

DRAINAGE CERTIFICATION

AS-BUILT ELEVATIONS ARE SHOWN ON THE PLAN IN LOCATIONS WHERE THE ORIGINAL DESIGN ELEVATION HAS BEEN CROSSED OUT AND THE NEW ELEVATION IS LISTED. ELEVATIONS WERE PROVIDED BY BOHANNAN HUSTON INC., PROFESSIONAL LAND SURVEYORS.

NOTES:

I, DANIEL J. GROCHOWSKI, OF BOHANNAN HUSTON INC., A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THE DRAINAGE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED DRAINAGE PLAN, TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DANIEL J. GROCHOWSKI, P.E.
H.M.P.E. NO. 8766

DATE: 11/2/00

DRAINAGE PLAN

The proposed plan for the treatment of onsite developed drainage is as follows. All runoff generated by the proposed multi-purpose facility will flow south and will drain to the adjacent sand play areas. Existing basin boundary and runoff data established by the "Drainage Plan for the New Westside Elementary School" dated June 3, 1991, prepared by Jeff Mortensen and Associates has designated the sand play areas as Basin C with a Q100 equal to 4.3 cfs. This drainage plan will extend Basin C to include the proposed multi-purpose facility with a concomitant reduction in Basin A1. Approximately 4,345 sf will be added to Basin C thereby adding an additional 0.42 cfs in runoff to this basin. The remaining 1,479 sf of the proposed multi-purpose facility total area (5,824 sf) will cover a paved area within Basin C with similar land treatment and therefore no significant change in runoff quantity is expected for this area.

The following calculations analyze the developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method. This method has been used in accordance with the City of Albuquerque Development Process Manual, Volume II, 1997 Revision.

CALCULATIONS

Time of Concentration/Time to Peak

$T_p = T_c = 12 \text{ min.}$

Point Rainfall

$P_6 = 2.2 \text{ in. (DPM Plate 22.2 A-2)}$

Rational Method

Discharge: $Q = C i A$

where $C = 0.93$ (DPM Plate 22.2 A-11)
 $i = 4.70$ (DPM Plate 22.2 A-10)
 $A = \text{area, acres}$

Developed Condition

Proposed Multi-purpose Facility
Roof area = 5,824 sf = 0.13 Ac
 $C = 0.93$
 $i = 4.7 \text{ in/hr}$
 $Q_{100} = C i A = 0.93(4.70)0.13 = 0.56 \text{ cfs}$

Percent of total runoff contributing to Basin C ΔQ_{100}
 $4345 \text{ sf} / 5824 \text{ sf} = 0.75$
 $\Delta Q_{100} = 0.75(0.56) = 0.42 \text{ cfs (increase)}$
 $Q_{100} \text{ (Basin C)} = 4.3 \text{ cfs} + 0.42 \text{ cfs} = 4.72 \text{ cfs}$

Reduction in Basin A1 Q_{100}
 $A_{\text{total}} = 201,505 \text{ sf} = 4.62 \text{ Ac}$
 $C = 0.47$ (weighted average unchanged by reduction in basin area)
 $Q_{100} = C i A = 0.47(4.70)4.62 = 10.20 \text{ cfs}$
 $\Delta Q_{100} \text{ (Basin A1)} = 10.20 \text{ cfs (0.10 cfs decrease)}$

Volume increase in Basin C

Increase in Area Draining to Basin C
Roof area = 4,345 sf
Treatment Type = D
 $E(\text{zone 1}) = 1.97 \text{ in/hr}$
 $V_{100} = E A = (1.97/12)4345 = 713 \text{ cf}$

EROSION CONTROL

An erosion control silt fence or erosion control berm shall be installed and maintained throughout construction adjacent to all disturbed areas at the property line along Education Place

The contractor is to ensure that no soil erodes from the site onto adjacent property or public right-of-way. This should be achieved by wetting the soil to protect it from wind, erosion, and installing silt fence or berm as described above.
During the months of July, August or September, any grading within or adjacent to a watercourse defined as a major facility shall provide for erosion control and safe passage of the 10-year design storm runoff during the construction phase.
Contractor shall conform to all City, County, State and Federal standard requirements and is responsible for preparing and obtaining all necessary applications and approvals.
All graded areas which do not receive a final surface treatment will be revegetated in accordance with COA Standard Specification 1012 and the Landscape Specifications.
Contractor shall obtain and abide by a Topsoil Disturbance Permit from the City of Albuquerque. The cost for required construction dust and erosion control measures shall be incidental to the project cost.

PROJECT BENCHMARK

AN ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 2-C12", SET ON TOP OF THE CURB AT THE WNW RETURN LOCATED AT THE INTERSECTION OF PARADISE HILLS BLVD. N.W. AND DAVENPORT ST. N.W. IN THE N.W. QUADRANT OF THE INTERSECTION.
ELEVATION = 5175.78 (M.S.L.D.)

T.B.M.

5 REBAR @ WEST PROPERTY RETURN OF MARNA LYNN AVE. N.W. AND EDUCATION PLACE N.W.
ELEVATION = 5164.30 (M.S.L.D.)

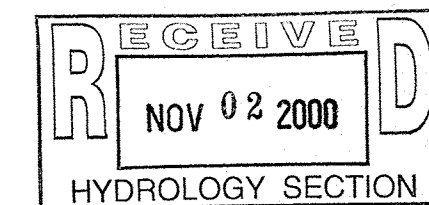
VICINITY MAP



ZONE ATLAS C-12 SCALE: 1"=1000'

GENERAL NOTES

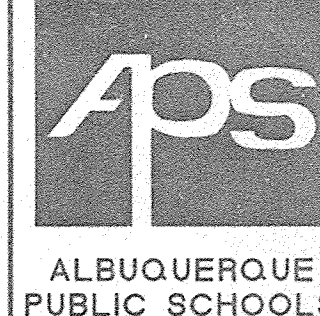
HEADER CURB SHALL BE CONSTRUCTED PER CITY OF ALBUQUERQUE STD. DWG. 2415



Bohannon & Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS



Architects Studio, LLC

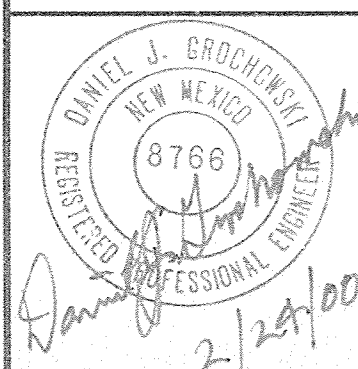
7510 Montgomery Blvd. NE Suite 102
Albuquerque, New Mexico 87109

Tel (505)889-3030 Fax (505)889-8737

REV	DATE	ACTION	DESCRIPTION	BY	APVD
1					
2					
3					
4					
5					

ALBUQUERQUE PUBLIC SCHOOLS

PETROGLYPH ELEMENTARY SCHOOL
MULTI-PURPOSE FACILITY ADDITION



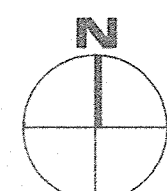
GRADING PLAN

PROJECT NUMBER 9901.00
Scale: 1"=20'-0"
Date: 02/23/00
C1.1
2 of 26

SITE PLAN

SCALE: 1"=20'-0"

1
CS.1



LEGEND

- EXISTING BASIN BOUNDARY
- BASIN BOUNDARY EXTENSION
- LIMITS OF ASPHALT REMOVAL
- LIMITS OF CONCRETE REMOVAL

LEGAL DESCRIPTION

TRACT A, ALBUQUERQUE WEST, UNIT 1

PROJECT BENCHMARK

CITY OF ALBUQUERQUE B.M. - "2-C12"
ELEVATION = 5175.79 FEET (M.S.L.D.)

T.B.M.

NAIL IN POWER POLE, AS SHOWN BELOW.
ELEVATION = 5164.31 FEET (M.S.L.D.)

SUPPLEMENTAL TEXT

This supplemental text is provided to further discuss and explain the concept underlying the development proposed for Basin C. Basin C is reserved exclusively for playground equipment and activities. Building construction, parking lot expansion, or other non-playground activities are restricted from this area. The grades in Basin C have been designed for the maintenance of the sand play areas. The adjacent paving, for the most part, slopes toward the sand play areas which are recessed approximately 0.3 feet below the surrounding top-of-curb. This design has been developed so that any sand leaving the play areas will flow or wash back into the designated area. The sand level has been kept 0.3 feet below the surrounding top-of-curb for the containment of the sand. The surrounding curbs are level. The design of Basin C is for the retention and management of sand and not stormwater runoff. Runoff generated by Basin C will drain into the sand play areas. If the sand areas fill with runoff, they will overflow and eventually reaching the lowest area which is contained by elevation 5162.00. Because this will be the lowest point in the play area an overflow spillway has been designed with the capacity of 1.0 cfs. This will allow the sand play area to also serve as a stormwater detention facility in the event that the area should fill with runoff and overtop the curb.

DRAINAGE PLAN

The following index contains items concerning the New Westside Elementary School Drainage Plan.

Description	Sheet No.
Vicinity Map	1
Existing Conditions	2
Grading Plan	1
Calculations	2

As shown by the Vicinity Map, the site is located in the Albuquerque West Unit 1 Subdivision. The site is bordered to the east by Education Place N.W. The criteria and concepts for the treatment of stormwater within the subdivision have been established by the "Drainage Report for Albuquerque West Unit 1 Phase One Improvements" dated October, 1990, prepared by Isaacson and Arfman, P.A. The Education Place Storm Drainage Plan (City Project No. 3791.91) dated March, 1991, prepared by Jeff Mortensen and Associates demonstrates the capacity of downstream drainage improvements and further defines the allowable runoff from Site "G". The current plan is in compliance with the above mentioned plan and report.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contour lines at 1'-0" intervals, 2) the limit and character of existing improvements, 3) the limit and character of the proposed improvements, and 4) the continuity between the existing and proposed grades. At present, the site is undeveloped. As shown by the plan, this project consists of the construction of a new school building, paving, landscaping and storm drain improvements.

At present, the majority of the runoff generated onsite (Basin A) flows in a southeasterly direction to the Education Place N.W. right-of-way. Runoff generated in a smaller area (Basin B) adjacent to the south and east lot lines flows from the site onto adjacent lots in the Riverview Subdivision.

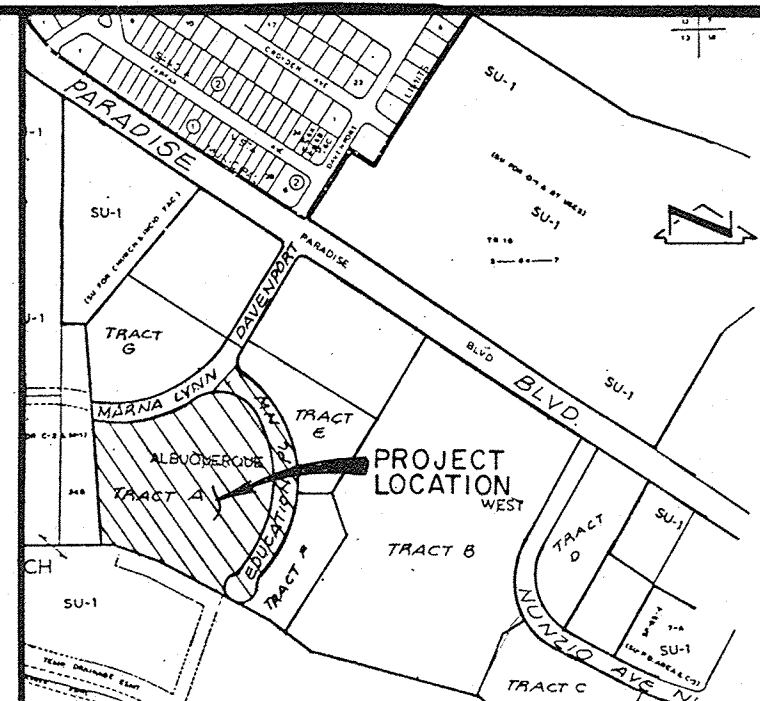
The proposed plan for the treatment of onsite developed drainage is as follows. Almost all of the runoff generated by the developed areas of the site will flow to Education Place N.W. and be taken into the Education Place storm drain or will be contained onsite. Runoff from the most impervious areas of the site, Basins A2 and A3, will be intercepted onsite and will be conveyed directly by an onsite storm drain to the Education Place N.W. storm drain. Runoff generated by the impervious areas of Basin C will drain into the adjacent sand play areas. This has been found to be an effective means of stormwater management on school sites and serves to mitigate the erosion of areas adjacent to the playground paving. Runoff generated in Basin B, a relatively undeveloped portion of the site, will continue to flow in the historic drainage pattern, but at a reduced peak discharge to adjacent property in the Riverview Subdivision.

The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method while the SCS Method has been used to quantify the volume of runoff generated. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, coupled with the Mayor's Emergency Rule adopted January 14, 1986. Calculations utilizing the Mannings Formula and the Orifice Equation have been included to demonstrate onsite drainage improvements capacity.

The Drainage Report for Albuquerque West Unit 1 Phase One Improvements indicates that the site is allowed free discharge of all developed storm waters. The report also defines the maximum allowable flow rate at two points which are pertinent to this plan. Per the report, as development occurs upstream of these points, onsite detention is to be used to achieve these maximum flows. Analysis Point (AP) #2 of the report is located at the low point of the three way intersection of Marna Lynn Avenue and Education Place. The maximum allowed flow rate at AP #2, per the Report, is 8.6 cfs. Analysis Point (AP) #4 of the Report is located at the south end of Education Place and includes the runoff from AP #2, the Education Place right-of-way, and this site. The maximum allowed discharge at AP #4, per the Report, is 38.4 cfs. This implies that the maximum combined discharge from this site and the Education Place N.W. right-of-way can be no more than 29.8 cfs, which is the difference between the maximum allowed flows at AP #2 and AP #4. The calculations presented hereon show that this objective will be met under the current plan. Due to the fact that this plan is consistent with the criteria and concepts set forth in the Drainage Report for the subdivision and the fact that runoff which discharges onto adjacent properties will be reduced development of this site should not have adverse affects on the downstream drainage conditions.

Construction Notes:

- Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System 260-1990, for location of existing utilities.
- Prior to construction, the contractor shall excavate and verify the horizontal and vertical location of all potential obstructions. Should a conflict exist, the contractor shall notify the engineer in writing so that the conflict can be resolved with a minimum amount of delay.
- All work on this project shall be performed in accordance with applicable federal, state and local laws, rules and regulations concerning construction safety and health.
- All construction within public right-of-way shall be performed in accordance with applicable City of Albuquerque Standards and Procedures.
- Private storm drain shall be RCP (Class III or better), PVC (SDR 35, equal or better), HDPE (Spirlite or approved equal) or D.I.P.
- If any utility lines, pipelines, or underground utility lines are shown on these drawings, they are shown in an approximate manner only, and such lines may exist where none are shown. If any such existing lines are shown, the location is based upon information provided by the owner of said utility, and the information may be incomplete, or may be obsolete by the time construction commences. The engineer has conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, makes no representation pertaining thereto, and assumes no responsibility or liability therefor. The contractor shall inform itself of the location of any utility line, pipeline, or underground utility line in or near the area of the work in advance of and during excavation work. The contractor is fully responsible for any and all damage caused by its failure to locate, identify and preserve any and all existing utilities, pipelines, and underground utility lines. In planning and conducting excavation, the contractor shall comply with state statutes, municipal and local ordinances, rules and regulations, if any, pertaining to the location of these lines and facilities.
- The design of planters and landscaped areas is not part of this plan. All planters and landscaped areas adjacent to the building(s) shall be provided with positive drainage to avoid any ponding adjacent to the structure. For construction details, refer to landscaping plan.



VICINITY MAP

N.T.S.

C-12

DRAINAGE CERTIFICATION

As shown by the as-built information shown hereon, the subject project site has been constructed in substantial conformance with the approved grading and drainage plan and associated contract documents. A preliminary certification was prepared and hence was determined that several areas of the site did not meet the criteria set forth on the approved plan. Because of this, remedial work was required of the Contractor. A return visit to the site was conducted on August 25, 1992. At that time, it was determined that the Contractor had satisfied the requirements of this project, hence this certification is now being submitted to the City of Albuquerque for Certificate of Occupancy approval. It should also be noted that the public infrastructure in the adjacent public rights-of-way was completed and accepted by the city in 1991.



Jeffrey G. Mortensen, State of New Mexico, License No. 8547, dated 08-27-92.

NMPE 8547

Date

08-27-92

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SCALE: 1" = 50'

TBM = NAIL IN P. POLE
ELEV. = 5164.31'

LEGEND

- EXIST. CONTOUR
- - - PROPOSED CONTOUR
- + PROPOSED SPOT ELEV.
- TC TOP OF CURB
- TA TOP OF ASPHALT
- FL FLOWLINE
- DIRECTION OF FLOW
- NEW ASPHALT
- NEW CONCRETE
- DRAINAGE BASIN BOUNDARY
- + AS-BUILT ELEV.

NEW DRIVEPADS PER
C.O.A. PROJECT # 3791.90
N.I.C.

NOTE:

THIS PLAN IS FOR GRADING AND DRAINAGE ONLY; REFER TO SITE PLAN FOR LAYOUT OF BUILDINGS, PAVING, ETC.

RECORD DRAWING

PARCEL H-4
RIVERVIEW SUBDIVISION

GRADING AND DRAINAGE PLAN

NEW WESTSIDE ELEMENTARY SCHOOL
5100 MARNA LYNN AVENUE N.W.

Erosion Control Measures

- The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property. This can be achieved by constructing temporary berms at the property lines and wetting the soil to keep it from blowing.
- The contractor shall promptly clean up any material excavated within the public right-of-way so that the excavated material is not susceptible to being washed down the street.
- The contractor shall secure "Topsoil Disturbance Permit" prior to beginning construction.

LINE	BEARING	DISTANCE
L1	S 44°05'39" E	78.90
L2	S 25°54'21" W	88.69

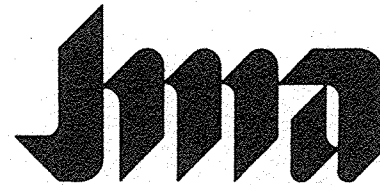
CURVE	ARC	DELTA	RADIUS	CHORD LENGTH	CHORD BEARING	TAN LENGTH
C1	43.02	82°08'45"	30.00	38.43	S 85°10'31" E	26.15
C2	38.84	14°50'05"	150.00	38.73	S 36°40'36" E	19.93
C3	38.84	14°50'06"	150.00	38.73	S 36°40'33" E	19.93
C4	38.84	14°50'06"	150.00	38.73	S 18°29'18" W	19.93
C5	38.84	14°50'06"	150.00	38.73	S 18°29'18" W	19.93
C6	33.31	63°36'44"	30.00	31.62	S 57°42'43" W	18.61

DESIGNED BY J.G.M.

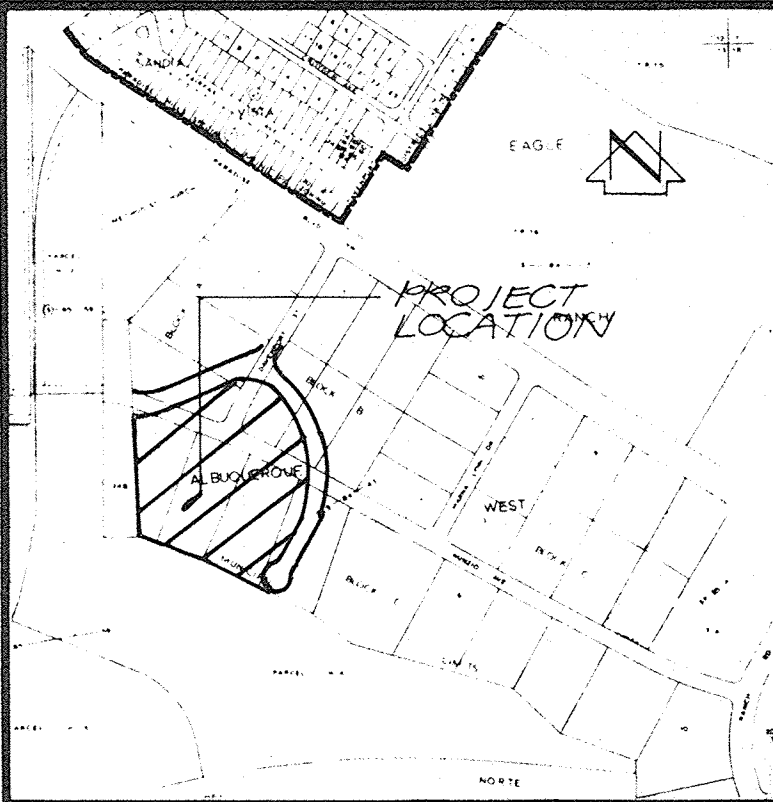
DRAWN BY J.M.C./S.G.H.

APPROVED BY J.G.M.

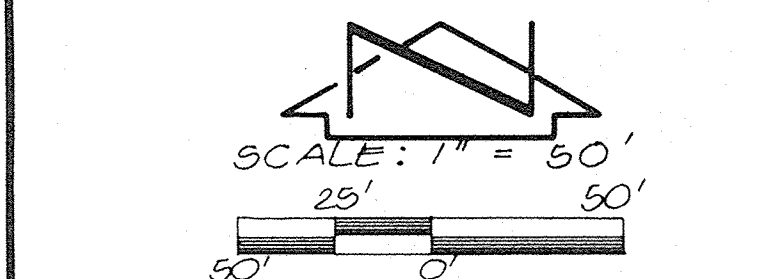
NO.	DATE	BY	REVISIONS	JOB NO.
1	6/91	JGM	ADDRESS CITY REVIEW COMMENTS	910211
2	8/91	JGM	ADD SUPPLEMENTAL TEXT & OVERFLOW SPILLWAY	DATE
3	07/92	JGM	AS-BUILT & CERTIFY	04/91
4	08/92	JGM	RE-INSPECT & RECERTIFY	SHEET 1 OF 4



JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505)345-4250



VICINITY MAP
SCALE: 1" = 800'



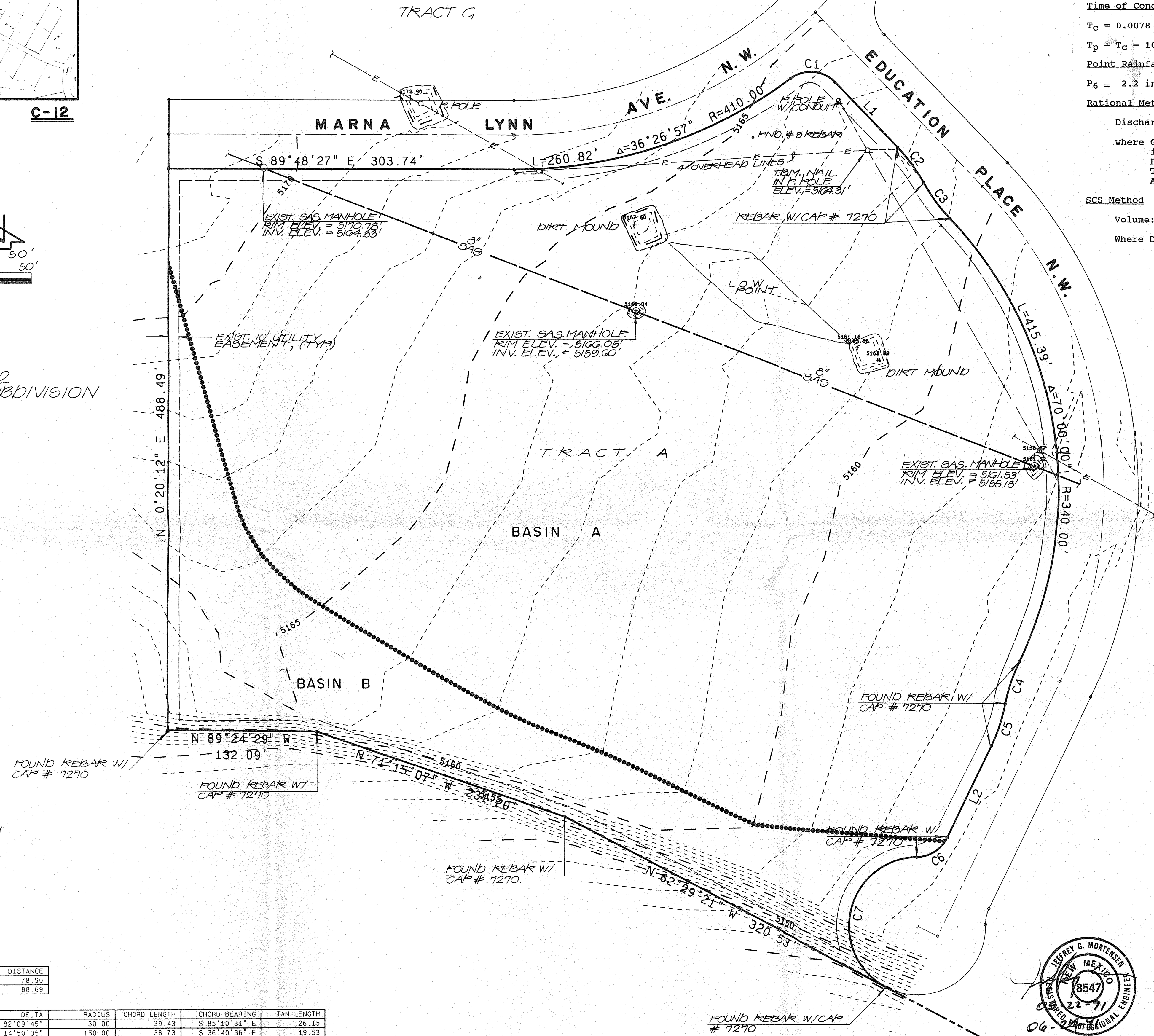
PARCEL 2
RIVER VIEW SUBDIVISION

LEGEND
--- EXIST. CONTOUR
..... DRAINAGE BASIN BOUNDARY

LINE	BEARING	DISTANCE
L1	S 44°05'39" E	78.90
L2	S 25°54'21" W	88.69

CURVE	ARC	DELTA	RADIUS	CHORD LENGTH	CHORD BEARING	TAN LENGTH
C1	43.02	82°09'45"	30.00	39.43	S 85°10'31" E	26.15
C2	38.84	14°50'05"	150.00	38.73	S 36°40'36" E	19.53
C3	38.84	14°50'06"	150.00	38.73	S 36°40'33" E	19.53
C4	38.84	14°50'06"	150.00	38.73	S 18°29'18" W	19.53
C5	38.84	14°50'06"	150.00	38.73	S 18°29'18" W	19.53
C6	33.31	63°36'44"	30.00	31.62	S 57°42'43" W	18.61
C7	159.18	152°00'26"	60.00	116.44	S 13°30'53" W	240.70

LEGAL DESCRIPTION
TRACT A, ALBUQUERQUE WEST, UNIT 1
PROJECT BENCHMARK
CITY OF ALB. B.M. - 2-C12
ELEV. = 5175.75 FEET (M.S.L.B.)
T.B.M.
NAIL IN POWER POLE AS SHOWN BELOW.
ELEV. = 5164.31 FEET (M.S.L.B.)



RECORD DRAWING

TOPOGRAPHIC SURVEY / EXISTING CONDITIONS / CALCULATIONS
NEW WESTSIDE ELEMENTARY SCHOOL
5100 MARNA LYNN AVENUE N.W.

Ground Cover Information
From SCS Bernalillo County Soil Survey,
Plate 10: MWA Madurez Wink Series (Fine sandy loam & sandy clay loam)
Hydrologic Soil Group: B
Existing Pervious CN = 79 (DPM Plate 22.2 C-2)
Cultivated Land: Poor condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)
Open spaces: good condition)

Time of Concentration/Time to Peak
 $T_c = 0.0078 L^{0.77} / S^{0.385}$ (Kirpich Equation)
 $T_p = T_c = 10$ min.

Point Rainfall
 $P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Rational Method
Discharge: $Q = C i A$

where C varies
 $i = P_6 (6.84) T_c^{-0.51} = 4.65$ in/hr
 $P_6 = 2.2$ in (DPM Plate 22.2D-1)
 $T_c = 10$ min (minimum)
A = area, acres

SCS Method
Volume: $V = 3630 (DRO) A$

Where DRO = Direct runoff in inches
A = area, acres

CALCULATIONS

Existing Condition

1. Basin A
Atotal = 363,600 sf = 8.35 Ac
Undeveloped area = 363,600 sf (1.00)
 $C = 0.40$ (Weighted average)
per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.40 (4.65) (8.35) = 15.5$ cfs
CN = 79 (DPM Plate 22.2 C-2)
DRO = 0.65 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 19,702$ cf

2. Basin B
Atotal = 72,000 sf = 1.65 Ac
Undeveloped area = 72,000 sf (1.00)
 $C = 0.40$ (Weighted average)
per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.40 (4.65) (1.65) = 3.1$ cfs
CN = 79 (DPM Plate 22.2 C-2)
DRO = 0.65 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 3,893$ cf

Developed Condition

1. Basin A1
Atotal = 205,850 sf = 4.73 Ac
Roof area = 2,800 sf (0.01)
Paved area = 37,050 sf (0.18)
Landscaped area = 49,100 sf (0.24)
Undeveloped area = 116,900 sf (0.57)
 $C = 0.42$ (Weighted average)
per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.47 (4.65) (4.73) = 10.3$ cfs
Aimp = 39,850 sf; % impervious = 19 %
Composite CN = 69 (DPM Plate 22.2 C-3)
DRO = 0.3 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 5,150$ cf

2. Basin A2
Atotal = 45,300 sf = 1.04 Ac
Roof area = 45,300 sf (1.00)
 $C = 0.90$ (Weighted average)
per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.90 (4.65) (1.04) = 4.4$ cfs
Aimp = 45,300 sf; % impervious = 100 %
Composite CN = 93 (DPM Plate 22.2 C-3)
DRO = 2.0 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 7,550$ cf

3. Basin A3
Atotal = 107,600 sf = 2.47 Ac
Paved area = 82,300 sf (0.77)
Landscaped area = 21,900 sf (0.20)
Undeveloped area = 3,400 sf (0.03)
 $C = 0.79$ (Weighted average)
per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.79 (4.65) (2.47) = 9.1$ cfs
Aimp = 82,300 sf; % impervious = 77 %
Composite CN = 88 (DPM Plate 22.2 C-3)
DRO = 1.2 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 10,760$ cf

Developed Flows Discharging to Education Place Storm Drain

$Q_{100} = Q_{100} \text{ Basin A1} + Q_{100} \text{ Basin A2} + Q_{100} \text{ Basin A3} + Q_{100} \text{ Education Place}$
 $Q_{100} = 8.6 + 4.4 + 9.1 + 6.5 = 28.6$ cfs < 29.8 cfs

Onsite Storm Inlet Capacity

Double "C" Storm Inlet
Orifice Equation $Q = CA(2gh)^{1/2}$
Analyze grate capacity only
Let effective grate opening = 1/2 (grate area)
 $A = 0.5 (2 \times 8) = 8$ sf, $h = 0.7$, $C = 0.60$
 $Q = 0.60 (8) [(2) (32.2) (0.9)]^{1/2} = 32.2$ cfs > 9.1 cfs

Storm Drain Capacity

1. 18" Dia. RCP, @ $S = 0.0150$, & $n = 0.012$
 $Q = (1.486/n) AR^{2/3} S^{1/2}$ Mannings Equation
Flowing full $Q = (1.486/0.012) (1.767) (0.3752/3) (0.0151/2) = 13.9$ cfs > 9.1 cfs

2. 24" Dia. RCP, @ $S = 0.0135$, & $n = 0.012$
 $Q = (1.486/n) AR^{2/3} S^{1/2}$ Mannings Equation
Flowing full $Q = (1.486/0.012) (3.142) (0.502/3) (0.01351/2) = 28.4$ cfs > 9.1 + 4.4 cfs

Comparisons

1. Basin A
 $\Delta Q_{100} = Q_{100} \text{ Basin A1} + Q_{100} \text{ Basin A2} + Q_{100} \text{ Basin A3} - Q_{100} \text{ Basin A}$
 $\Delta Q_{100} = 10.3 + 4.4 + 9.1 - 15.5 = 8.3$ cfs (increase)
 $\Delta V_{100} = V_{100} \text{ Basin A1} + V_{100} \text{ Basin A2} + V_{100} \text{ Basin A3} - V_{100} \text{ Basin A}$
 $\Delta V_{100} = 5,150 + 7,550 + 10,760 - 3,890 = 19,570$ cf (increase)

2. Basin B

$\Delta Q_{100} = 3.1 - 0.6 = 2.5$ cfs (decrease)
 $\Delta V_{100} = 3,890 - 790 = 3,100$ cf (decrease)

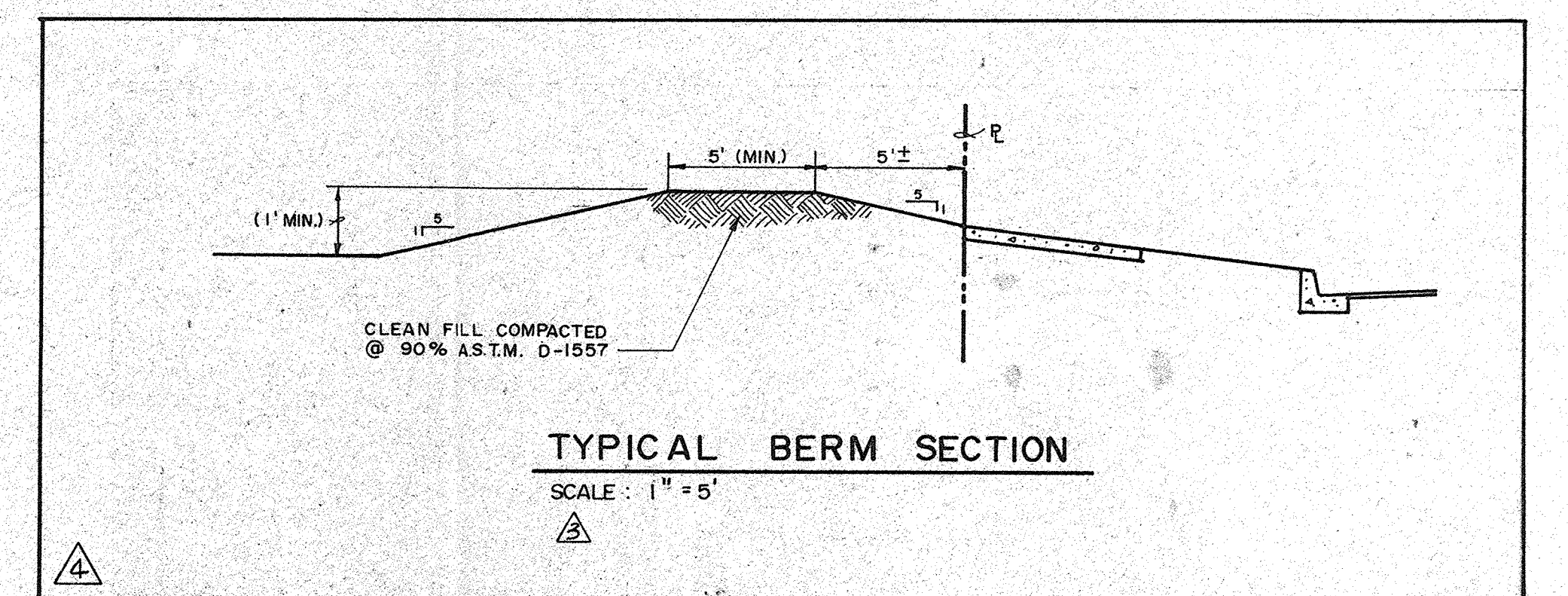
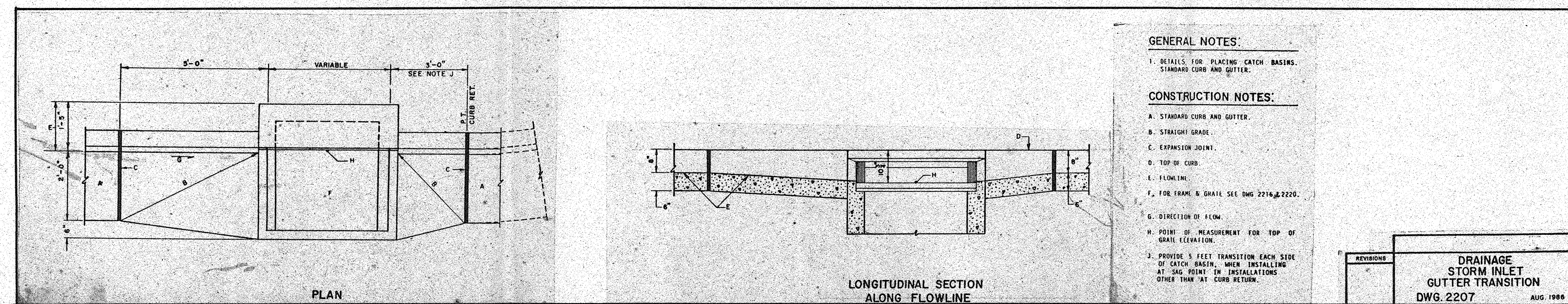
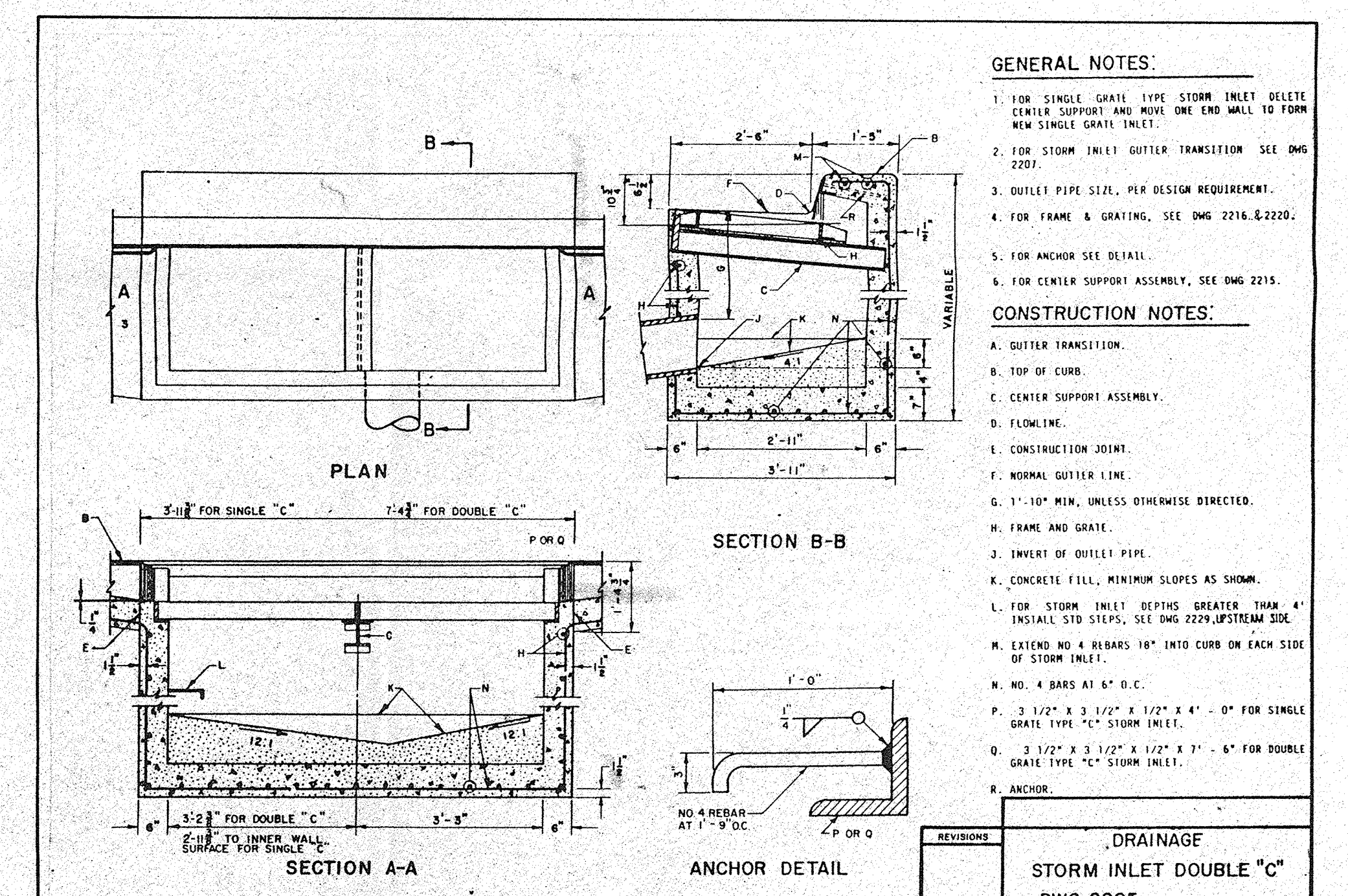
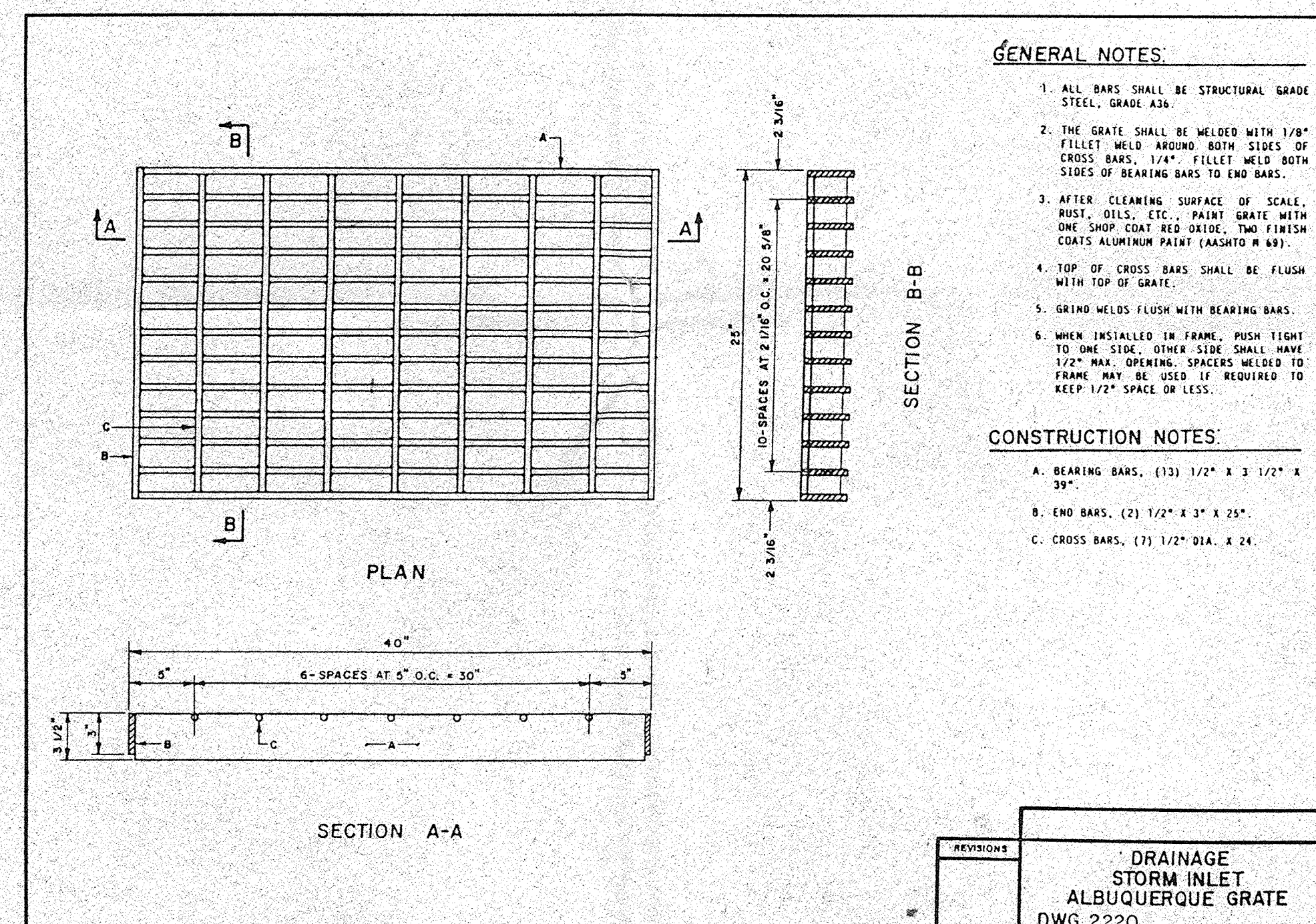
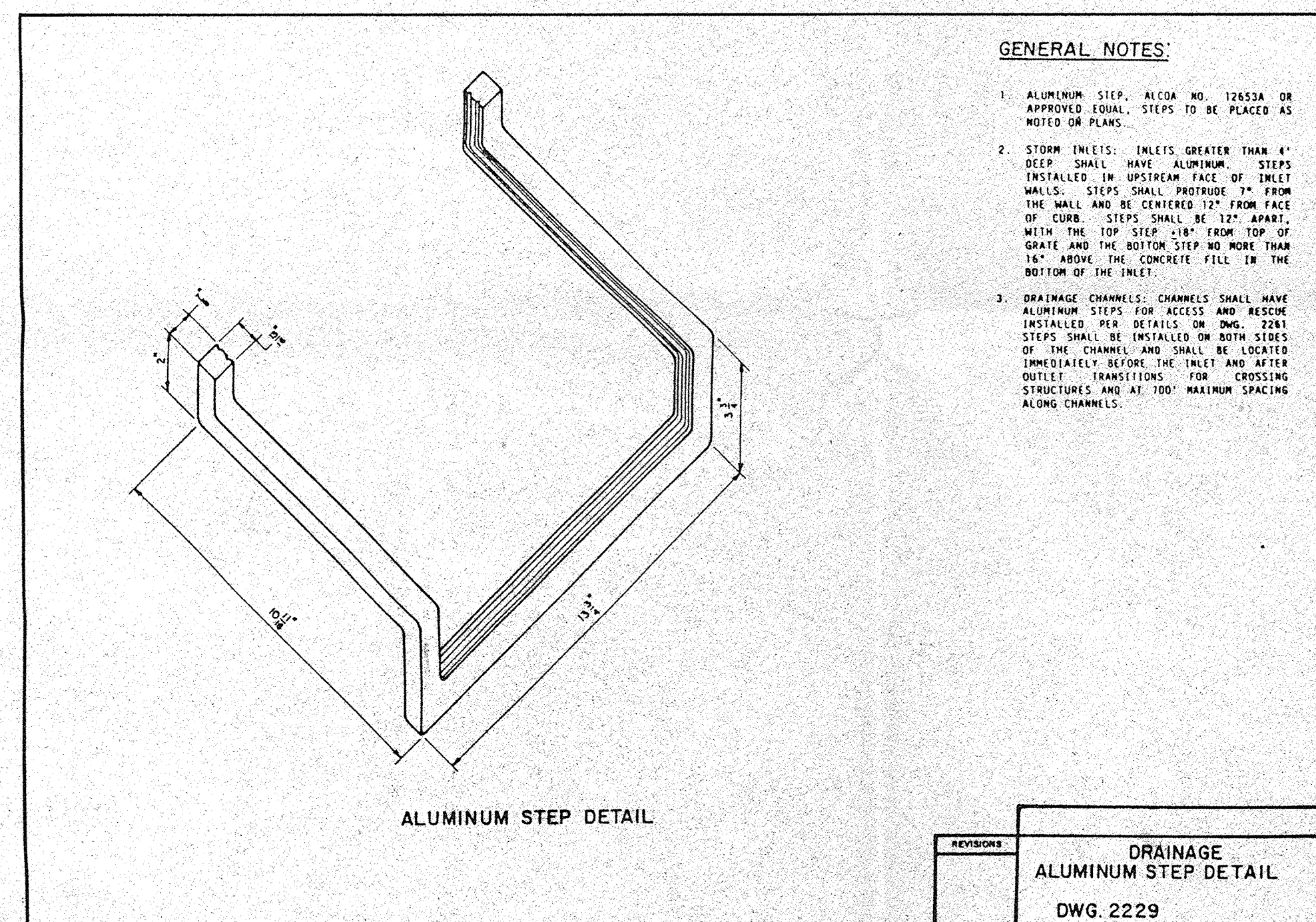
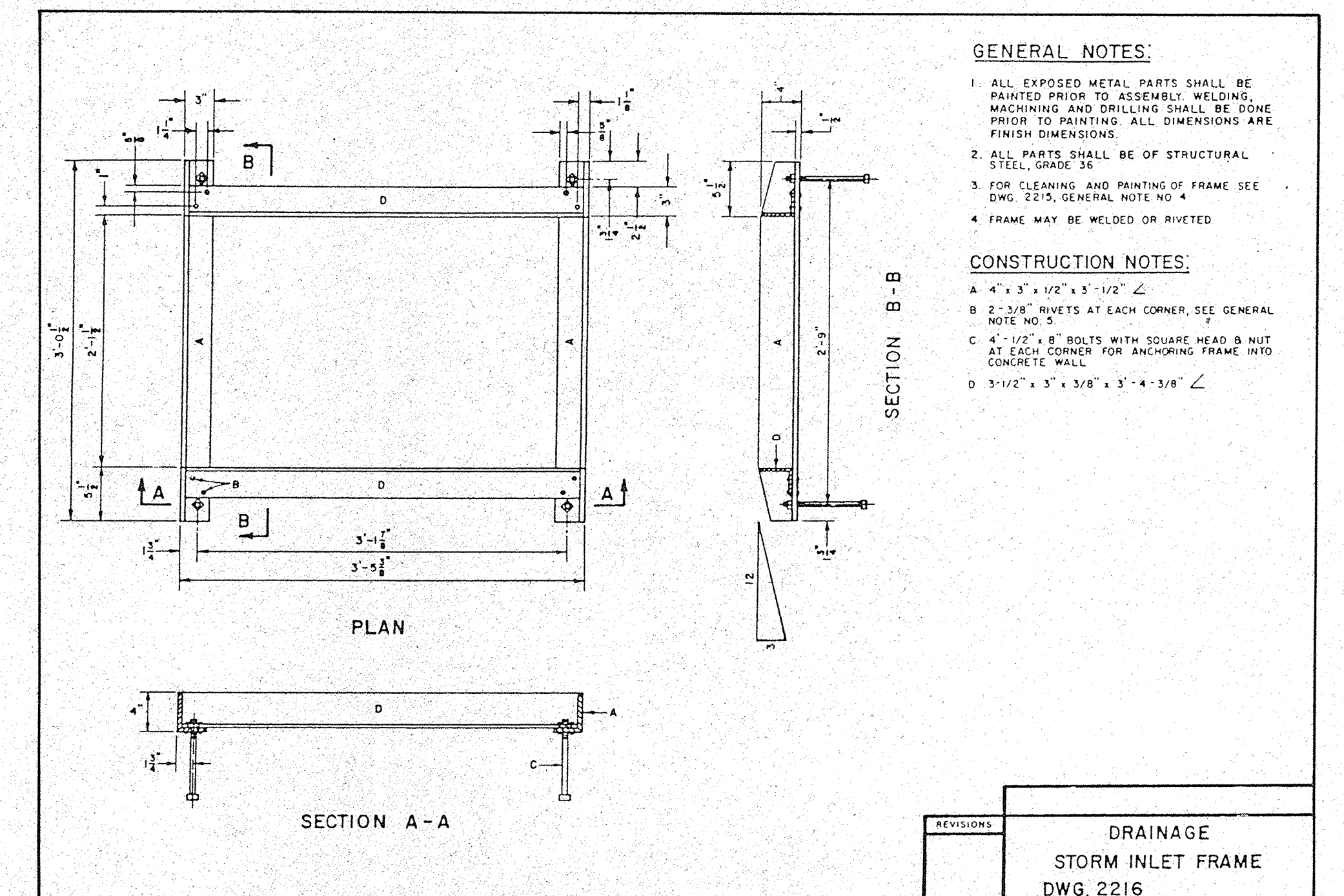
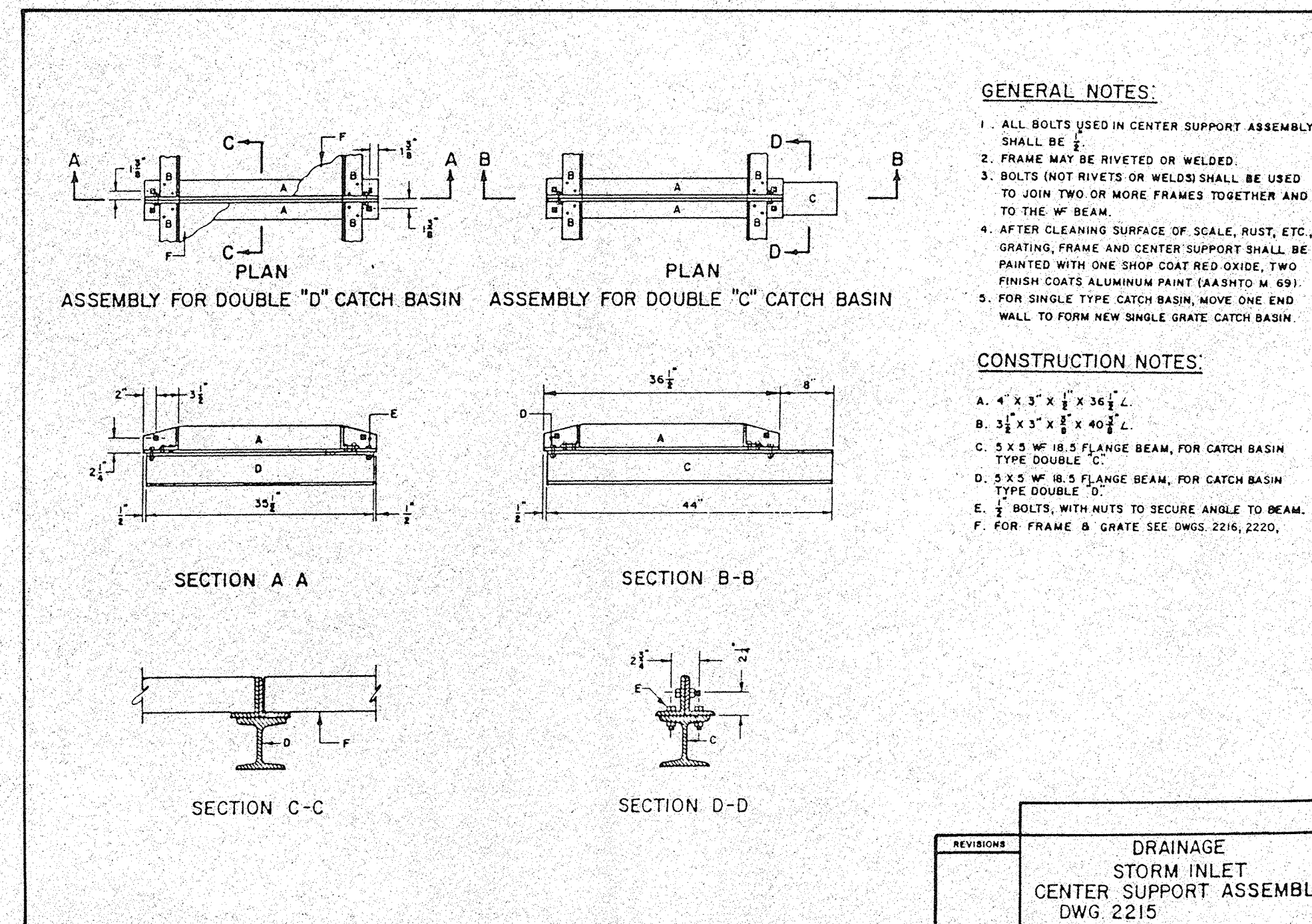
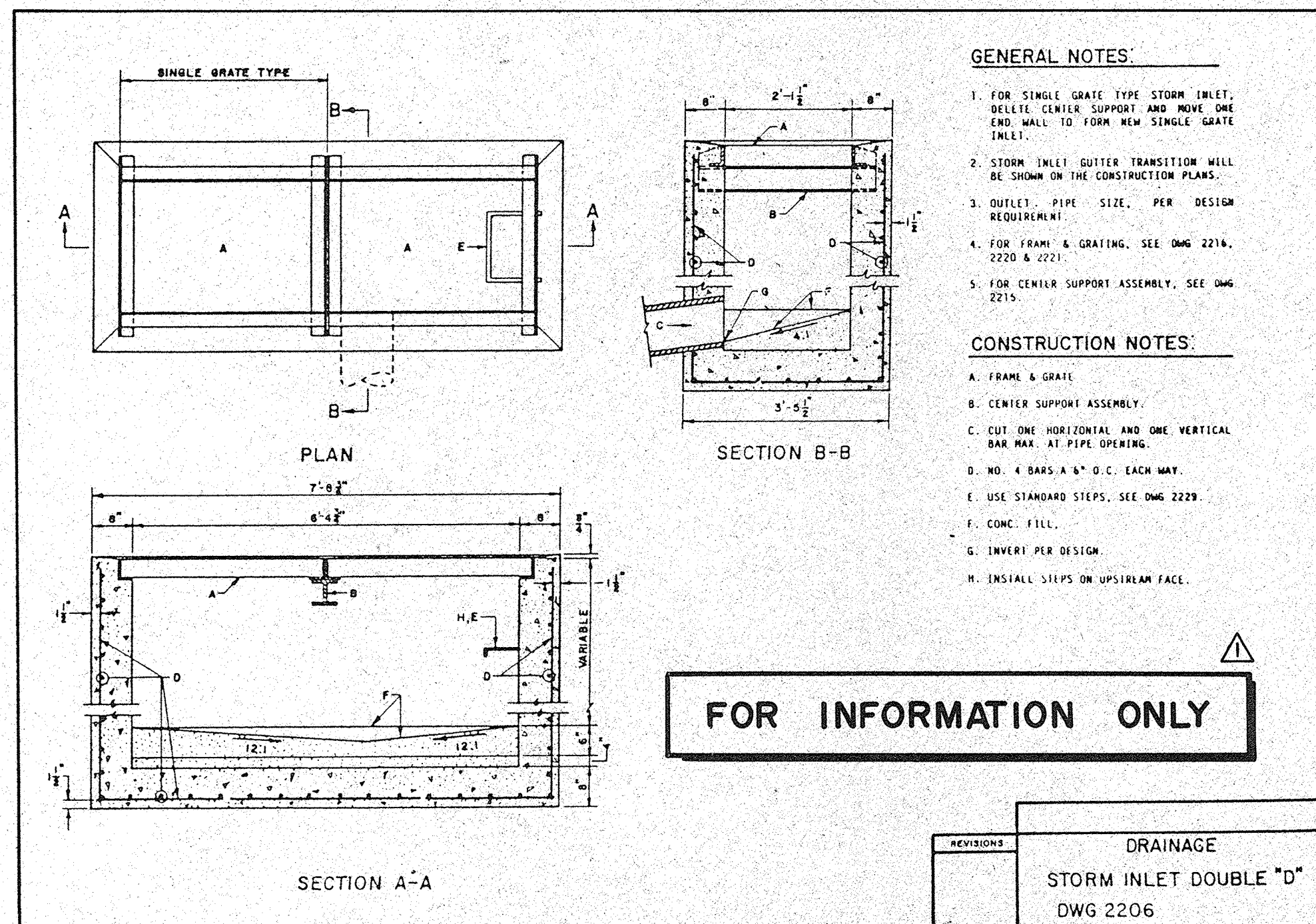
Basin C Overflow

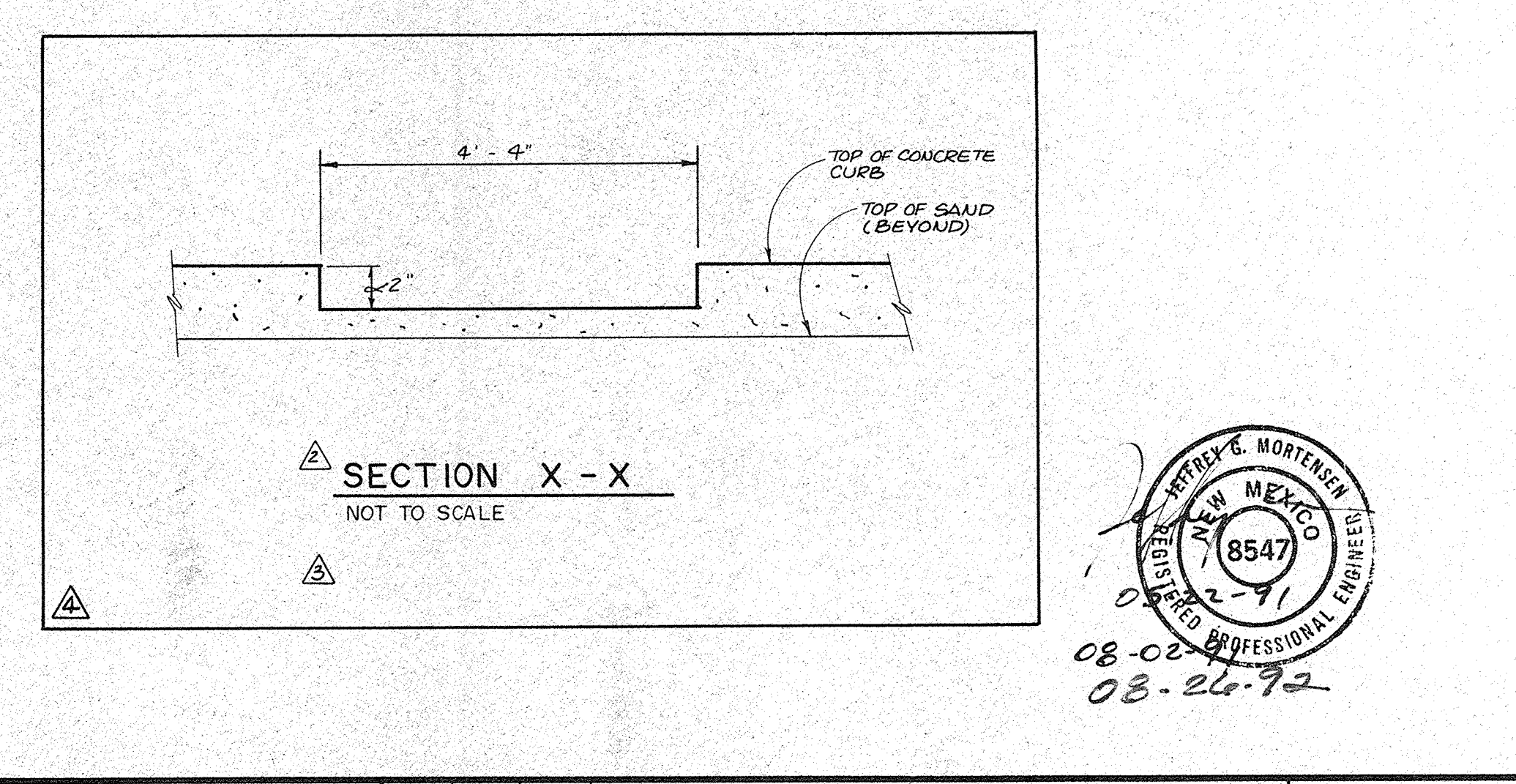
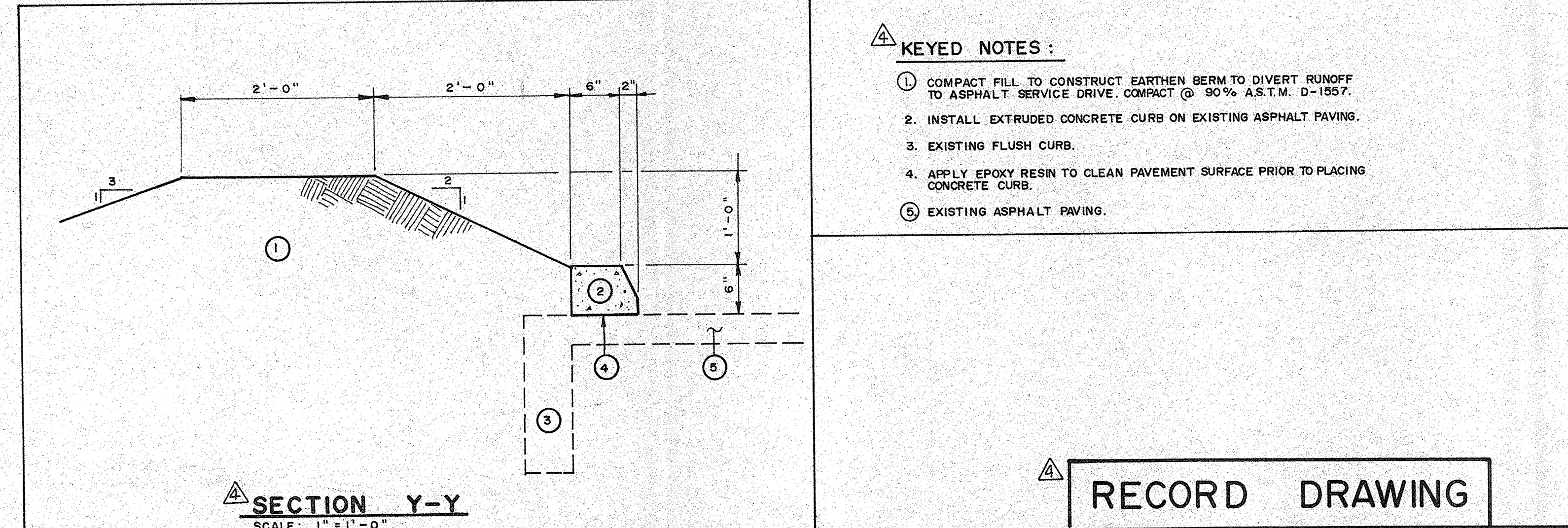
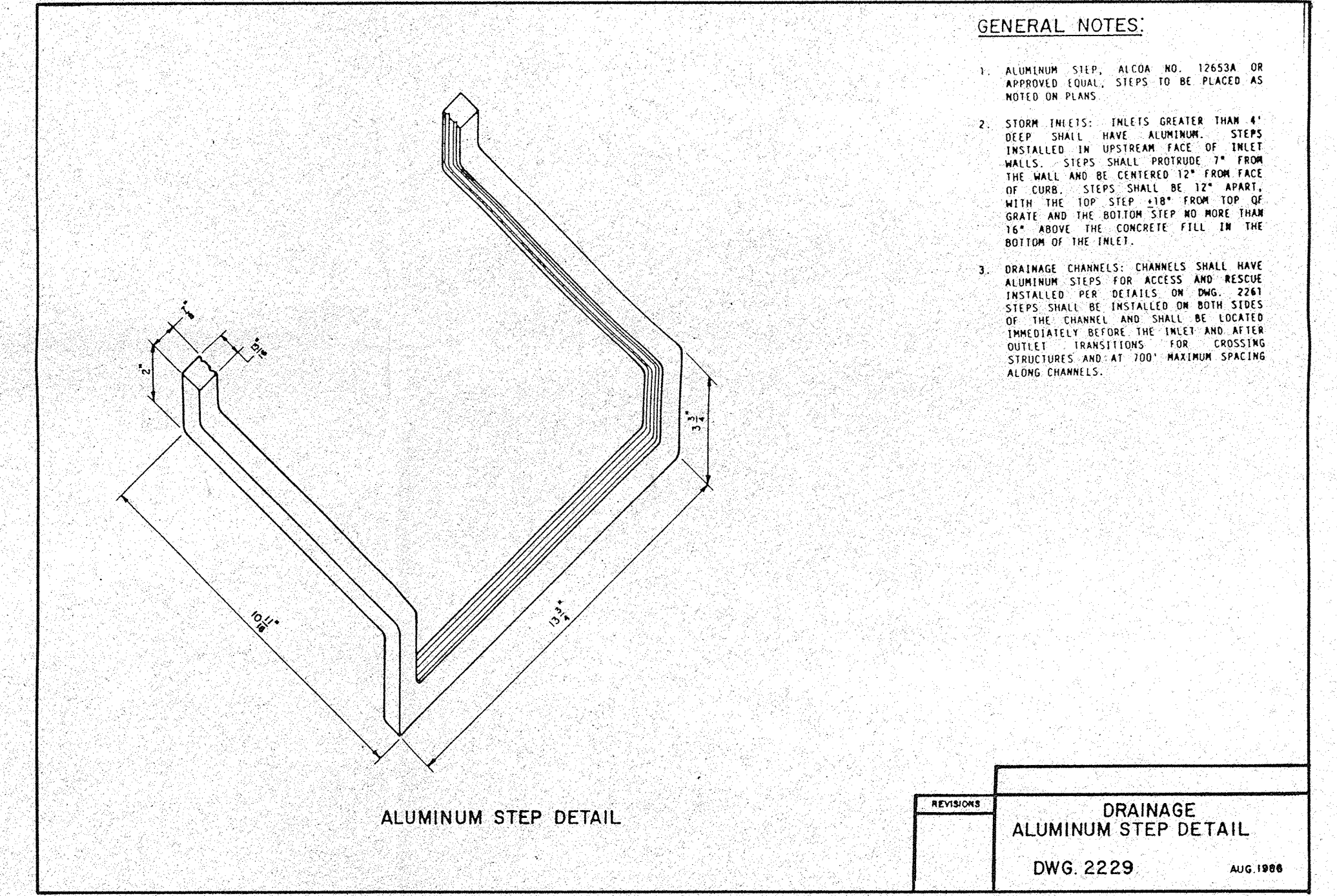
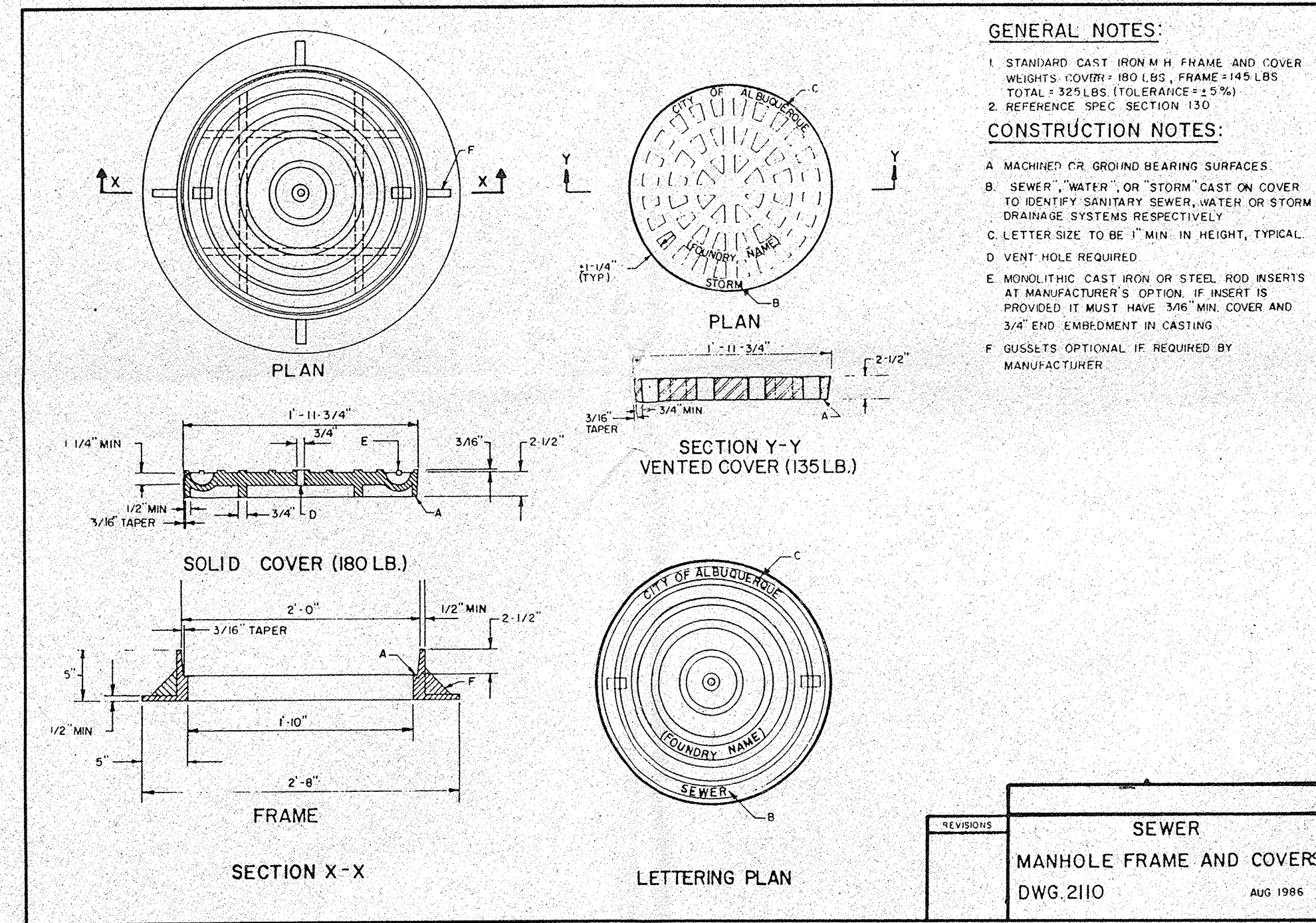
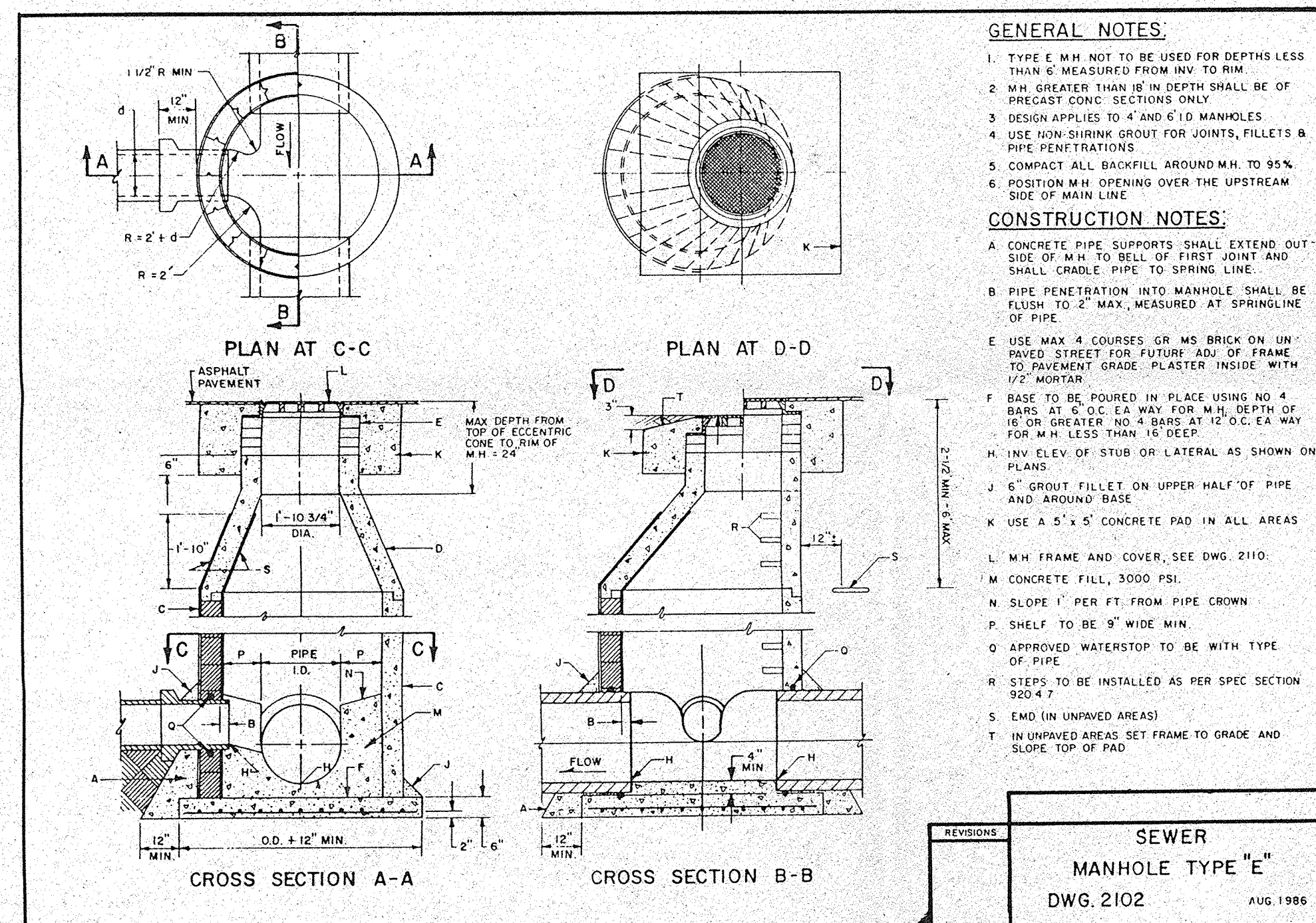
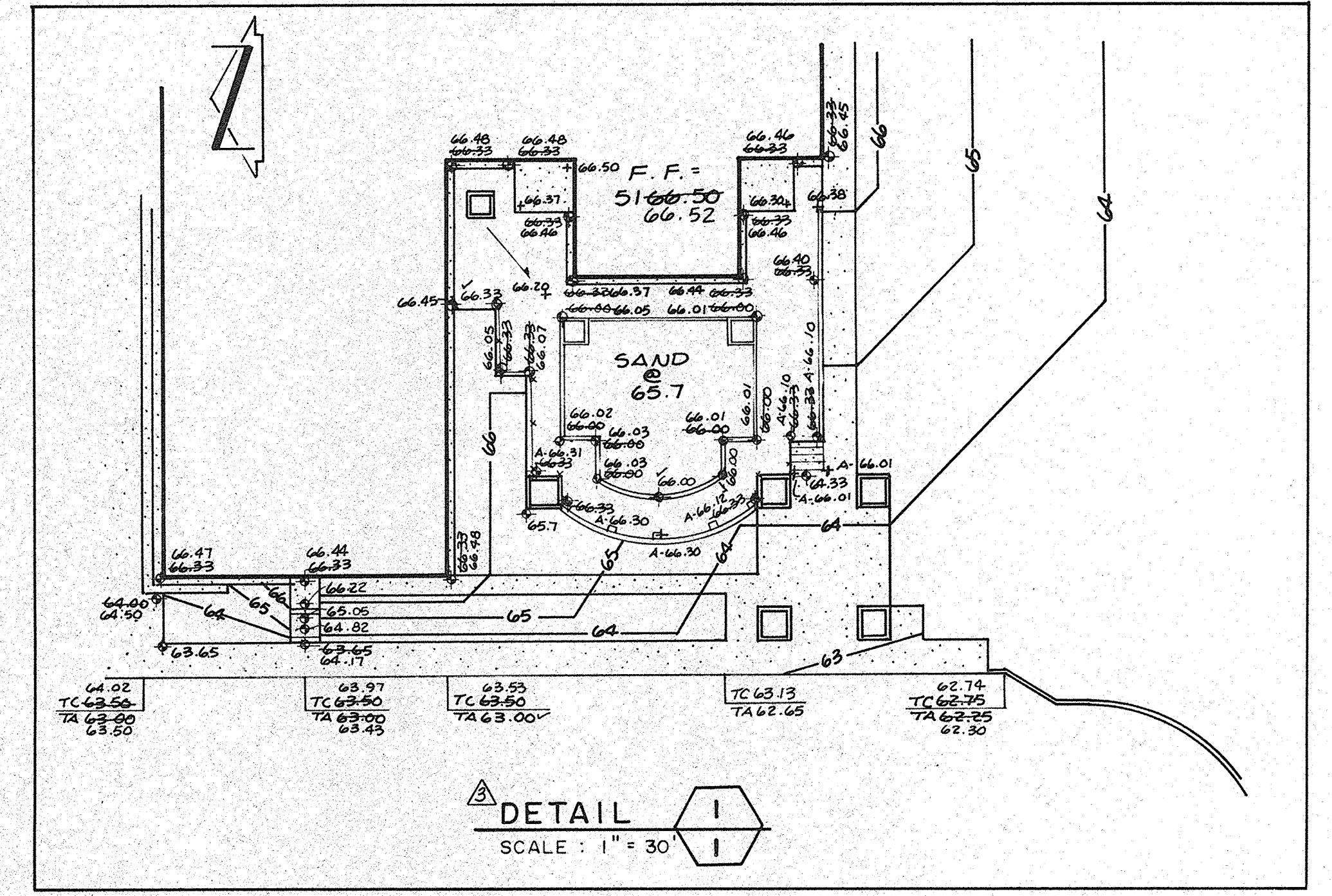
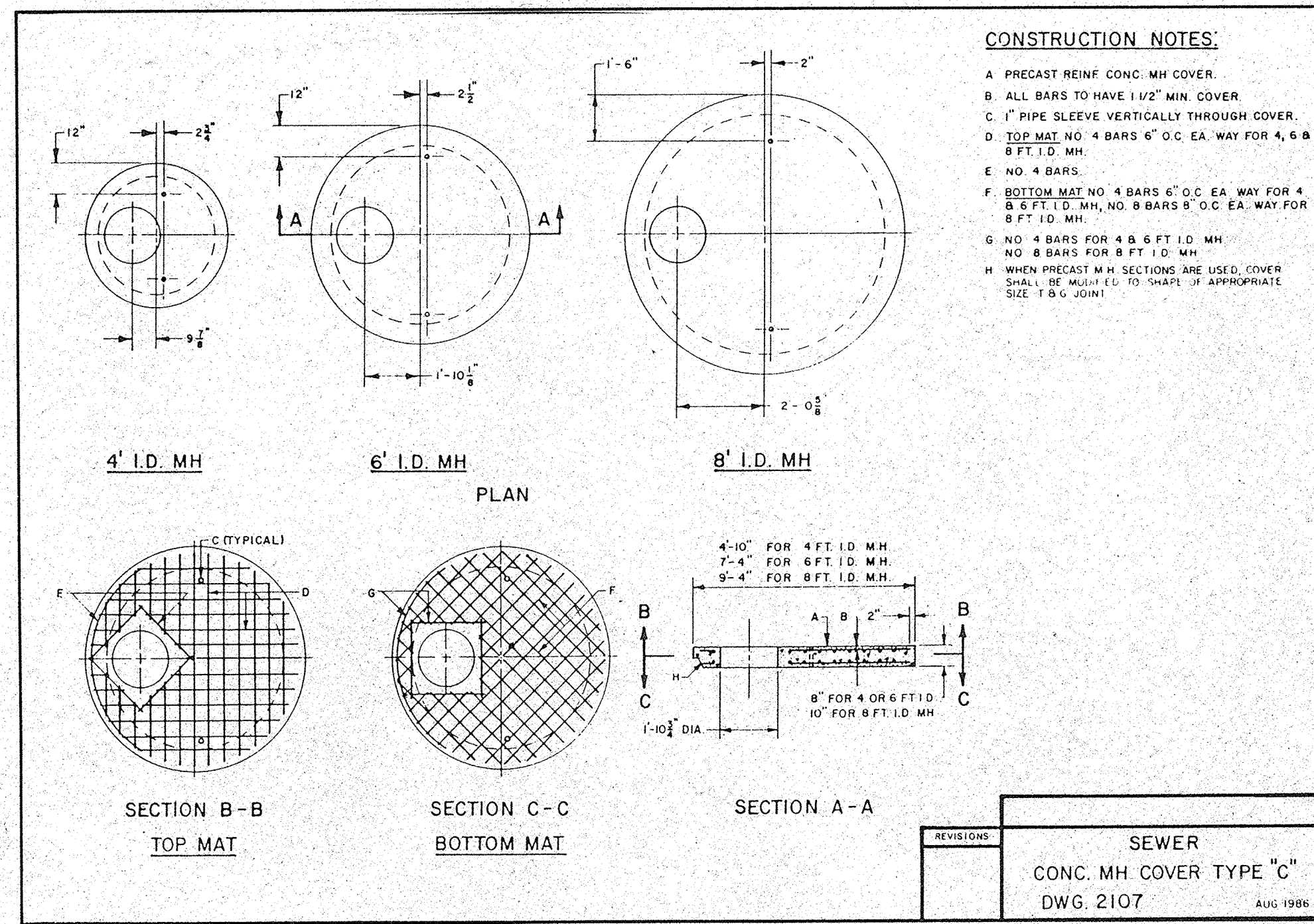
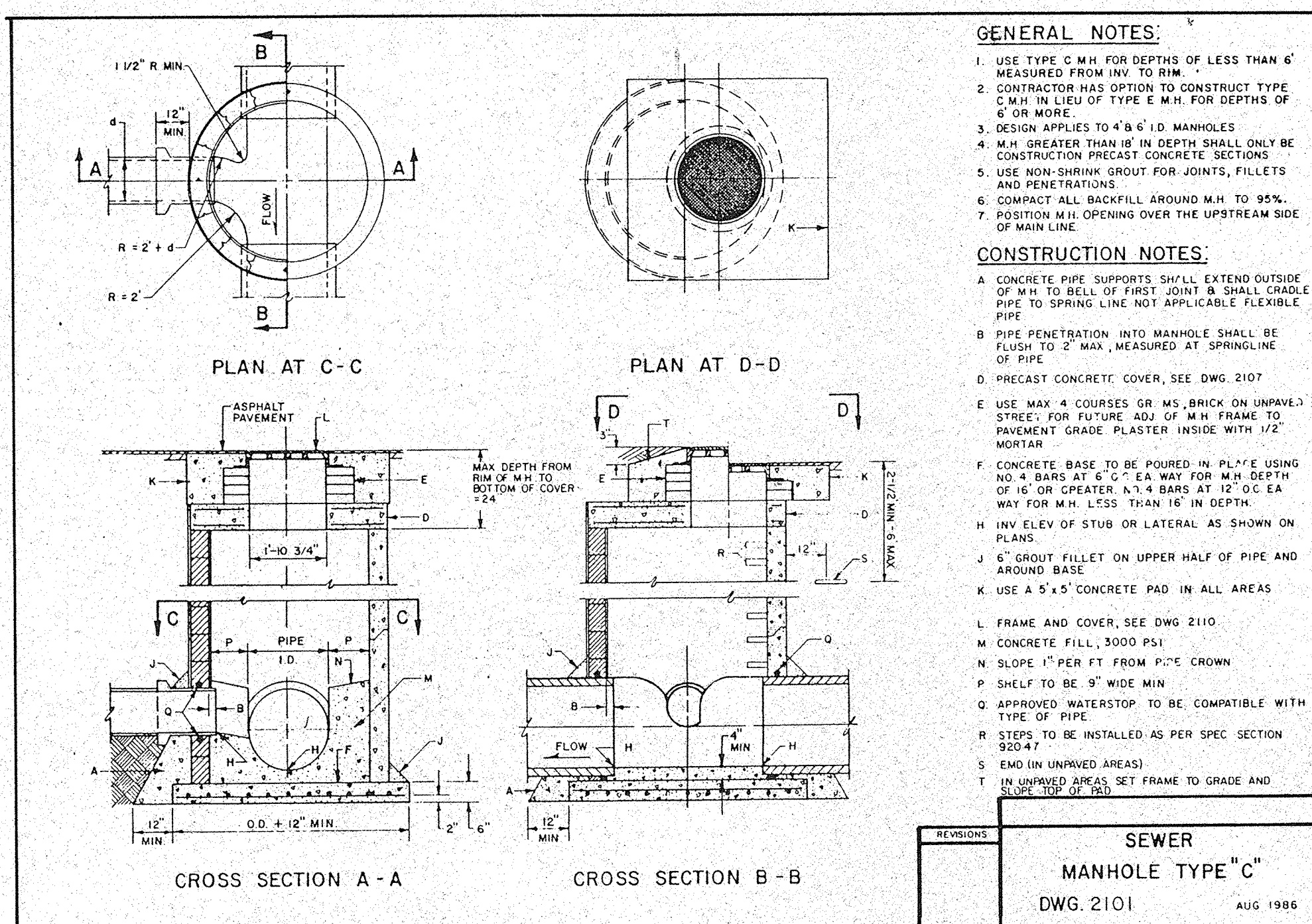
$Q = 3.3 LH^{3/2}$
Let $Q = 1$ cfs
 $H = 0.17$

THEN $L = 4.33'$

JMA JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505)345-4250

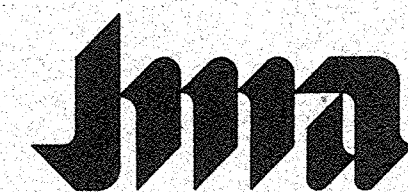
DESIGNED BY	NO.	DATE	BY	REVISIONS	JOB NO.
J.G.M.	6/91	J.G.M.	ADDRESS CITY REVIEW COMMENTS		910211
DRAWN BY	NO.	DATE	BY	REVISIONS	DATE
J.M.C.	8/91	J.G.M.	BASIN C OVERFLOW		04/91
APPROVED BY	NO.	DATE	BY	REVISIONS	SHEET
J.G.M.	8/92	J.G.M.	RECORD DRAWING		2 OF 4





RECORD DRAWING

DRAINAGE DETAILS & SECTIONS
NEW WESTSIDE ELEMENTARY SCHOOL
5100 MARNA LYNN AVENUE N.W.



JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505)345-4250

DESIGNED BY	NO.	DATE	BY	REVISIONS	JOB NO.
J.G.M.	1	8/91	JGM	ADD SECTION X-X (OVERFLOW SPILLWAY)	910211
J.M.A.	2	7/92	JGM	AS-BUILT	DATE
J.G.M.	3	8/92	JGM	REINSPECT, AS-BUILT & RECERTIFY	04/91
					SHEET 4 OF 4

