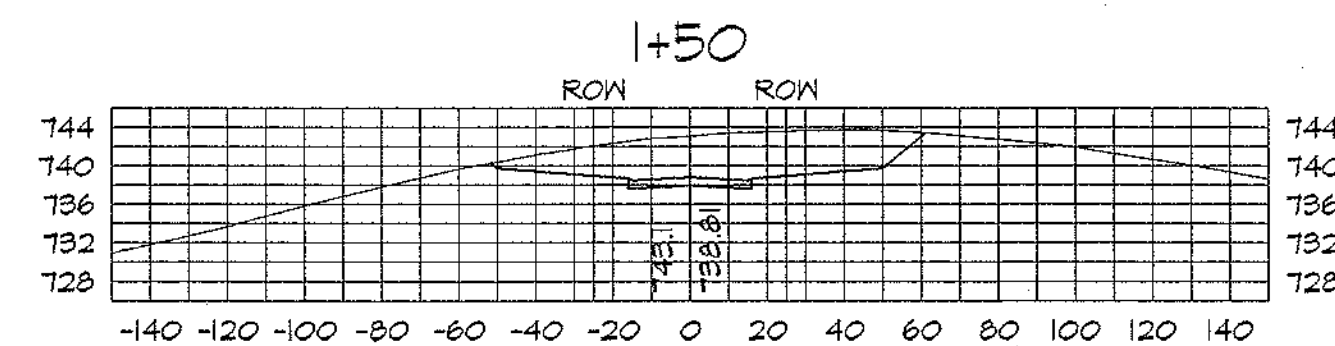
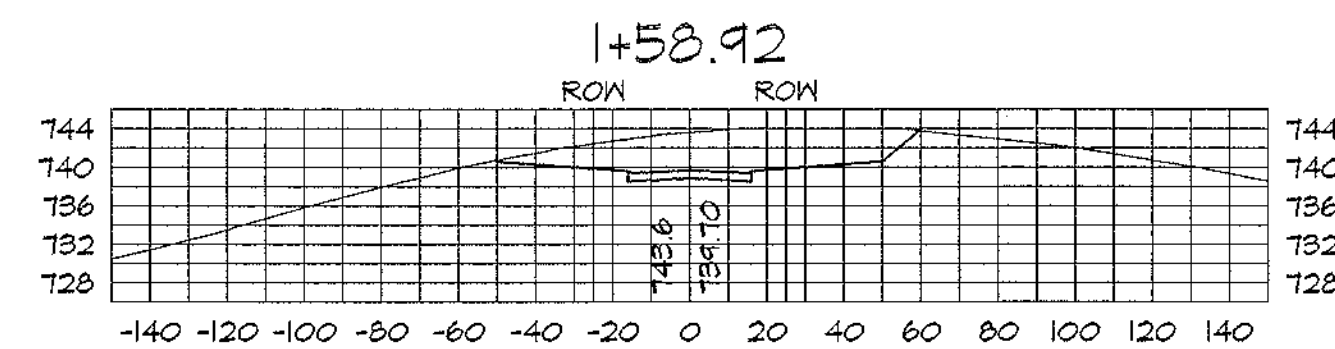
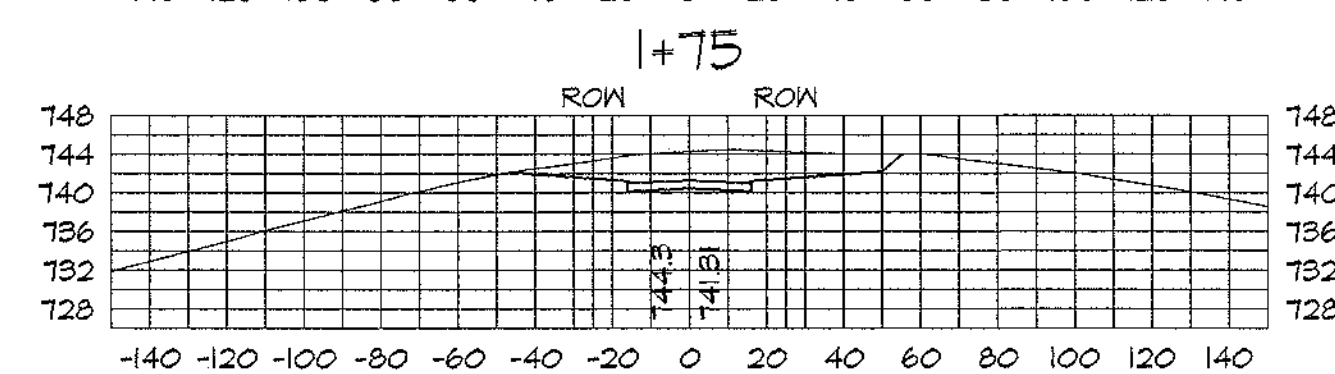
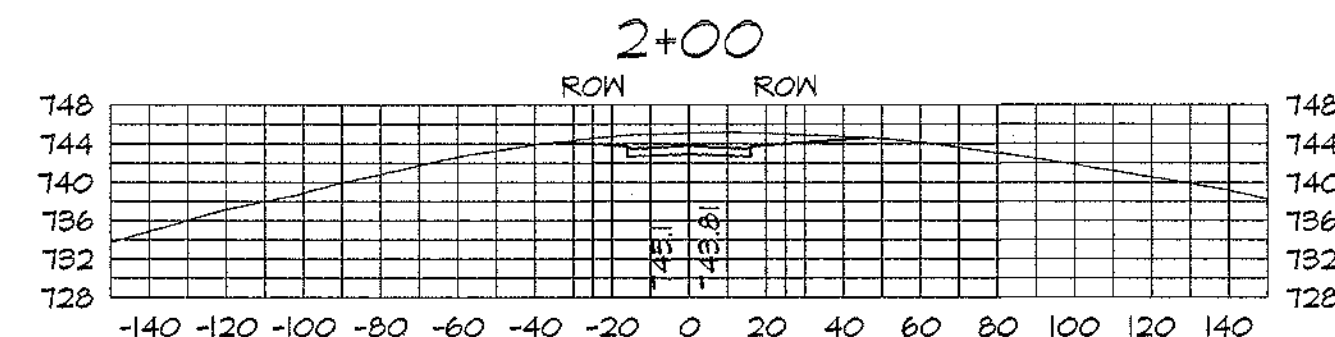
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CESSNA COURT

HOR: 1" = 50'

VER: 1" = 20'



LEAR COURT

HOR: 1" = 50'
VER: 1" = 20'

STREET CROSS SECTIONS

[illegible]

RUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

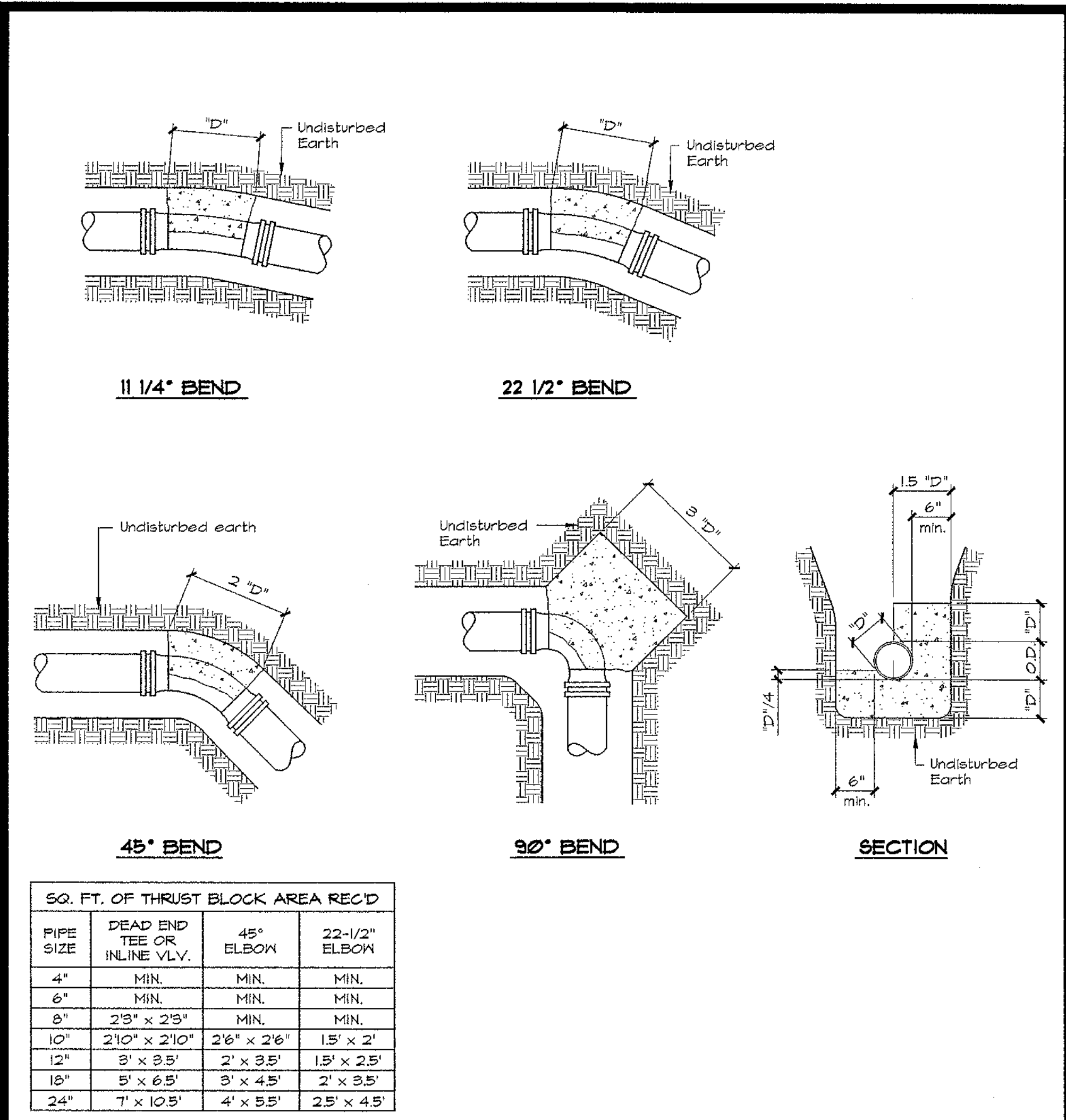


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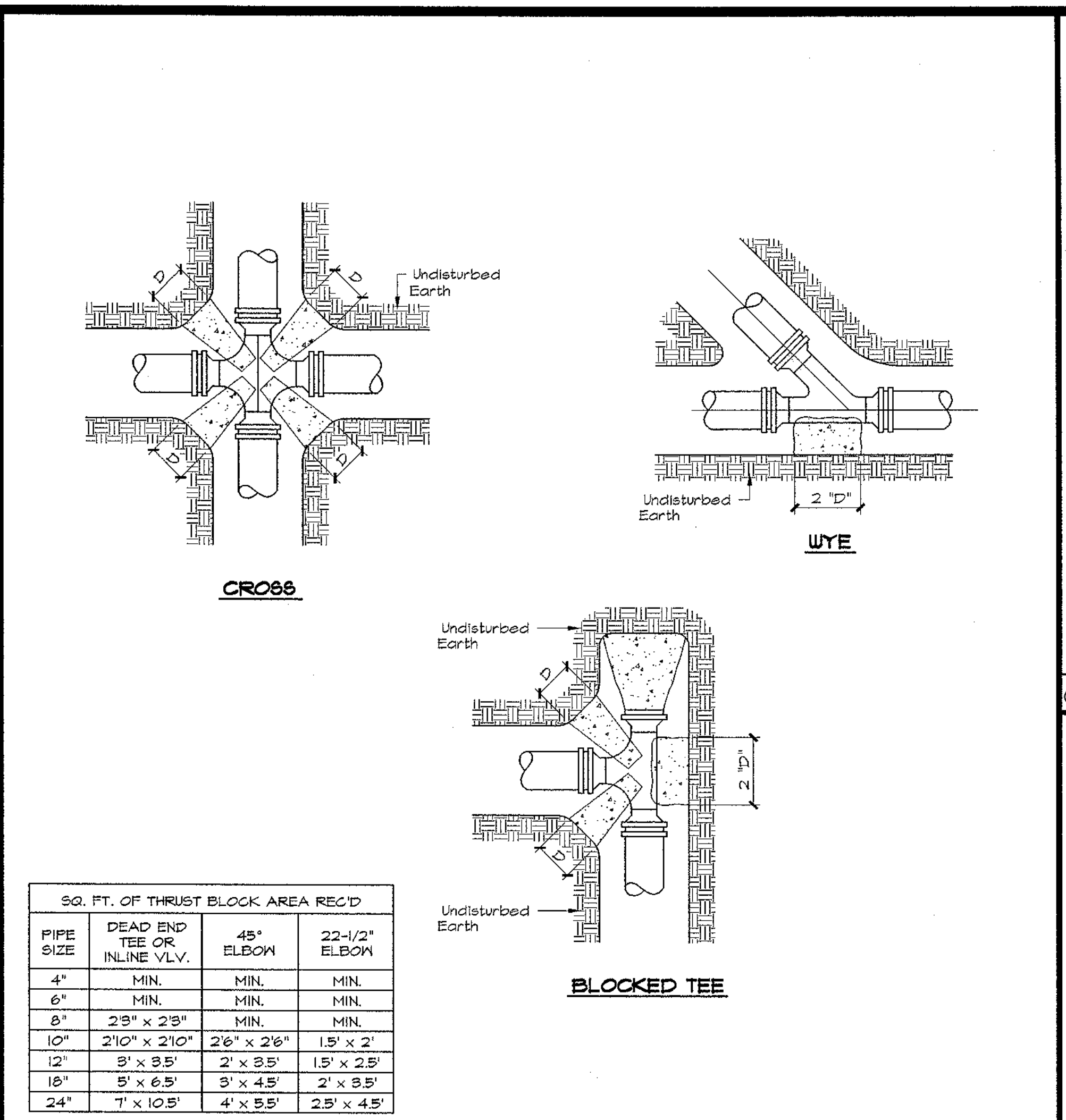
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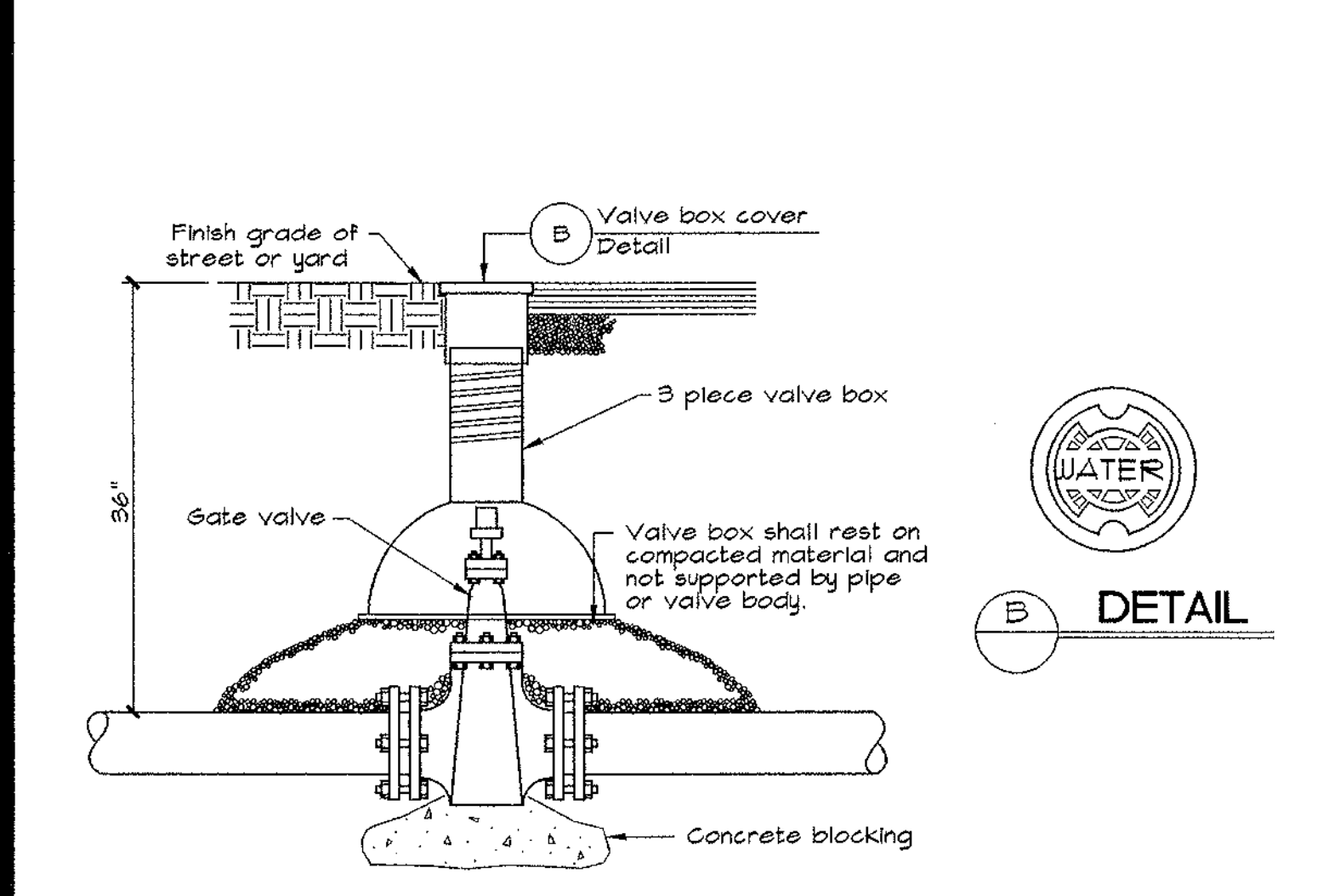
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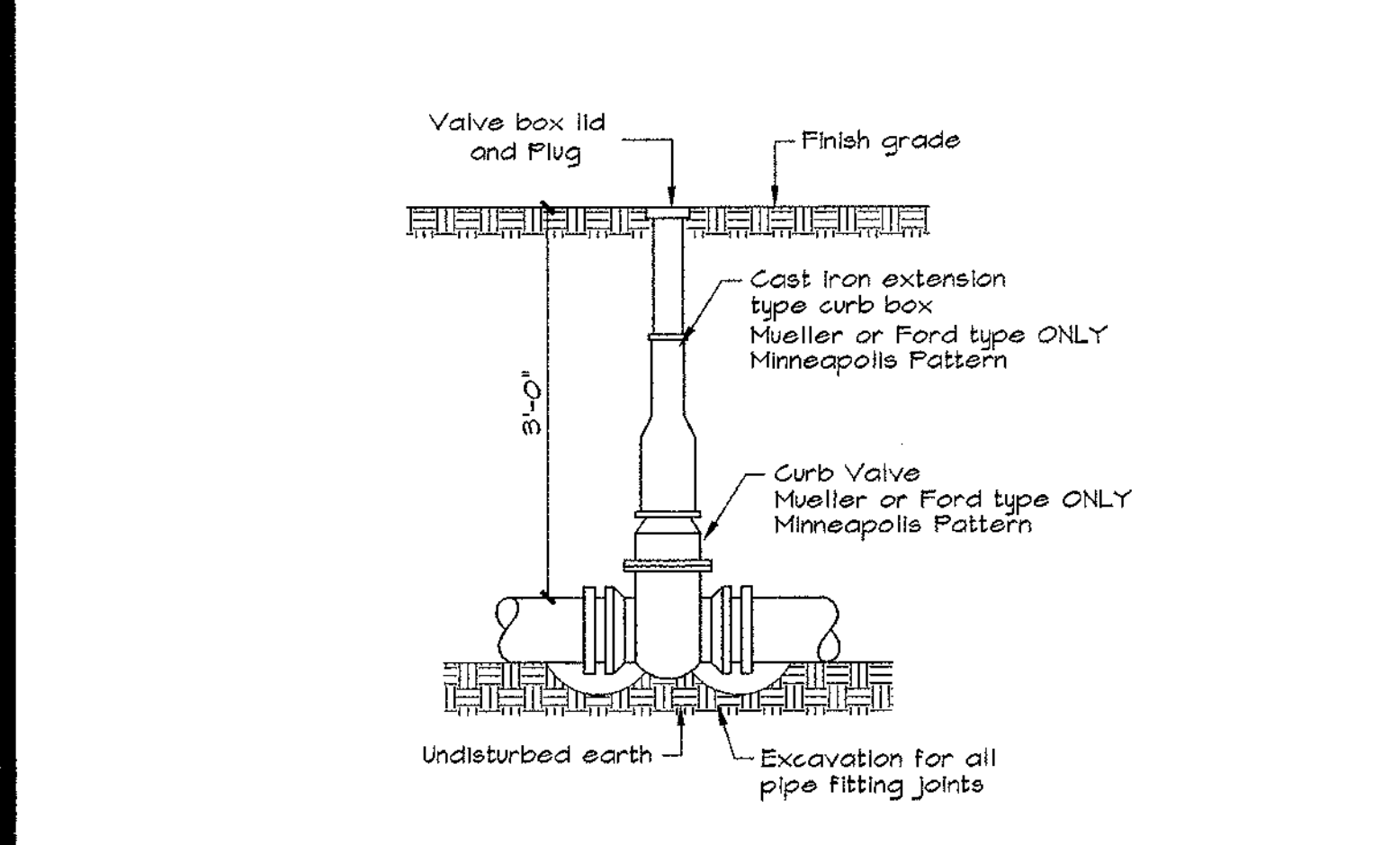
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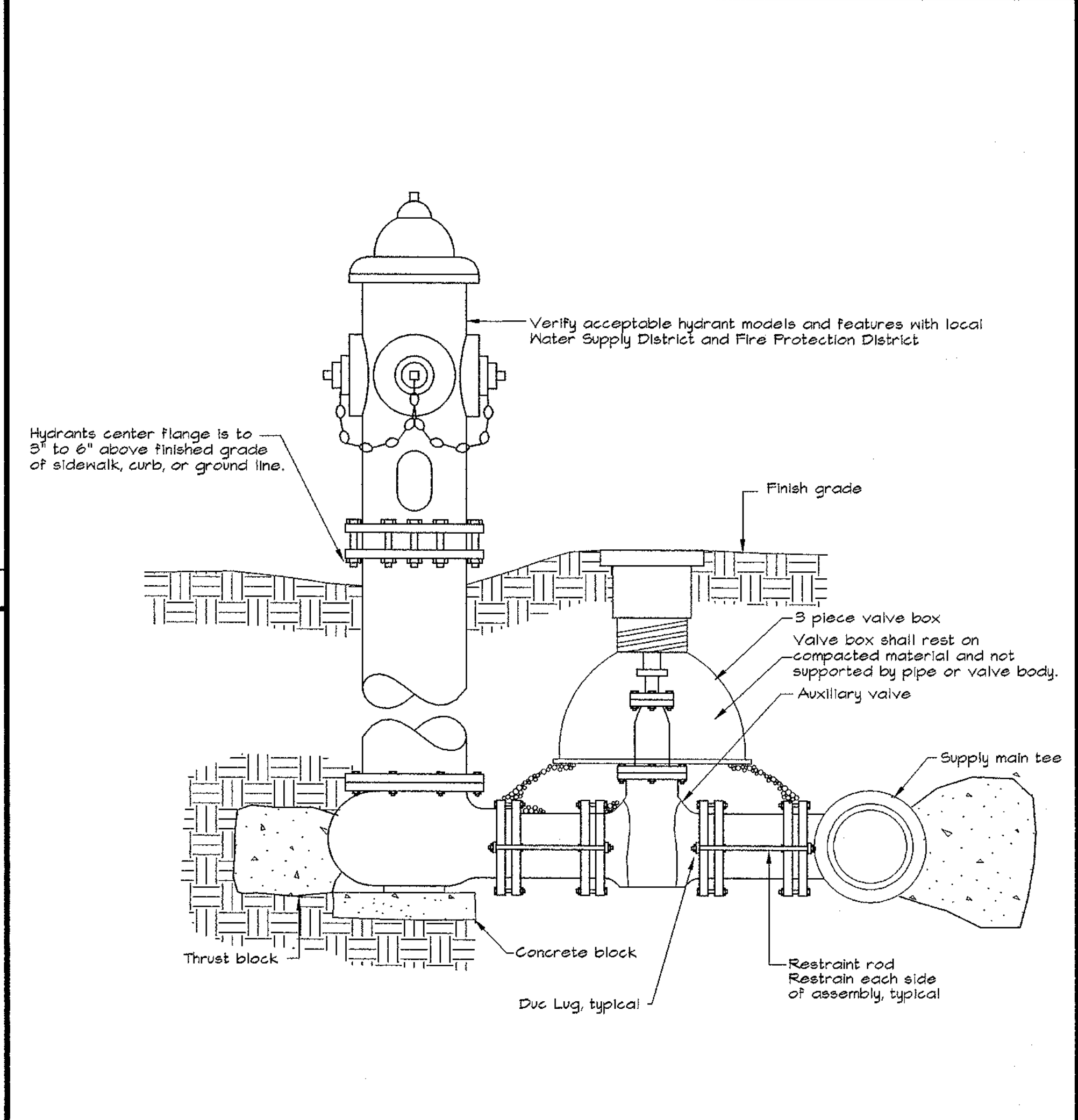
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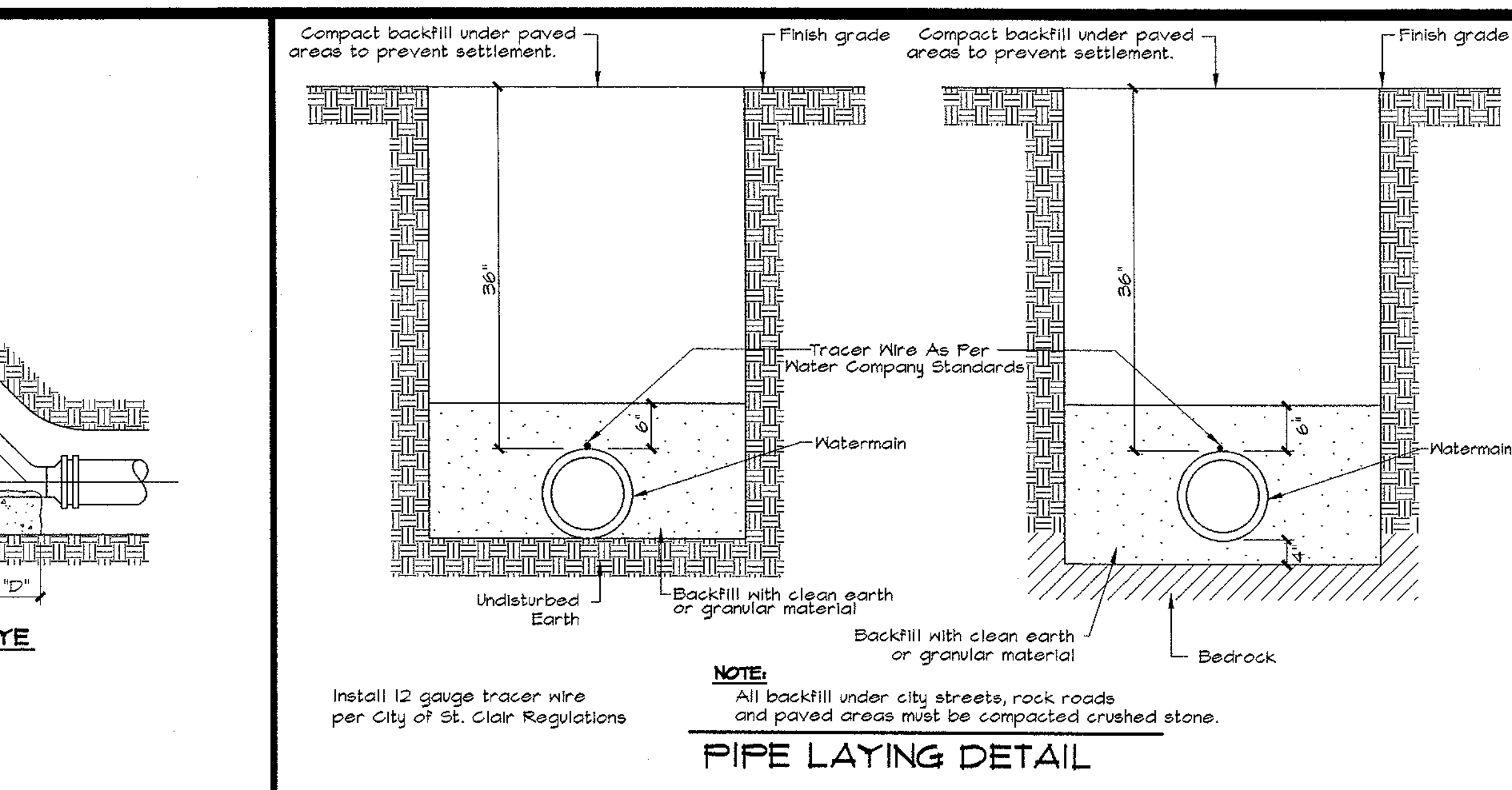
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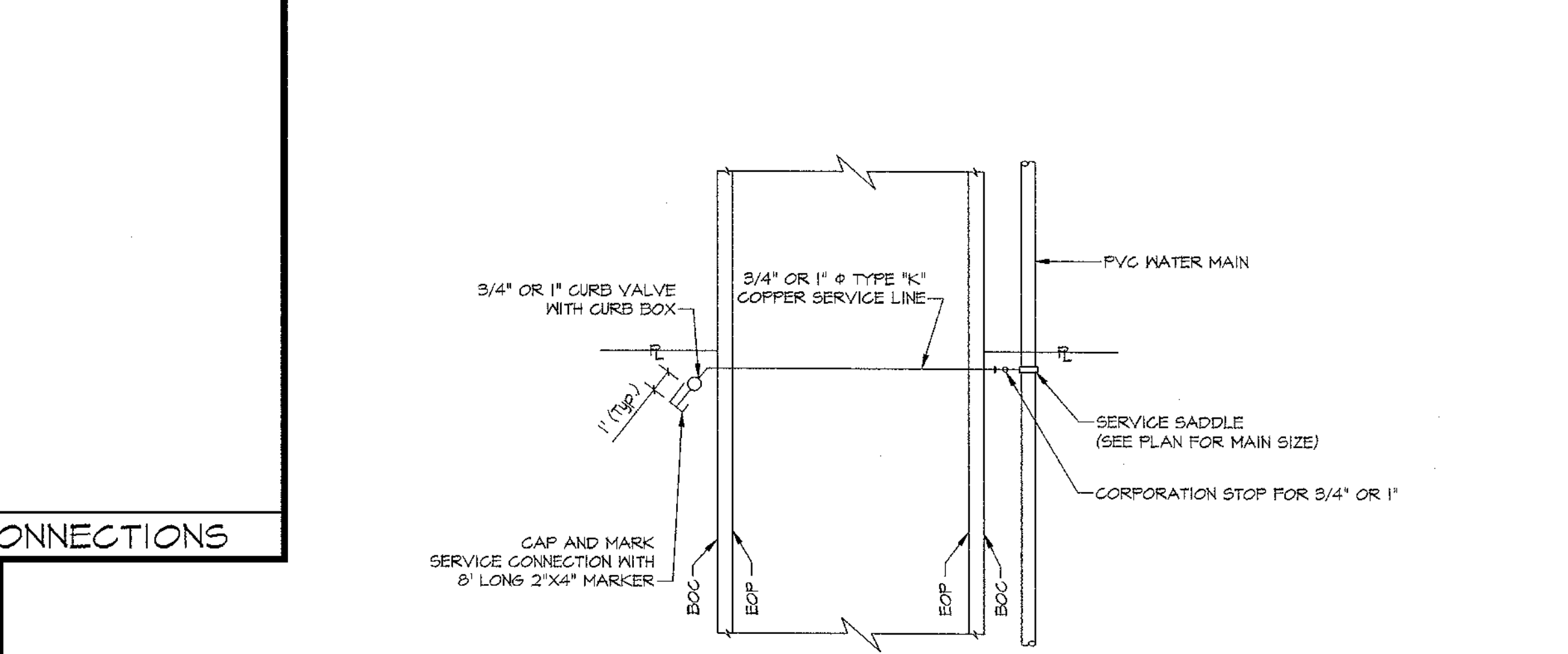
04 TYPICAL CURB STOP



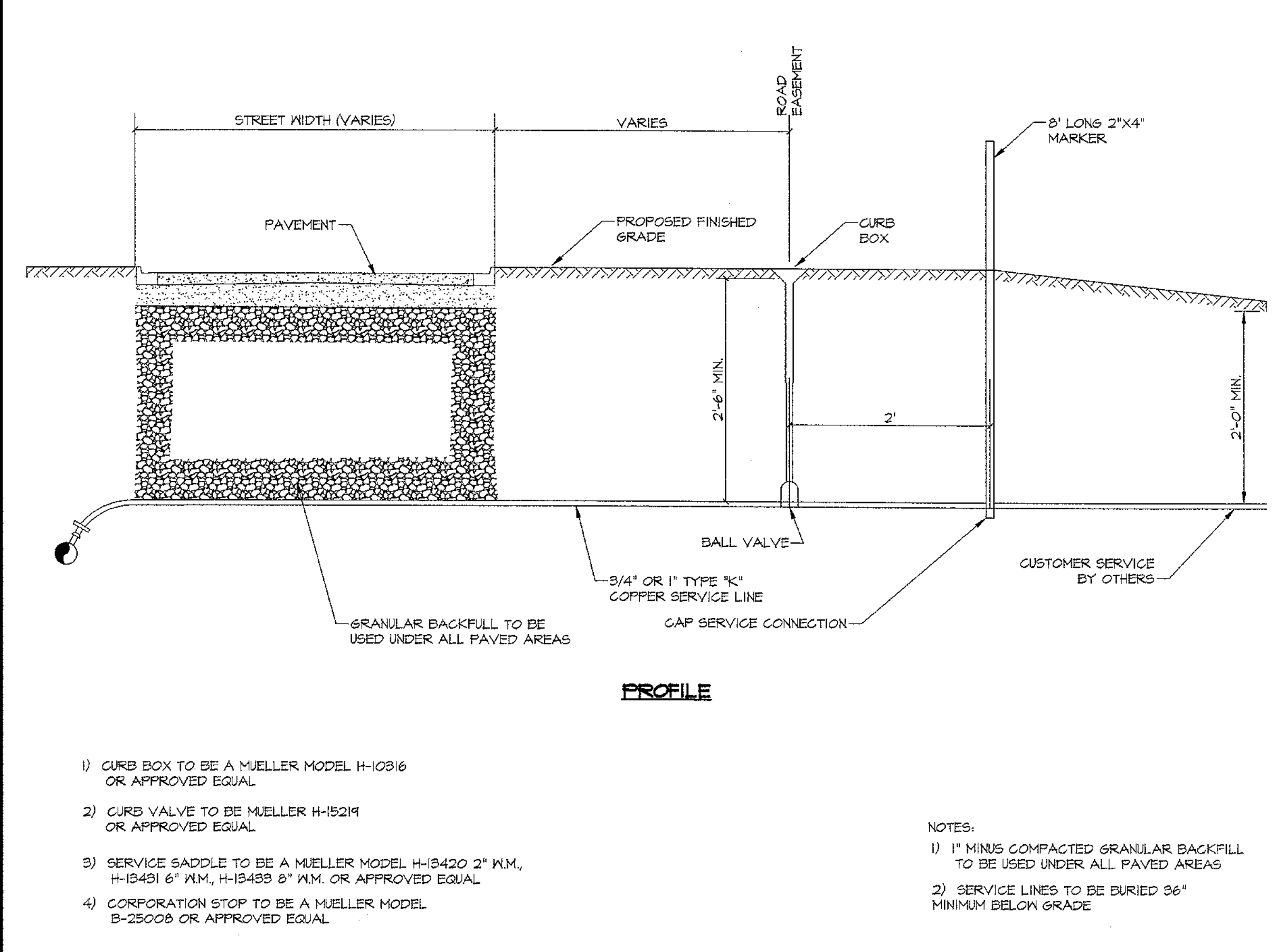
05 TYPICAL FIRE HYDRANT INSTALLATION



06 TYPICAL WATERLINE INSTALLATION



07 WATER SERVICE CONNECTION DETAIL



08 WATER SERVICE CONNECTION DETAIL

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REGISTERED PROFESSIONAL ENGINEER
NUMBER E-2000162109
GARY TERSCHULSE, P.E.
UNREGISTERED

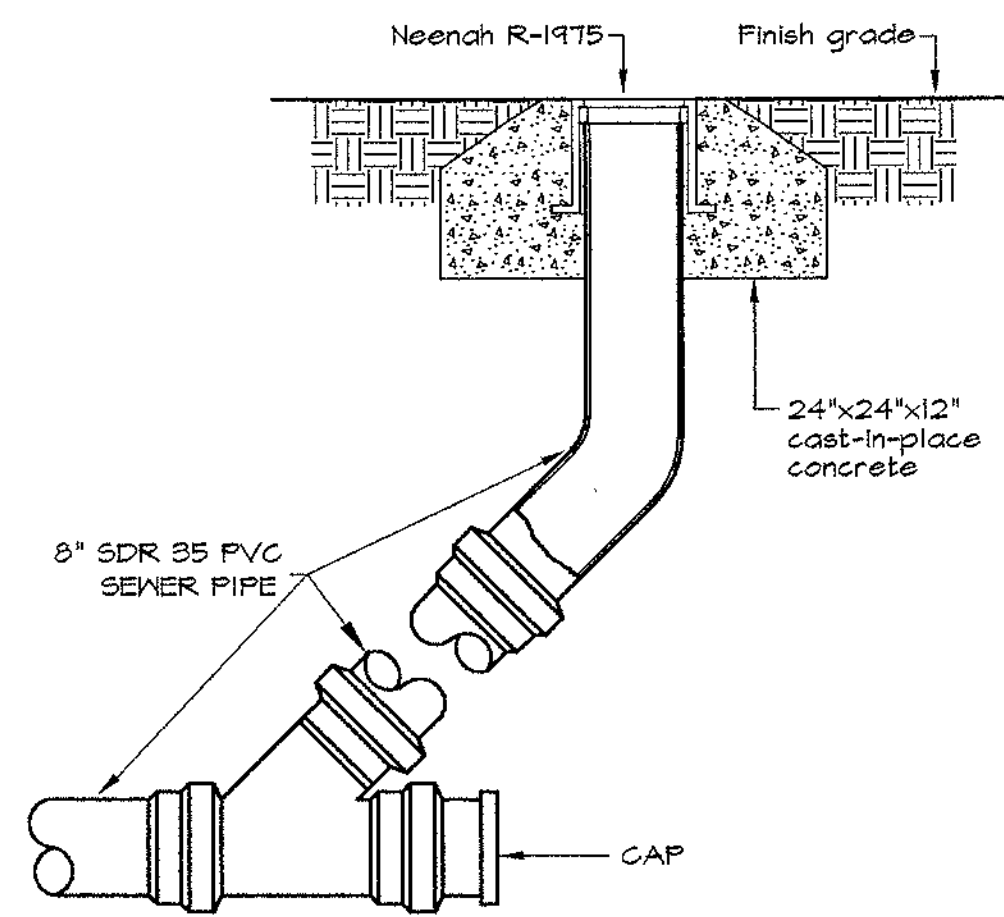
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RUNWAY ESTATES
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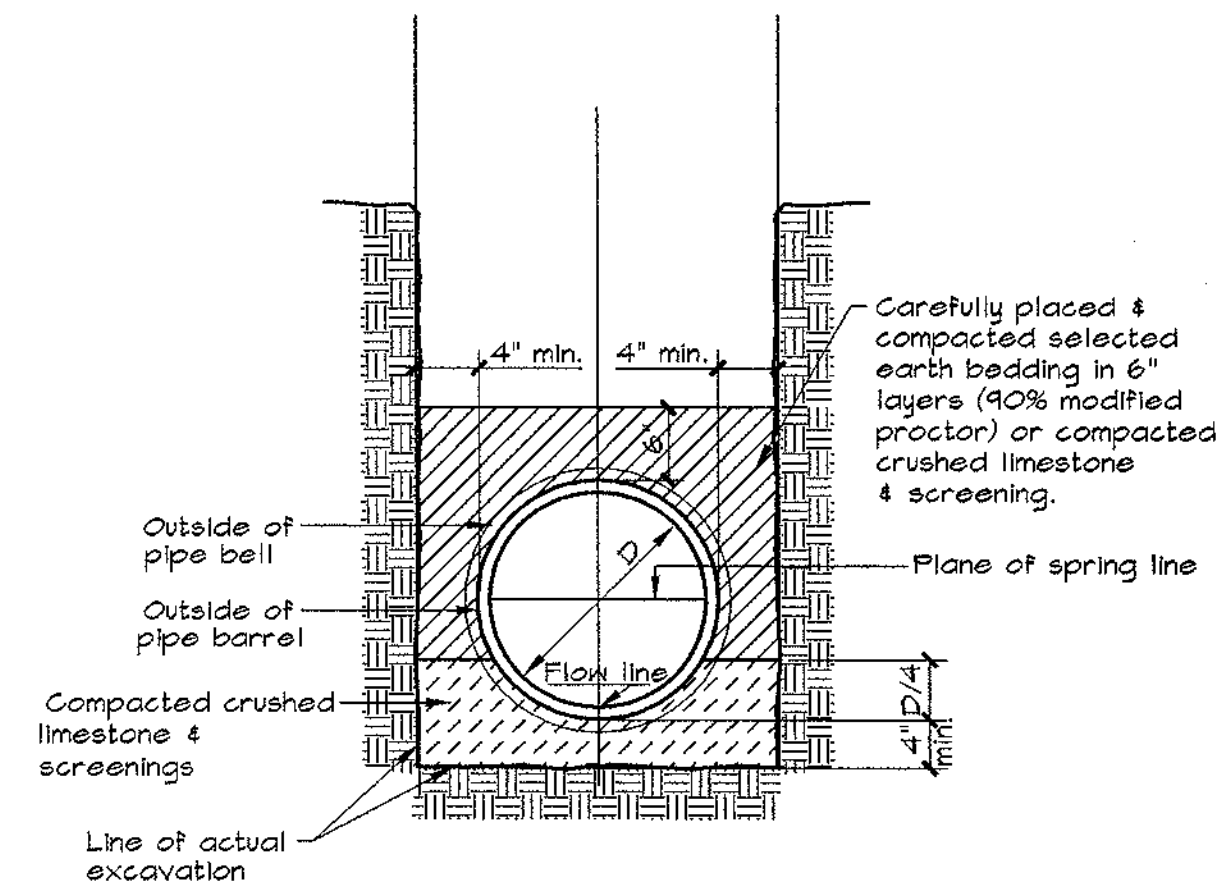
DATE	REVISION	DESCRIPTION
8/4/06	1	PRELIMINARY PLAT

PROJECT #2439

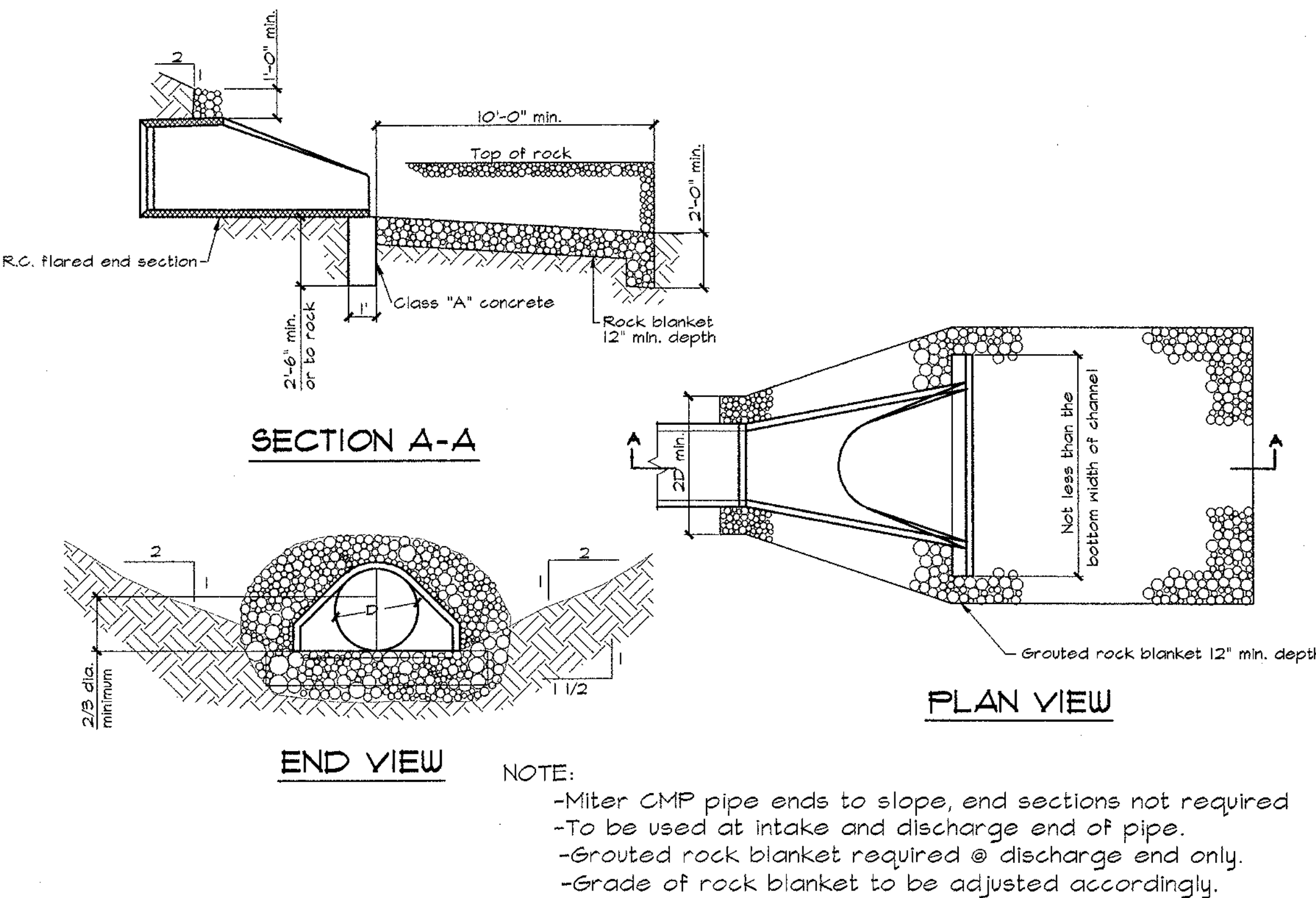
DETAIL SHEET
C27 OF 30



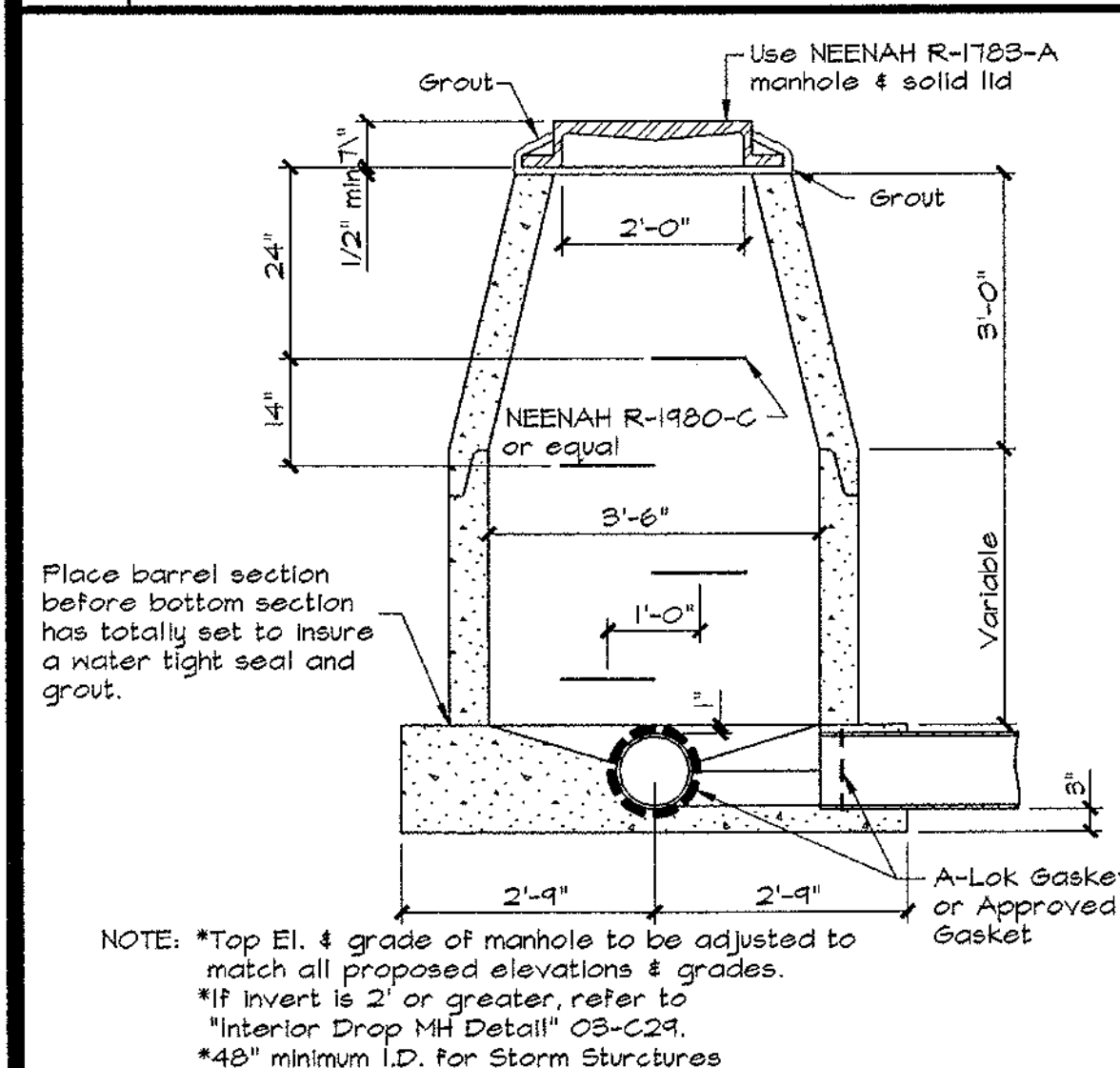
01 TYPICAL LAMPHOLE DETAIL



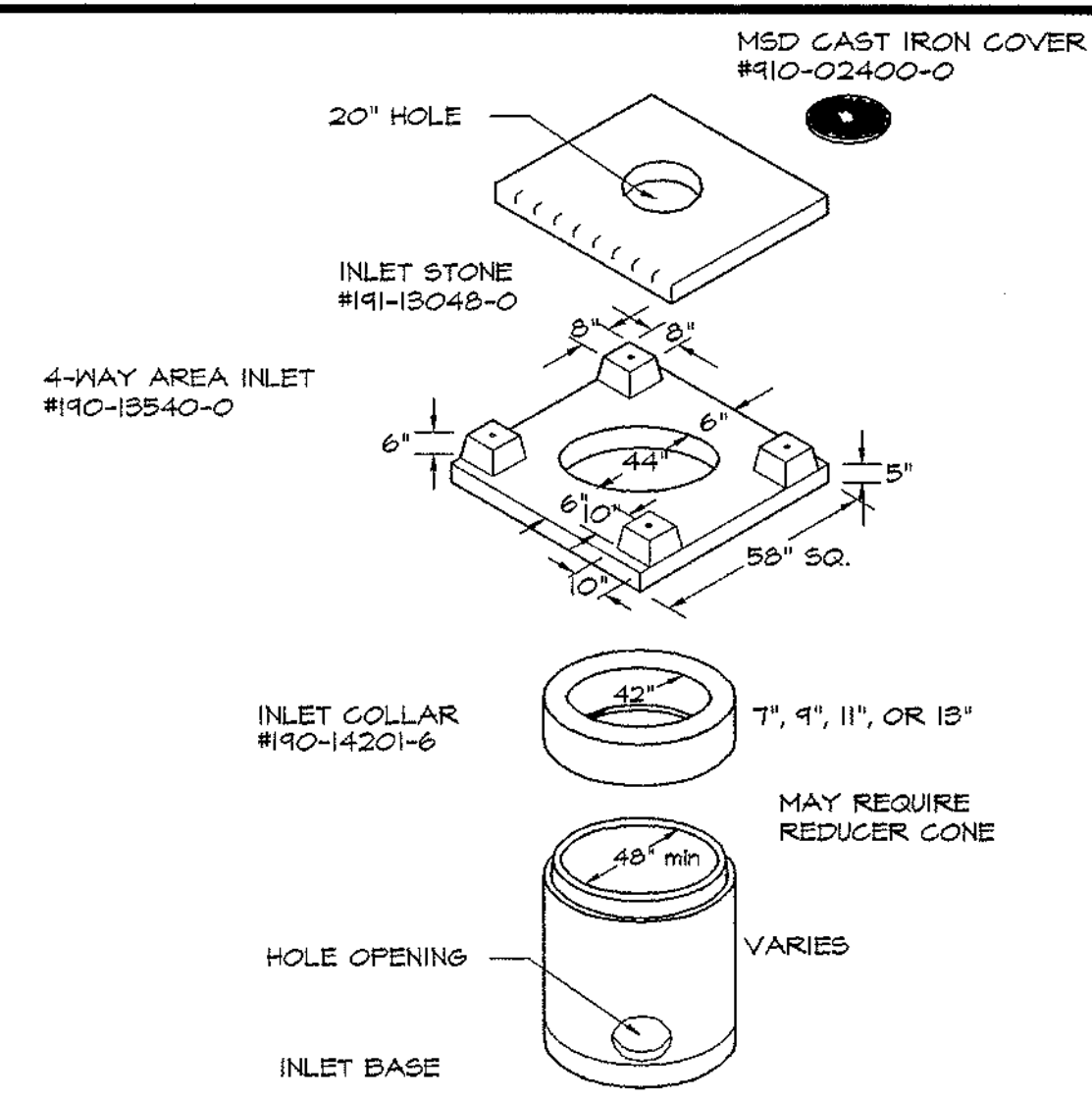
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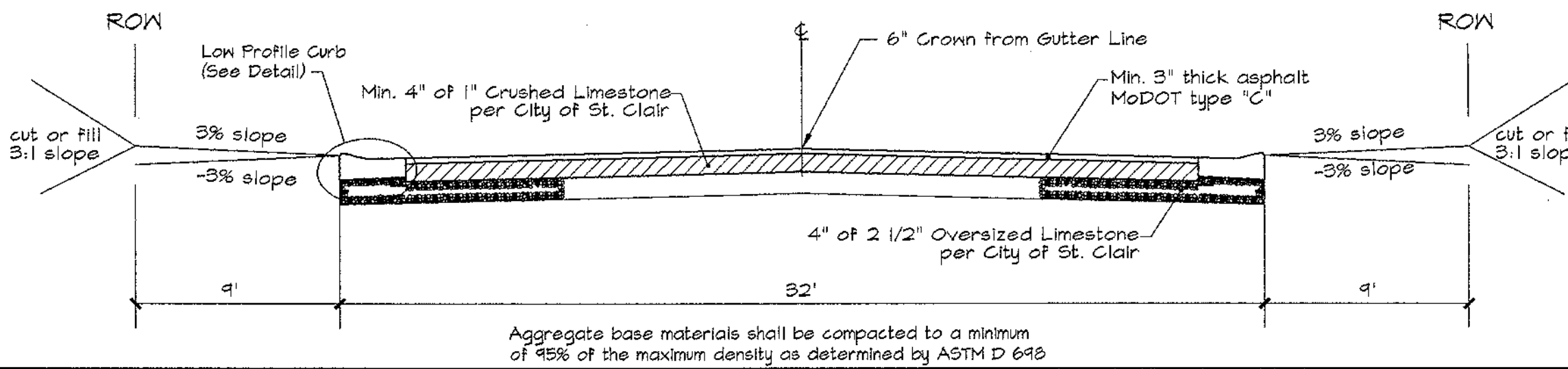
03 TYPICAL FLARED END SECTION DETAIL



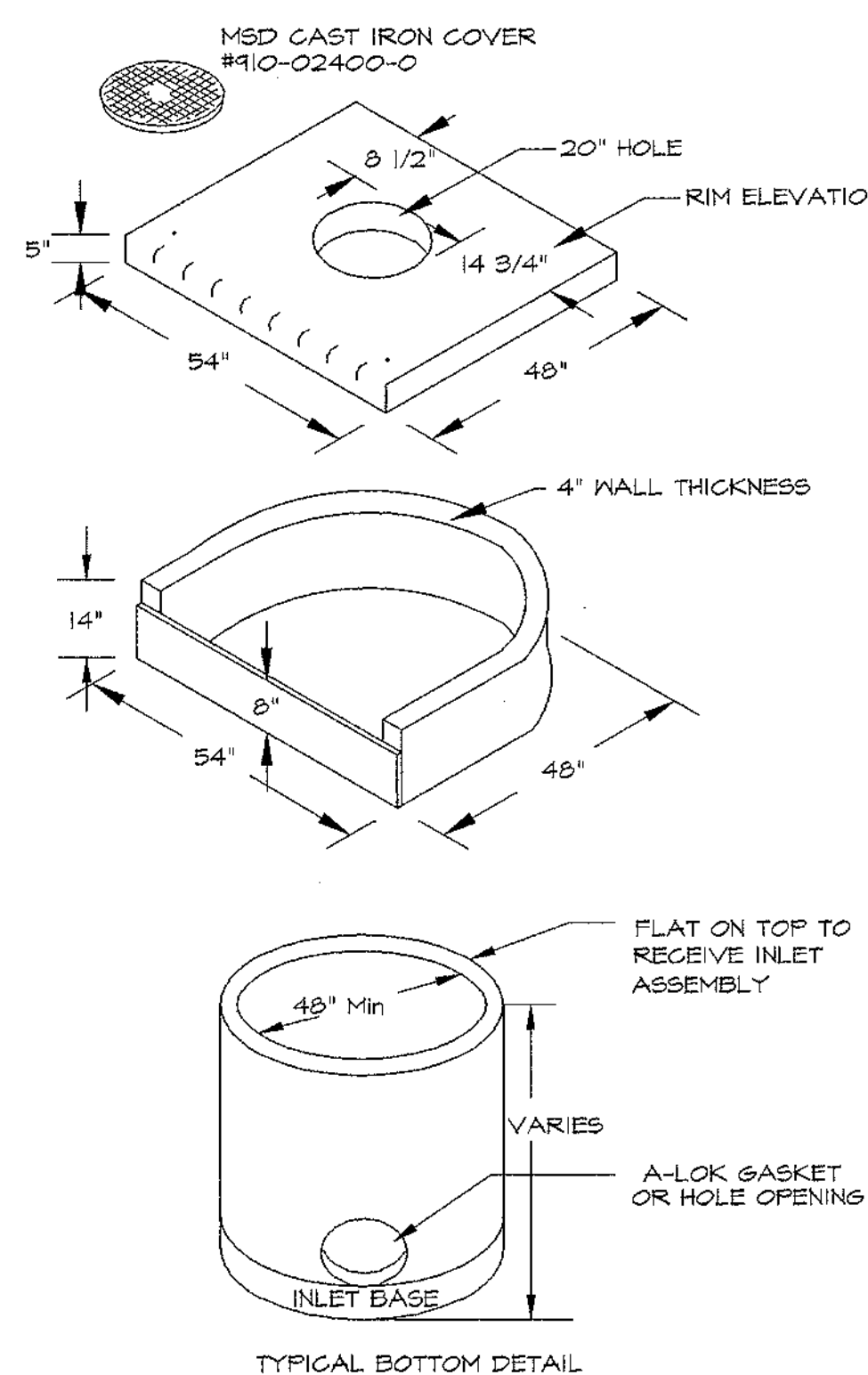
04 TYPICAL MANHOLE DETAIL



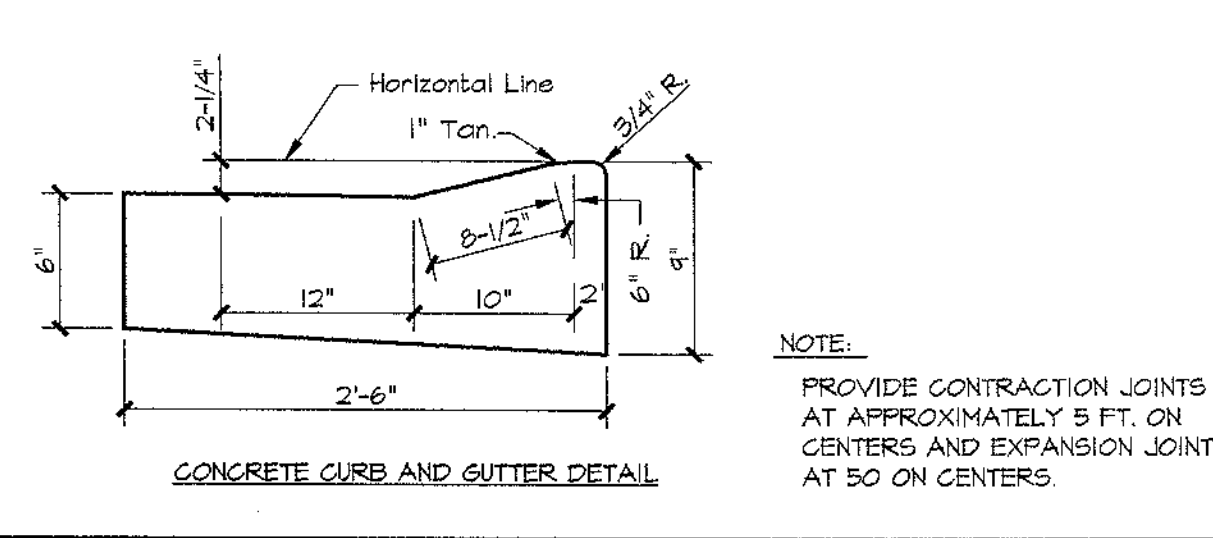
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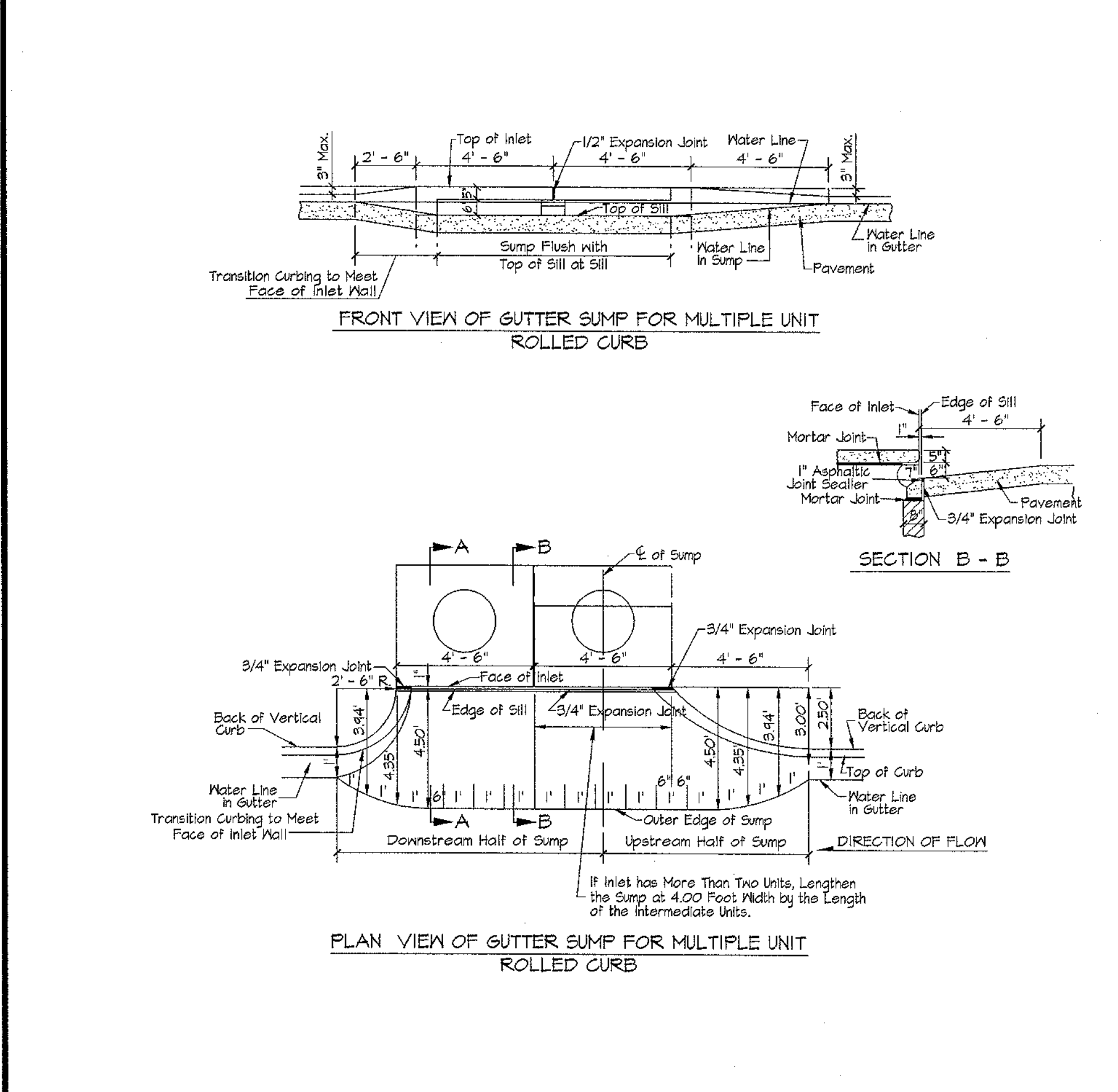
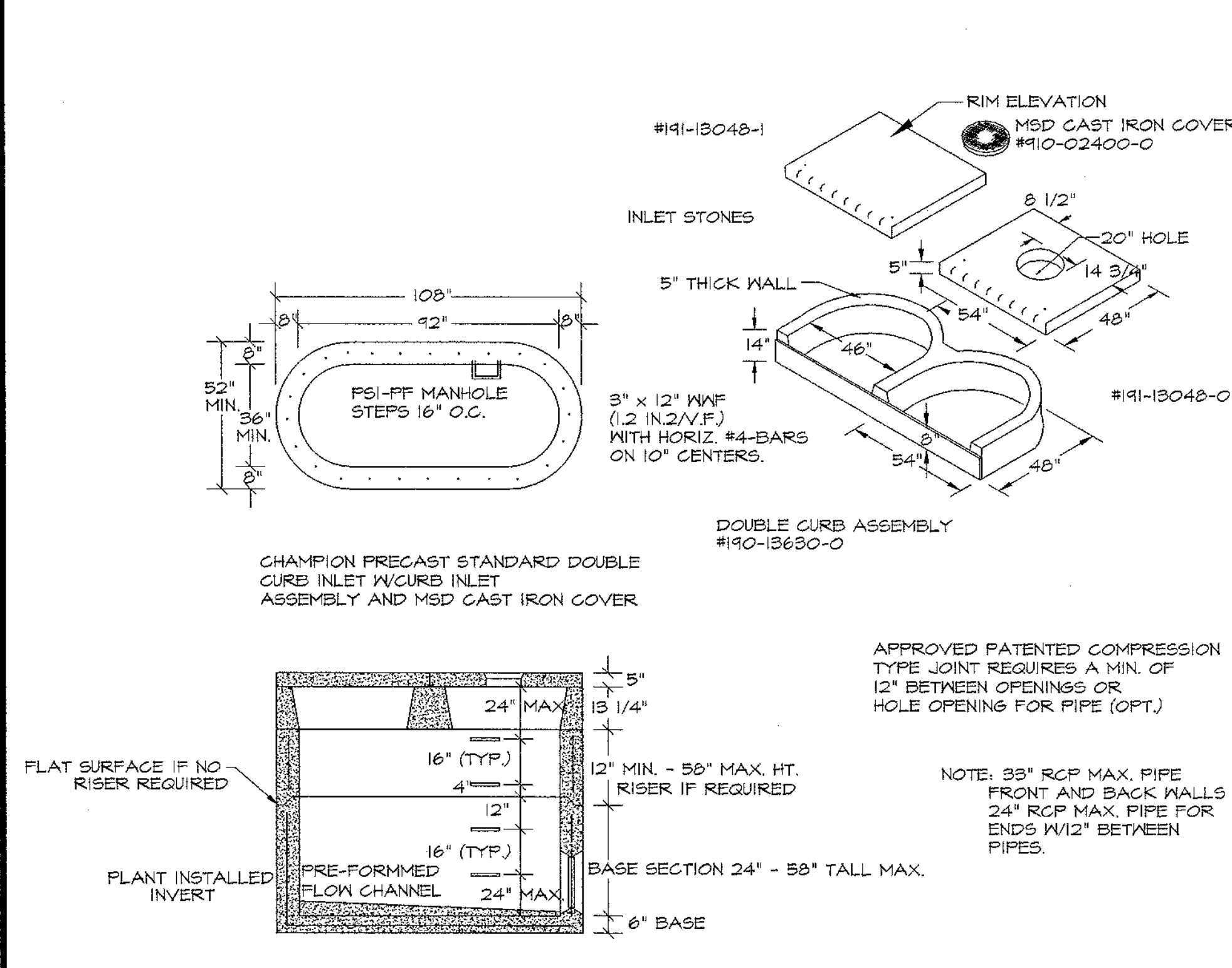
06 TYPICAL 32' STREET CROSS SECTION



07 TYPICAL CURB INLET AND SUMP DETAIL



08 TYPICAL PRECAST DOUBLE CURB INLET AND SUMP DETAIL



08 TYPICAL PRECAST DOUBLE CURB INLET AND SUMP DETAIL

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St. Clair, Missouri 63077

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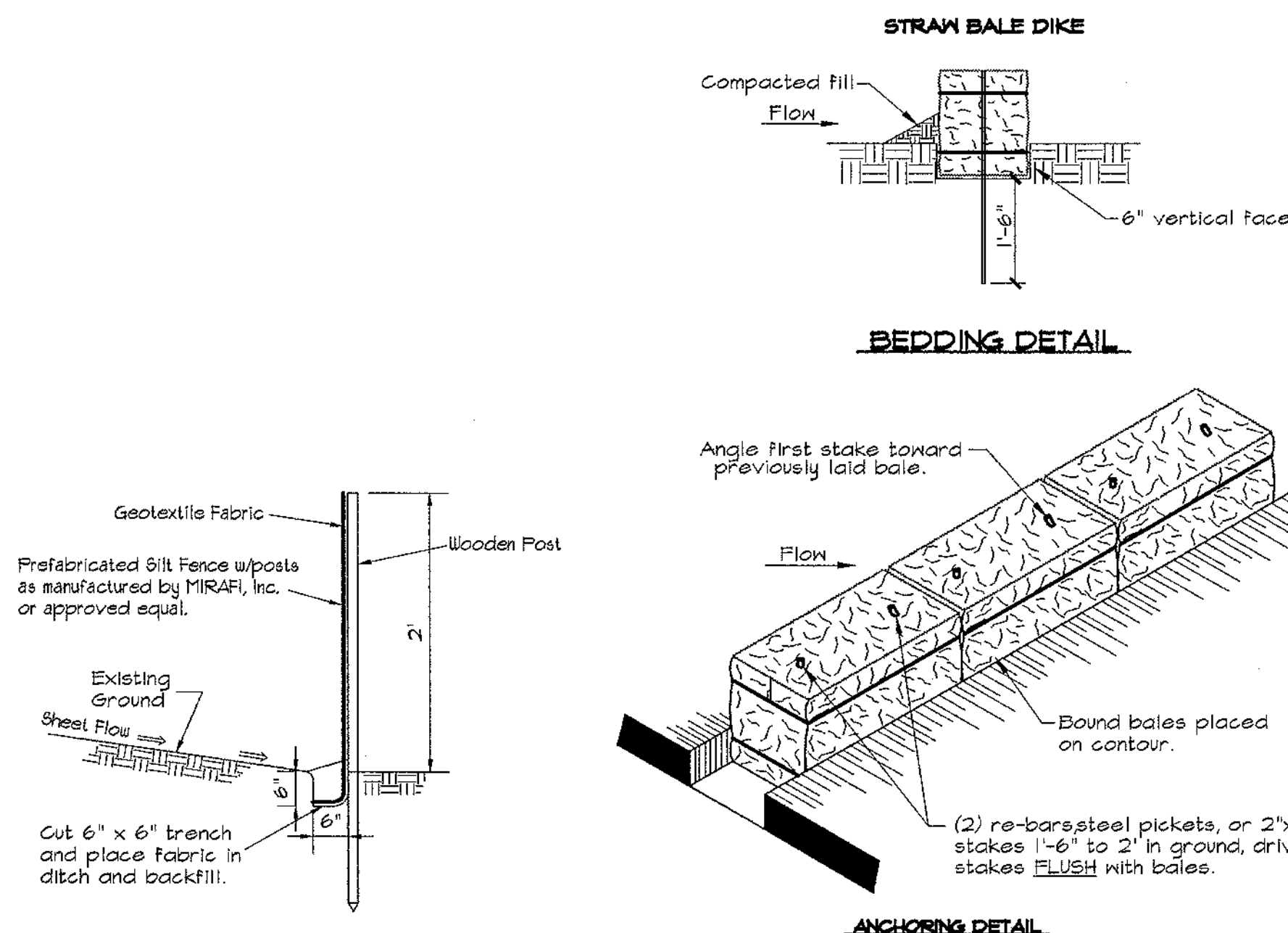
DETAIL SHEET		DESCRIPTION	DATE	REVISION
DATE	WP	PRELIMINARY PLAT	8/14/06	
PROJECT	#2434			

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1. THE SITE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN EROSION SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH EPA BEST MANAGEMENT PRACTICE (BMP), STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND "PROTECTING WATER QUALITY" FIELD GUIDE FOR DEVELOPMENT SITES IN MISSOURI AND KANSAS.
2. THE SITE MANAGER SHALL INSPECT SEDIMENT CONTROL MEASURES AND ENSURE THAT ROUTINE MAINTENANCE AND NONROUTINE REPAIR IS PERFORMED TO KEEP THE BMP IN GOOD WORKING ORDER.
3. THE SITE CONTRACTOR SHALL MAINTAIN EFFECTIVENESS AND STRUCTURAL INTEGRITY OF THE BMP FOR THE LIFE OF THE CONSTRUCTION PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED.
4. PROVIDE PERMANENT SEEDINGS IN ACCORDANCE WITH "PROTECTING WATER QUALITY" FIELD GUIDE FOR DEVELOPMENT SITES IN MISSOURI AND KANSAS UPON COMPLETION OF IMPROVEMENTS.

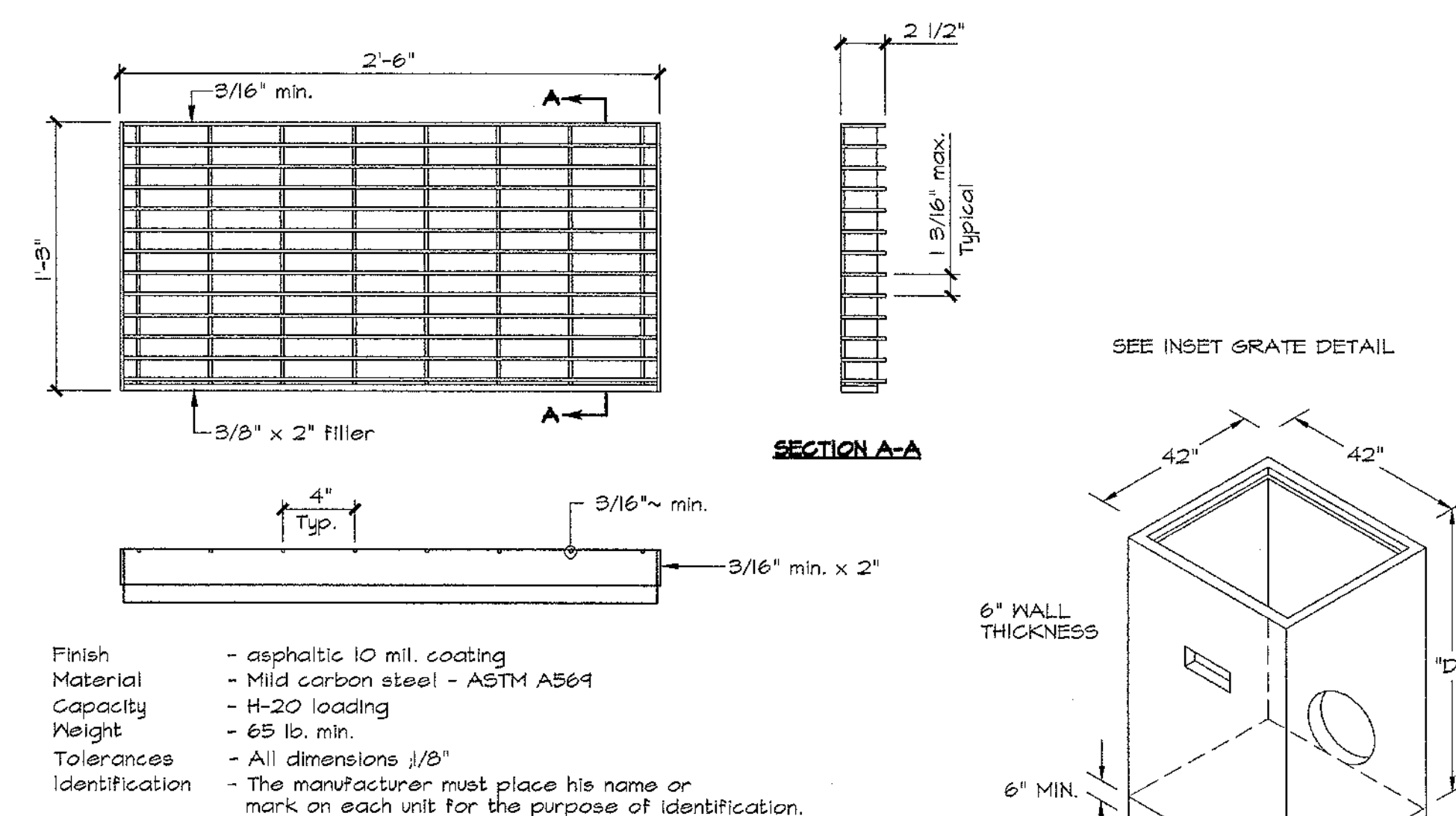
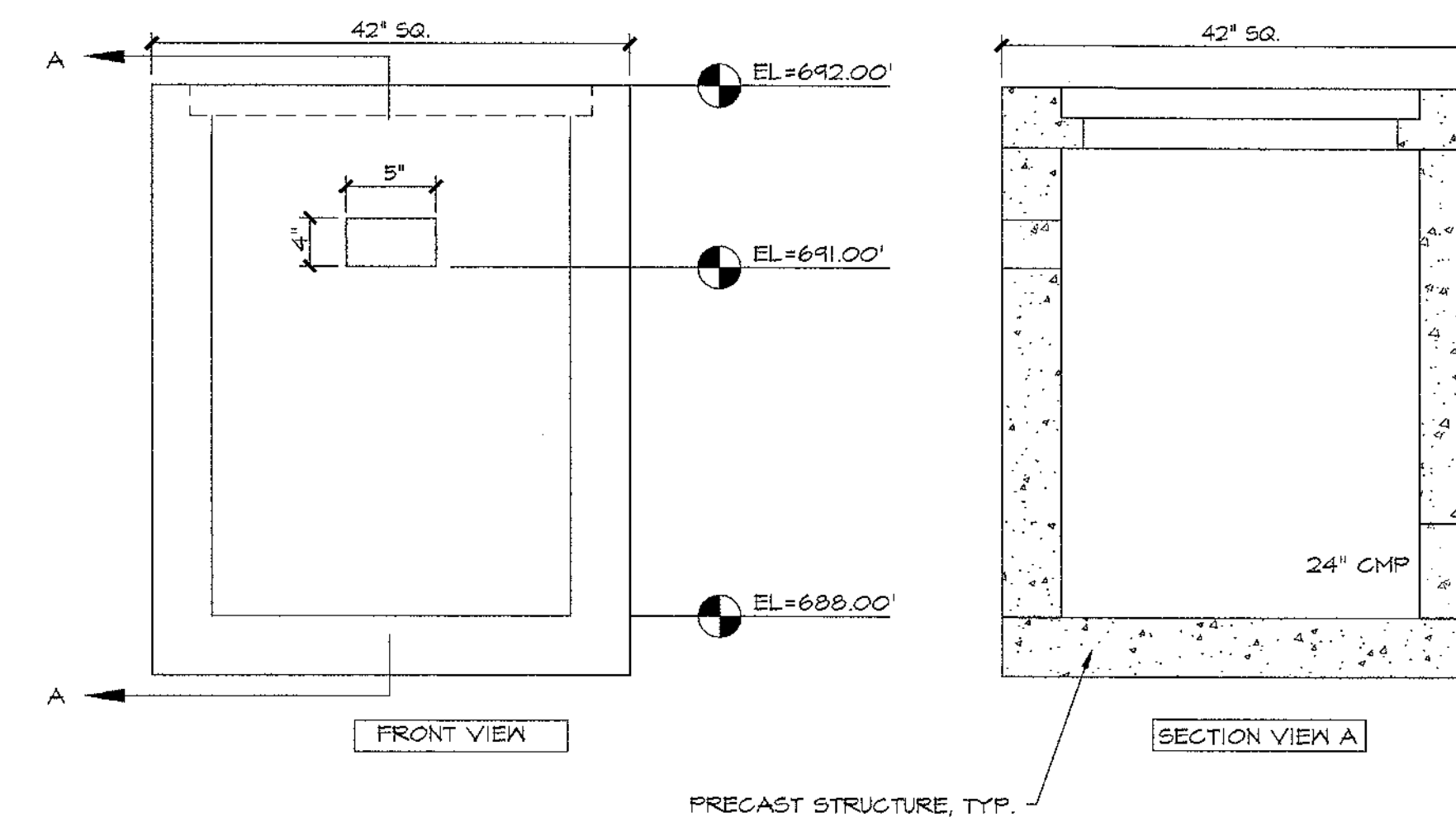
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

1. CONSTRUCTION ENTRANCES.
THE ENTRANCE SHALL BE MAINTAINED IN A GOOD CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY.
2. PRESERVING NATURAL VEGETATION.
EFFECTIVENESS OF NATURAL VEGETATION SHALL BE MAINTAINED
TO PROVIDE WATER QUALITY BENEFITS BY INTERCEPTING RAINFALL, FILTERING STORM WATER RUNOFF, AND PREVENTING OFF-SITE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS.
3. CHECK DAMS.
CHECK DAMS SHALL BE INSPECTED AFTER EACH STORM EVENT TO ENSURE CONTINUED EFFECTIVENESS.



- 1) Siltation Fence to be installed per manufacturer's recommendations.
- 2) Siltation Fences shall be inspected periodically for damage and for the amount of sedimentation which has accumulated. Removal of sediment will be required when it reaches 1/2 of the height of the siltation fence.
- 3) Siltation Control Devices to remain in place until adequate vegetative growth insures no further soil erosion.

1. Bales shall be placed at the toe of a slope or on the contour and in a row with ends abutting the adjacent bales.
2. Each bale shall be embedded in the soil a minimum of 6", and placed so the bindings are horizontal.
3. Bales shall be securely anchored in place by either 2 stakes or re-bars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
4. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.



WATER-MAIN

10' minimum distance between sanitary sewer & watermain.

SANITARY SEWER LINE

HORIZONTAL DISTANCE

Center pipe length

Over sewer line

WATER-MAIN

18" minimum clearance from top of sewer line to bottom of watermain.

Center pipe length under water main

CROSSINGS: Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.

3/4" STAINLESS STEEL
BAND MIN. 2 BANDS
MAX. 5" SPACING

8"

2"

12" max

A-LOK GASKET

FLARED LEG BRACKET
ATTACHED WITH 3/8" x 5"
STAINLESS STEEL BOLT
WITH AFFERVOYED ANCHOR

DETAIL A

INTERIOR DROP MANHOLE
NOTE: Top El. & grade of manhole to be adjusted to
match all proposed elevations & grades.

Technical drawing of a 90° elbow. The drawing shows a cross-section of the elbow with a 48° taper. The top flange is labeled "Rim". The bottom flange is labeled "90° ELBOW". The drawing also shows a 90° elbow connection at the bottom, with a dimension line indicating a maximum length of 1 in. max.

Ø3 INTERIOR DROP DETAIL

RRUNWAY ESTATES
Preliminary Plat
St. Clair, Missouri 63077

DETAIL SHEET		
DATE	WF	REVISION
5/17/26		PRELIMINARY PLAT
		PROJECT #2499

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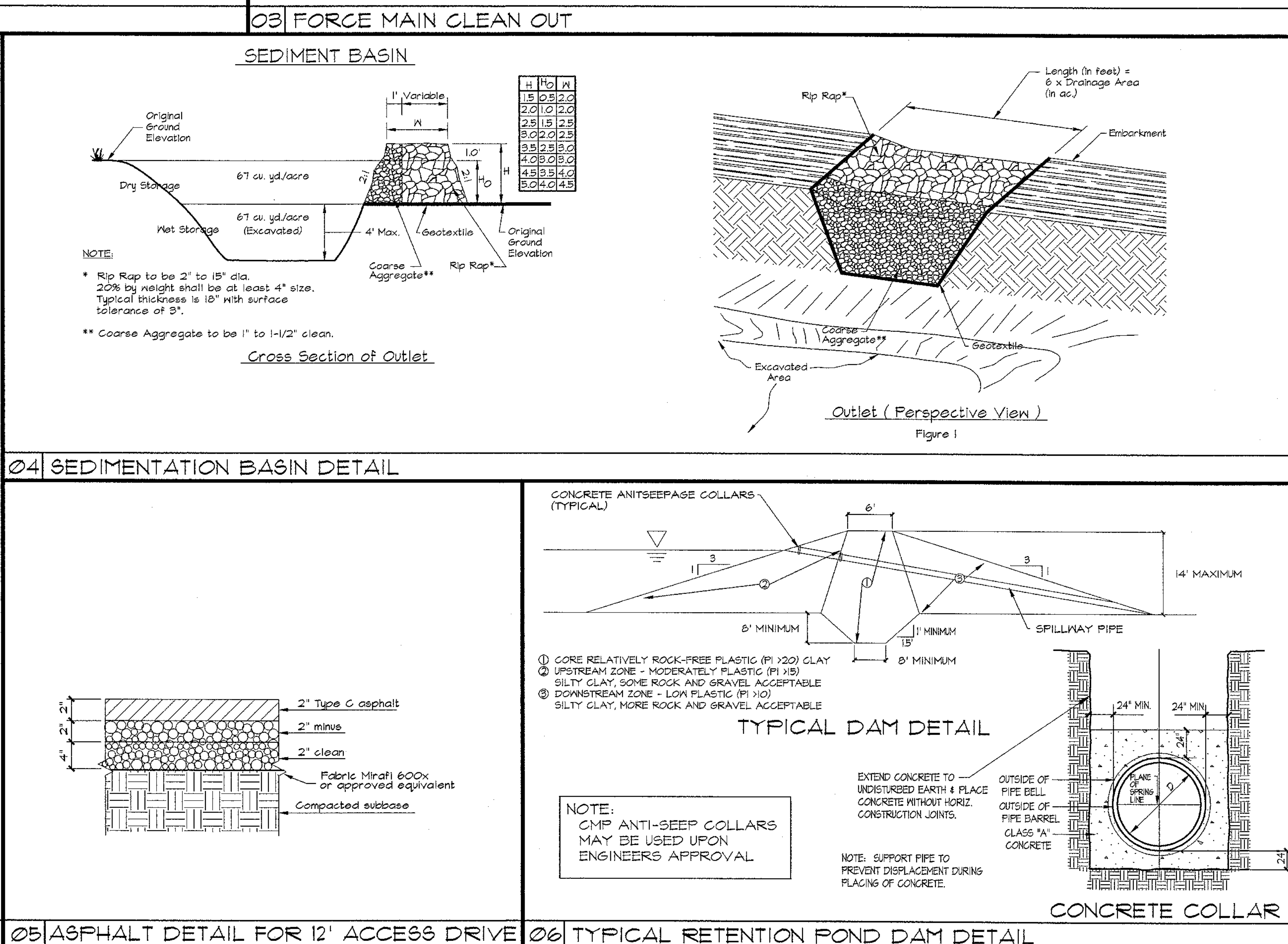
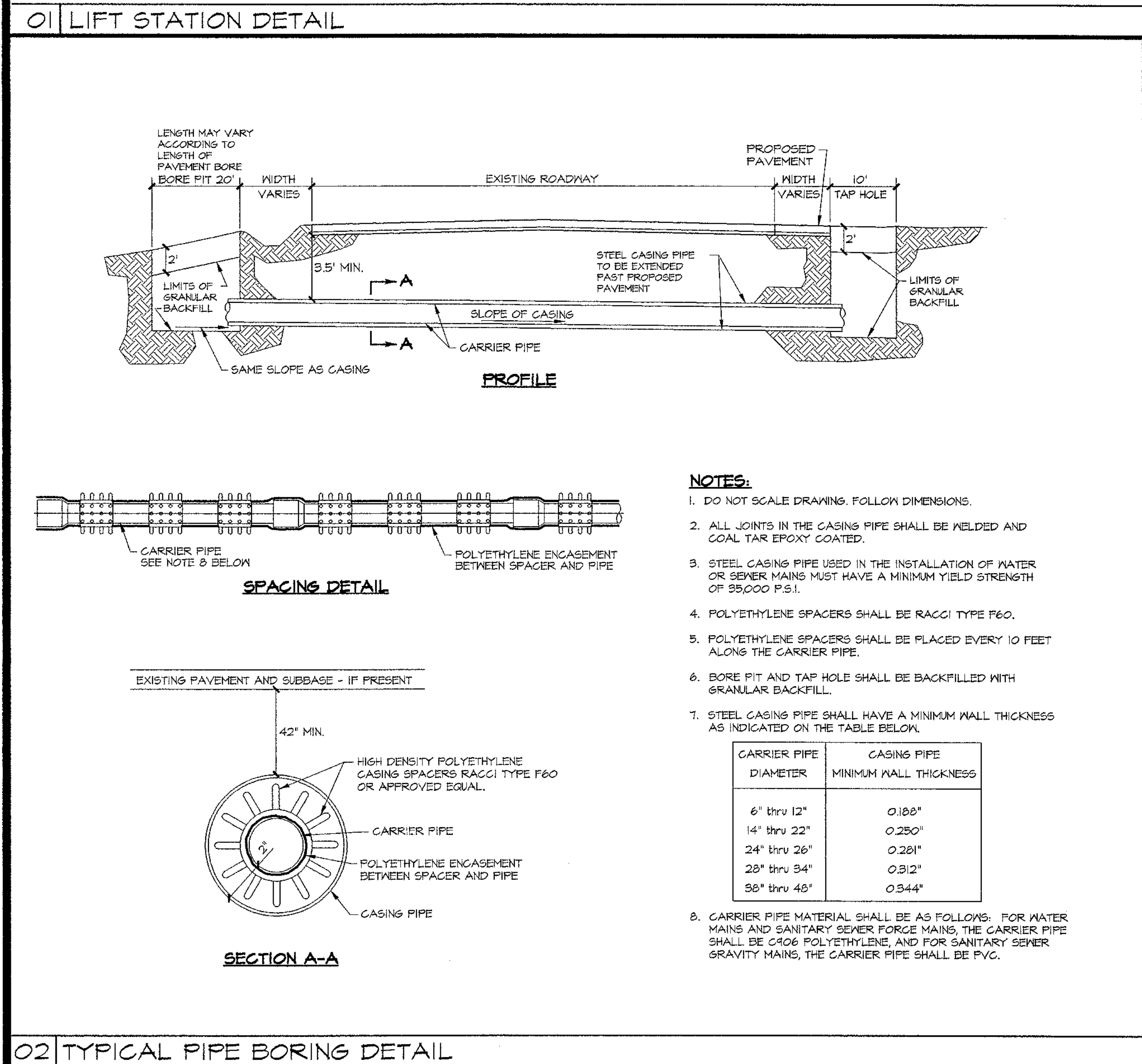
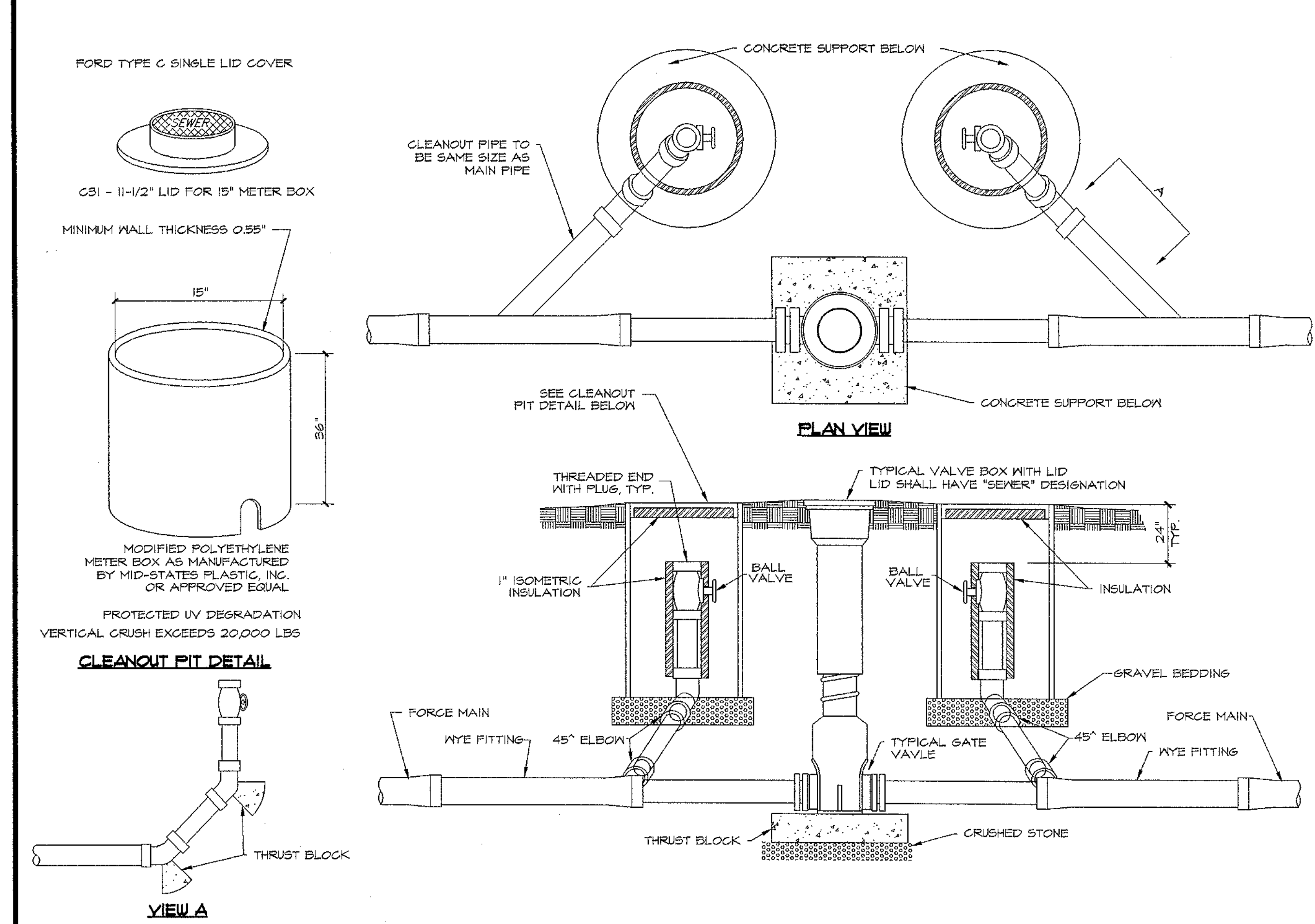
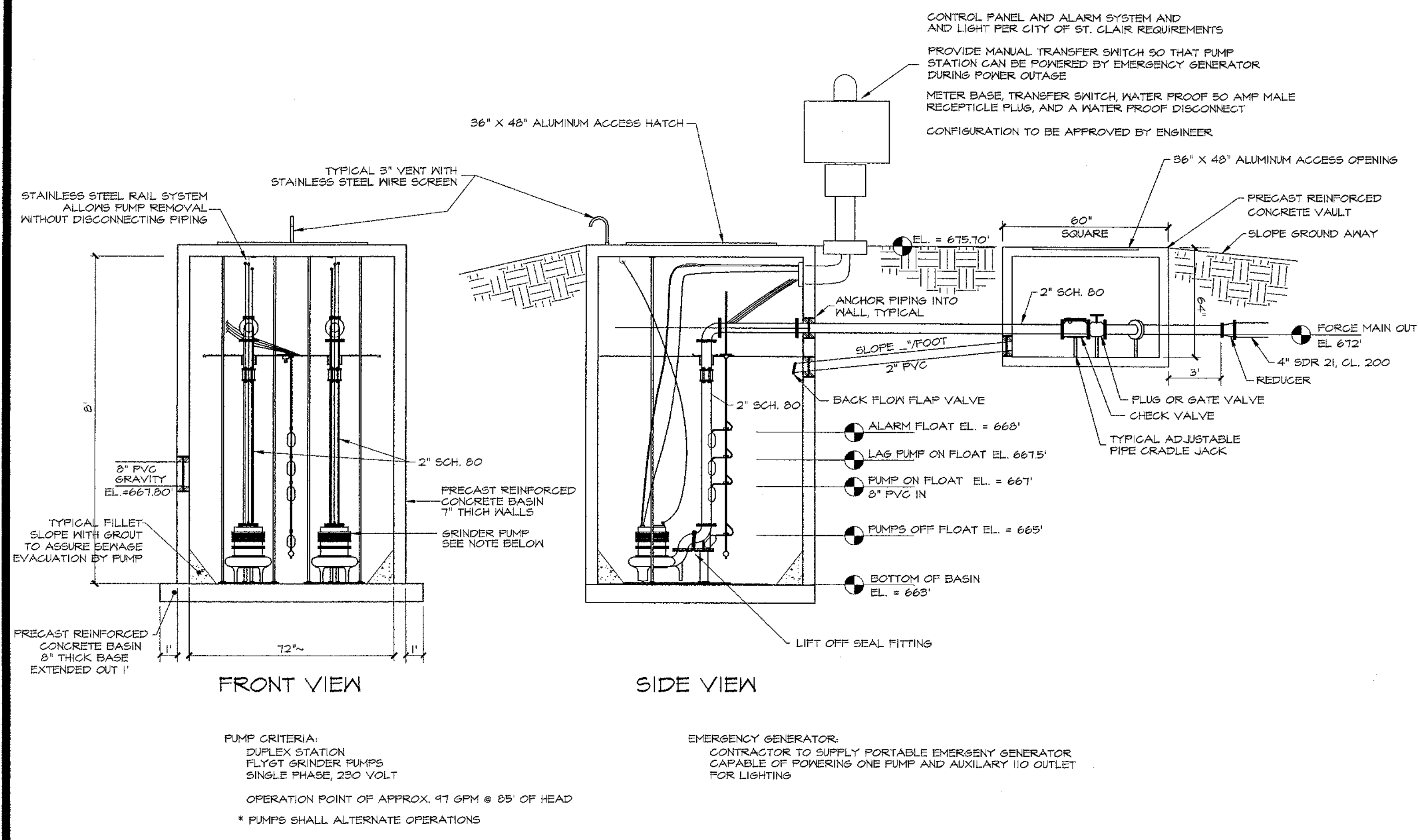
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PROJECT #2434
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DATE	REVISION	DESCRIPTION
5/14/06	1	PRELIMINARY PLAT