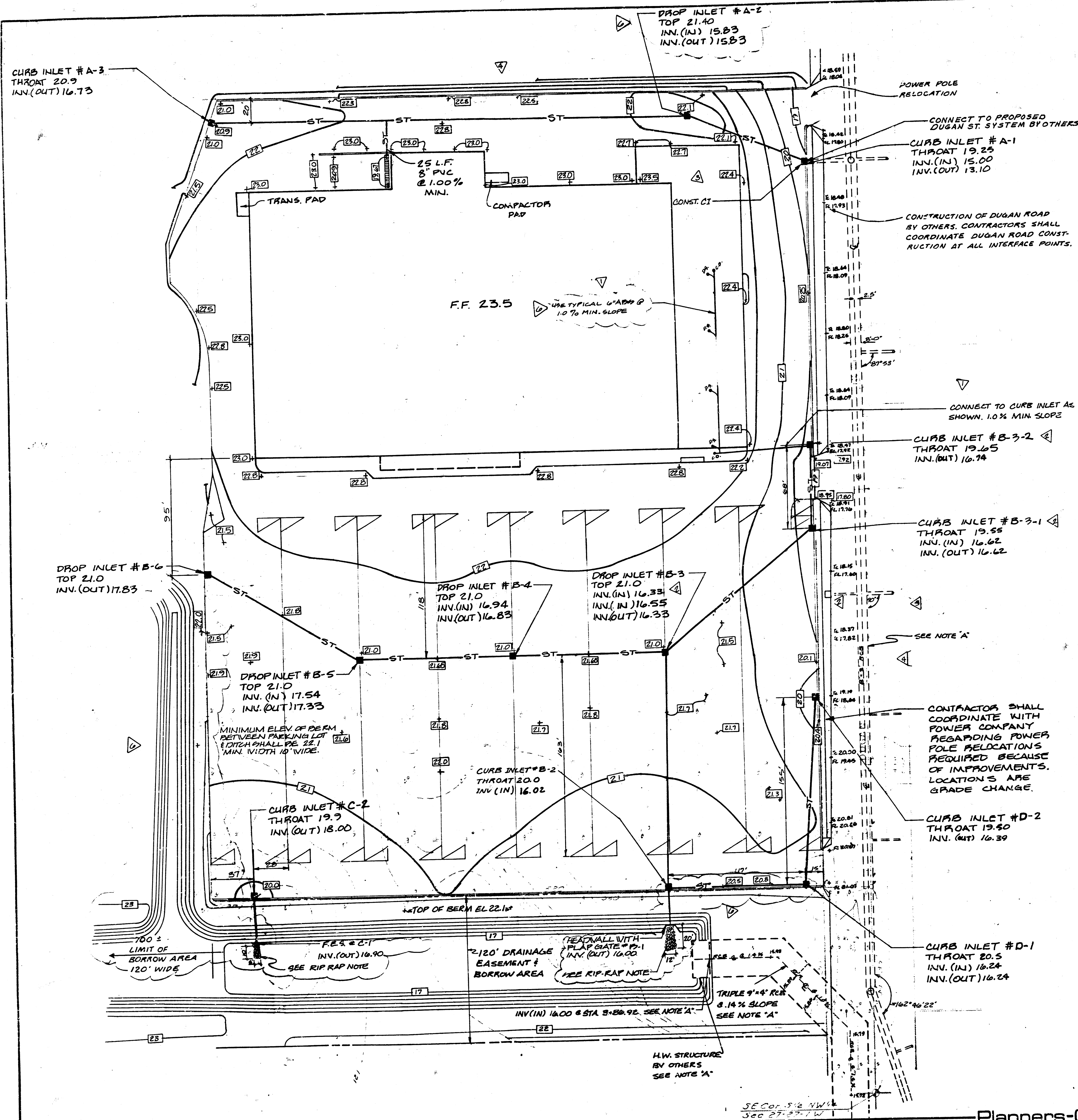




GRADING AND DRAINAGE PLAN NOTES

- Existing topography, utilities, and roadway configurations shown are based upon a topographic survey prepared by:
Baughman Company, P.A.
330 Laura Street
Wichita, Kansas 67211
(316) 262-7271
Dated: May 1986
- Contractor shall verify existing topographic data, locations of existing utilities, and other site conditions prior to construction.
- For site dimensional layout, see Drawing C-1, Staking Plan.
- For utility information, see Drawing C-4, Utility Plan.
- All construction within the Dugan Road and highway rights-of-way shall be coordinated with Dugan Road improvement plans prepared by Baughman Company.
- All disturbed areas that are not proposed to be covered by blacktop or asphalt shall be grassed as soon as grading operations are completed. Areas shall be seeded with a mix of Kentucky 31 tall fescue and adelphi bluegrass. The mix shall be 90% fescue and 10% bluegrass by volume, sown at a rate of 5 lb/1000 s.f.
- Borrow material will be required in order to bring the project site to the elevations shown. Borrow can be obtained from the 120' Ditch Easement at the South property line of the project. Limits of borrow would be Dugan Street to the east and 1300' to the west. The section and elevation of the drainage ditch in the easement shall be left as close as possible to the design of that ditch by:
Baughman Company, P.A.
330 Laura Street
Wichita, Kansas 67211
(316) 262-7271
Dated: May 1986
- Entire site shall be stripped of topsoil and organic matter prior to commencing filling operations. All fill should be placed in 8\" maximum lifts at a minimum compaction of 98% of the modified proctor test. (ASTM)

NOTE 'A'

SEE BAUGHMAN COMPANY
STORM WATER SEWER PLAN
PROJ. # 468-76-245-81589
000-000-001 FOR STORM
SANITARY SEWER SEE PROJ. #
412-76-245-81488-000-000-001
FOR DUGAN ROAD & TRIPLE
9'-4\" BOX CULVERT.

RIP RAP NOTE

USE MINI 450-6\" MINI THICKNESS OF
THE RIP RAP - 12\". USE PLASTIC FILTER
CLOTH UNDER THE RIP RAP TO CONFORM
TO ASTM D-1777 & ASTM D-1682
SEE DETAIL ON DRAWING C-5

NOTE TO CONTRACTOR

This project will be constructed under the supervision of the CITY ENGINEER and conforming to the SPECIFICATIONS of the CITY OF WICHITA. The CONTRACTOR will pay the City of Wichita for all costs of plan review, inspection and booking per contract.

APPROVED AS NOTED

By CITY ENGINEER OF WICHITA

Sanitary Sewers

Storm Sewers

Drainage Approaches

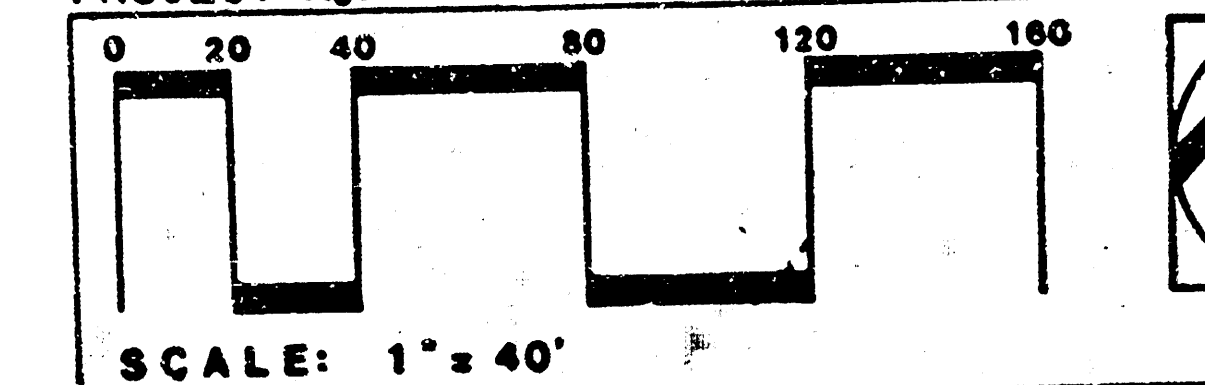
Water Mains

Paving

Other

Booked 8/8/87 MCG

PROJECT No. 468-76-245-80001-000-000-084



SCALE: 1\" = 40'

Columbia
Engineering &
Services, Inc.

5775A Glenridge Drive
Suite 202
Atlanta, Georgia 30328
404 256-9088



Project
U.S. HWY. 54 & DUGAN STREET

WICHITA, KANSAS

Developer
TERRA VENTURE INC.
OVERLAND PARK, KANSAS

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☒ Approved for construction
☐ Not approved for construction

Revisions	Date
15' PLAT SHOULDER DITCH GRADING	7-12-86
DUGAN RD GRADING	
LINE 8-3 TO 8-1	7-30-86
GARDEN SHOP DS	8-25-86
PIPE LENGTH 82 TO 8-1	9-11-86
GRADING & CT 8-3-1	
A-2 ALL ELEVATIONS	9-12-86
ROAD ELEV REVISIONS	9-30-86
GRADING BETWEEN A-1 & A-2	
ROAD CHANGES AND STORM	10-3-86
STRUCTURES THE DOWN	
NOTE A & PIPE LENGTHS	
C-2 TO C-1 & 8-2 TO 8-1	
PIPE LENGTHS & ELEVATIONS OF	
THE DRAIN & TOP OF A-2	10-19-86

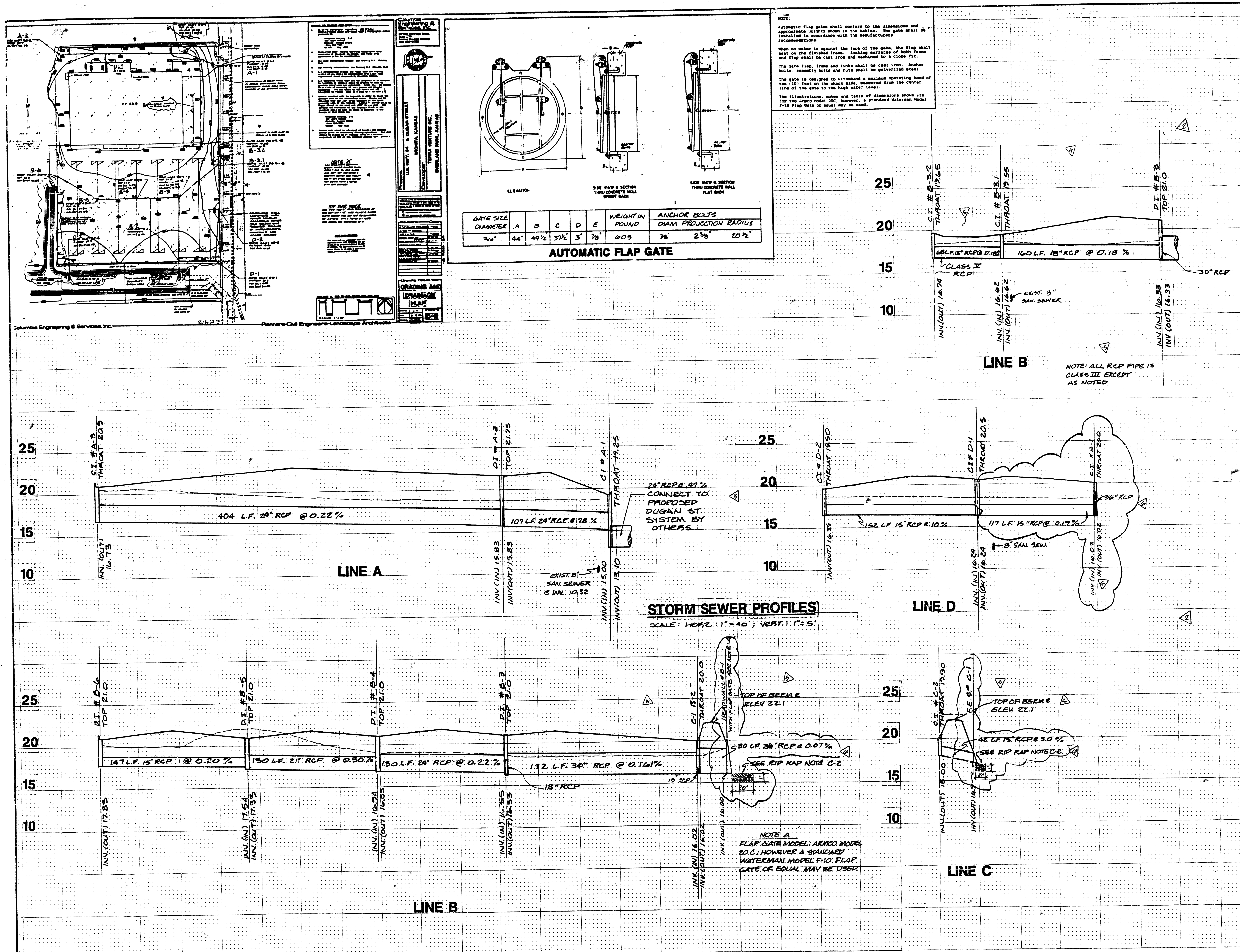
Drawing Title
GRADING AND DRAINAGE PLAN 1/3

Drawn By J. H.
Date 6-12-86
Project No. 1065

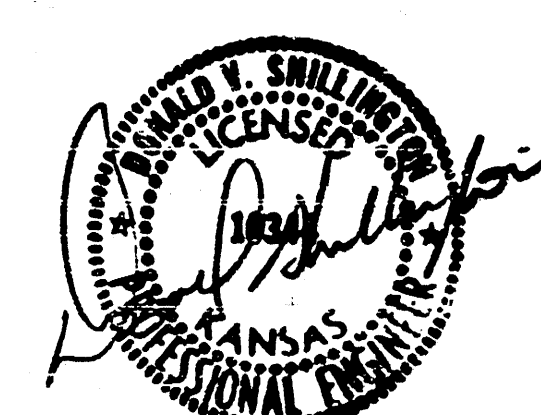
Drawing No. C-2

Columbia Engineering & Services, Inc.

Planners-Civil Engineers-Landscape Architects



Columbia Engineering & Services, Inc.
5775A Glenridge Drive,
Suite 202
Atlanta, Georgia 30328
404 258-9088



Project
U.S. HWY. 54 & DUGAN STREET
WICHITA, KANSAS

Developer
TERRA VENTURE INC.
OVERLAND PARK, KANSAS

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☒ Approved for construction
☐ Not approved for construction

Revisions	Date
LINE C 12" TO 15" TO BOX CONNECTION	7-22-86
LINE B 15" TO 18" RCP INFO.	7-30-86
PIPE MATERIAL FROM 15" TO 18" RCP	7-30-86
PIPE LENGTH 15' TO 18'	7-30-86
NEW THROAT ELEV. @ B-3-1	7-30-86
LINE A-2 TO A-1	7-30-86
SAN. SEWER REMOVAL	7-30-86
LINE B & C REVISIONS	7-30-86
LINE B & C REVISIONS	7-30-86
LINE D REV.	10-12-86
CONNECT D-1 TO B-2, 1" SAN. SEW. TO HWY. ON B-1 C-1	

Drawing Title
PROFILES

2/3

Drawn By: A.M.
Date: 6-12-86
Project No: 1065

Drawing No: C-4



Project
U.S. HWY. 54 & DUGAN STREET

WICHITA, KANSAS

Developer
TERRA VENTURE INC.
OVERLAND PARK, KANSAS

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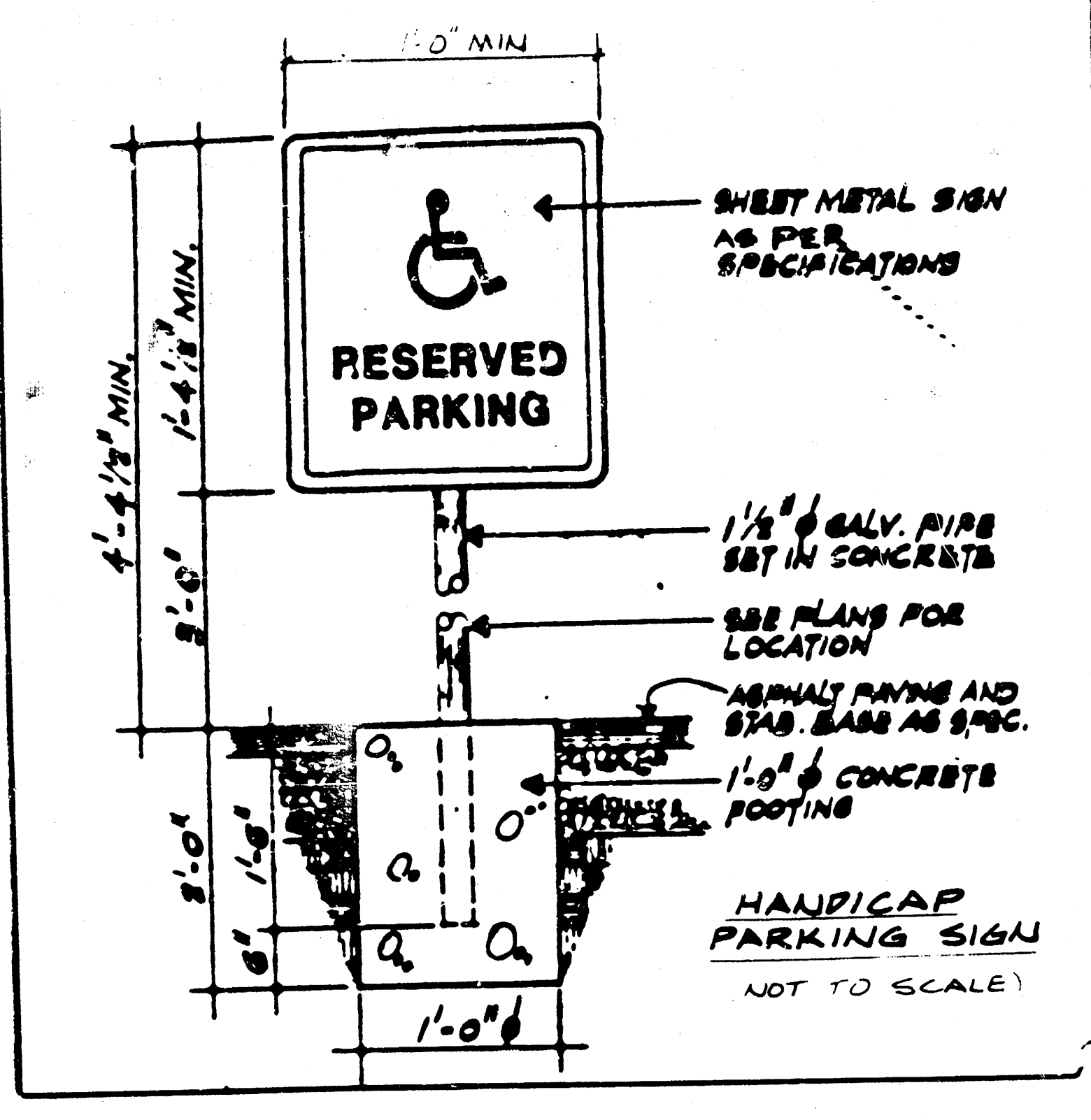
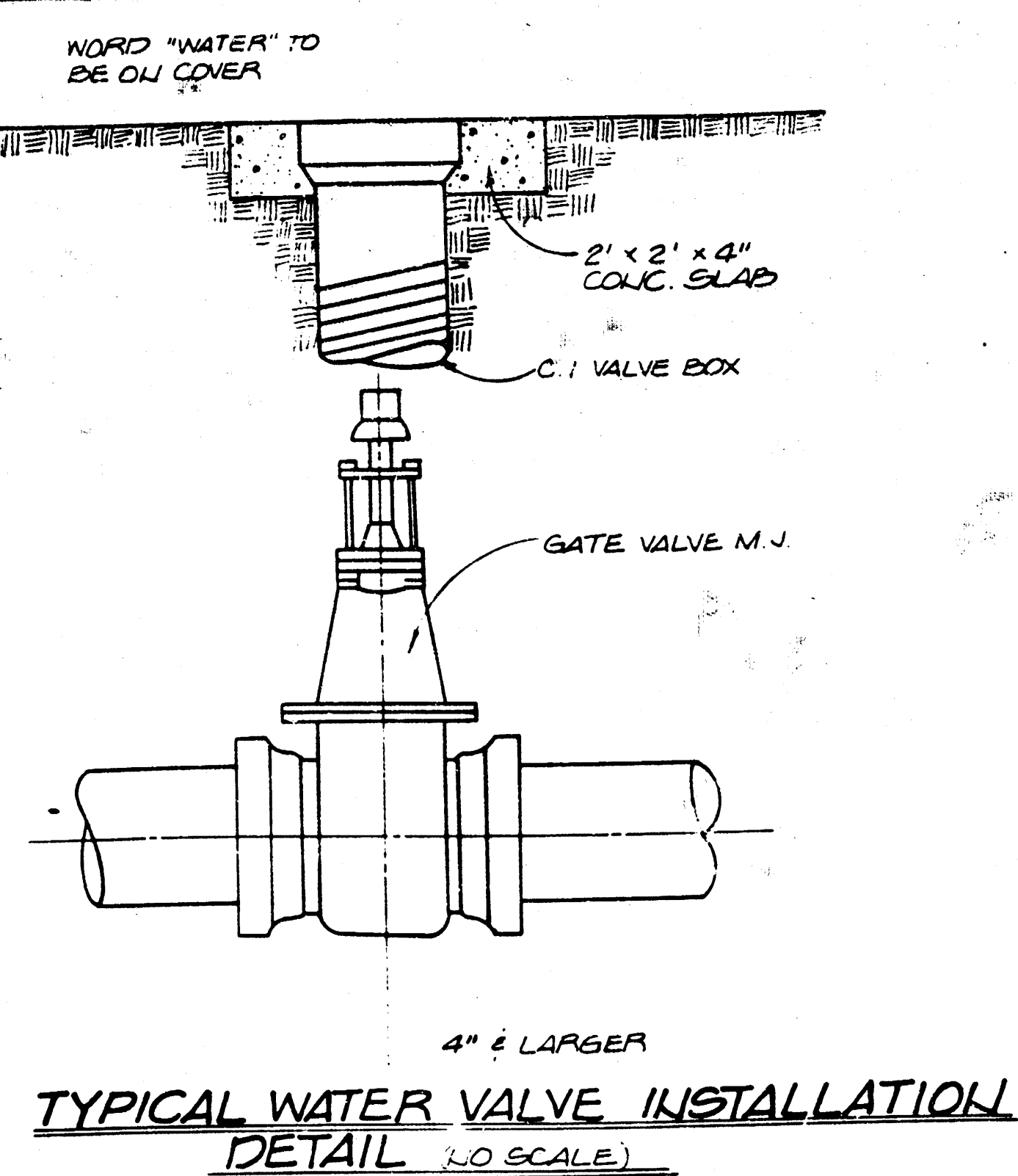
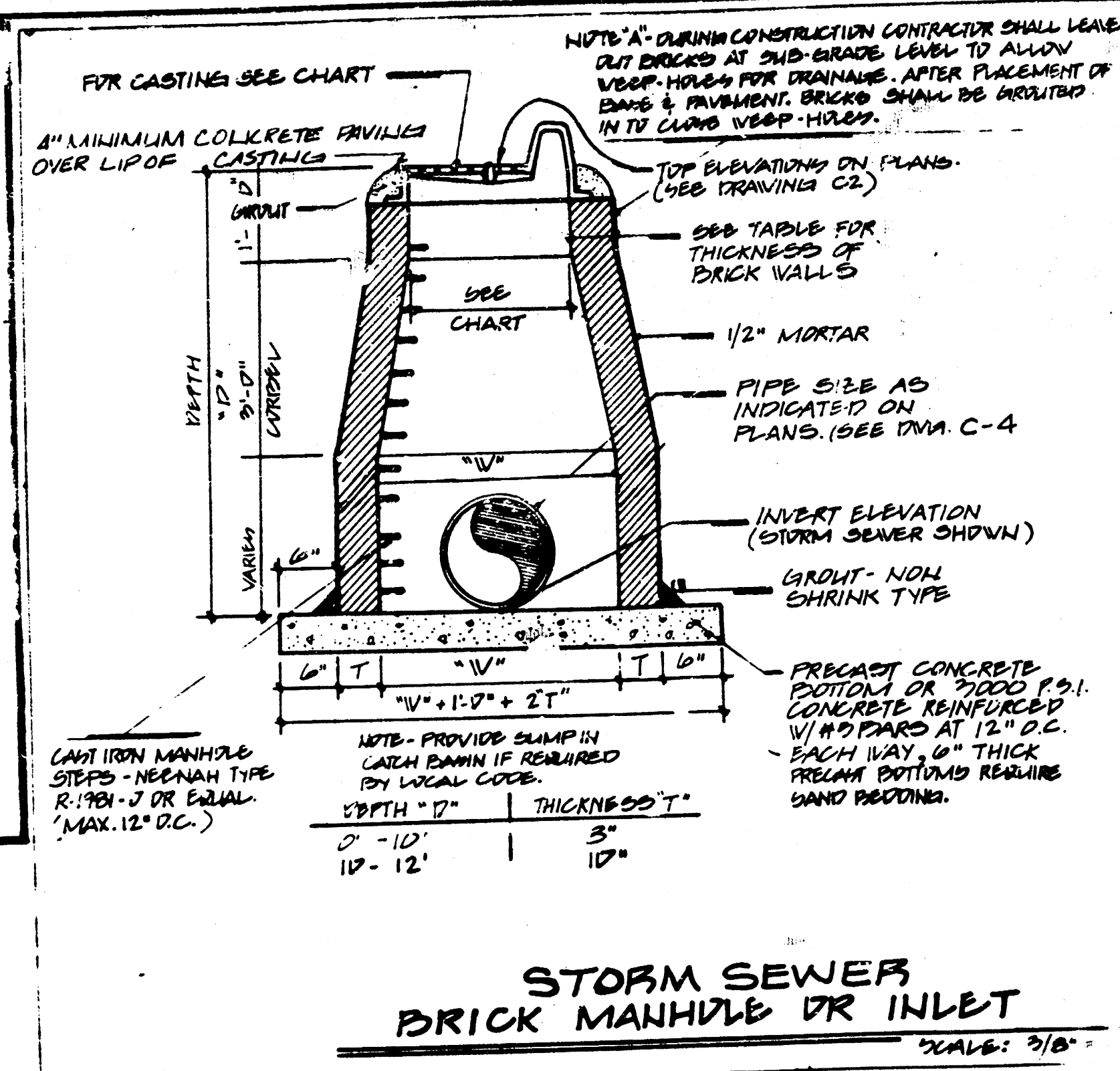
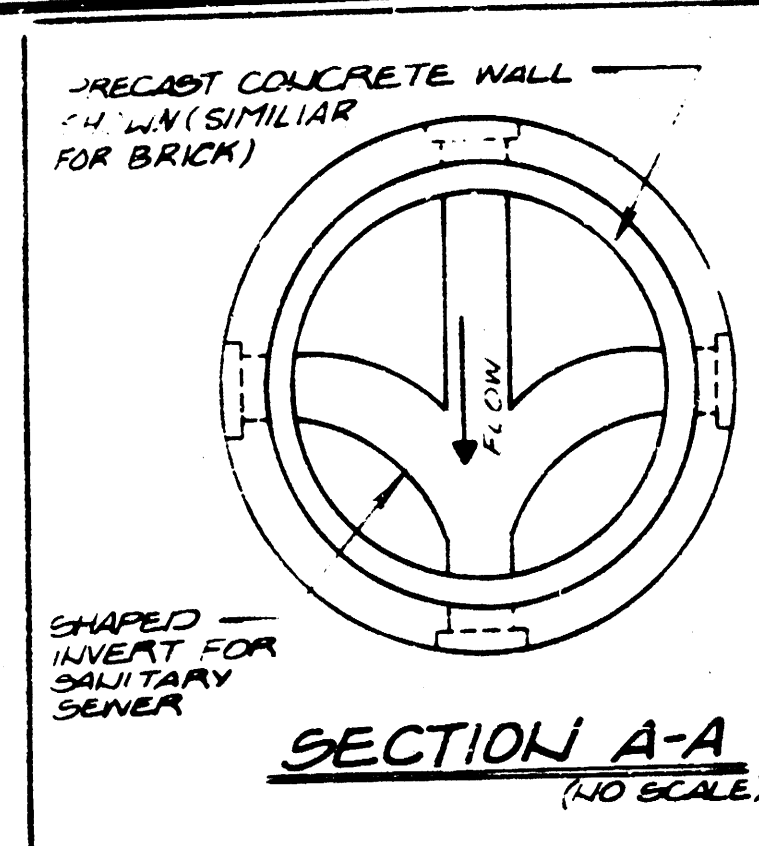
☒ Approved for construction
☐ Not approved for construction

Revisions	Date
CAST-IN-PLACE AND BRICK SANITARY MANHOLES DETAIL	7-12-80
CONC. FRS. DETAIL	7-30-84
RIP RAP	10-3-86

Drawing Title	
DETAILS	
Drawn By	J.H.
Date	10-12-86
Project No.	1065
Drawing No.	C-5

- ALL CONCRETE TO BE PUMPED PLACED, CURED, AIR ENTRAINMENT, PROTECT FINISH.
- CONCRETE TO BE CURED WITH A.S.D.H.T.D. APPROVED LIQUID MEMBRANE SEAL.
- MINIMUM VERTICAL GRADE 0.01%.
- MAXIMUM VERTICAL GRADE 0.03%.
- PROVIDE REINFORCING AT ALL EXPANSION JOINTS, COLD JOINTS AND WHERE CURBS & GUTTERS WILL NOT BE POURED MONOLITHIC BY EITHER OF THE FOLLOWING METHODS:
 - 1" DIA. SMOOTH DOVEL BARS(3) BY 1'-0" LONG IN EXPANSION JOINTS.
 - 1" DIA. SMOOTH DOVEL BARS(3) BY 1'-0" LONG, COLD JOINT END OF DOVEL W/ BITUMINOUS COATING.
- A COLD JOINT WILL BE DEFINED AS A 24" MINIMUM OR LONGER PAUSE IN PLACING CONCRETE BETWEEN POURS.

CURB & GUTTER SECTION
NO SCALE



DIMENSION CHART FOR BRICK OR PRECAST MANHOLE OR INLET

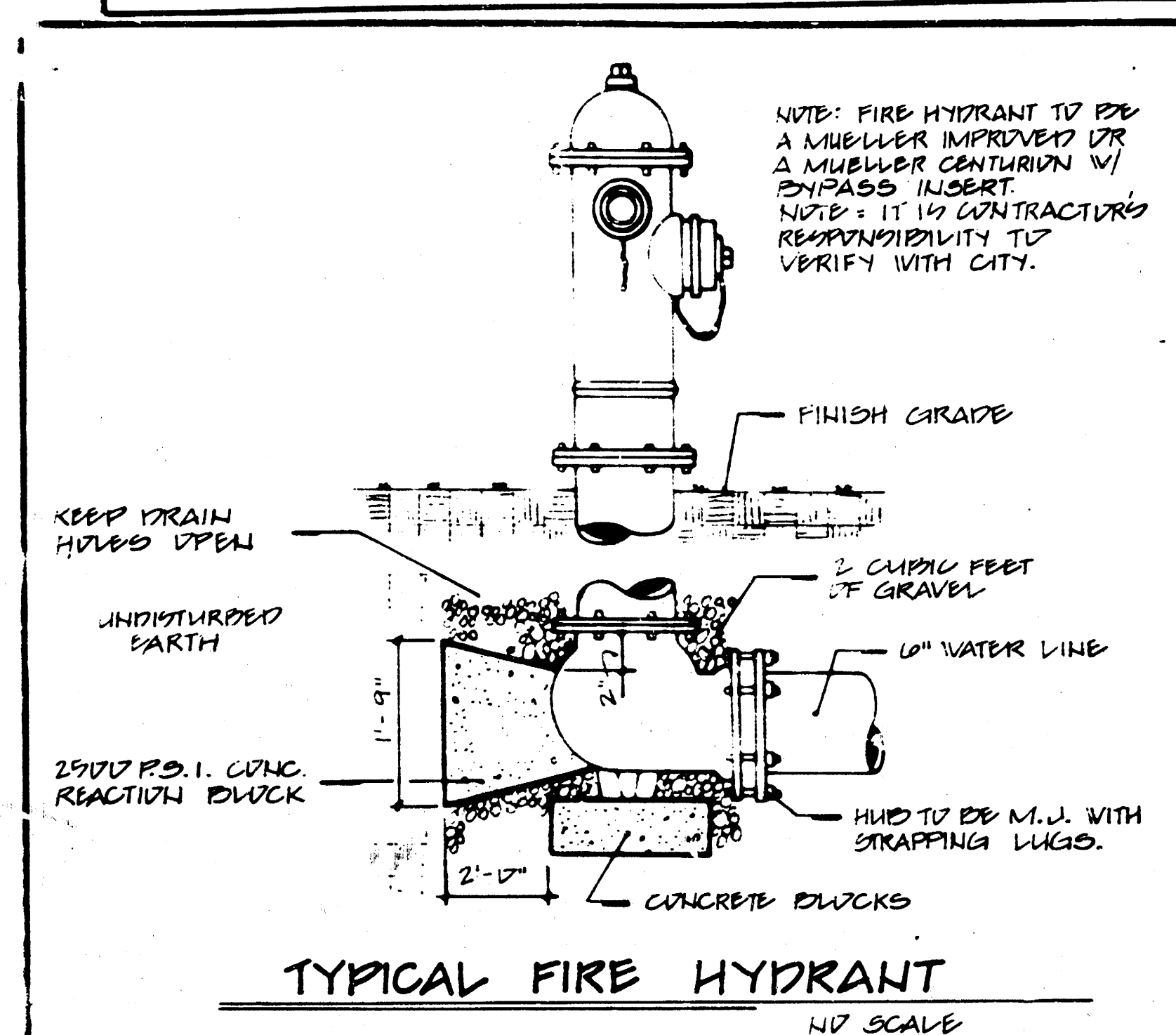
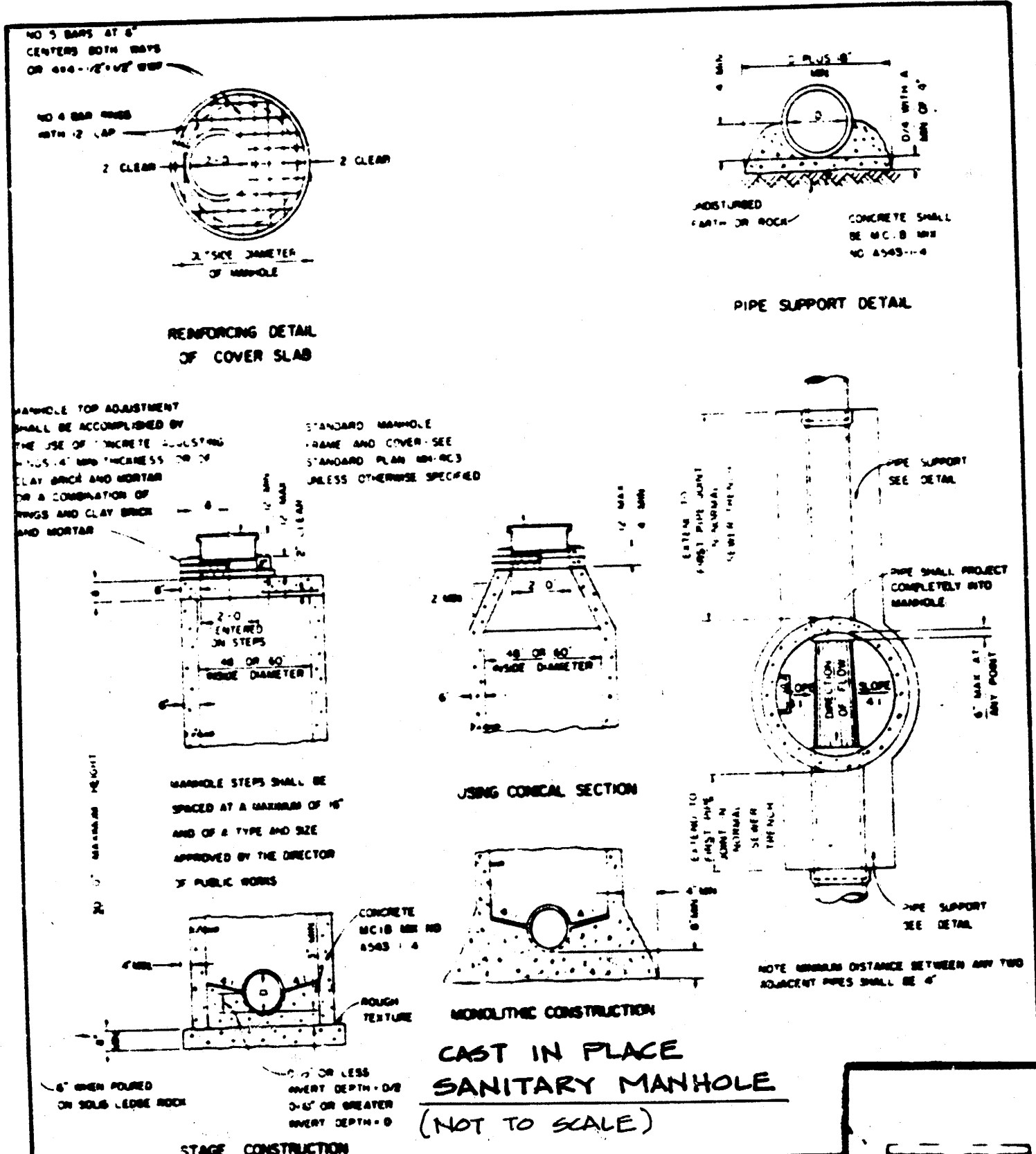
Casting	Inside Top Dimension	Application
R-1725	27" Circular	Sanitary Manhole
R-1730	27" Circular	Storm Manhole
R-3015	25" x 24"	Curb Inlet
R-3339 B	26" x 26"	Drop Inlet
R-3457 B	36 3/8" x 48 5/8"	Double Grate Drop Inlet
R-4343	21" x 24"	Drop Inlet (Ditch or Non-pavement)

Depth "H"	Box Dimensions "W"
0' to 4'	Same as inside top dimensions for grate
4' and up (excluding double grate drop inlet)	4' Min. up to 36" dia. pipe Dia. of largest pipe plus 1'-0" for pipes larger than 36" x
Greater than 10' and double grate drop inlet	5' Min. up to 48" dia. pipe Dia. of largest pipe plus 1'-0" for pipes larger than 48" x

*For pipe arches use span dimension instead of diameter.

**Use round to rectangular adapter section when using precast manhole sections.

***Heeneh Foundry (or equal)



AREA OF CONCRETE
BUCKLING AT FITTING
1" x 12" x 12" OR 2" x 12" x 12"
D = 12.56 SQ. FT.

APPROXIMATE BUCKLING REQUIRED
BASED ON 100 PSI. AND 1000 LBS.
PER SQUARE FOOT SOIL BEARING.
AREAS SHALL BE INCREASED OR DE-
CREASED FOR DIFFERENT CHARACTERISTICS

	11 1/2" x 22 1/2"			12" x 24"			14" x 28"			16" x 32"			18" x 36"			20" x 40"			22" x 44"			24" x 48"			26" x 52"			28" x 56"			30" x 60"		
PIPE	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)	END AREA SQ. FT.	W(FE)	C(U)
1"	1.11	1.0	0.03	2.17	1.0	0.04	3.99	1.9	0.12	2.02	1.9	0.09																					
6"	1.96	1.0	0.04	3.89	1.0	0.08	7.11	1.9	0.21	9.03	1.9	0.15																					