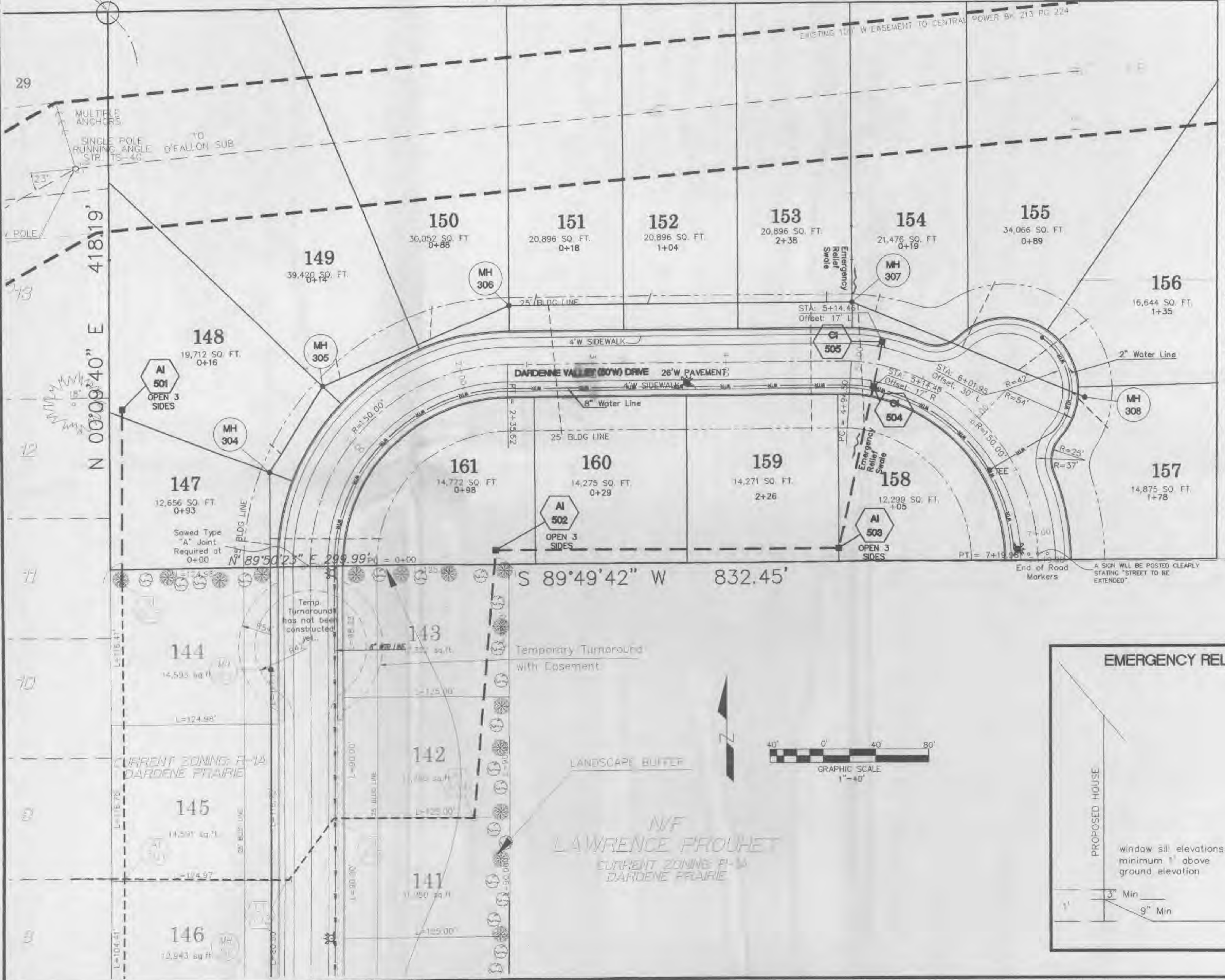


N 89°52'47" E 833.35'



THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE OR NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE AND PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

04/02/01
06/22/01
09/25/01
10/11/01

Revised As Per GBA Comments - 3-23-01
Revised As Per County Comments - 6-18-01
Revised As Per County & GBA Comments
Revised As Per GBA Comments

FLAT PLAN FOR
DARDENE LANDING-PHASE III
DEVELOPED BY: TMH, LLC.

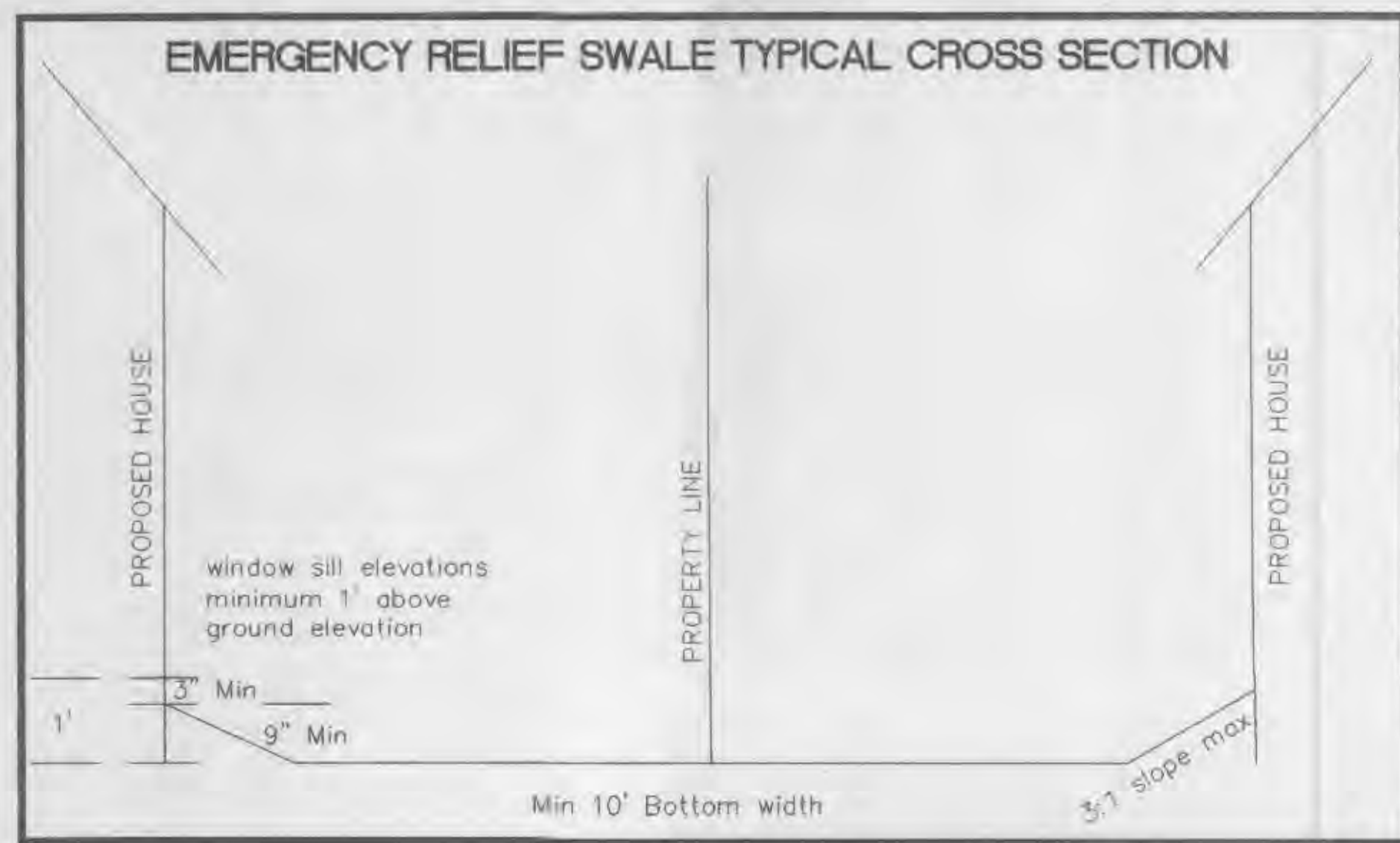
ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: 636 947-0607 FAX: 636 947-2448

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Handwritten signature
10-15-01

ORDER NO.
990503-01
DATE
03/14/01

3



N 89°52'47" E 833.35'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE OR NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE AND PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

Revised As Per GBA Comments - 5-23-01
 Revised As Per County Comments - 6-18-01
 Revised As Per County & GBA Comments
 Revised As Per GBA Comments

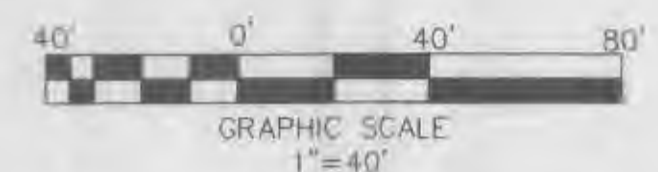
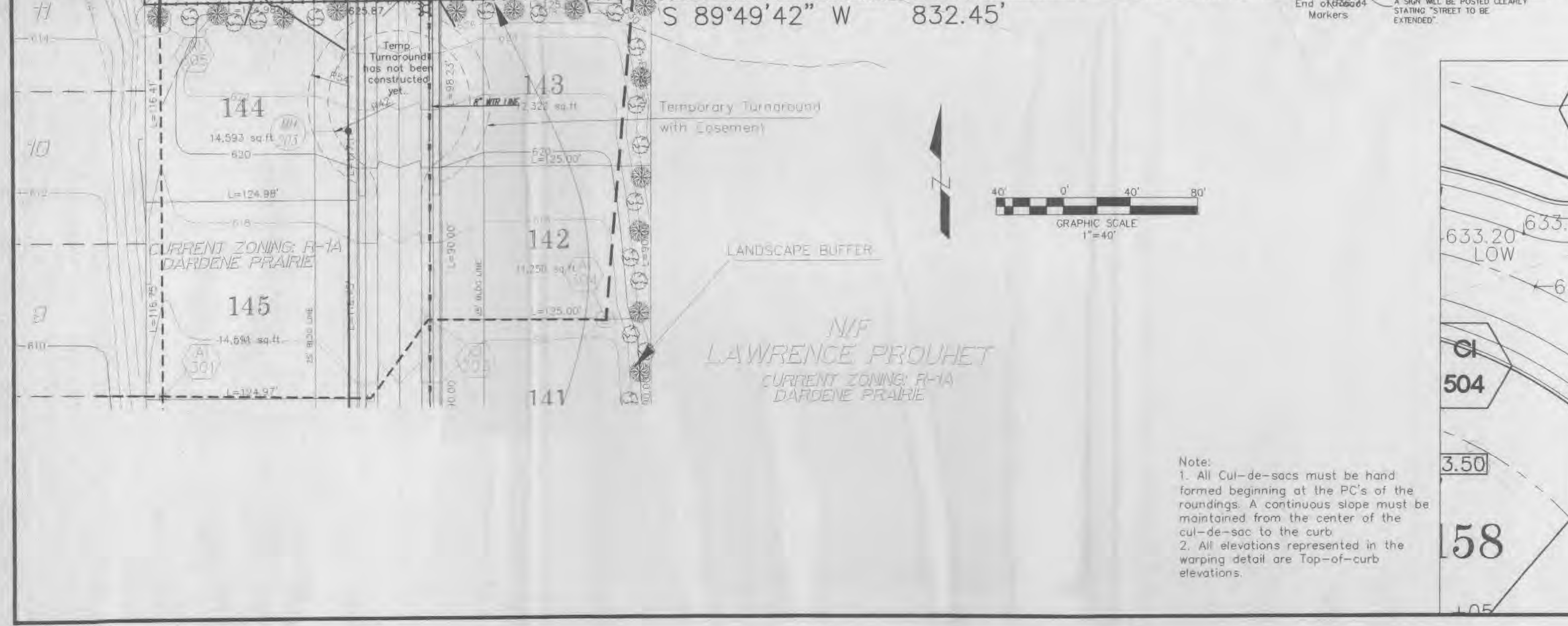
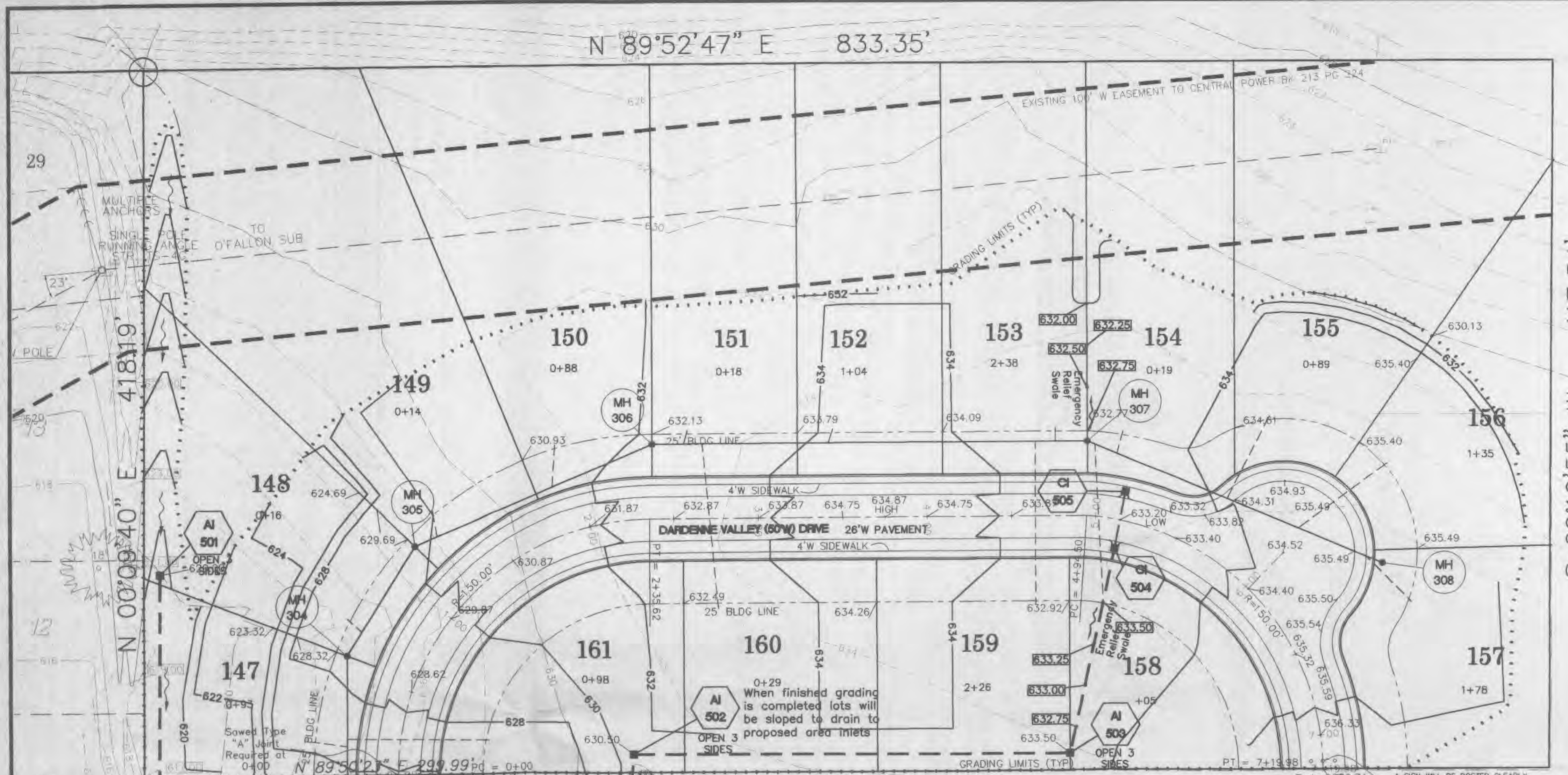
04/02/01
 06/22/01
 09/25/01
 10/11/01

GRADING PLAN FOR
DARDENNE LANDING-PHASE III
 DEVELOPED BY: TMH, LLC.

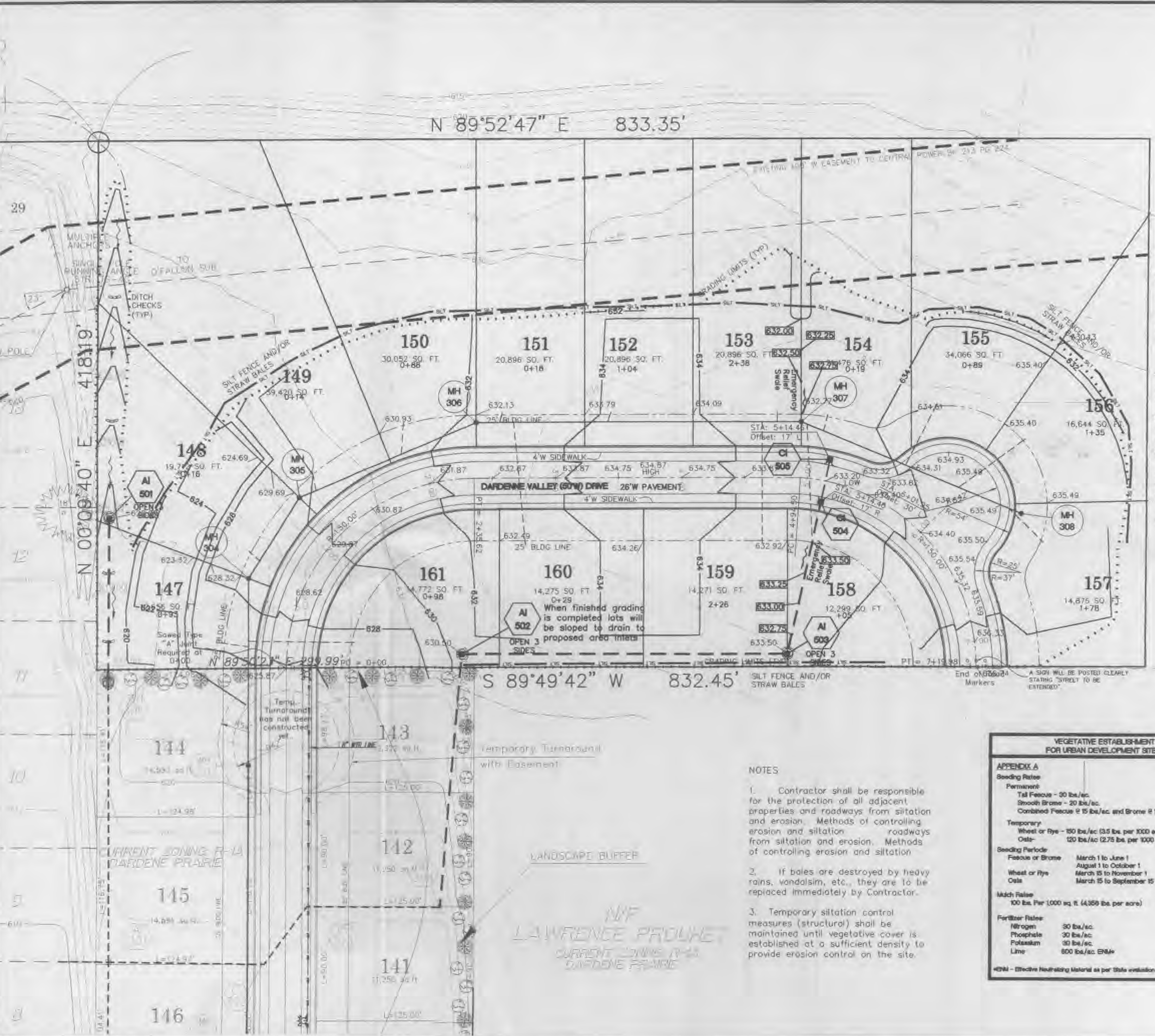
ST. CHARLES ENGINEERING & SURVEYING, INC.
 801 S. FIFTH STREET, SUITE 202
 ST. CHARLES, MO 63301
 TEL: (636) 947-0607 FAX: (636) 947-2448

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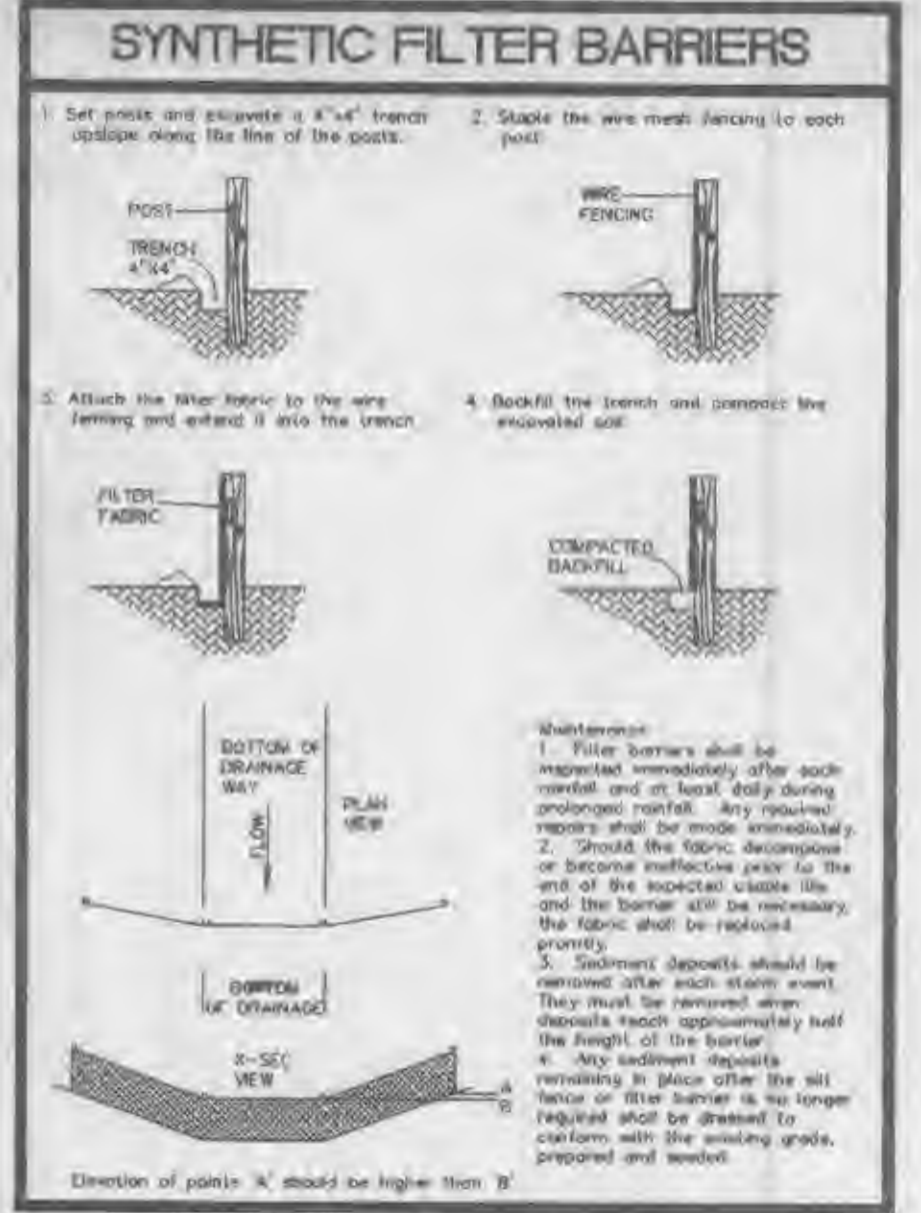
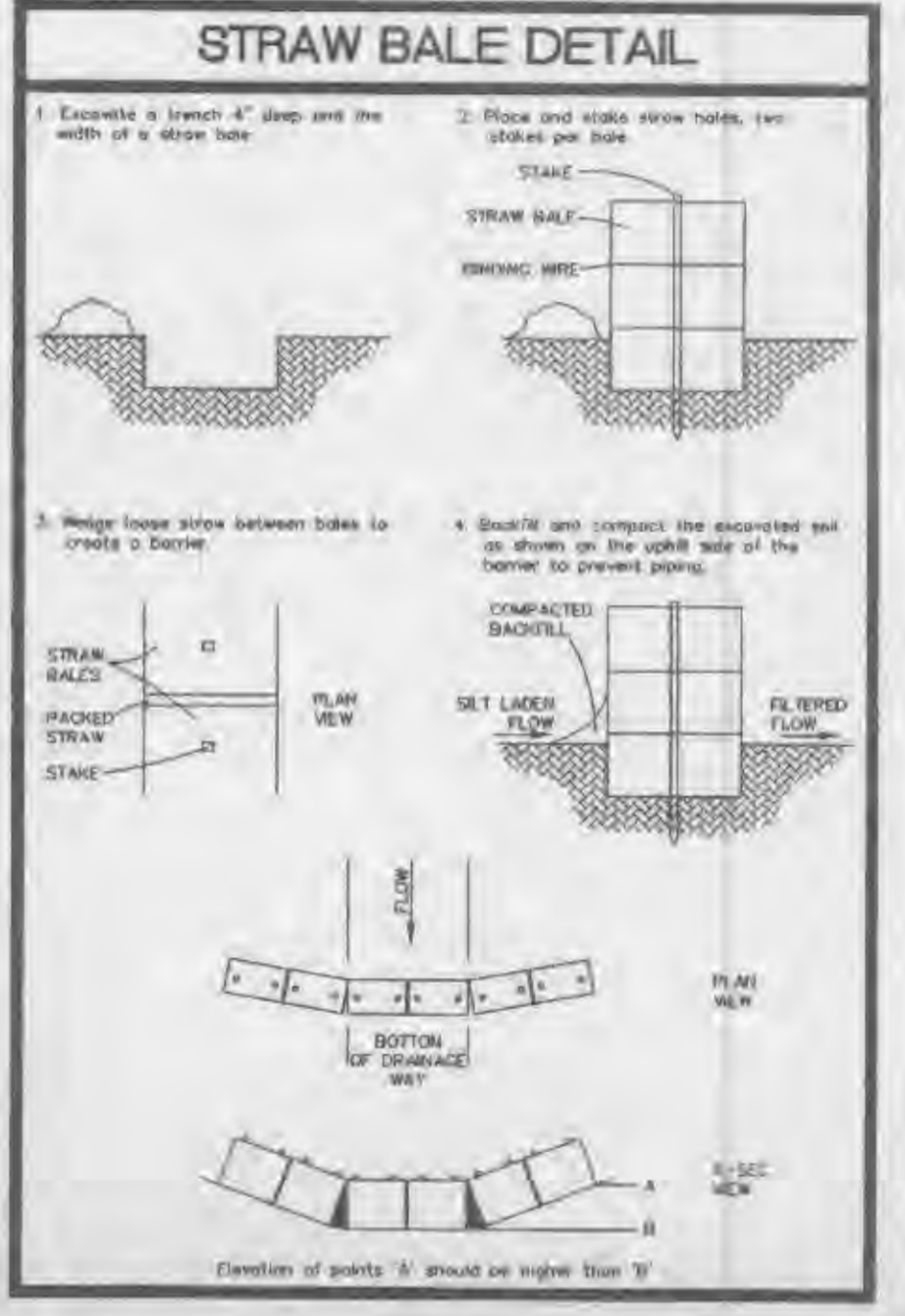
ORDER NO.
 990503-01
 DATE
 03/14/01
 4



Note:
 1. All Cul-de-sacs must be hand formed beginning at the PC's of the roundings. A continuous slope must be maintained from the center of the cul-de-sac to the curb.
 2. All elevations represented in the warping detail are Top-of-curb elevations.



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VEGETATIVE ESTABLISHMENT FOR URBAN DEVELOPMENT SITES

APPENDIX A

Seeding Rates

Permanent

- Tall Fescue - 30 lbs./ac.
- Smooth Brome - 20 lbs./ac.
- Combined Fescue & Brome - 15 lbs./ac. and Brome @ 10 lbs./ac.

Temporary

- Wheat or Rye - 150 lbs./ac. (3.5 lbs. per 1000 square foot)
- Oats - 120 lbs./ac. (2.75 lbs. per 1000 square foot)

Seeding Periods

- Fescue or Brome: March 1 to June 1, August 1 to October 1
- Wheat or Rye: March 15 to November 1
- Oats: March 15 to September 15

Match Rate

100 lbs. Per 1000 sq. ft. (4,356 lbs. per acre)

Fertilizer Rates

- Nitrogen: 30 lbs./ac.
- Phosphate: 30 lbs./ac.
- Potassium: 30 lbs./ac.
- Lime: 800 lbs./ac. ENM

ENM - Effective Neutralizing Material as per State evaluation of quarried rock.

- ### NOTES
- Contractor shall be responsible for the protection of all adjacent properties and roadways from siltation and erosion. Methods of controlling erosion and siltation roadways from siltation and erosion. Methods of controlling erosion and siltation.
 - If bales are destroyed by heavy rains, vandalism, etc., they are to be replaced immediately by Contractor.
 - Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.

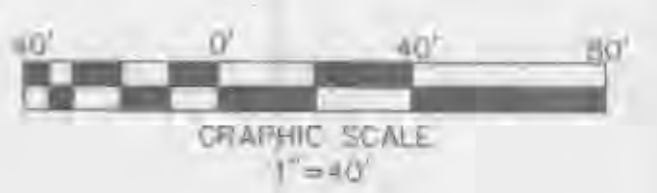
Revised As Per O&M Comments - 3-25-01
09/25/01

EROSION CONTROL FOR
DARDENE LANDING-PHASE III
DEVELOPED BY: TMH, LLC.

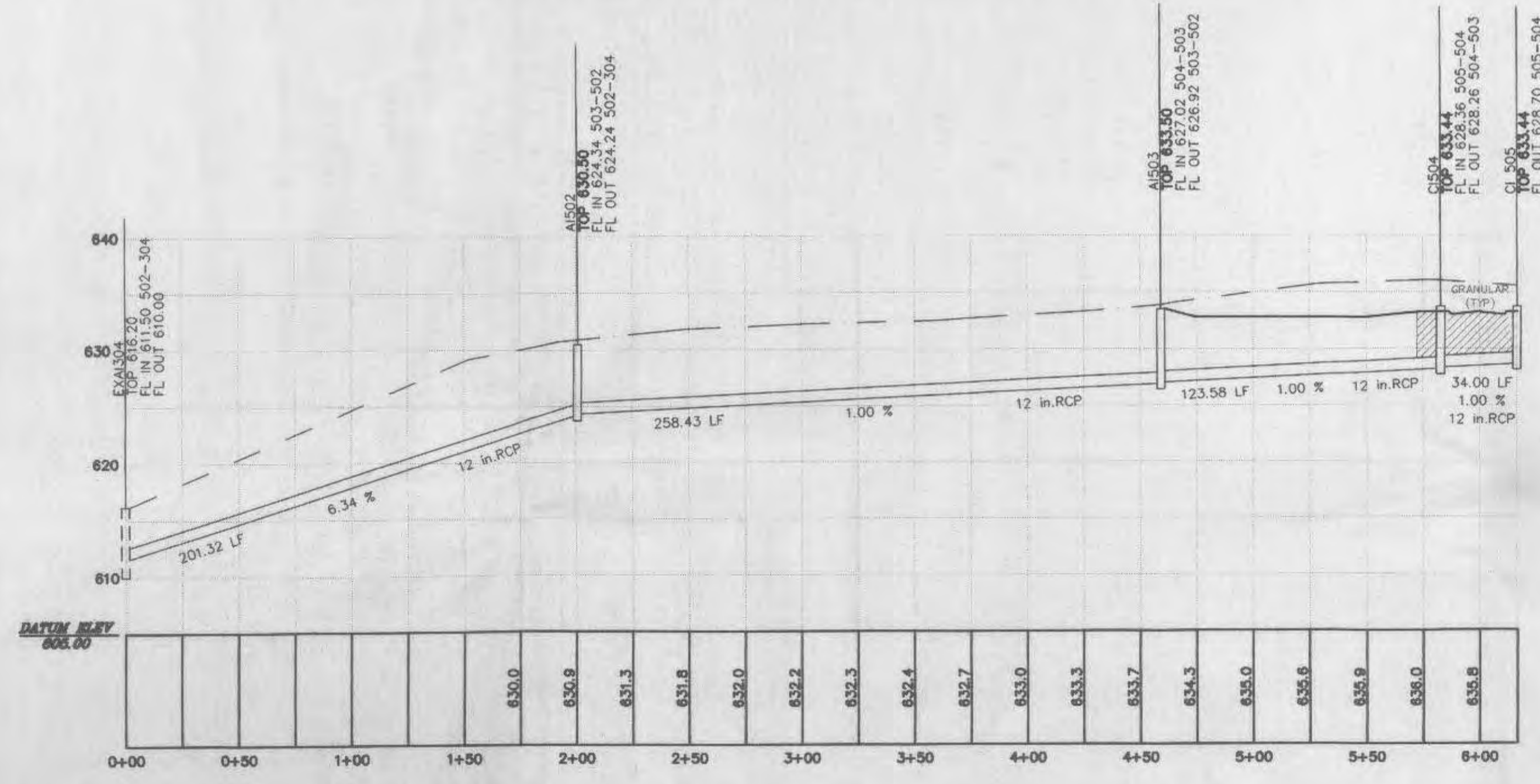
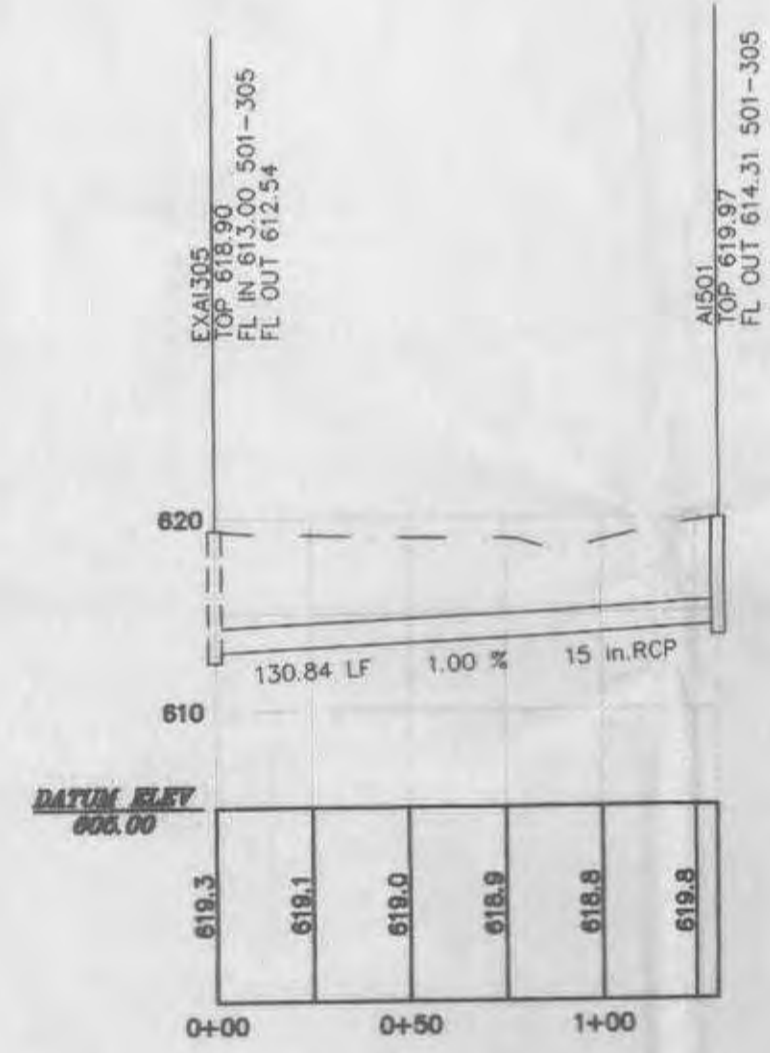
ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: (636) 947-0607 FAX: (636) 947-2448



ORDER NO. 990503-01
DATE 03/14/01
5



THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE OR NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE AND PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.



1" = 10' VERT.
1" = 50' HORIZ.
SCALE:

04/02/01 Revised As Per CBA Comments - 3-23-01
06/22/01 Revised As Per County Comments - 4-18-01

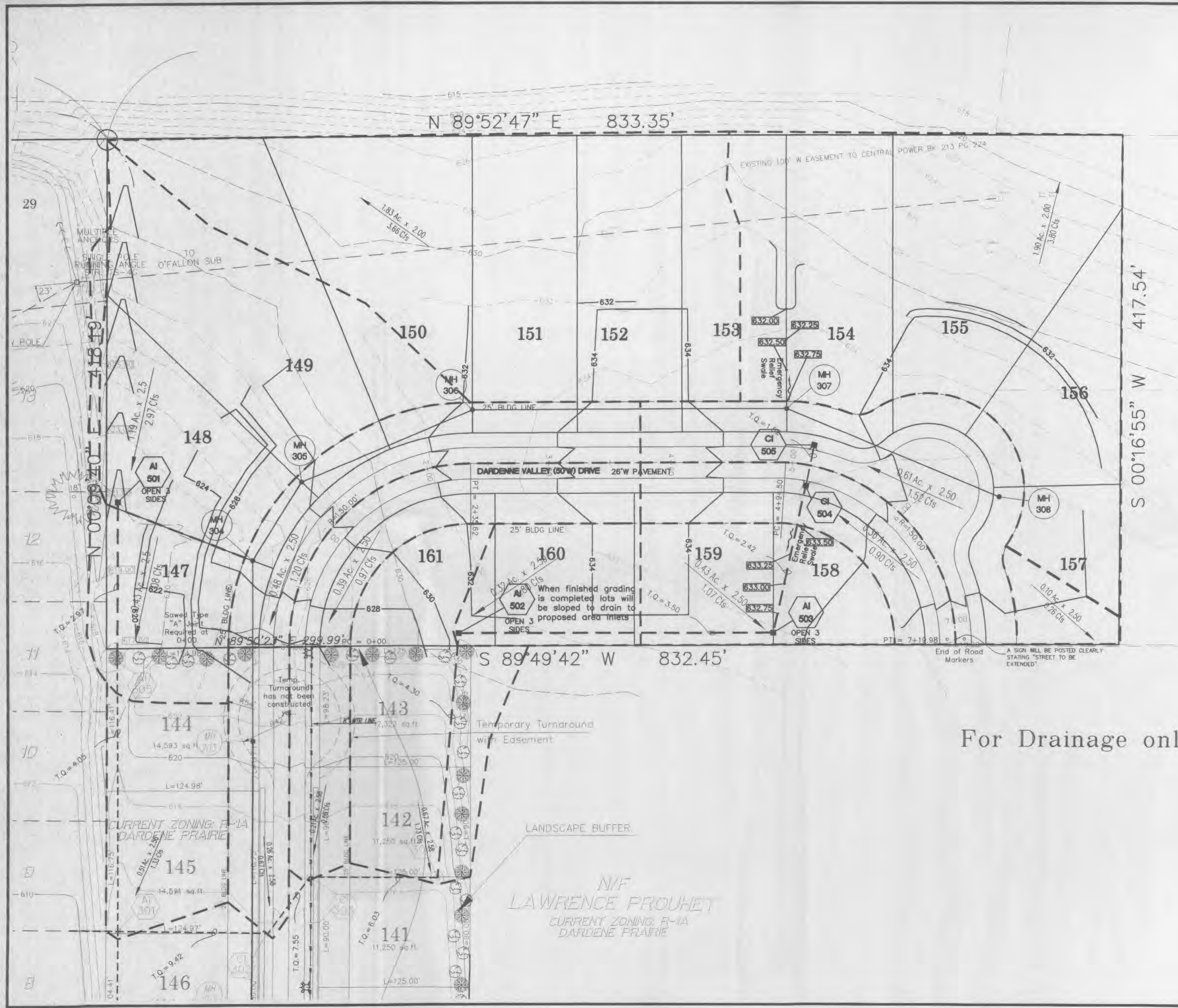
STORM PROFILE FOR
DARDENNE LANDING-PHASE III
DEVELOPED BY: TMH, L.L.C.

ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: (636) 947-0607 FAX: (636) 947-2448

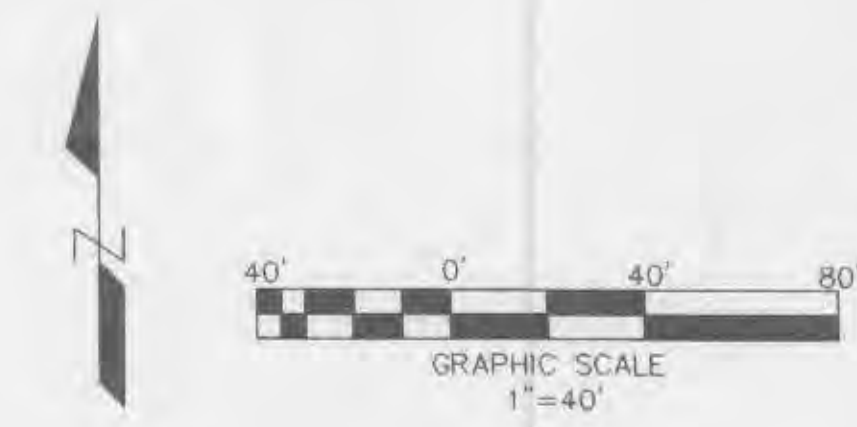


ORDER NO. 990503-01
DATE 08/14/01
7

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE OR NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE AND PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.



For Drainage only - Not for Construction



Revised As Per GSA Comments - 3-23-01
 Revised As Per County Comments - 6-18-01
 Revised As Per County & GSA Comments

04/02/01
 06/22/01
 09/25/01

POST DEVELOPED DRAINAGE FOR
DARDENE LANDING-PHASE III
 DEVELOPED BY: TMH, LLC.

ST. CHARLES ENGINEERING & SURVEYING, INC.
 801 S. FIFTH STREET, SUITE 202
 ST. CHARLES, MO 63301
 TEL: (636) 947-0607 FAX: (636) 947-2448

S E S

STATE OF MISSOURI
 MICHAEL DEWELL
 LICENSE NUMBER
 E-22260

ORDER NO.
 990503-01
 DATE
 08/14/01
8

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE OR NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE AND PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.



SIGN IS TO BE 30" X 30", WHITE FACED WITH 3" BLOCK LETTERS, SAYING "STREET TO BE EXTENDED IN THE FUTURE"

Revised As Per O&A Comments - 3-23-01

04/02/01

PRE DEVELOPED DRAINAGE FOR
DARDENE LANDING-PHASE III
 DEVELOPED BY: TMH, L.L.C.

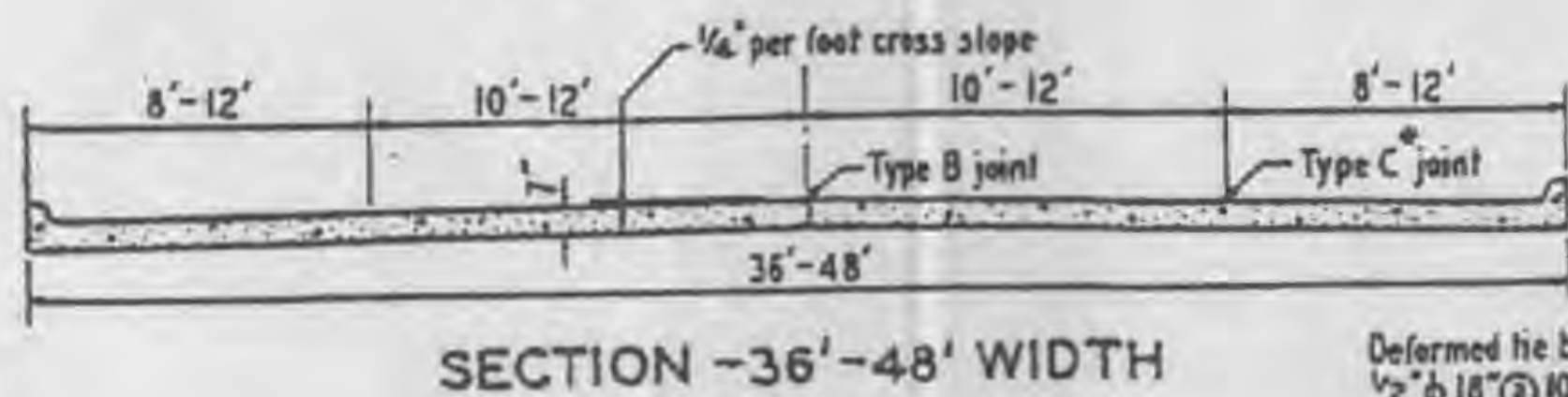
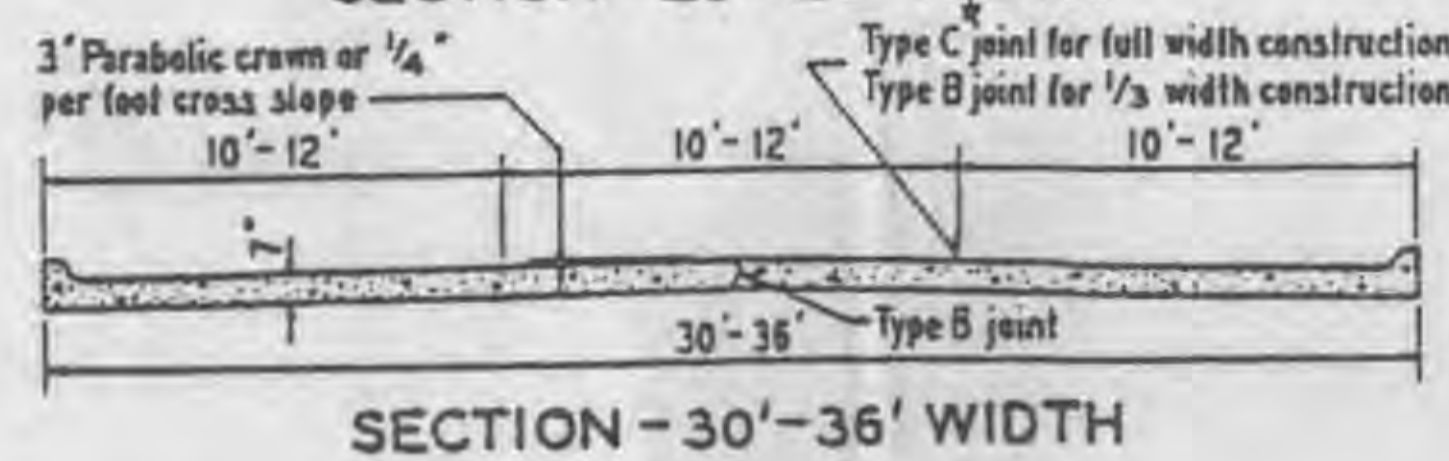
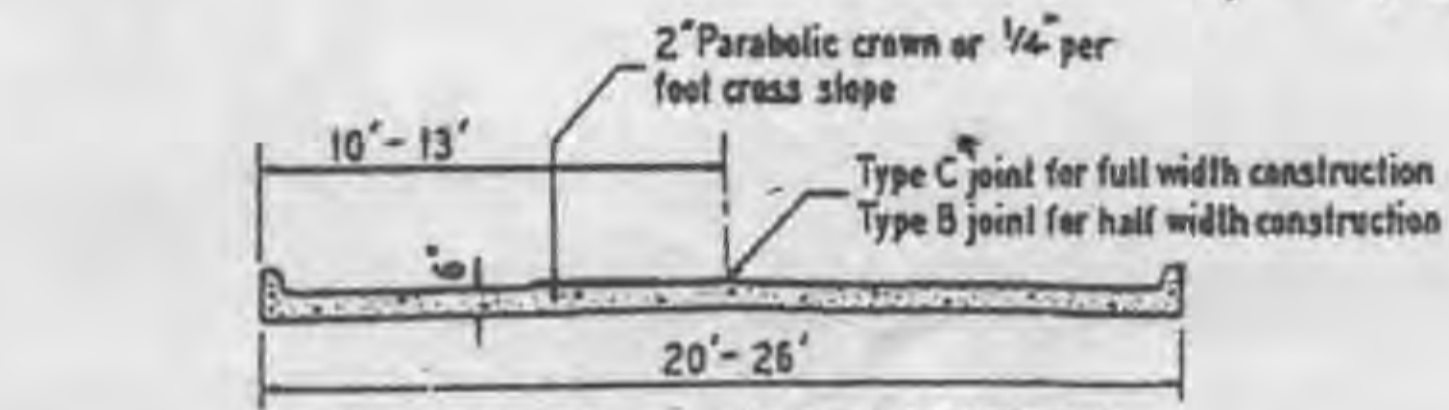
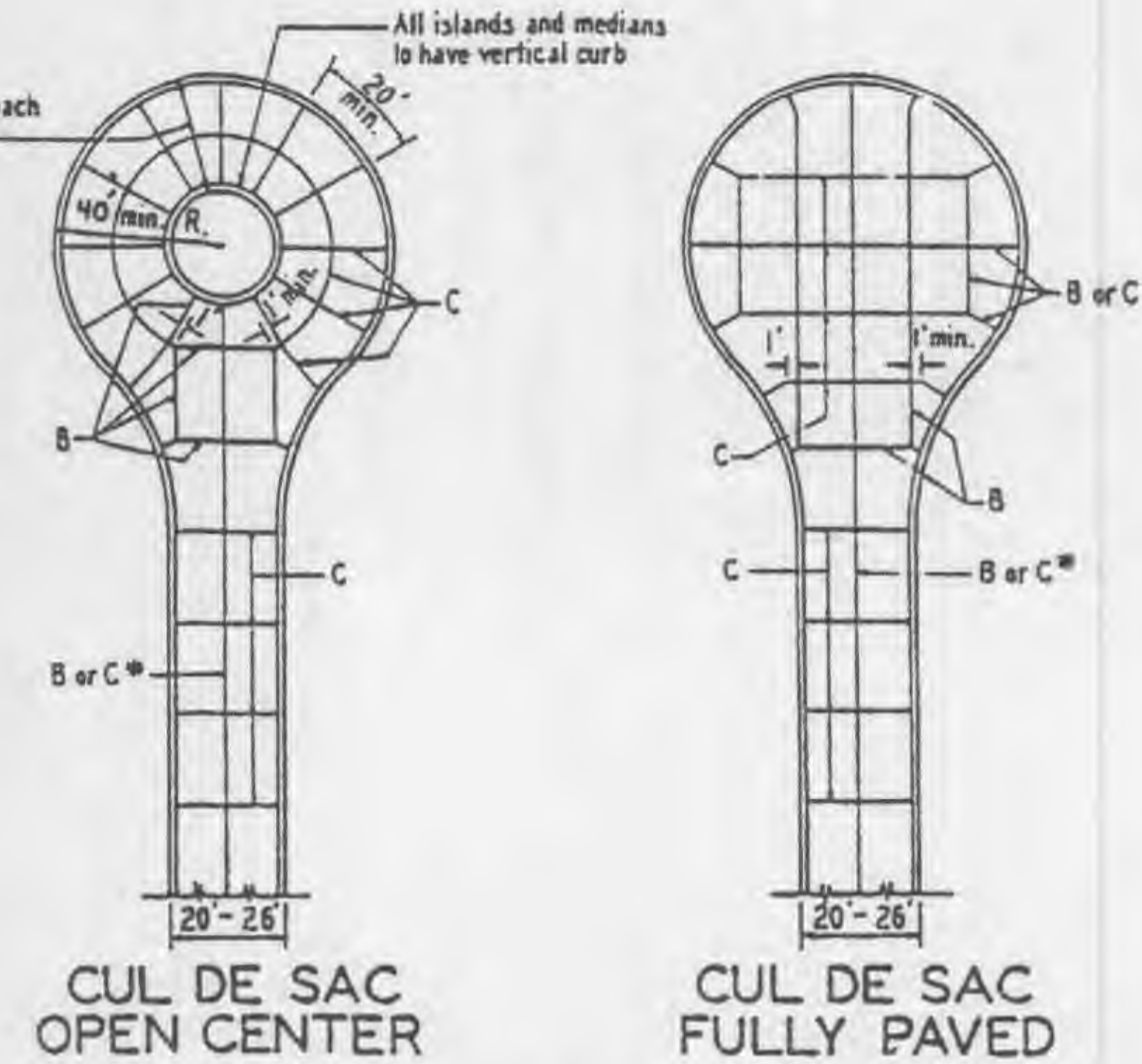
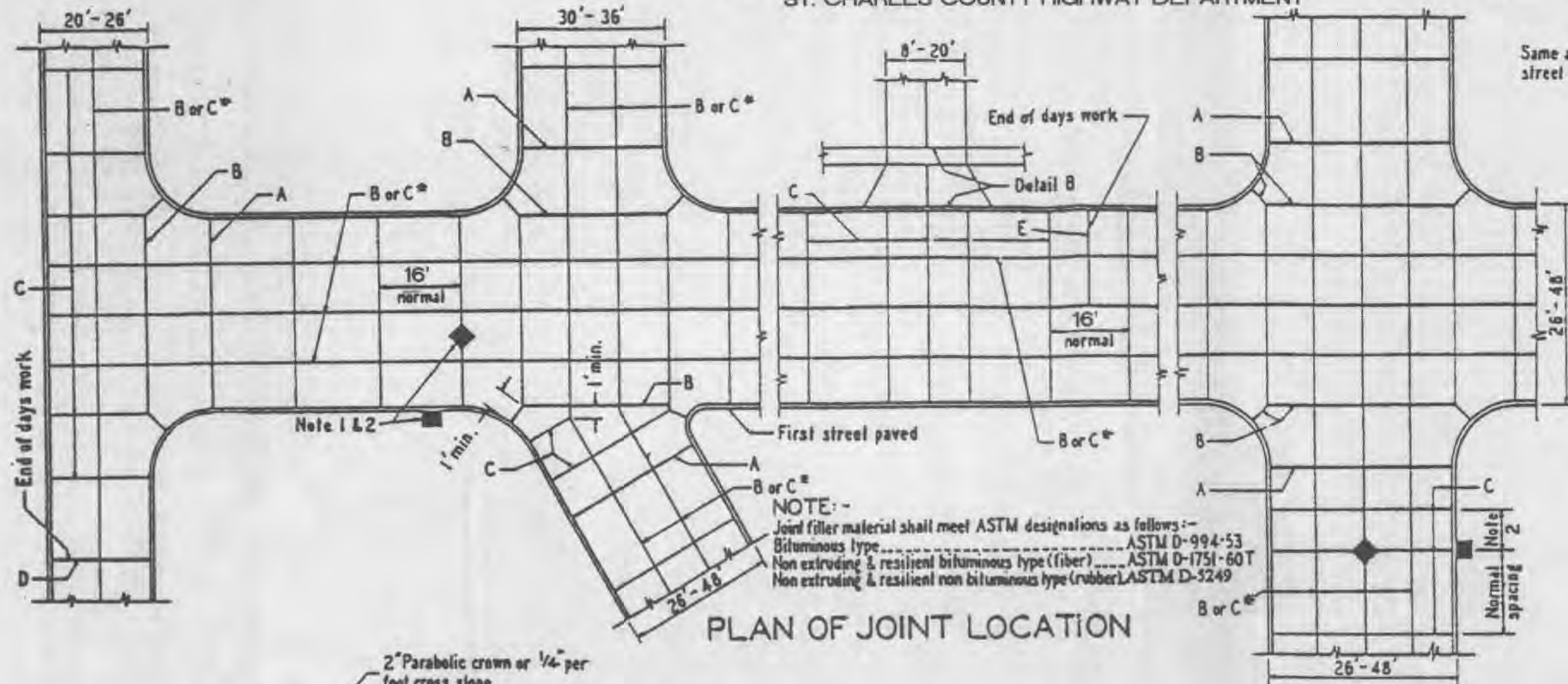
ST. CHARLES ENGINEERING & SURVEYING, INC.
 801 S. FIFTH STREET, SUITE 202
 ST. CHARLES, MO 63301
 TEL: (636) 947-0607 FAX: (636) 947-2448



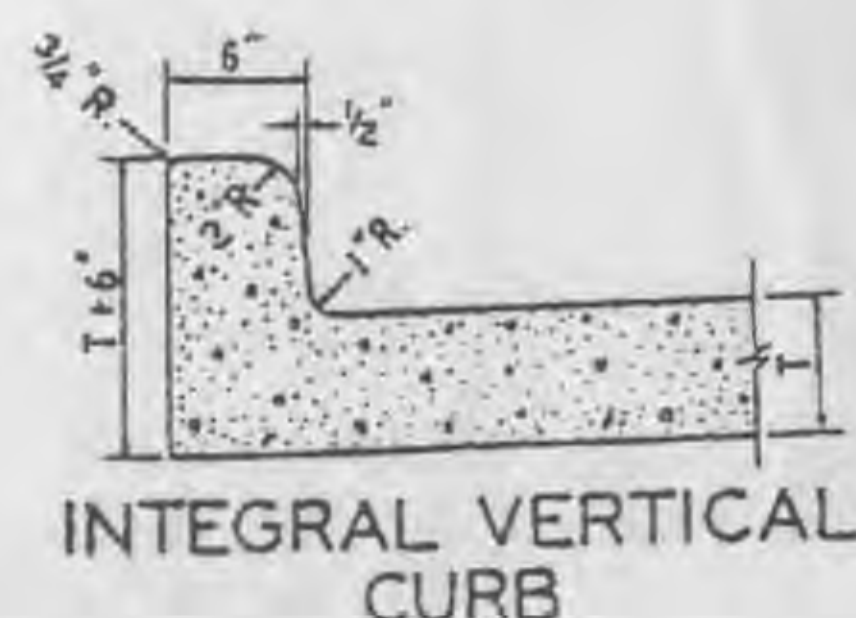
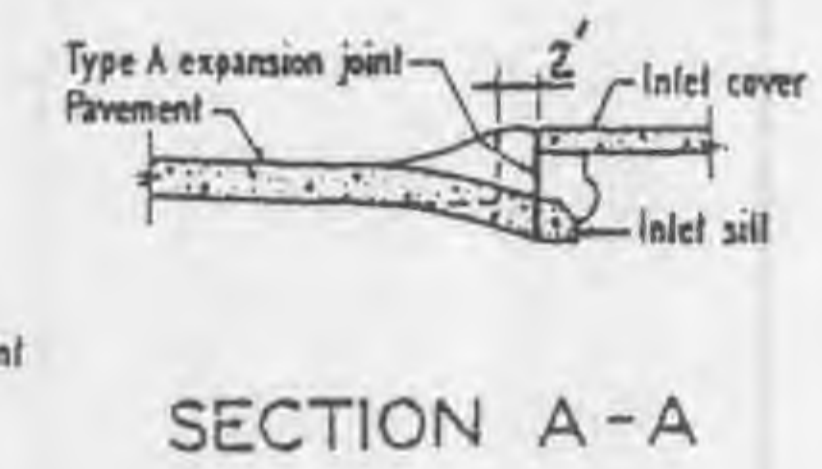
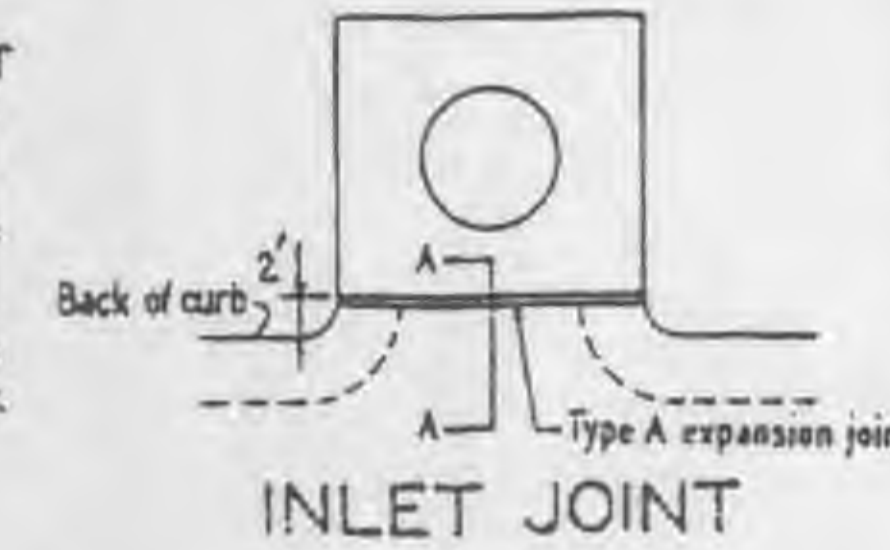
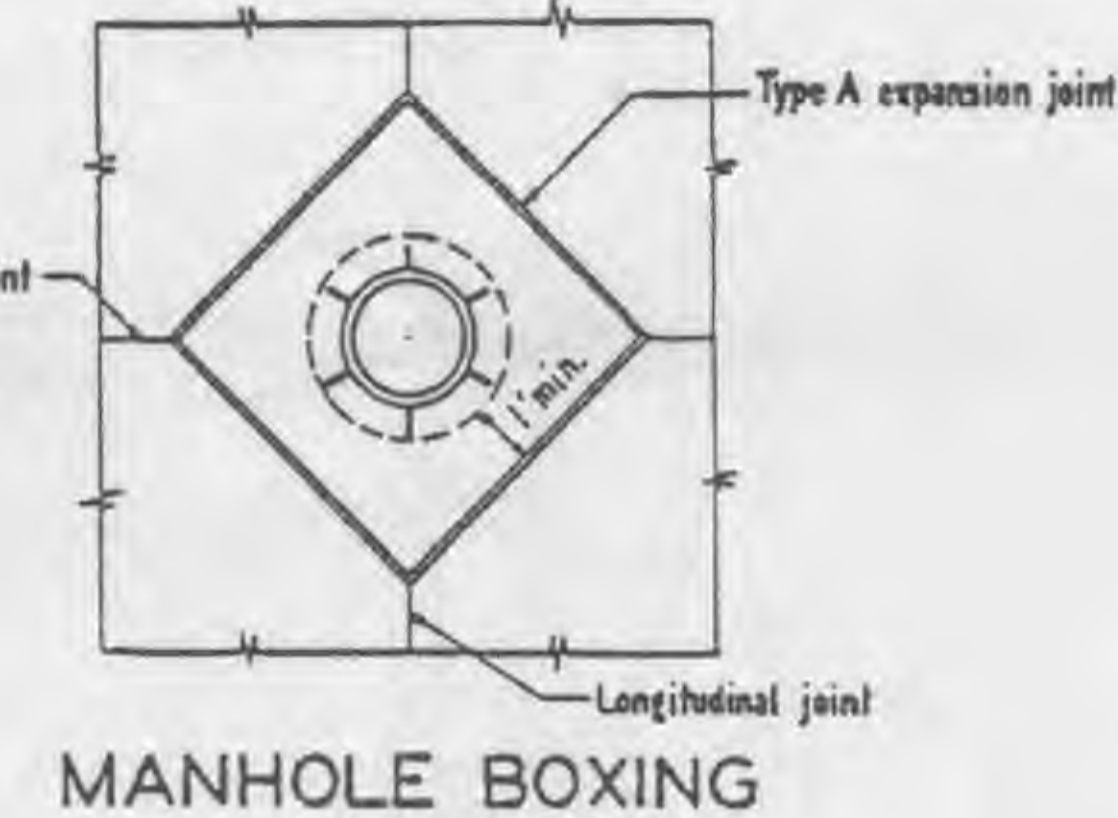
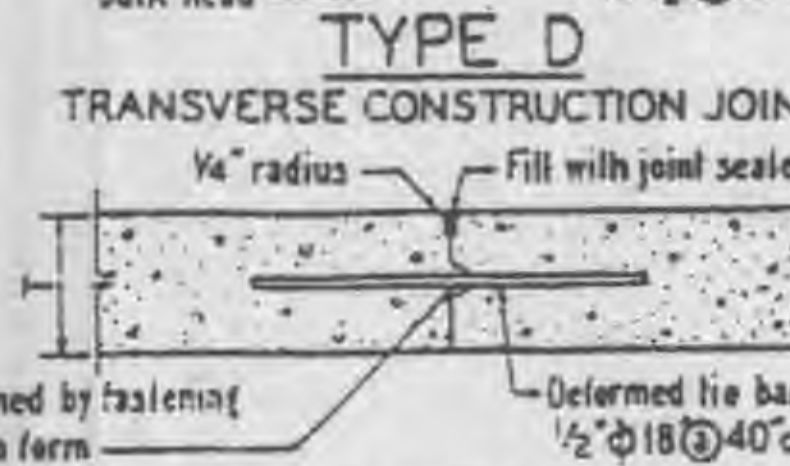
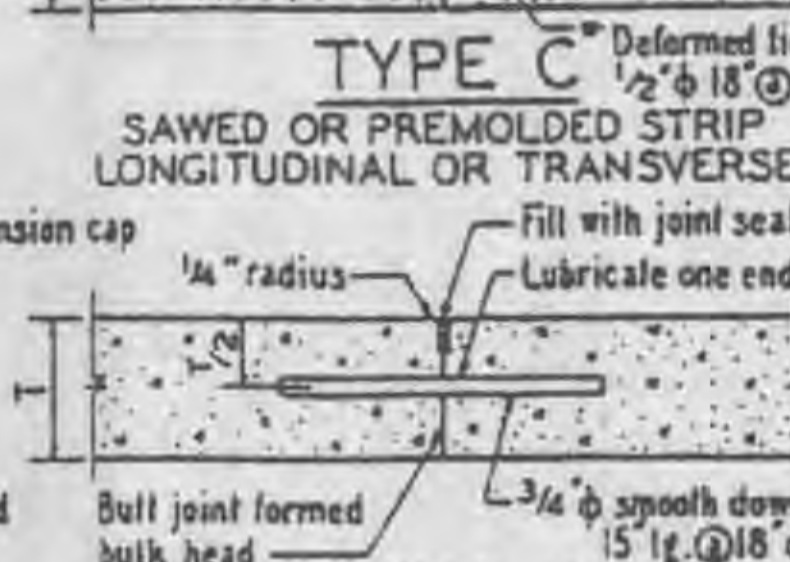
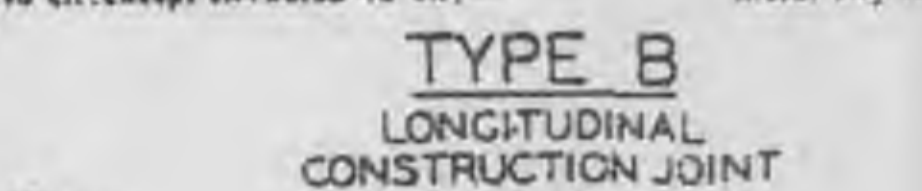
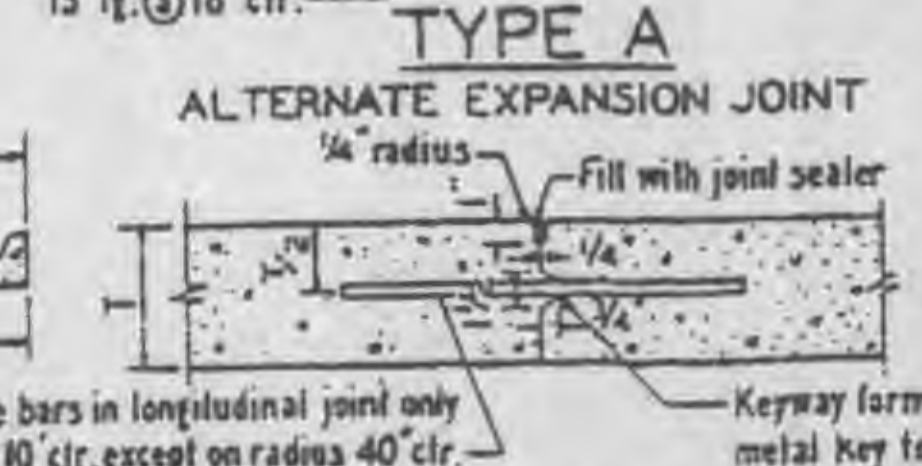
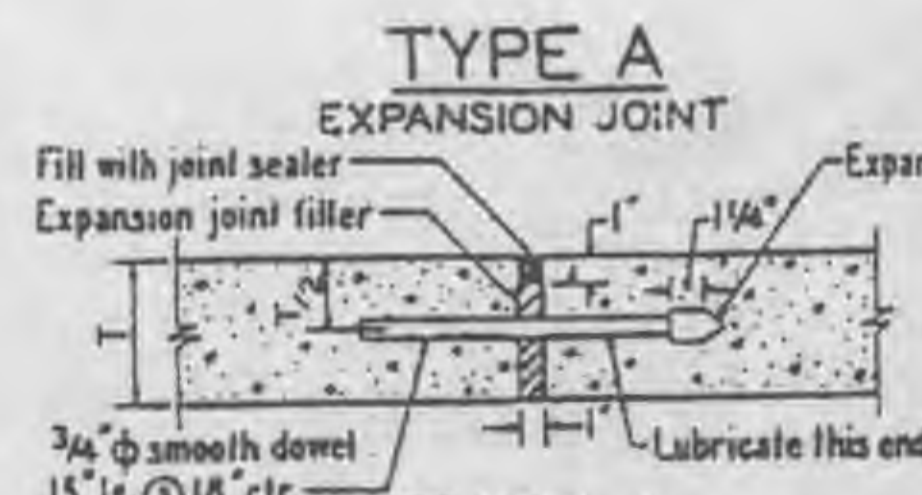
ORDER NO.
 990503-01
 DATE
 03/14/01



**PORTLAND CEMENT CONCRETE
INTEGRAL CURB PAVEMENT TYPICAL SECTIONS AND DETAILS**
ST. CHARLES COUNTY HIGHWAY DEPARTMENT



SEE TYPE "A" MODIFIED EXPANSION JOINT DETAIL



NOTE:-
JOINT SEALANT MATERIAL SHALL MEET ASTM AND AASHTO DESIGNATIONS AS FOLLOWS:
ASTM D-3405.....AASHTO M-301 OR
ASTM D-1190-74.....AASHTO M-173-84
OR THE LATEST REVISIONS THEREOF.

NOTE:-
1. ALL CATCH BASINS SHALL BE SEPARATED FROM THE PAVEMENT AND CURB BY EXPANSION JOINT MATERIAL EXTENDING COMPLETELY THROUGH CURB AND SLAB. MANHOLE CASTINGS WITHIN THE PAVEMENT LIMITS SHALL BE BOXED AS SHOWN.
2. WHEN A JOINT FALLS WITHIN 5 FT. OF OR CONTACTS BASINS, MANHOLES OR OTHER STRUCTURES, SHORTEN ONE OR MORE PANELS EITHER SIDE OF OPENING TO PERMIT JOINT TO FALL ON ROUND STRUCTURES AND AT OR BETWEEN CORNERS OF RECTANGULAR STRUCTURES.
3. T-6" ON LOCAL STREET.
4. T-7" ON MAJOR OR THRU STREET.

DARDENNE LANDING PHASE 3
PAVEMENT DETAILS I

ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: (636) 947-0607 FAX: (636) 947-3448

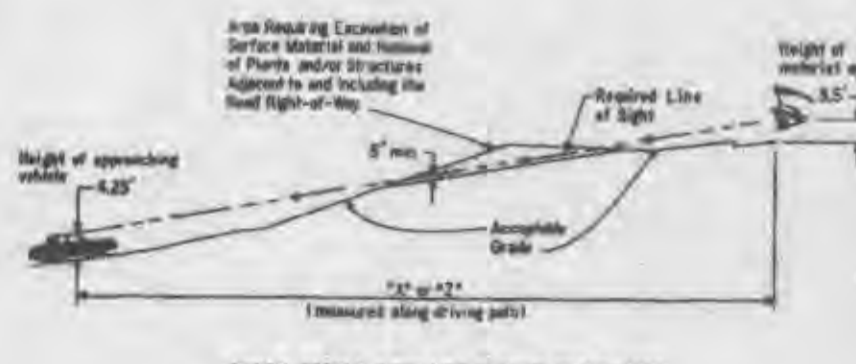


11-7-90

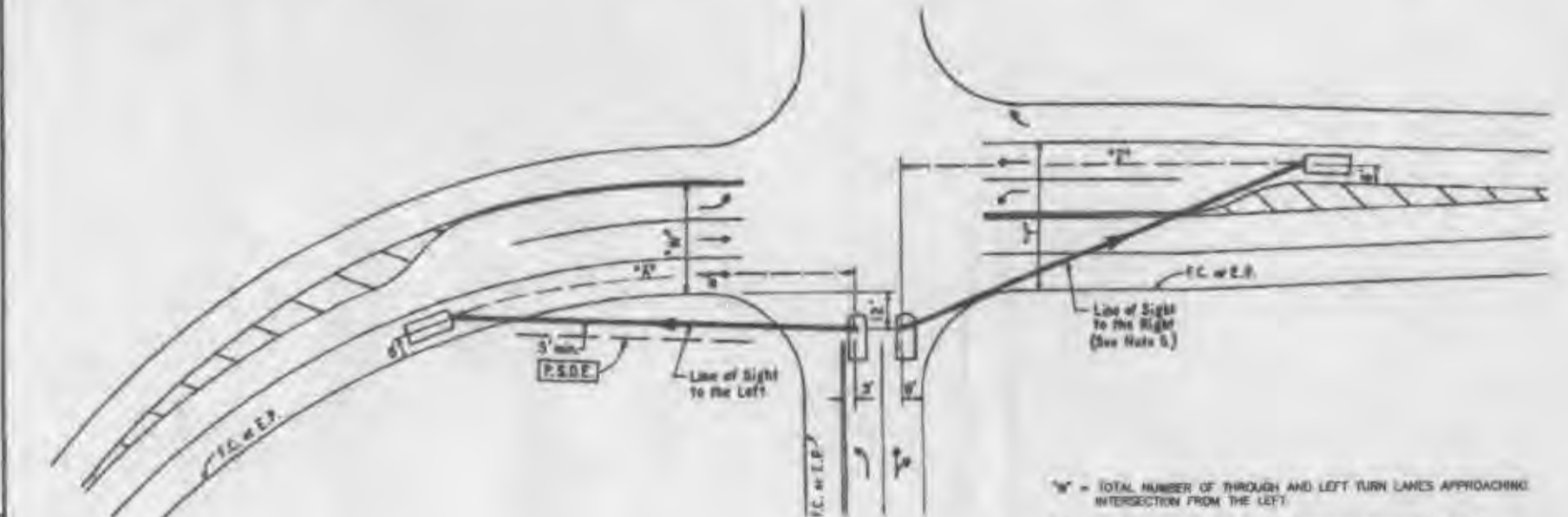
40.25-1

SIGHT DISTANCE FOR VEHICLE ENTERING ROADWAY FROM STOPPED POSITION ASSOCIATED WITH NEW DEVELOPMENT

Design Speed (mph)	Sight Distance to the Right (ft)				Sight Distance to the Left (ft)			
	Y ₁ = 2 Lanes	Y ₁ = 3 Lanes	Y ₁ = 4 Lanes	Y ₁ = 5 Lanes	Y ₂ = 1 Lane	Y ₂ = 2 Lanes	Y ₂ = 3 Lanes	Y ₂ = 4 Lanes
15	125'	185'	180'	190'	100'	150'	150'	165'
20	210'	295'	295'	305'	200'	300'	310'	325'
25	290'	390'	395'	415'	250'	390'	400'	420'
30	310'	425'	430'	455'	300'	420'	430'	450'
35	380'	500'	505'	535'	350'	490'	500'	520'
40	415'	545'	550'	585'	400'	540'	550'	570'
45	485'	630'	635'	675'	450'	630'	640'	660'
50	515'	685'	690'	735'	500'	680'	690'	710'
55	570'	750'	755'	805'	550'	750'	760'	780'
60	625'	825'	830'	885'	600'	820'	830'	850'
65	675'	895'	900'	960'	650'	890'	900'	920'
70	730'	975'	980'	1040'	700'	970'	980'	1000'



- GENERAL NOTES:**
- DO NOT SCALE DRAWING FOLLOW DIMENSIONS.
 - SIGHT DISTANCE DESIGN CRITERIA SHALL BE BASED UPON ULTIMATE NUMBER OF LANES.
 - ON EXISTING ROADWAYS THE DESIGN SPEED SHALL BE THE 85TH PERCENTILE SPEED OF MOTORISTS ON THE ROADWAY AS ESTABLISHED BY RADAR STUDIES, OR 3 MPH GREATER THAN THE POSTED SPEED LIMIT, WHICHEVER IS GREATER. FOR RESIDENTIAL AND NON-RESIDENTIAL DISTRICTS WITH A PAVEMENT WIDTH OF 30 FT. OR LESS, THE DESIGN SPEED SHALL BE THE ANTICIPATED POSTED SPEED LIMIT.
 - ON NEW ROADWAYS THE DESIGN SPEED SHALL BE 5 MPH GREATER THAN THE ANTICIPATED POSTED SPEED LIMIT. FOR RESIDENTIAL AND NON-RESIDENTIAL DISTRICTS WITH A PAVEMENT WIDTH OF 30 FT. OR LESS, THE DESIGN SPEED SHALL BE THE ANTICIPATED POSTED SPEED LIMIT.
 - AT A VERTICALLY CURVED LINE OF SIGHT TO THE RIGHT SHOULD BE MEASURED FROM A VEHICLE IN THE LEFT TURN LANE.
 - IF "W" IS GREATER THAN 3 LANES OR "Y" IS GREATER THAN 5 LANES, SIGHT DISTANCE DATA SHALL BE INCREASED BY EXTRAPOLATING FROM VALUES SHOWN ON THE CHART.
 - IF "W" OR "Y" INCLUDE A MEDIAN, SIGHT DISTANCE DATA SHALL BE INCREASED BY INTERPOLATING OR EXTRAPOLATING FROM VALUES SHOWN ON THE CHART.
 - HEIGHT OF MOTORIST EYE IN STOPPED VEHICLE = 4.25 FT.
 - HEIGHT OF APPROACHING VEHICLE = 4.25 FT.



W = TOTAL NUMBER OF THROUGH AND LEFT TURN LANES APPROACHING INTERSECTION FROM THE LEFT
 Y = SIGHT DISTANCE TO THE LEFT (measured along driving path)
 W = TOTAL NUMBER OF THROUGH AND LEFT TURN LANES ACROSS EXISTING PAVEMENT LOOKING TO THE RIGHT
 Y = SIGHT DISTANCE TO THE RIGHT (measured along driving path)
 P.S.B.E. = PERMANENT SIGHT DISTANCE EASEMENT

ST. LOUIS COUNTY
 DEPARTMENT OF HIGHWAYS AND TRAFFIC
 CLAYTON, MISSOURI
SIGHT DISTANCE AT INTERSECTIONS
 APPROVED: [Signature]
 DIRECTOR
 DATE: 02/11/00

TYPE A (MODIFIED) CONSTRUCTION JOINT

NOTES:

- THE NUMBER OF BACKER RODS REQUIRED WILL VARY WITH THE PAVEMENT THICKNESS. BACKER RODS AND FLEXIBLE FOAM FILLER MUST EXTEND THROUGH THE FULL DEPTH OF THE PAVEMENT.
- JOINT FILLER SHALL BE A FLEXIBLE, NON-ABSORBENT, NON-GASSING, NON-STAINING, NON-SHRINKING MATERIAL, EXTRUDED FROM A CLOSED-CELL POLYMER, ASTM D-5249.
- JOINT FILLER COMPOSED OF CELLULAR FIBERS, ASTM D-1751, MAY BE USED AT DRIVEWAY, SIDEWALK, AND SEWER INLET AND MANHOLE LOCATIONS.
- SEE "INTEGRAL CURB DETAIL 'B' AT DRIVEWAYS" FOR EXPANSION JOINT REQUIREMENTS AT DRIVEWAY CONNECTIONS TO THE STREET AND THE GARAGE.

TYPE "A" - MODIFIED EXPANSION JOINT

ST. CHARLES COUNTY HIGHWAY DEPARTMENT
 FEBRUARY 2000
 CIVIL/PAVEMENT/CAD design/1/2/00.dwg
 1 OF 1

CONCRETE SIDEWALK

GENERAL NOTES:

- Do not scale drawing. Follow dimensions.
- Sidewalk cross slope 0.04/ft.
- Sidewalk thickness increases to 10" on both side of Private Driveways and 7" on each side of Commercial Driveways for one section of sidewalk equal in length to the width of the sidewalk. See Entrance Construction Details.
- Sidewalk thru private and commercial driveways will be paid for as 6" and 7" approaches use "Integral Curb Detail 'B' at Driveways".
- For sidewalk locations on Cul-De-Sacs use "Pavement Construction Details".
- For longitudinal and transverse joints, dowels, and tie bar requirements and dimensions refer to the "Integral Curb Pavement Typical Sections and Details".
- All necessary pavement markings by St. Charles County.
- For roadway cross slopes, pavement types and thickness refer to "Standard Typical Section".
- 3" precast expansion joint is required where the sidewalk is located on the outer edge of curved pavement. A 1 1/2" precast expansion joint is required where the sidewalk is located on tangent sections or on the inner edge of curved pavement.

ST. CHARLES COUNTY HIGHWAY DEPARTMENT
 FEBRUARY 2000
 CIVIL/PAVEMENT/CAD design/Concrete Sidewalk.dwg
 1 OF 1

INTEGRAL CURB DETAIL "B" AT DRIVEWAYS

NOTES:

- A 1" JOINT IS REQUIRED AT THE CURB AND GARAGE FOR ALL DRIVEWAYS LOCATED ON THE OUTER EDGE OF CURVED PAVEMENT, UNLESS GROOVED JOINTS ARE USED AT SIDEWALK. THEN A 2" JOINT IS REQUIRED AT THE CURB.
- A 1/2" JOINT IS REQUIRED AT THE CURB AND GARAGE FOR ALL DRIVEWAYS LOCATED ON TANGENT SECTIONS OF PAVEMENT OR ON THE INNER EDGE OF CURVED PAVEMENT.
- EXPANSION JOINT MATERIAL MUST EXTEND THROUGH THE FULL DEPTH OF THE PAVEMENT.
- SIDEWALK THICKNESS SHALL BE A MINIMUM OF 7" THROUGH COMMERCIAL DRIVEWAYS.

ST. CHARLES COUNTY HIGHWAY DEPARTMENT
 MAY 2000
 CIVIL/PAVEMENT/CAD design/Driveway.dwg
 1 OF 1

INTERIOR ROADWAY CROSS SECTION

NOTES:

- ROW = 1'
- 4' concrete sidewalk
- seed & mulch or sod
- 6" P.C. CONCRETE (NON-REINFORCED)
- 2% slope
- 4% slope
- 1.3' width
- 6" depth

N.T.S.

BARRICADE DETAIL

SIGN	A	B	C	D	E	F
18"x 18"	3-11/16"	5-5/16"	3-1/4"	1-1/4"	1-1/2" R	22"

TYPE IV OBJECT MARKER
 RED REFLECTOR ON RED BACKGROUND
 THICKNESS OF FLAT SHEET FOR TYPE IV OBJECT MARKER SHALL BE 0.063"

ST. CHARLES COUNTY HIGHWAY DEPARTMENT
 BARRICADE DETAIL
 N.T.S.

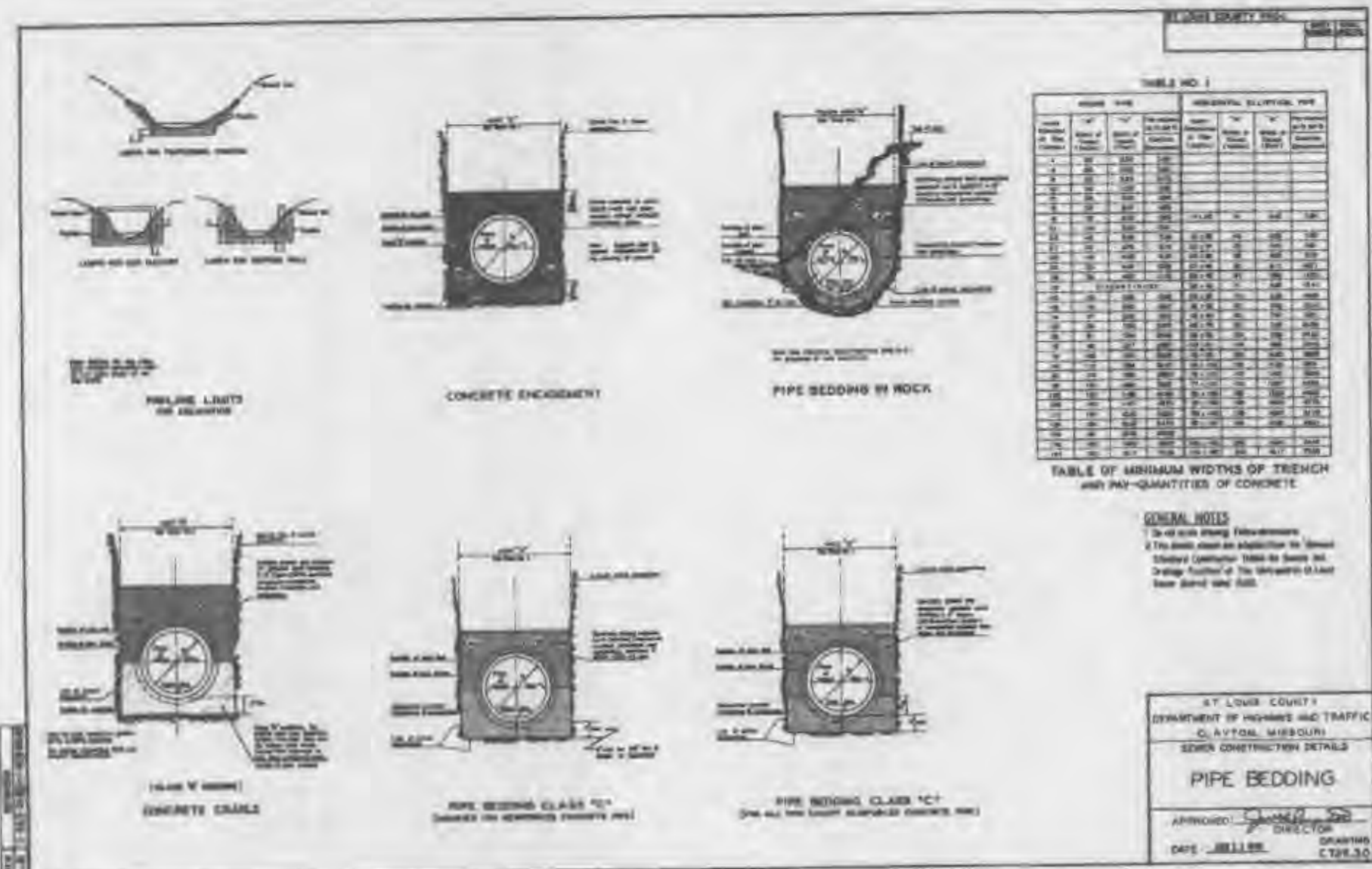
DARDENNE LANDING PHASE 3
 PAVEMENT DETAILS II

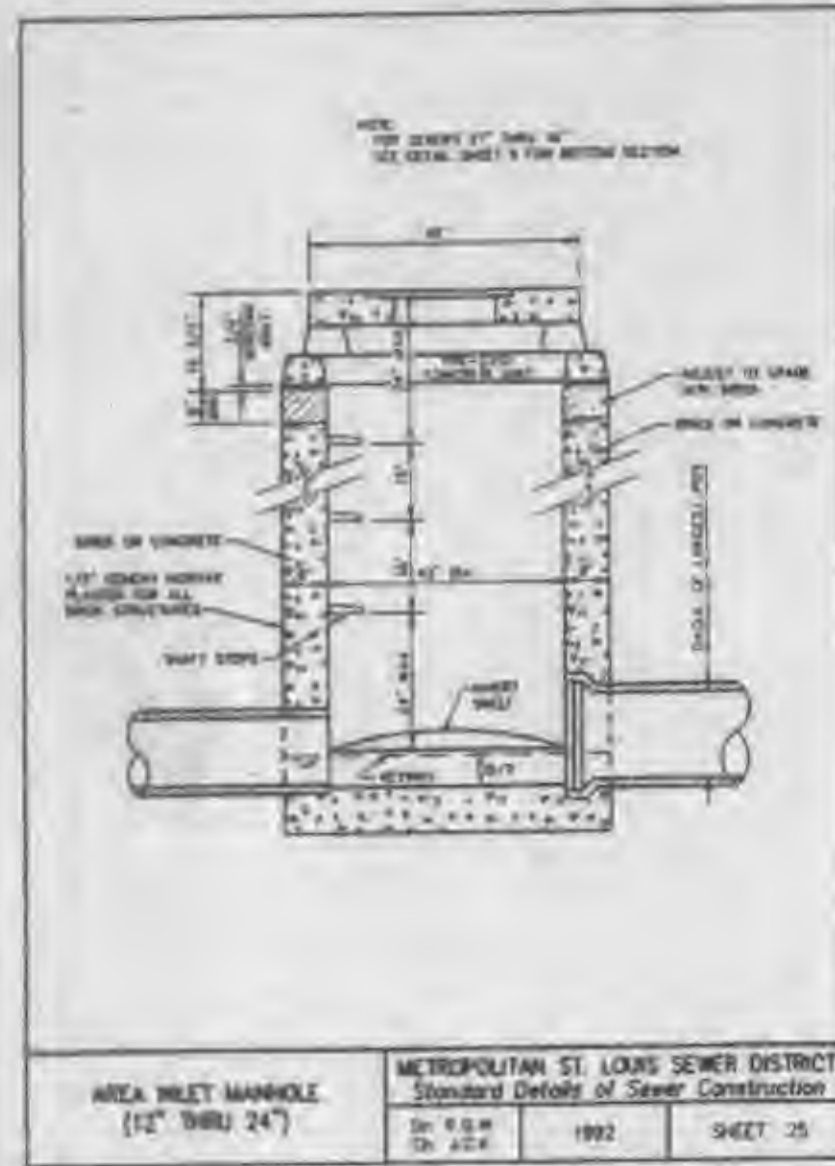
ST. CHARLES ENGINEERING & SURVEYING, INC.
 801 S. FIFTH STREET, SUITE 202
 ST. CHARLES, MO 63301
 TEL: (636) 947-0007 FAX: (636) 947-3446

SEALS

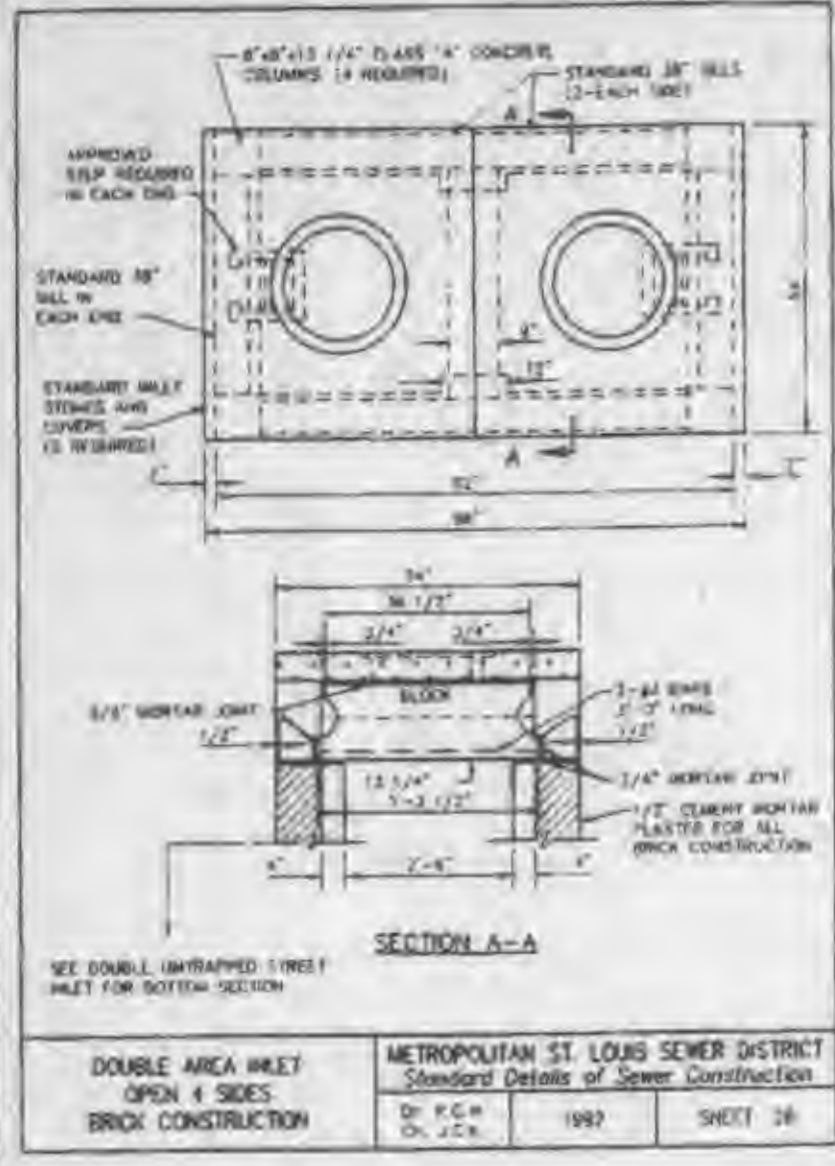


ORDER NO. 99-0505-01
 DATE 08/14/01

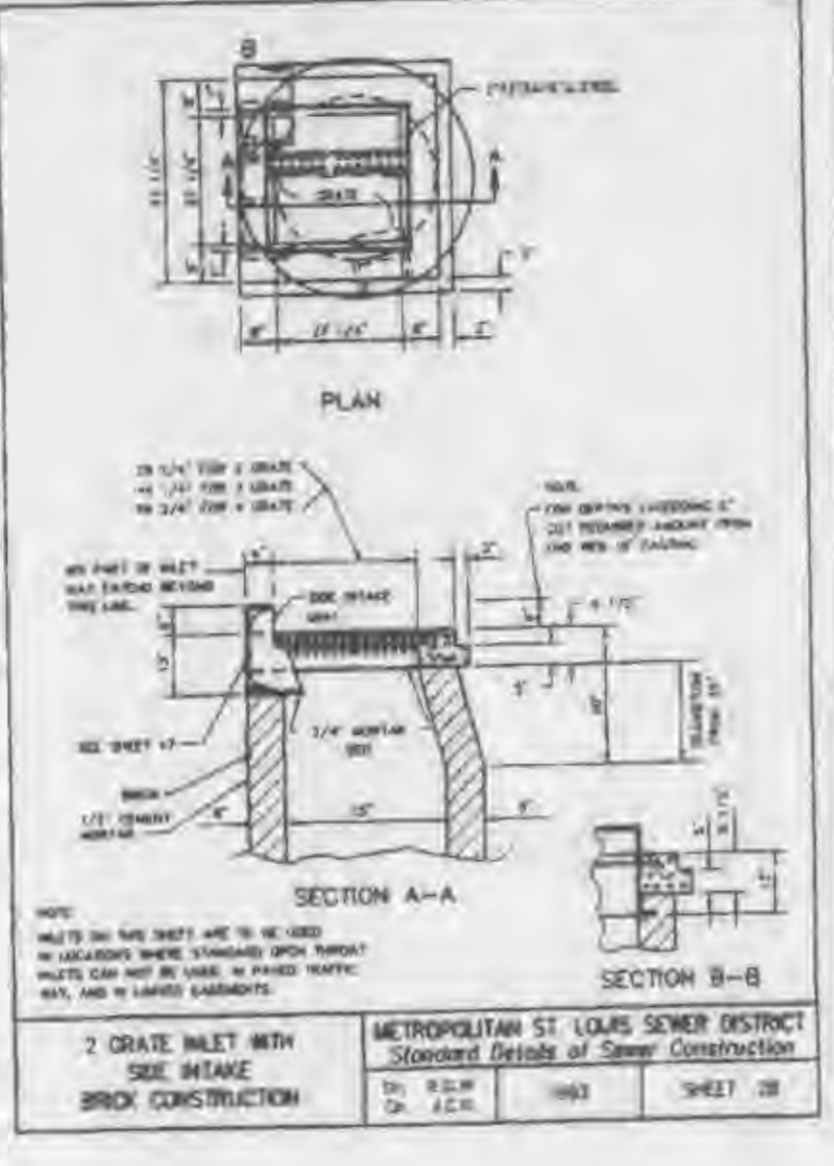




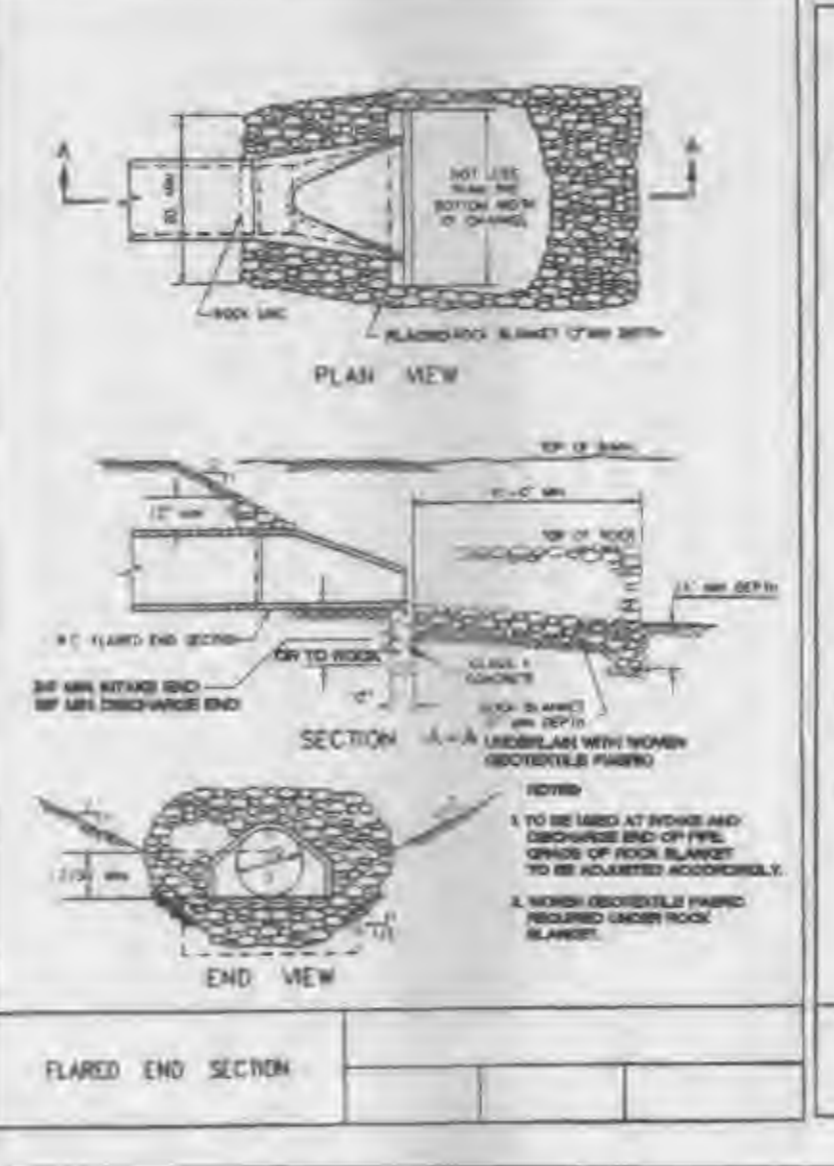
AREA INLET MANHOLE
(12" DIA. 24")
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 25



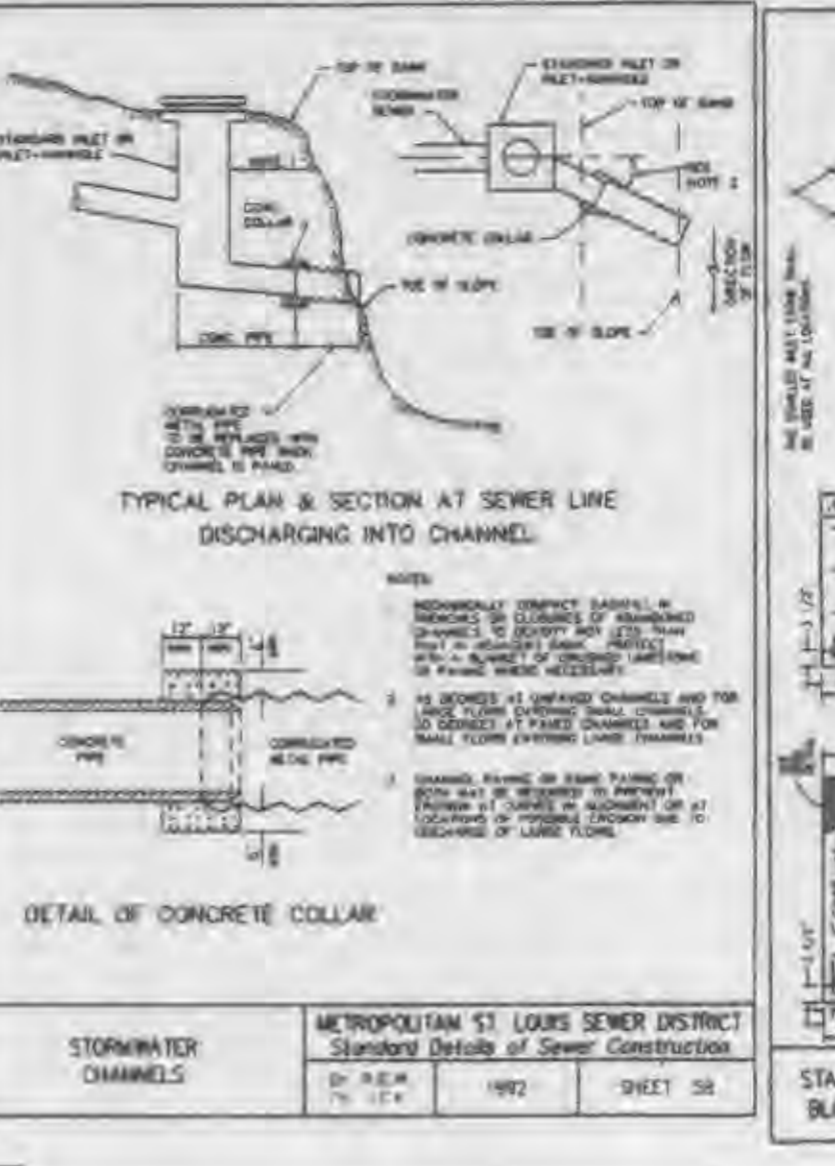
DOUBLE AREA INLET
OPEN 4 SIDES
BRICK CONSTRUCTION
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 26



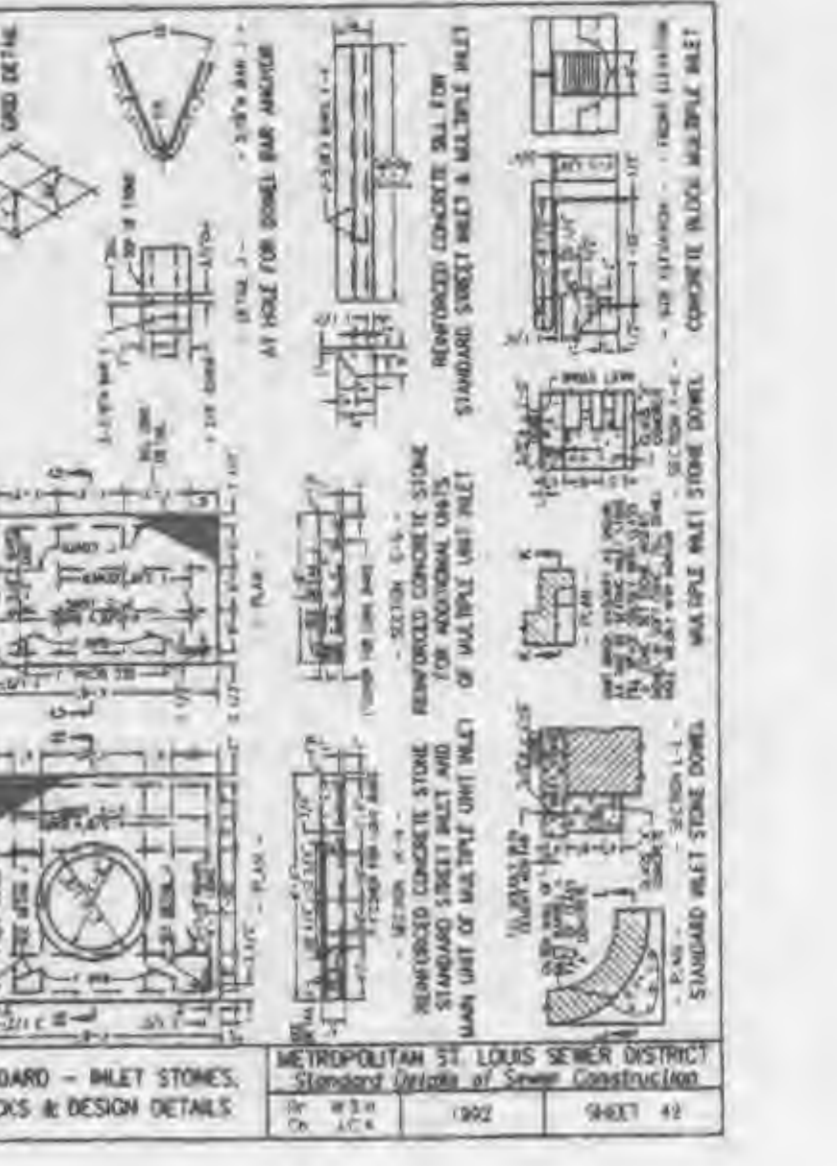
2 GRATE INLET WITH
SIDE INLETS
BRICK CONSTRUCTION
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 28



FLARED END SECTION
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 29



TYPICAL PLAN & SECTION AT SEWER LINE
DISCHARGING INTO CHANNEL
DETAIL OF CONCRETE COLLAR
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 30



STANDARD - INLET STONES,
BLOCKS & DESIGN DETAILS
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 42

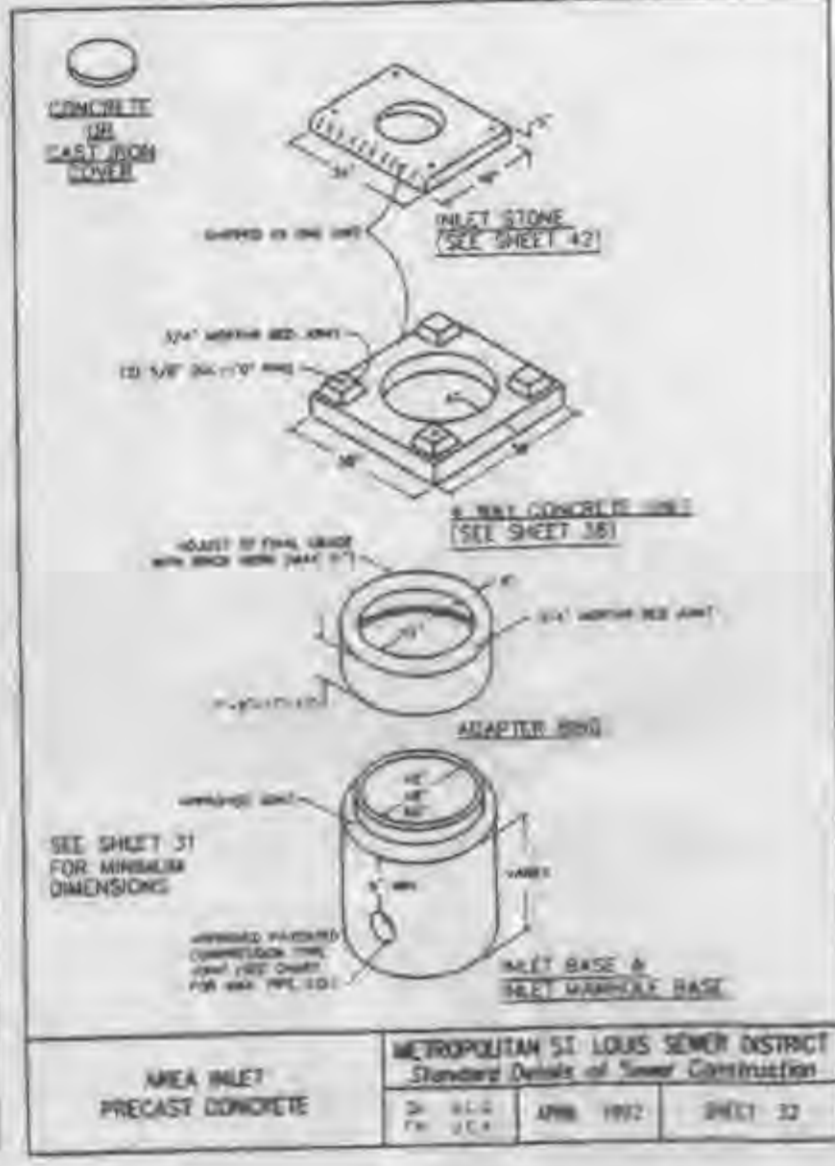
PRECAST CONCRETE STORMWATER STRUCTURES
MINIMUM DISTANCE FROM LINE TO TOP OF STONE OR GRATE.

SIZE OF STORM DRAIN	AREA INLET STORMWATER MANHOLE	DOUBLE AREA INLET STORMWATER MANHOLE	DOUBLE AREA INLET STORMWATER MANHOLE
12"	12" x 12" x 12"	12" x 12" x 12"	12" x 12" x 12"
18"	18" x 18" x 18"	18" x 18" x 18"	18" x 18" x 18"
24"	24" x 24" x 24"	24" x 24" x 24"	24" x 24" x 24"
30"	30" x 30" x 30"	30" x 30" x 30"	30" x 30" x 30"
36"	36" x 36" x 36"	36" x 36" x 36"	36" x 36" x 36"
42"	42" x 42" x 42"	42" x 42" x 42"	42" x 42" x 42"
48"	48" x 48" x 48"	48" x 48" x 48"	48" x 48" x 48"
54"	54" x 54" x 54"	54" x 54" x 54"	54" x 54" x 54"
60"	60" x 60" x 60"	60" x 60" x 60"	60" x 60" x 60"
66"	66" x 66" x 66"	66" x 66" x 66"	66" x 66" x 66"
72"	72" x 72" x 72"	72" x 72" x 72"	72" x 72" x 72"
78"	78" x 78" x 78"	78" x 78" x 78"	78" x 78" x 78"
84"	84" x 84" x 84"	84" x 84" x 84"	84" x 84" x 84"
90"	90" x 90" x 90"	90" x 90" x 90"	90" x 90" x 90"
96"	96" x 96" x 96"	96" x 96" x 96"	96" x 96" x 96"
102"	102" x 102" x 102"	102" x 102" x 102"	102" x 102" x 102"
108"	108" x 108" x 108"	108" x 108" x 108"	108" x 108" x 108"
114"	114" x 114" x 114"	114" x 114" x 114"	114" x 114" x 114"
120"	120" x 120" x 120"	120" x 120" x 120"	120" x 120" x 120"

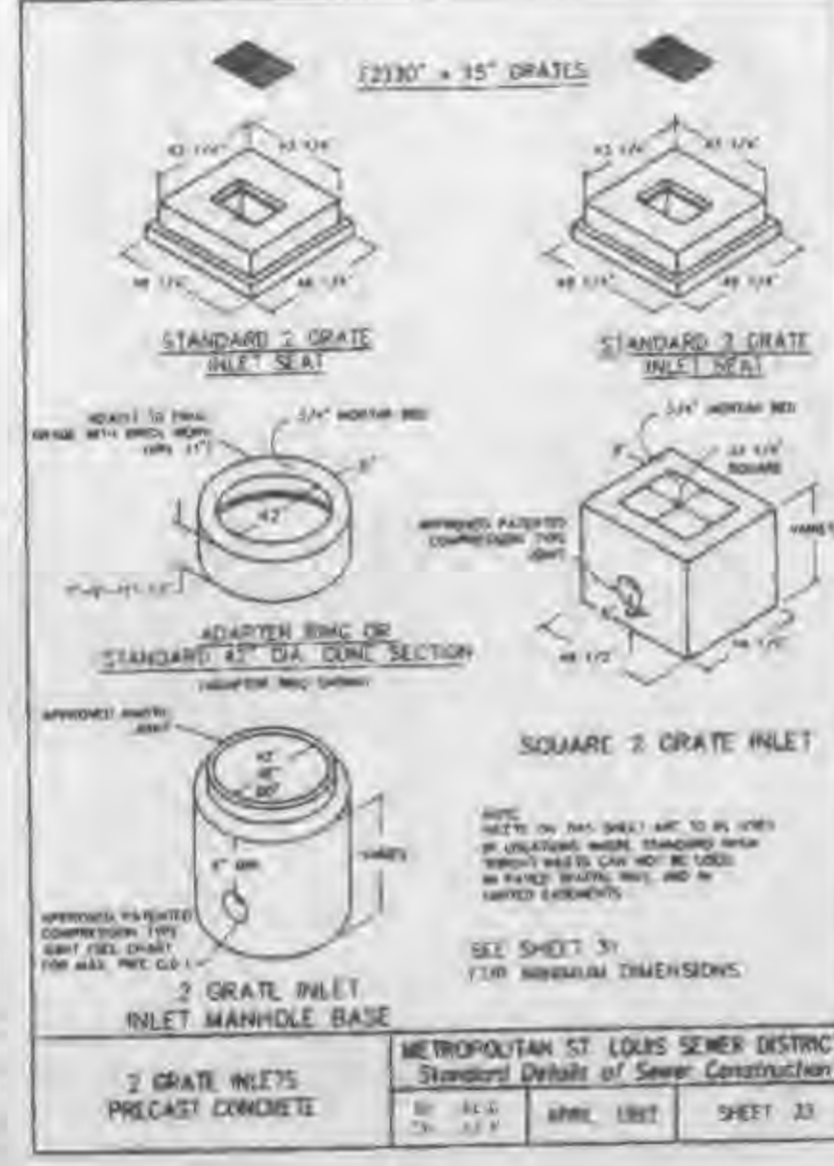
SEE SHEET 25 FOR DETAILS. THIS SHEET IS FOR DETAILS. SEE SHEET 25 FOR DETAILS.

NOTE: 1. ALL MANHOLE STRUCTURES SHALL BE CONSTRUCTED TO THE TOP OF THE STORM DRAIN. 2. ALL MANHOLE STRUCTURES SHALL BE CONSTRUCTED TO THE TOP OF THE STORM DRAIN. 3. ALL MANHOLE STRUCTURES SHALL BE CONSTRUCTED TO THE TOP OF THE STORM DRAIN.

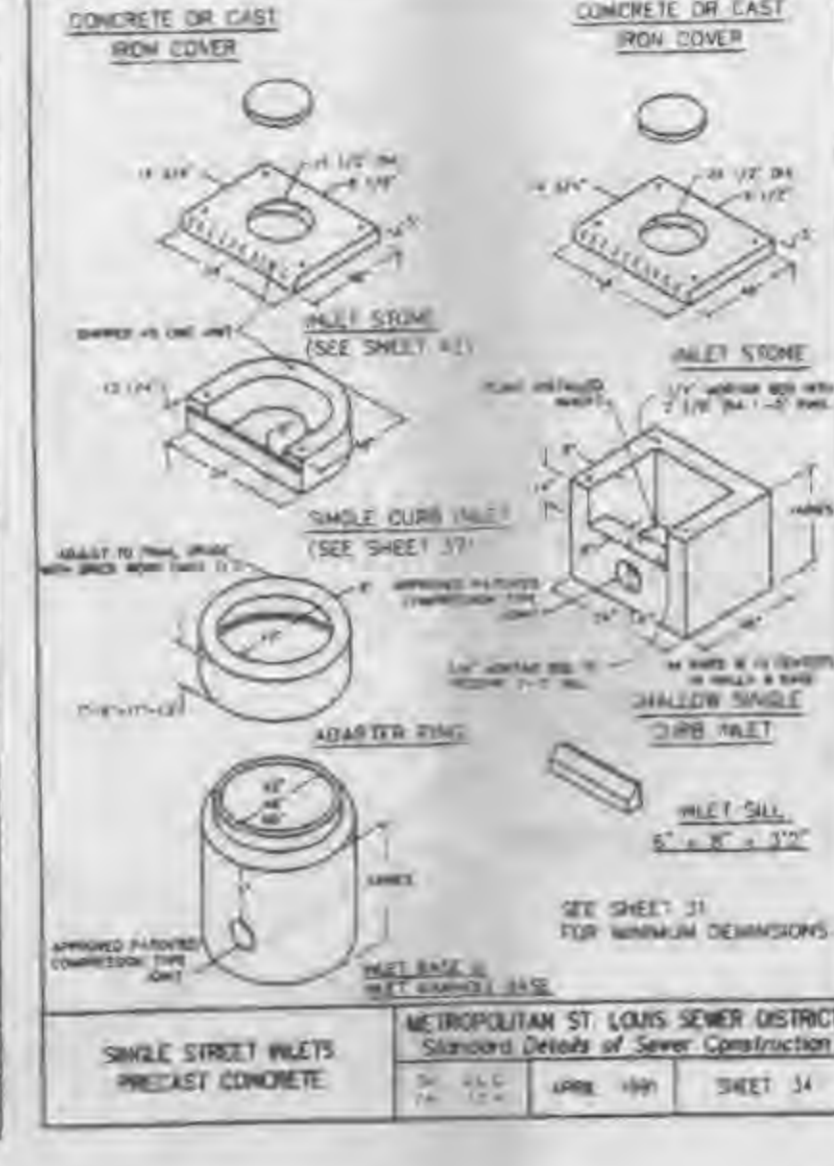
PRECAST CONCRETE
STORMWATER STRUCTURES
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. SEPT 1990 SHEET 2



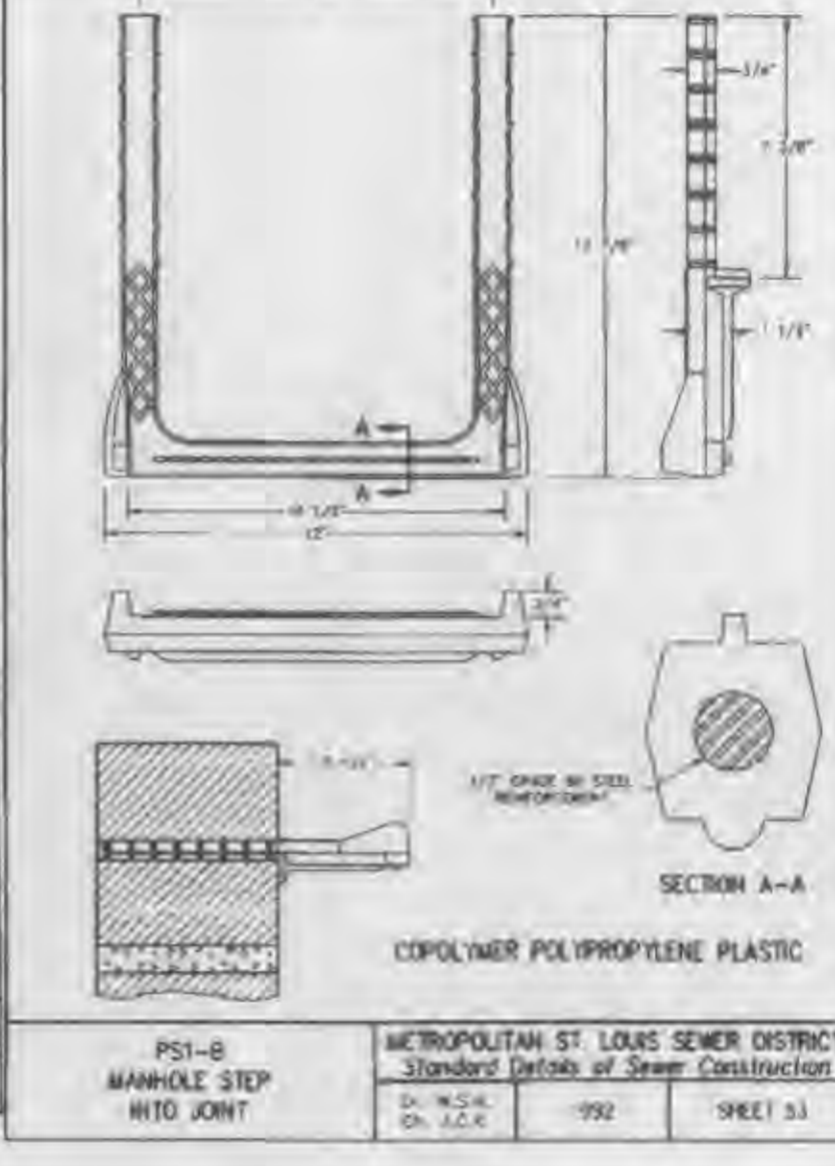
AREA INLET
PRECAST CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. APR 1992 SHEET 22



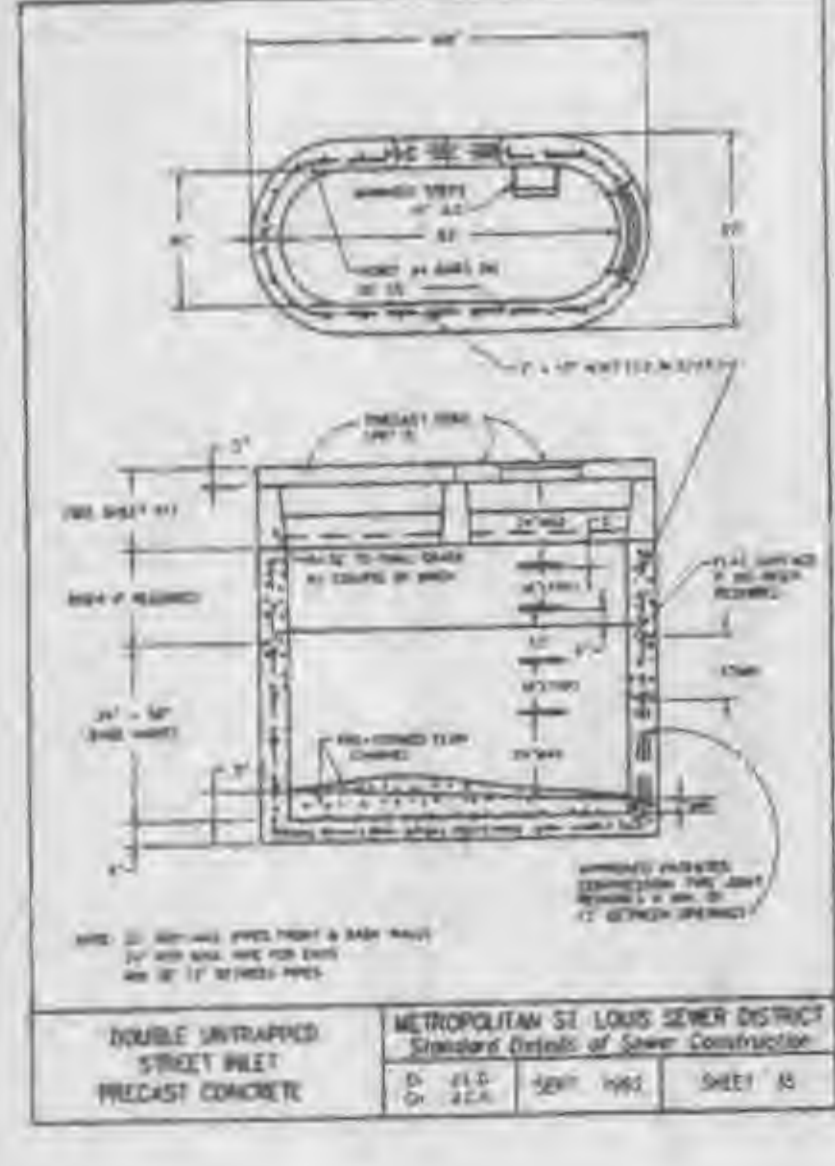
2 GRATE INLETS
PRECAST CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. APR 1992 SHEET 23



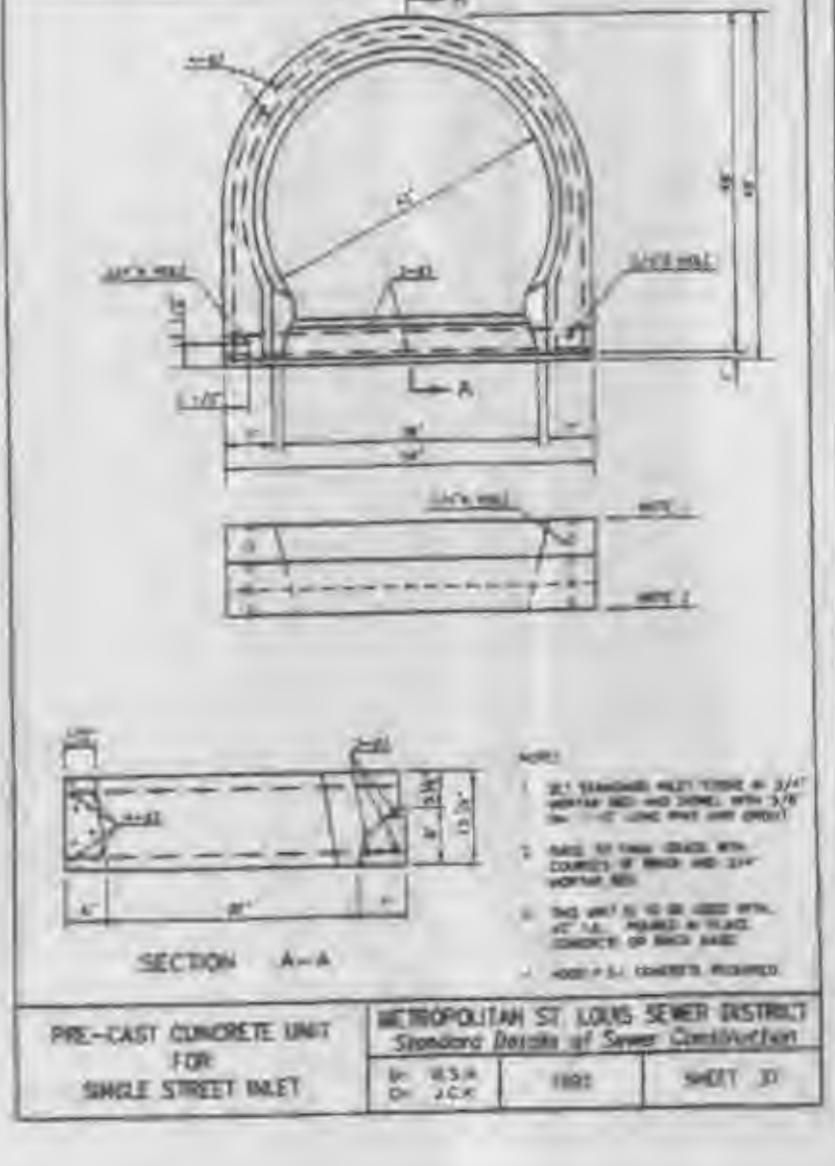
SINGLE STREET INLETS
PRECAST CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. APR 1991 SHEET 34



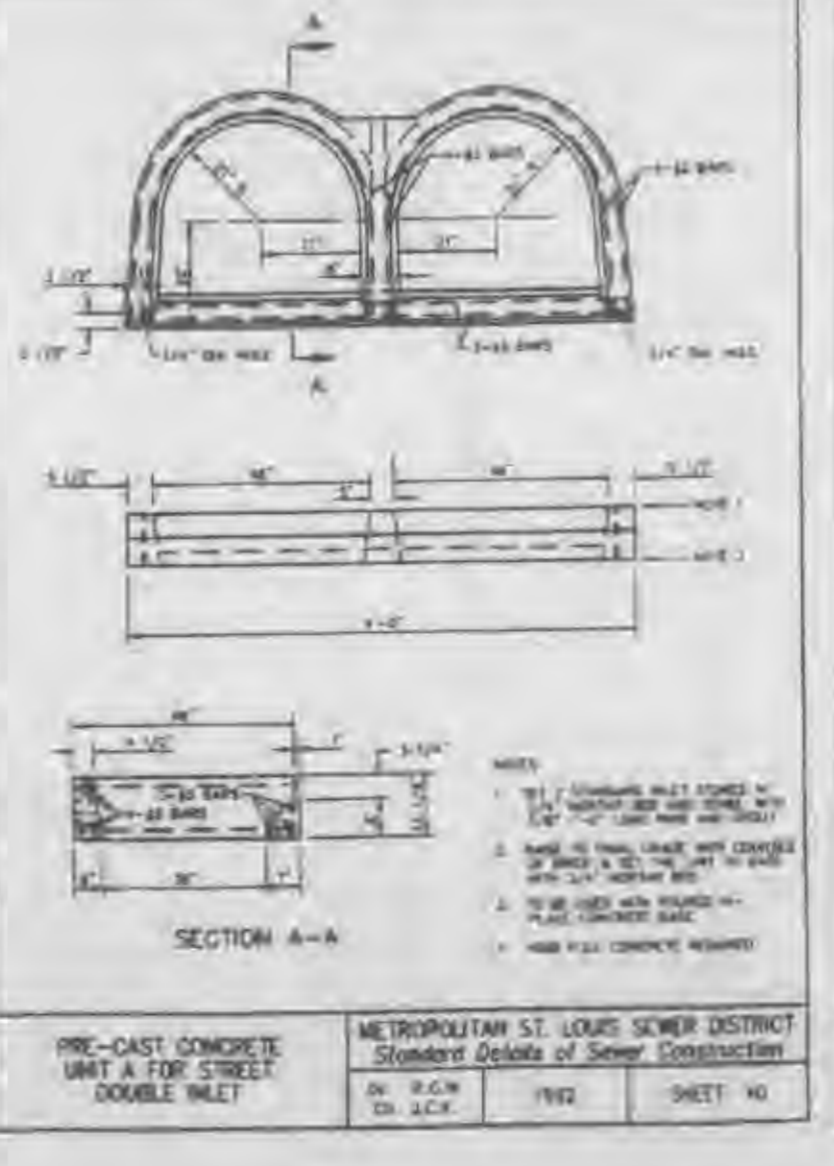
MANHOLE STEP
INTO JOINT
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 33



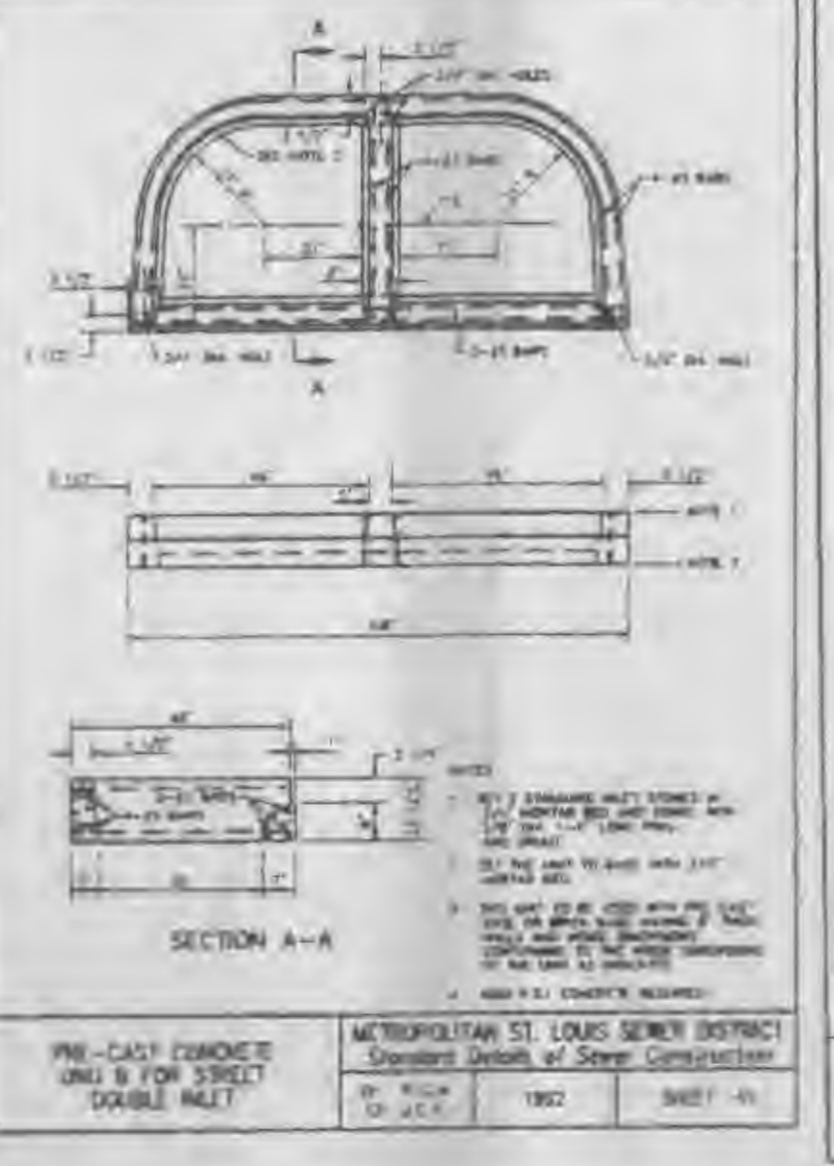
DOUBLE UNFRAMED
STREET INLET
PRECAST CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. SEPT 1992 SHEET 35



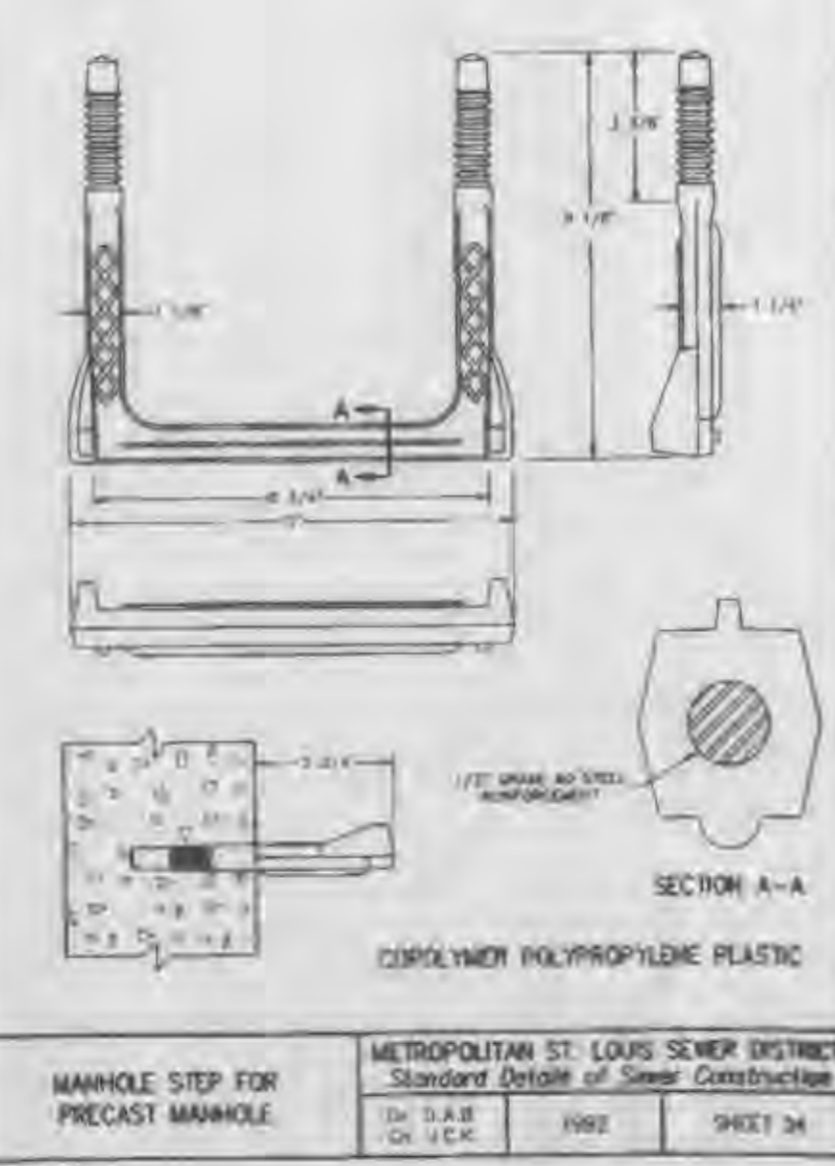
PRE-CAST CONCRETE UNIT
FOR
SINGLE STREET INLET
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1991 SHEET 37



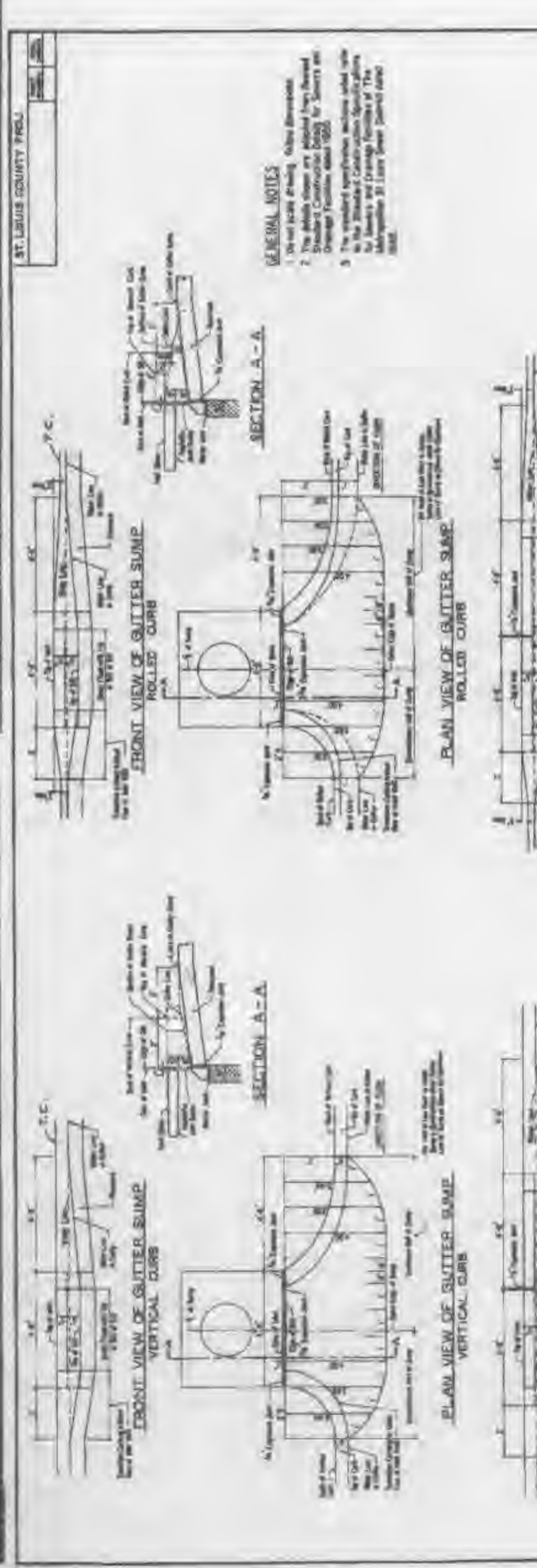
PRE-CAST CONCRETE
UNIT A FOR STREET
DOUBLE INLET
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 40



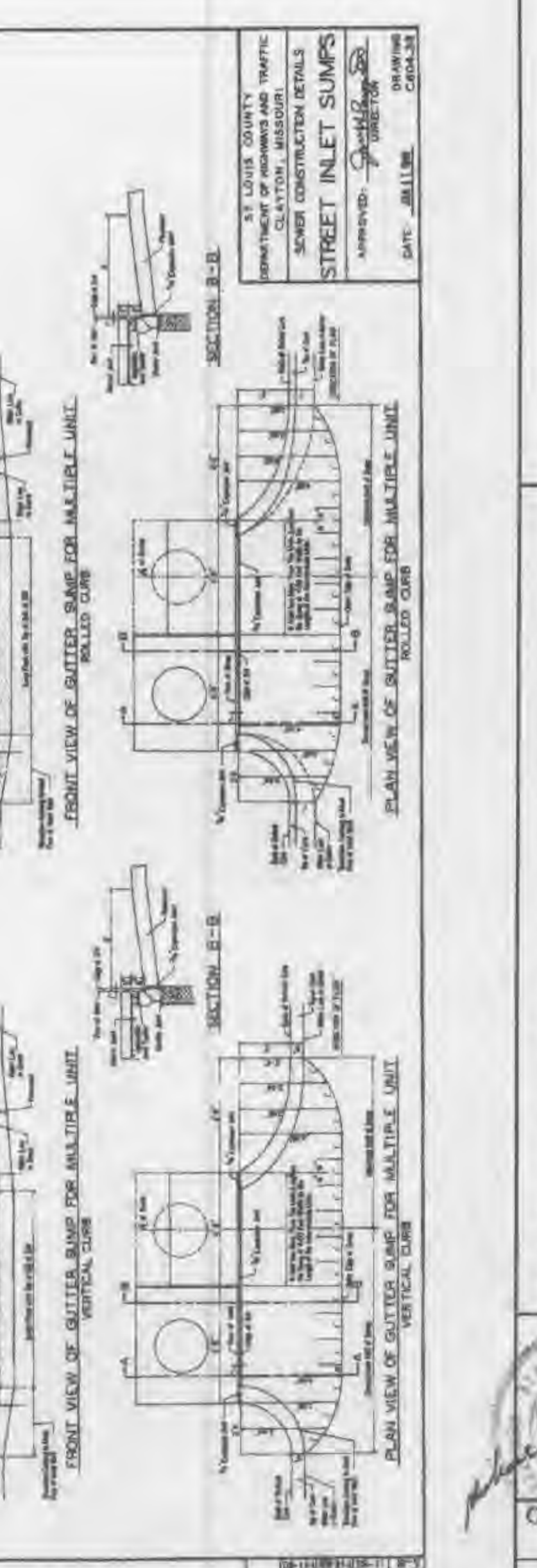
PRE-CAST CONCRETE
UNIT B FOR STREET
DOUBLE INLET
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 41



MANHOLE STEP FOR
PRECAST MANHOLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 34



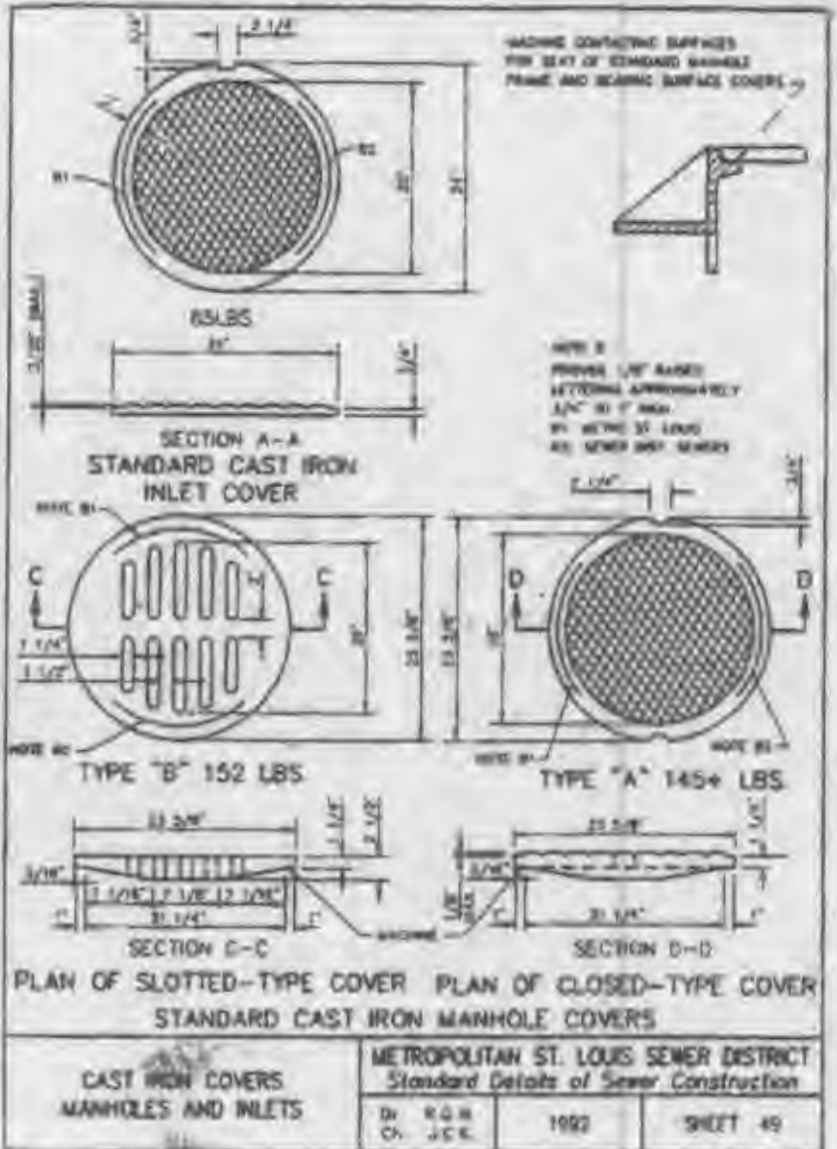
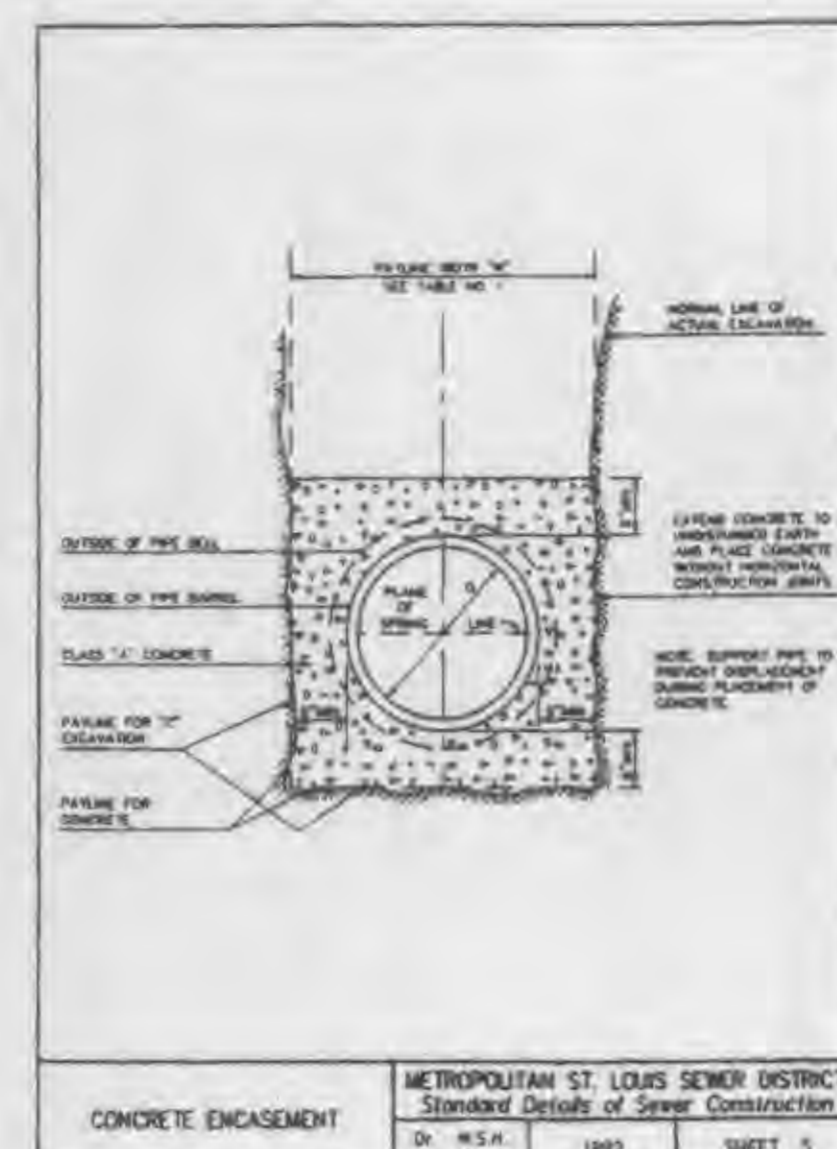
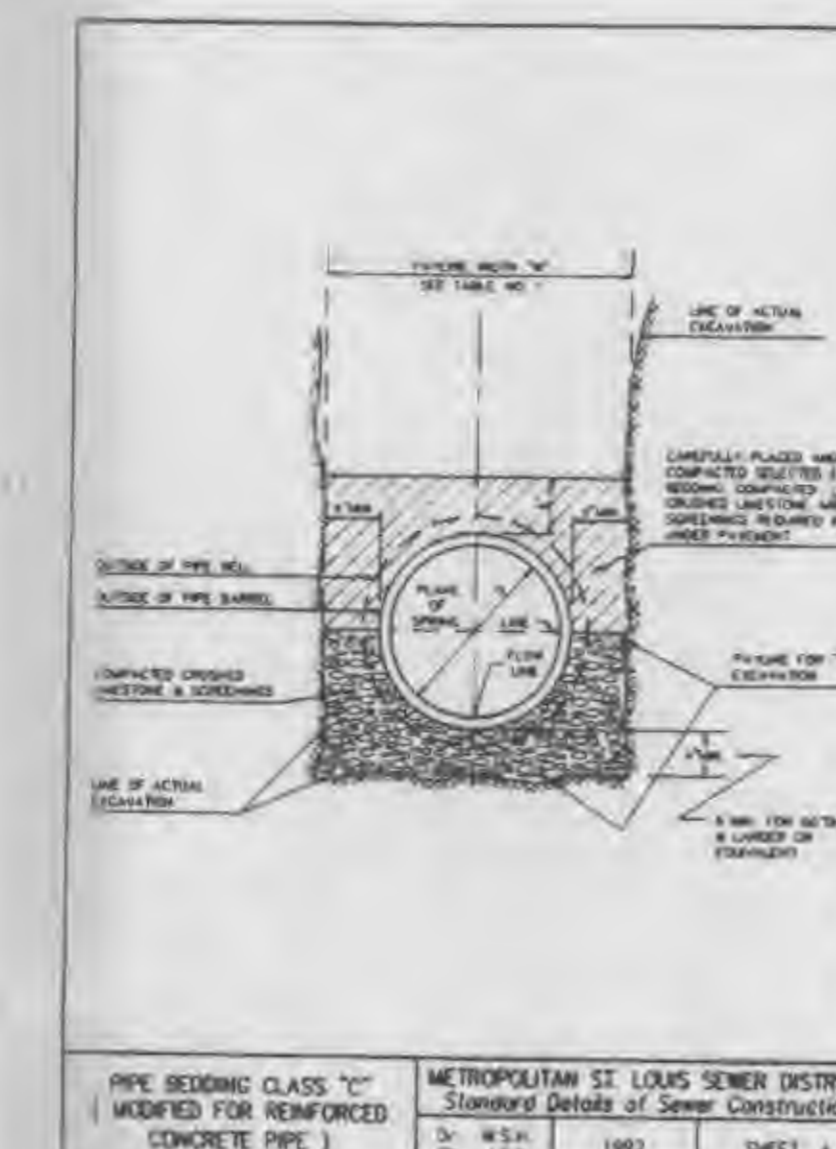
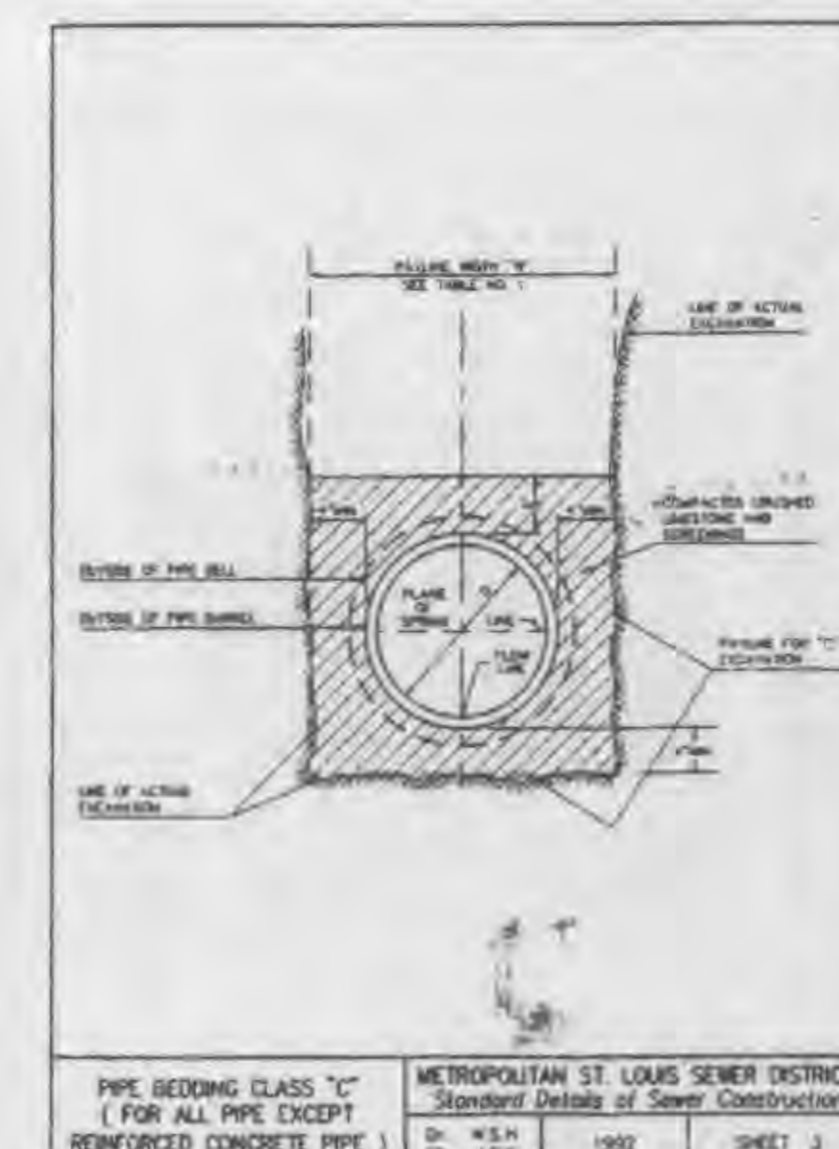
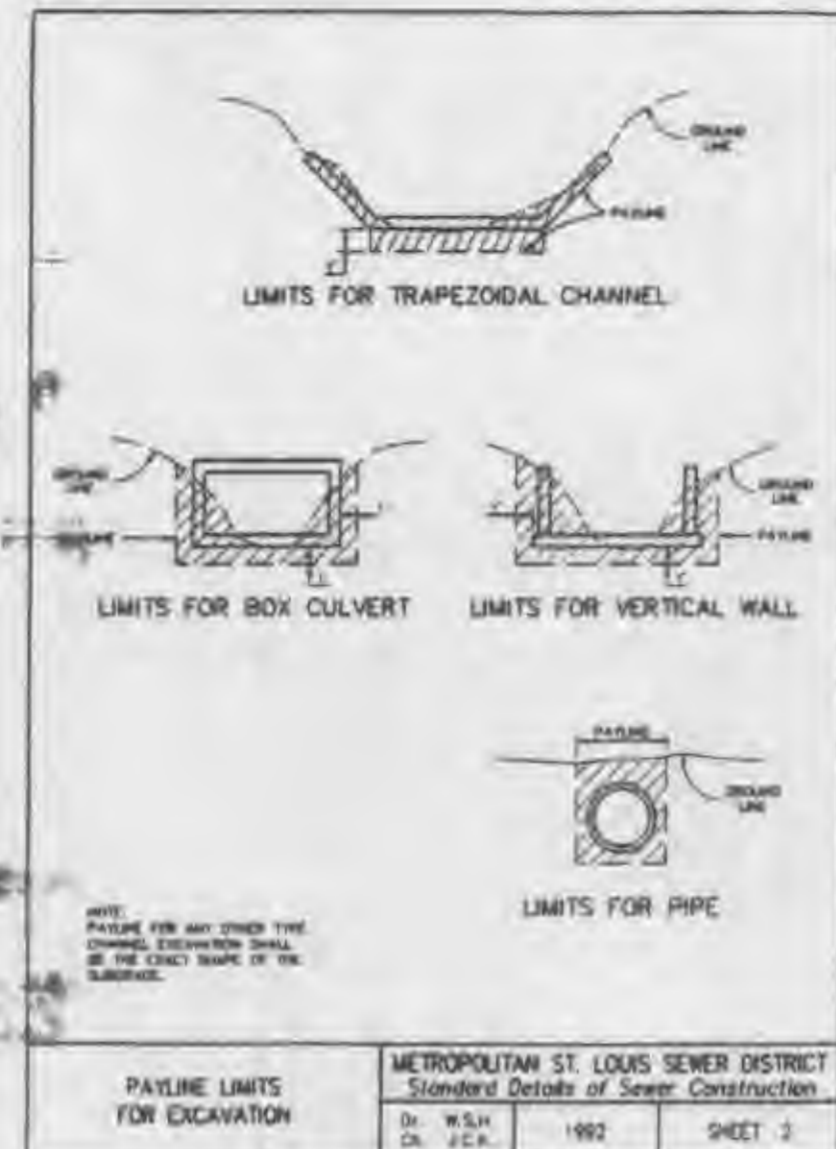
FRONT VIEW OF GUTTER RAMP FOR MULTIPLE UNIT
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 36



PLAN VIEW OF GUTTER RAMP FOR MULTIPLE UNIT
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. J.C.K. 1992 SHEET 36

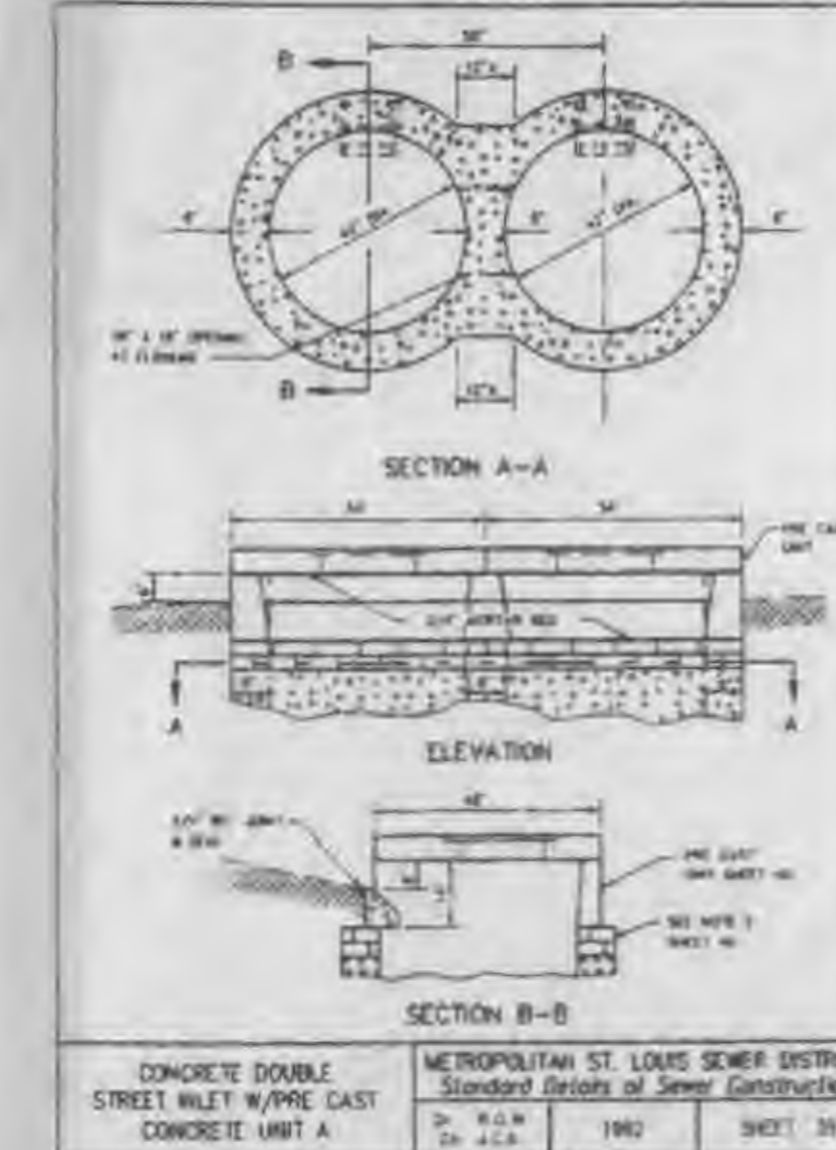
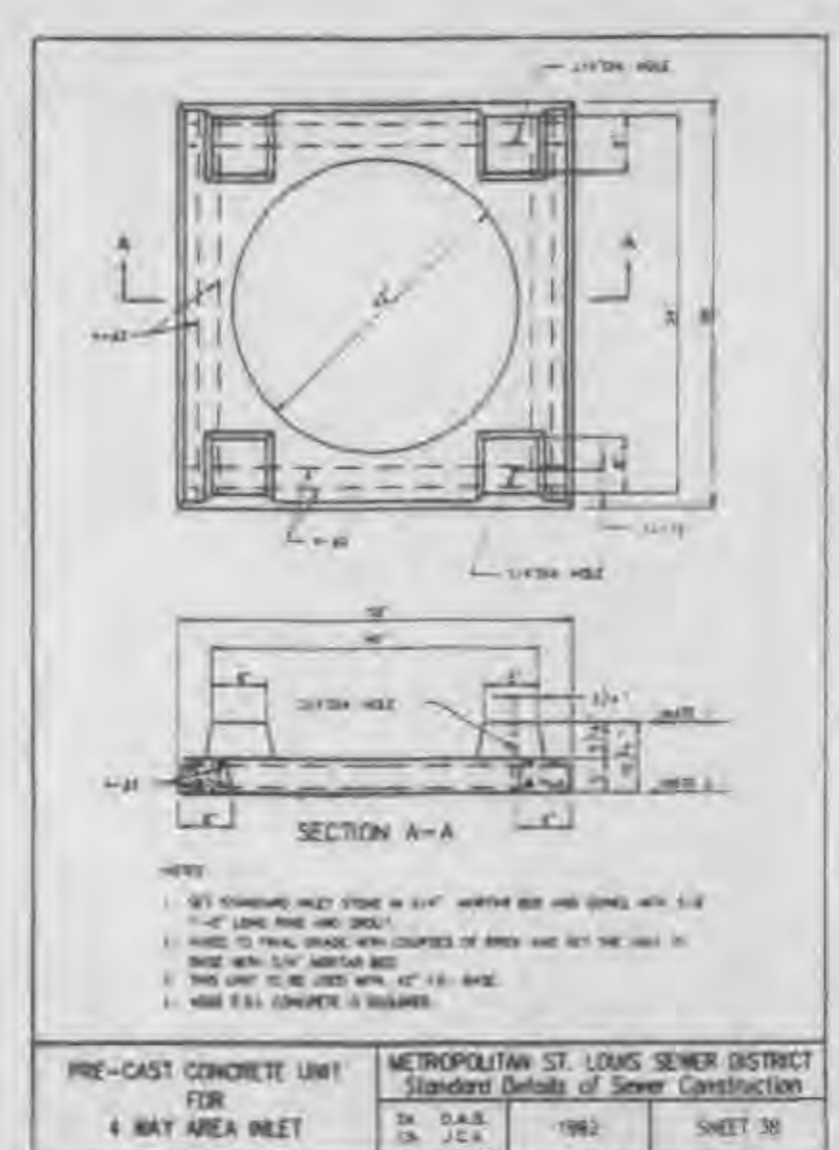
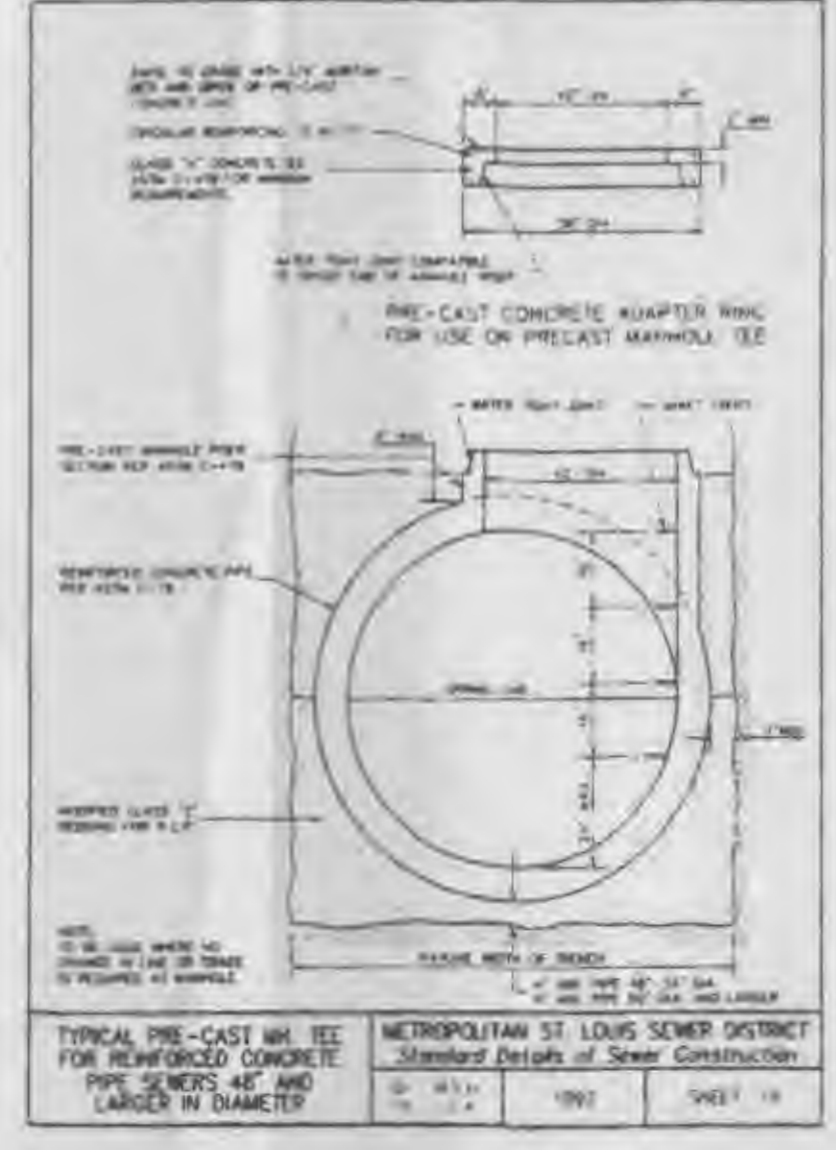
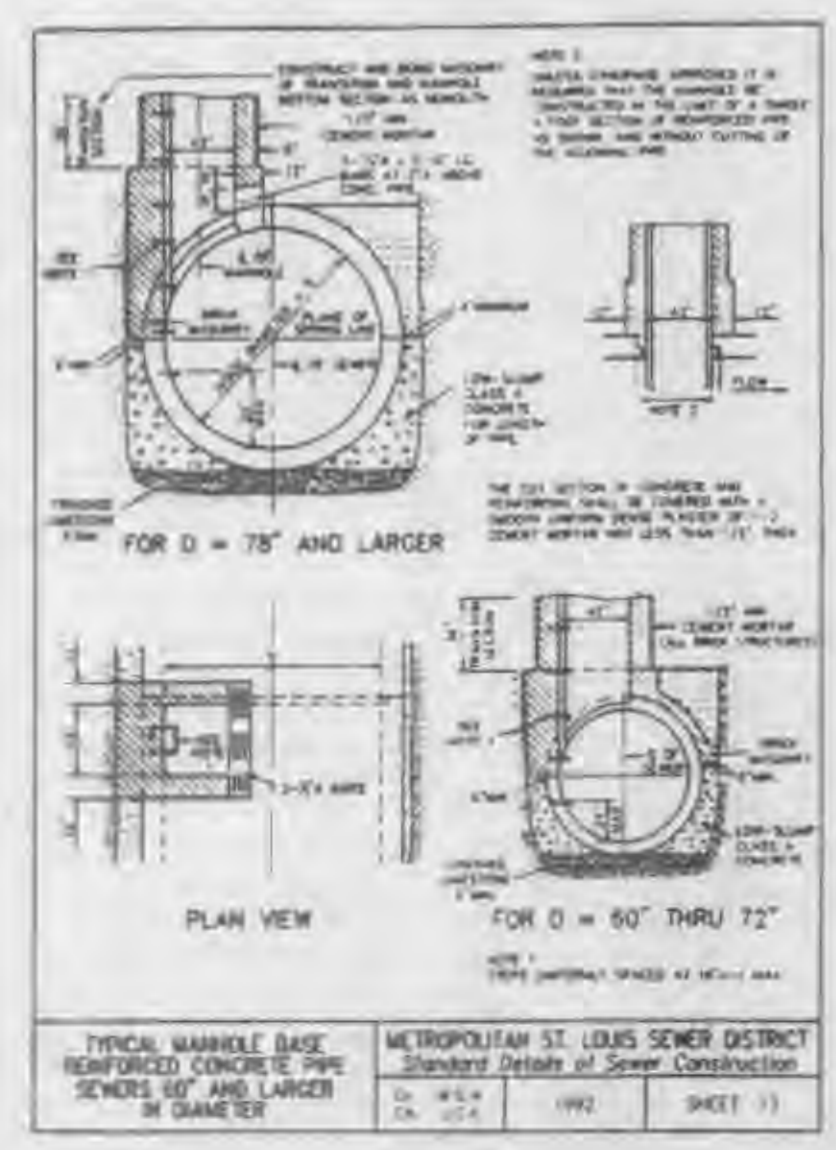
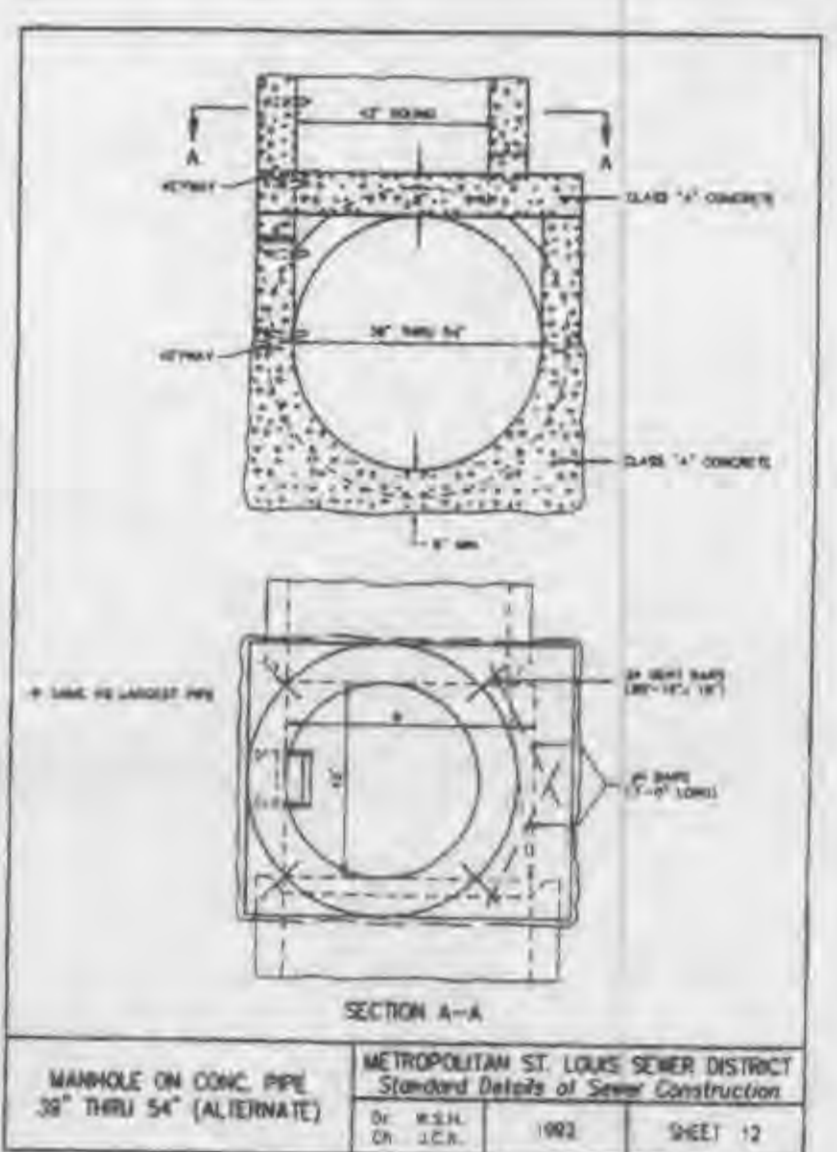
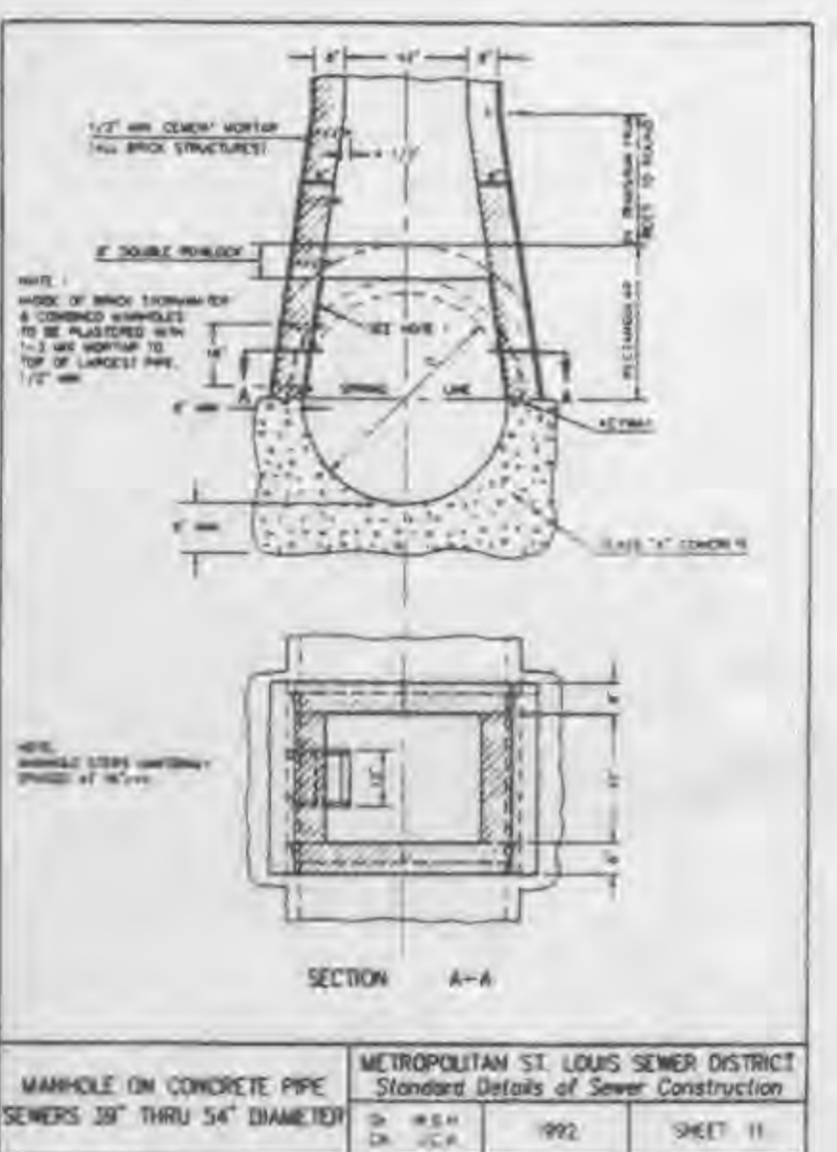
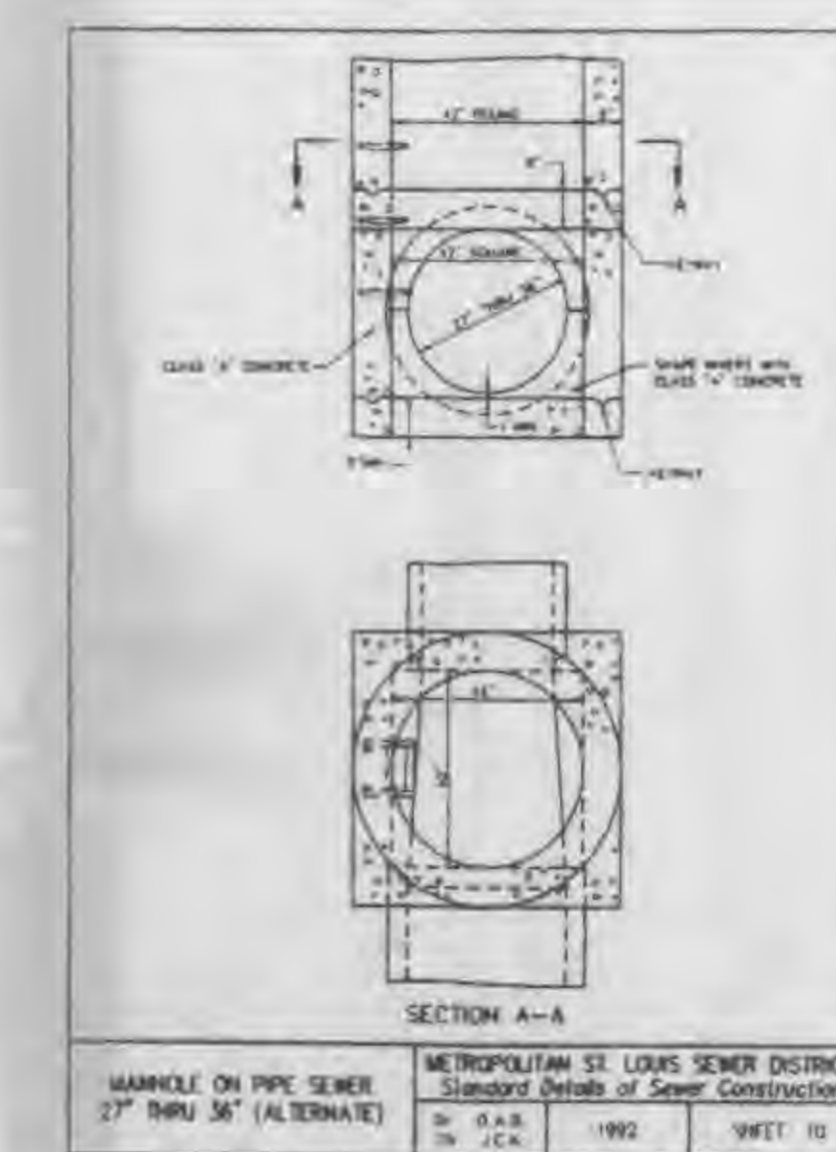
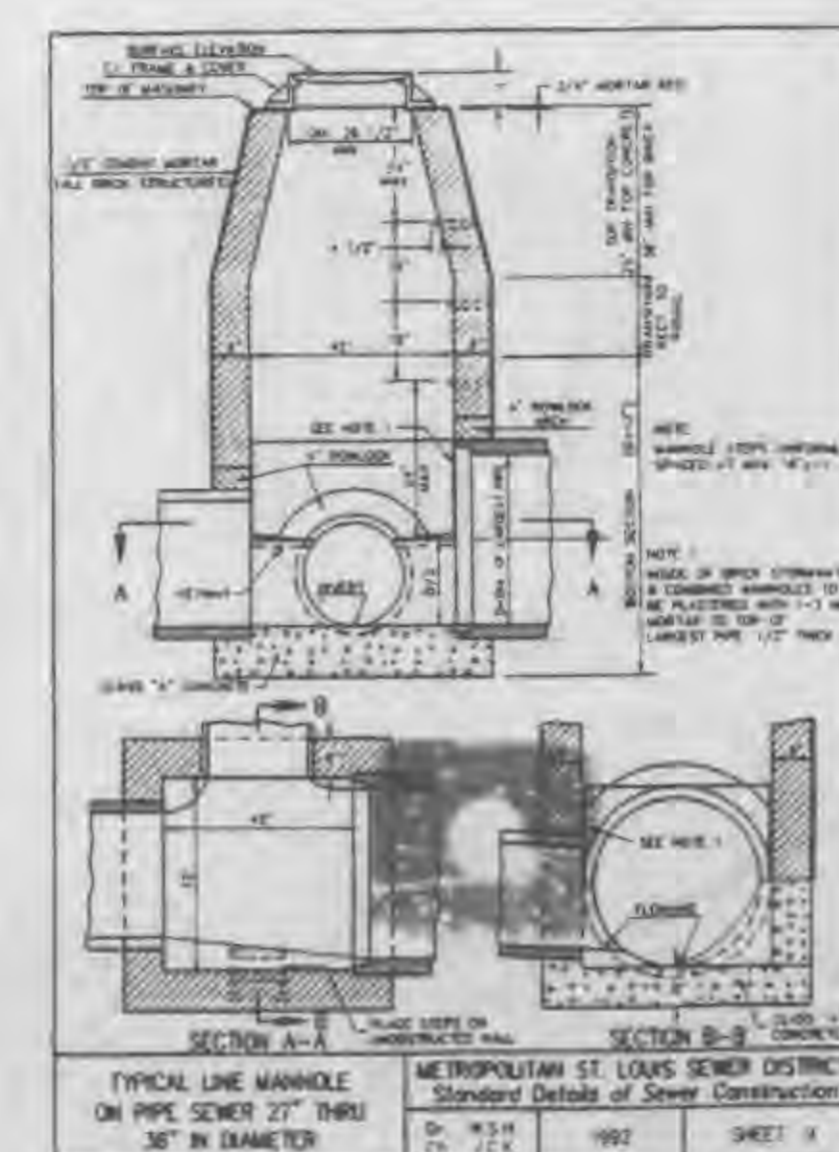
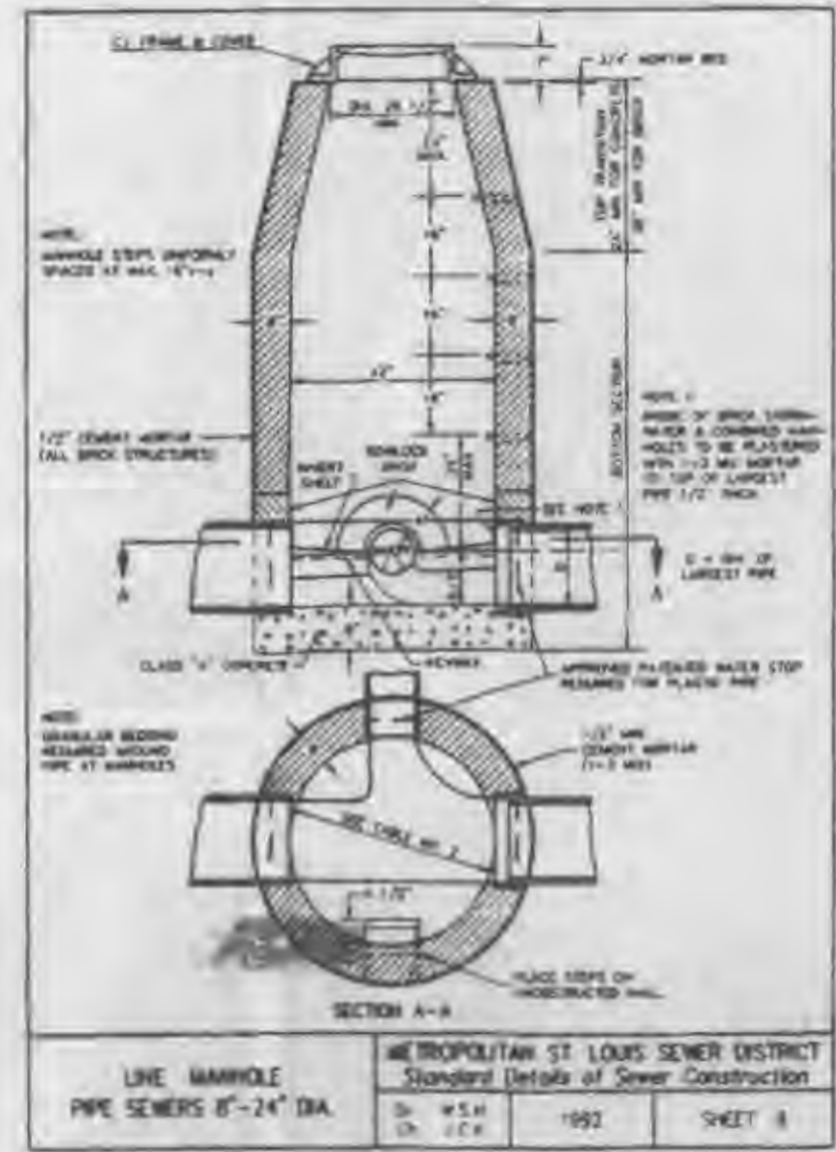
ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
PIPE SIZE (INCHES)	PAVING WIDTH (INCHES)	PAVING WIDTH (FEET)	PAVING WIDTH (FEET)	PAVING WIDTH (INCHES)	PAVING WIDTH (INCHES)	PAVING WIDTH (FEET)	PAVING WIDTH (FEET)
12	36	3.0	3.0	36	36	3.0	3.0
15	39	3.25	3.25	39	39	3.25	3.25
18	42	3.5	3.5	42	42	3.5	3.5
21	45	3.75	3.75	45	45	3.75	3.75
24	48	4.0	4.0	48	48	4.0	4.0
27	51	4.25	4.25	51	51	4.25	4.25
30	54	4.5	4.5	54	54	4.5	4.5
33	57	4.75	4.75	57	57	4.75	4.75
36	60	5.0	5.0	60	60	5.0	5.0
39	63	5.25	5.25	63	63	5.25	5.25
42	66	5.5	5.5	66	66	5.5	5.5
45	69	5.75	5.75	69	69	5.75	5.75
48	72	6.0	6.0	72	72	6.0	6.0
51	75	6.25	6.25	75	75	6.25	6.25
54	78	6.5	6.5	78	78	6.5	6.5
57	81	6.75	6.75	81	81	6.75	6.75
60	84	7.0	7.0	84	84	7.0	7.0
63	87	7.25	7.25	87	87	7.25	7.25
66	90	7.5	7.5	90	90	7.5	7.5
69	93	7.75	7.75	93	93	7.75	7.75
72	96	8.0	8.0	96	96	8.0	8.0
75	99	8.25	8.25	99	99	8.25	8.25
78	102	8.5	8.5	102	102	8.5	8.5
81	105	8.75	8.75	105	105	8.75	8.75
84	108	9.0	9.0	108	108	9.0	9.0
87	111	9.25	9.25	111	111	9.25	9.25
90	114	9.5	9.5	114	114	9.5	9.5
93	117	9.75	9.75	117	117	9.75	9.75
96	120	10.0	10.0	120	120	10.0	10.0
99	123	10.25	10.25	123	123	10.25	10.25
102	126	10.5	10.5	126	126	10.5	10.5
105	129	10.75	10.75	129	129	10.75	10.75
108	132	11.0	11.0	132	132	11.0	11.0
111	135	11.25	11.25	135	135	11.25	11.25
114	138	11.5	11.5	138	138	11.5	11.5
117	141	11.75	11.75	141	141	11.75	11.75
120	144	12.0	12.0	144	144	12.0	12.0
123	147	12.25	12.25	147	147	12.25	12.25
126	150	12.5	12.5	150	150	12.5	12.5

TABLE 1
PAVING WIDTHS OF TRENCH AND PAT-QUARTERS OF CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. W. H. & J. C. A. 1992 SHEET 1



SECTION OF MANHOLE	DIMENSION
TOP	UPPER 26 1/2" DIA.
TRANSITION	LOWER 42" DIA.
BOTTOM SECTION	8" THRU 24" DIA. PIPE 42" DIA.
BOTTOM SECTION	27" THRU 36" DIA. PIPE 42" SQUARE

TABLE NO. 2
STANDARD MANHOLE DIMENSIONS
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
D. W. H. & J. C. A. 1992 SHEET 7



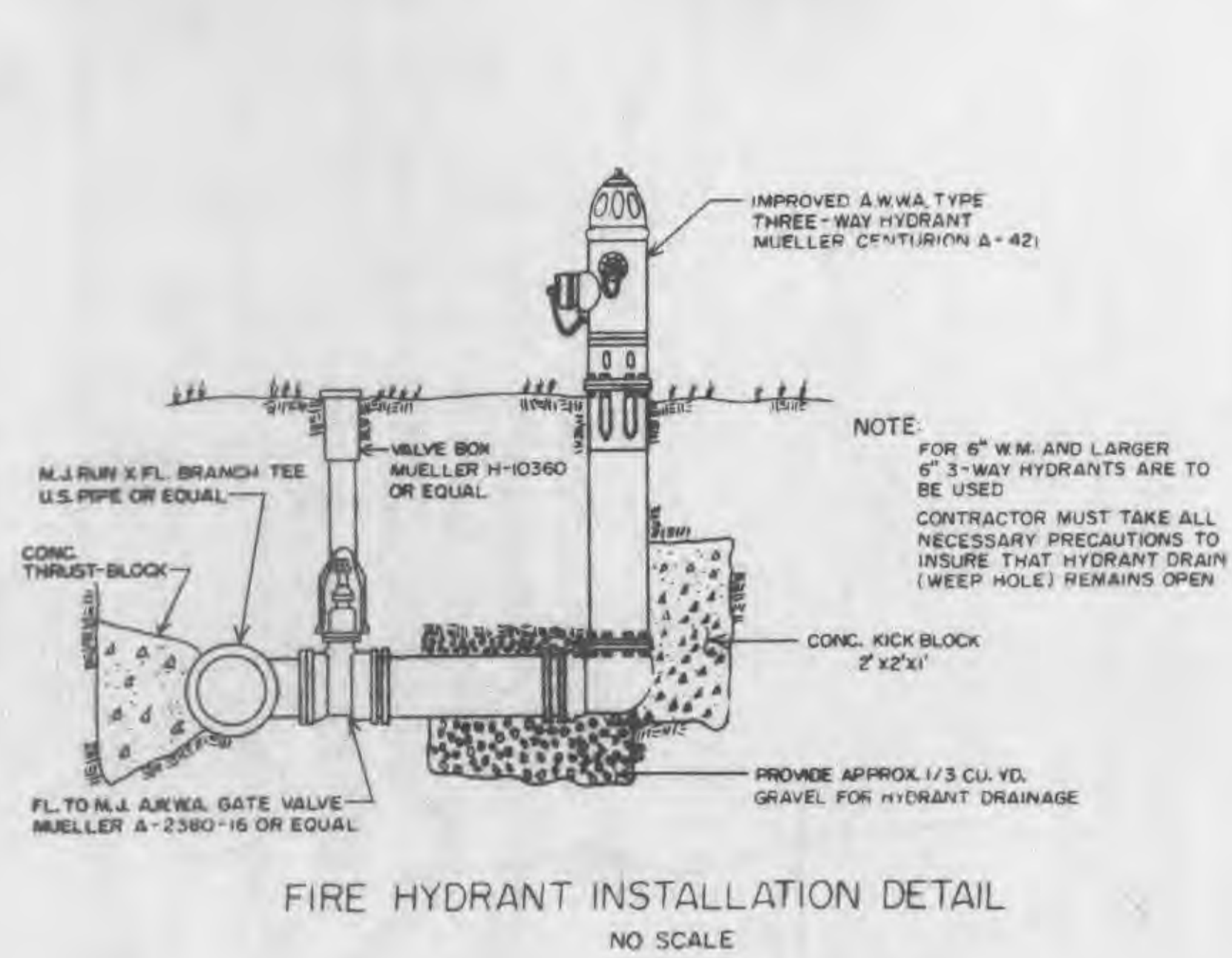
DARDENNE LANDING PHASE 3
STORM DETAILS II

S. C. ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: 636-947-4607 FAX: 636-947-2448

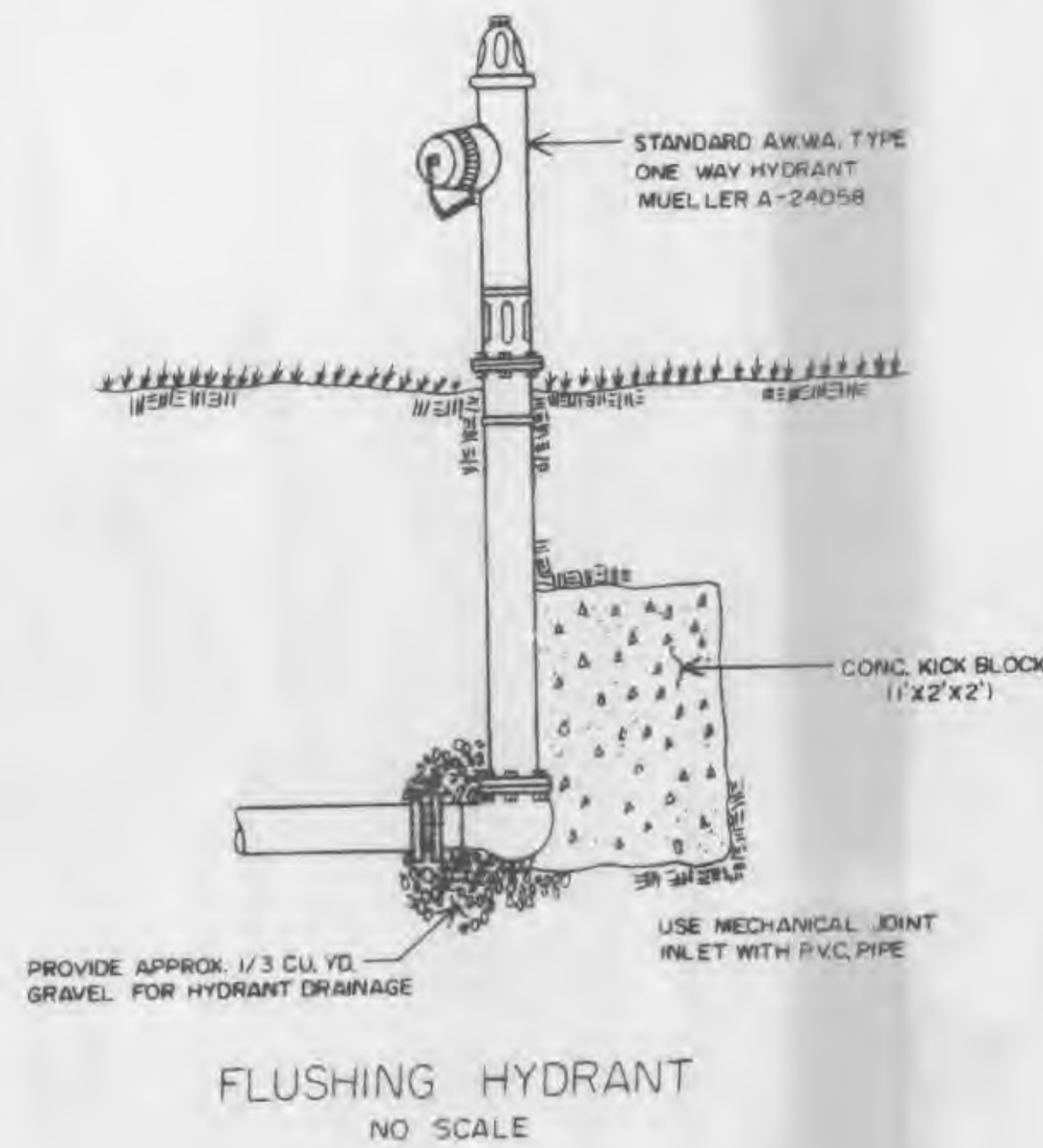
S C E S

ORDER NO.
09-0009-01
DATE
09/14/01

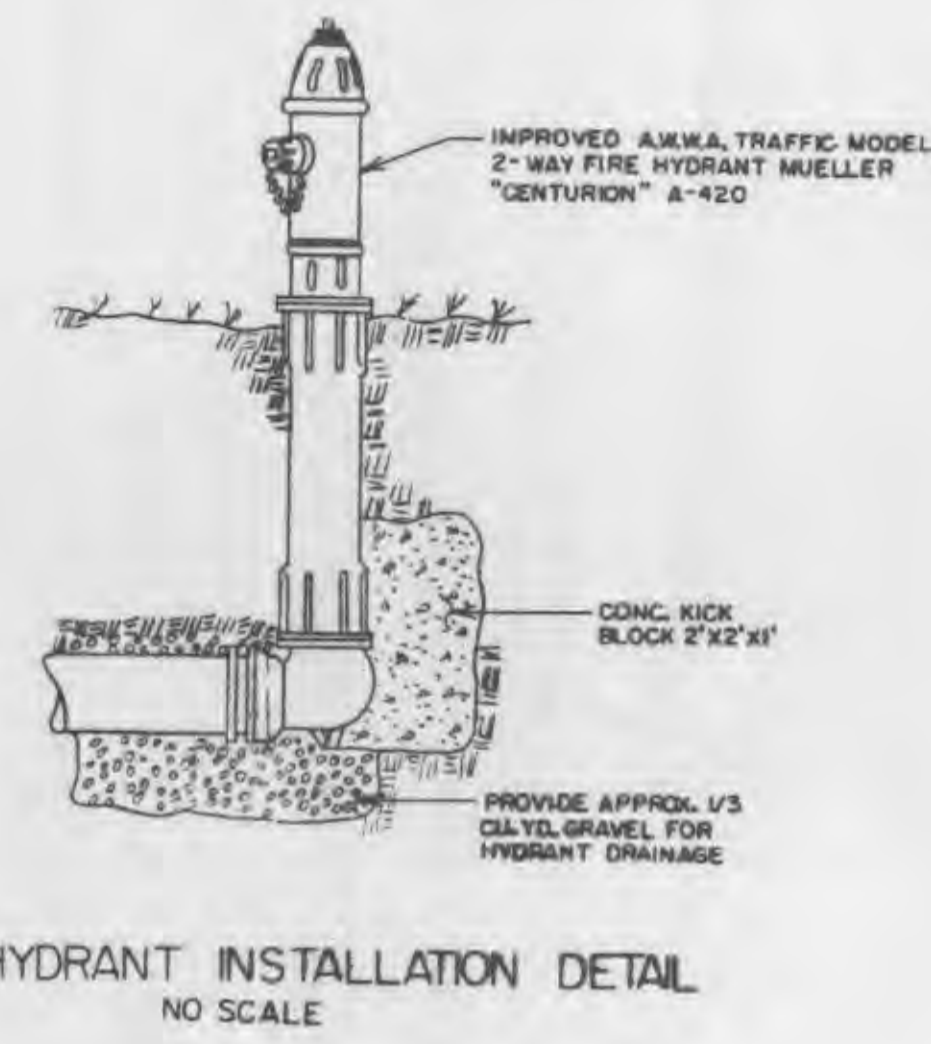
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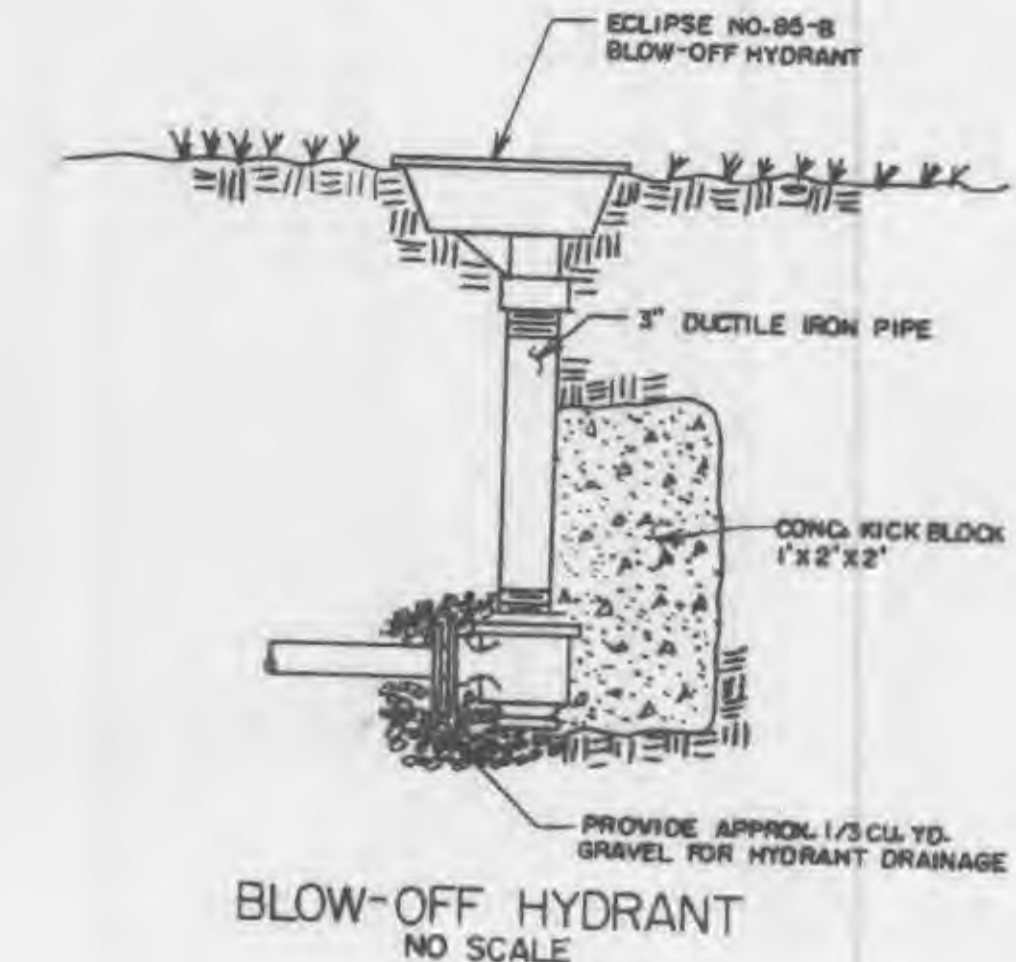
FIRE HYDRANT INSTALLATION DETAIL
NO SCALE



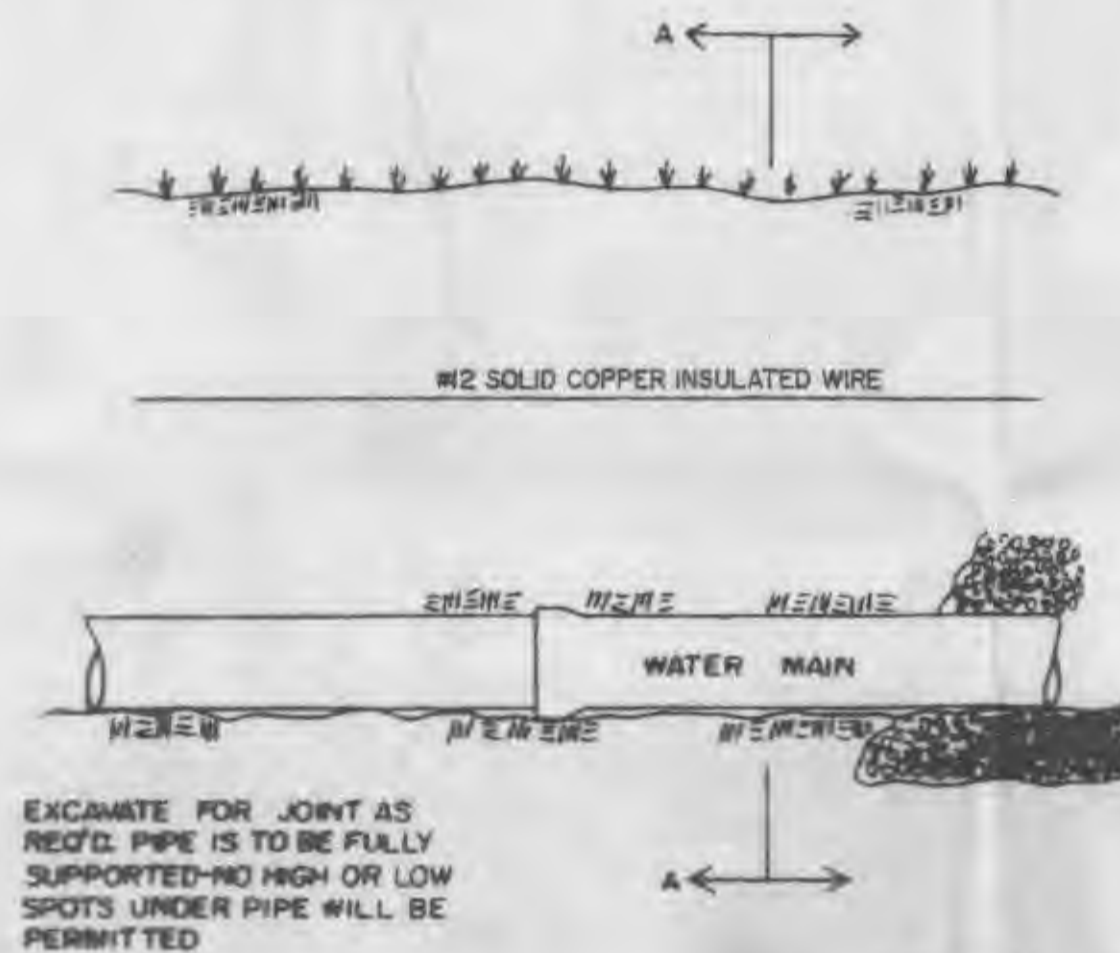
FLUSHING HYDRANT
NO SCALE



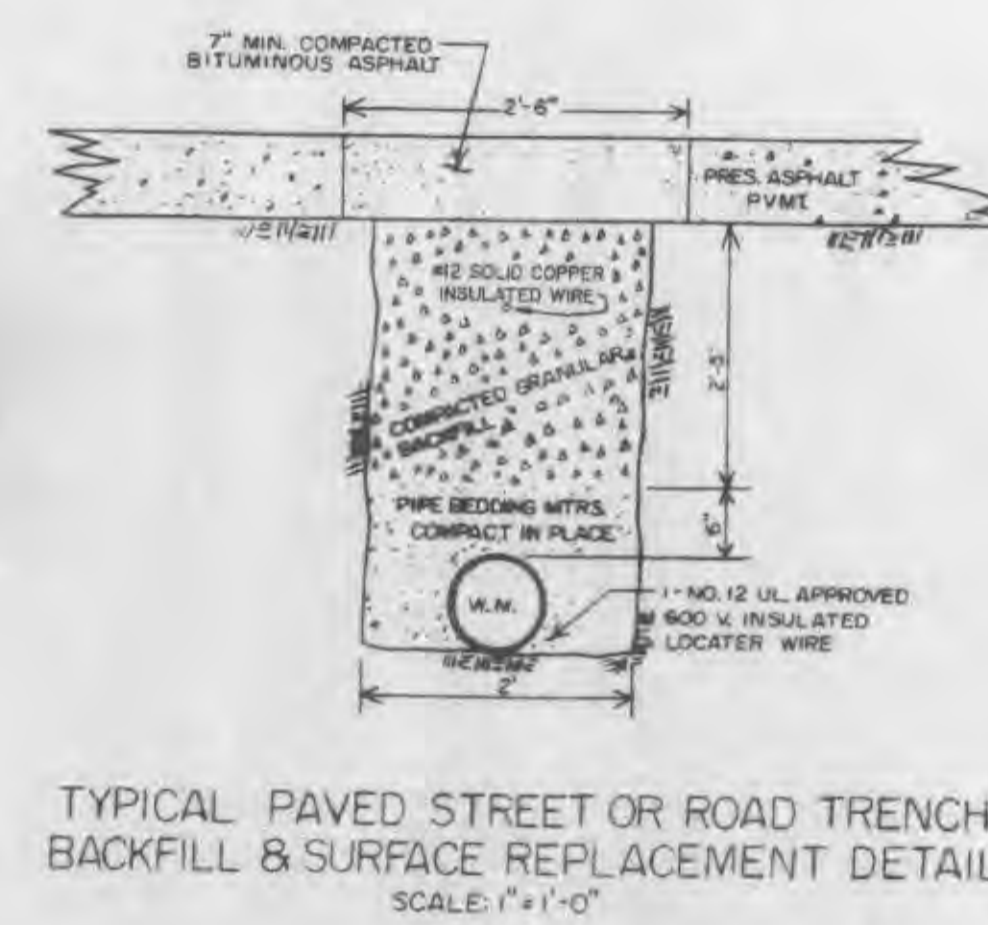
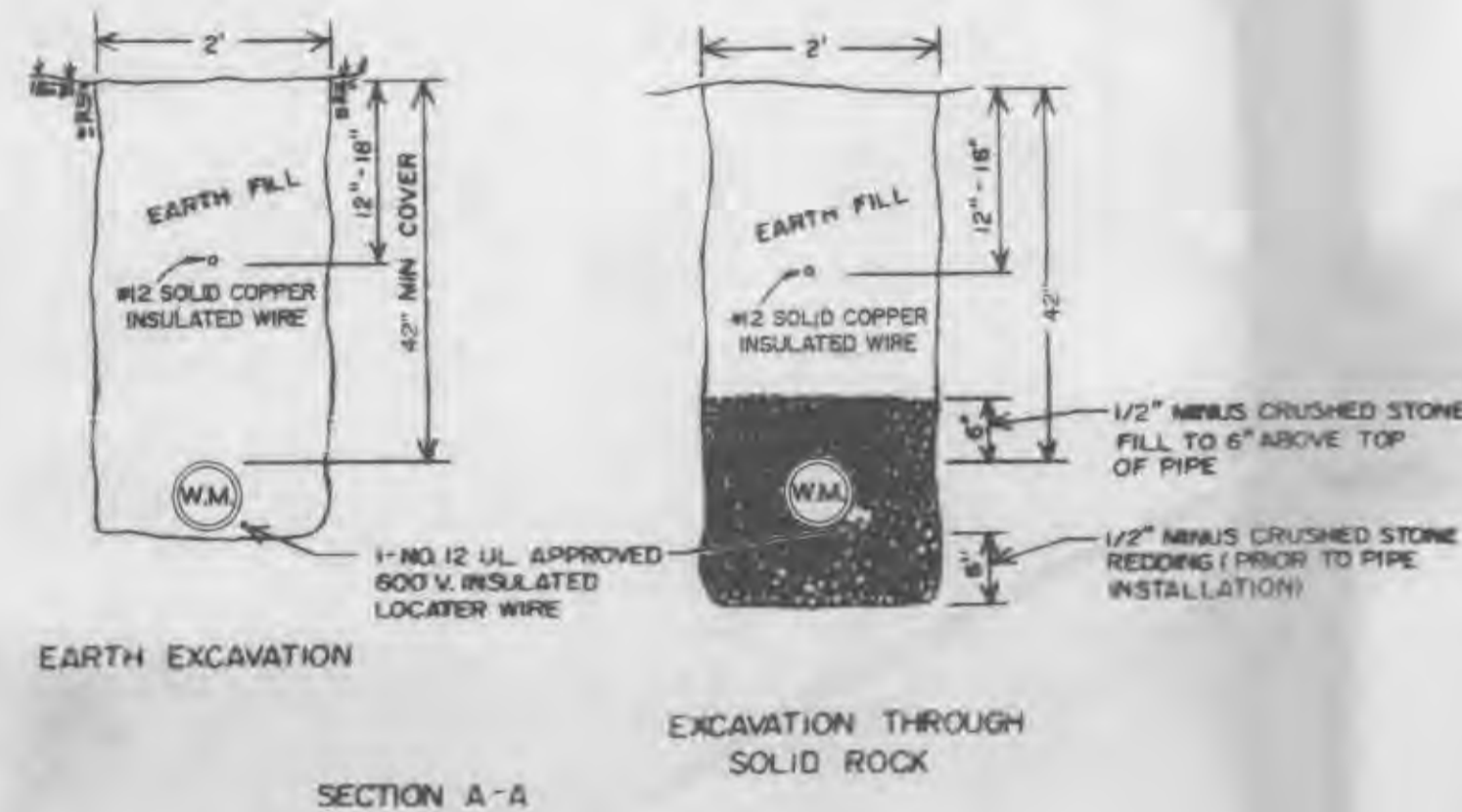
FIRE HYDRANT INSTALLATION DETAIL
NO SCALE



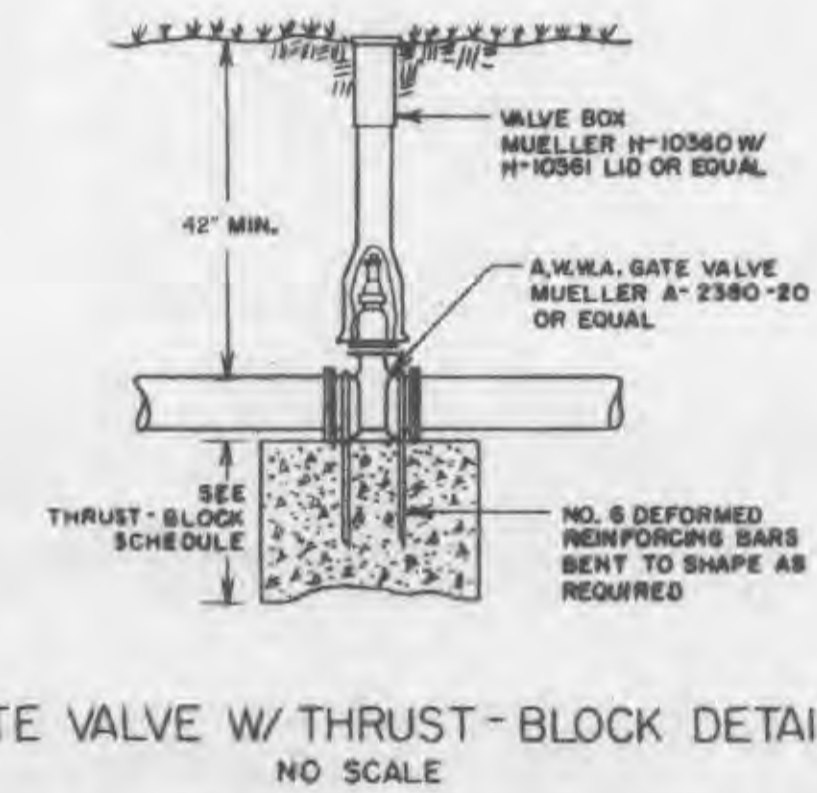
BLOW-OFF HYDRANT
NO SCALE



TYPICAL WATER MAIN TRENCHING DETAIL
NO SCALE



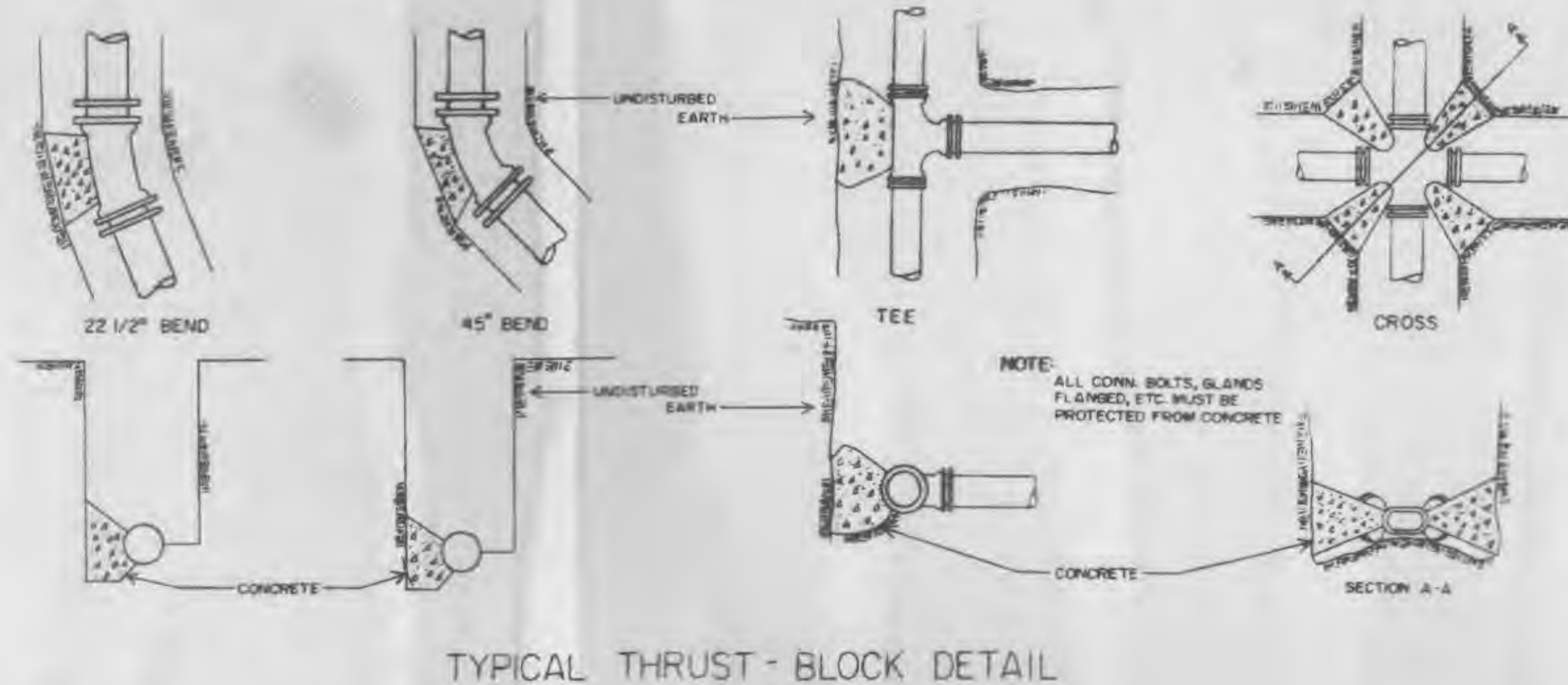
TYPICAL PAVED STREET OR ROAD TRENCH BACKFILL & SURFACE REPLACEMENT DETAIL
SCALE: 1"=1'-0"



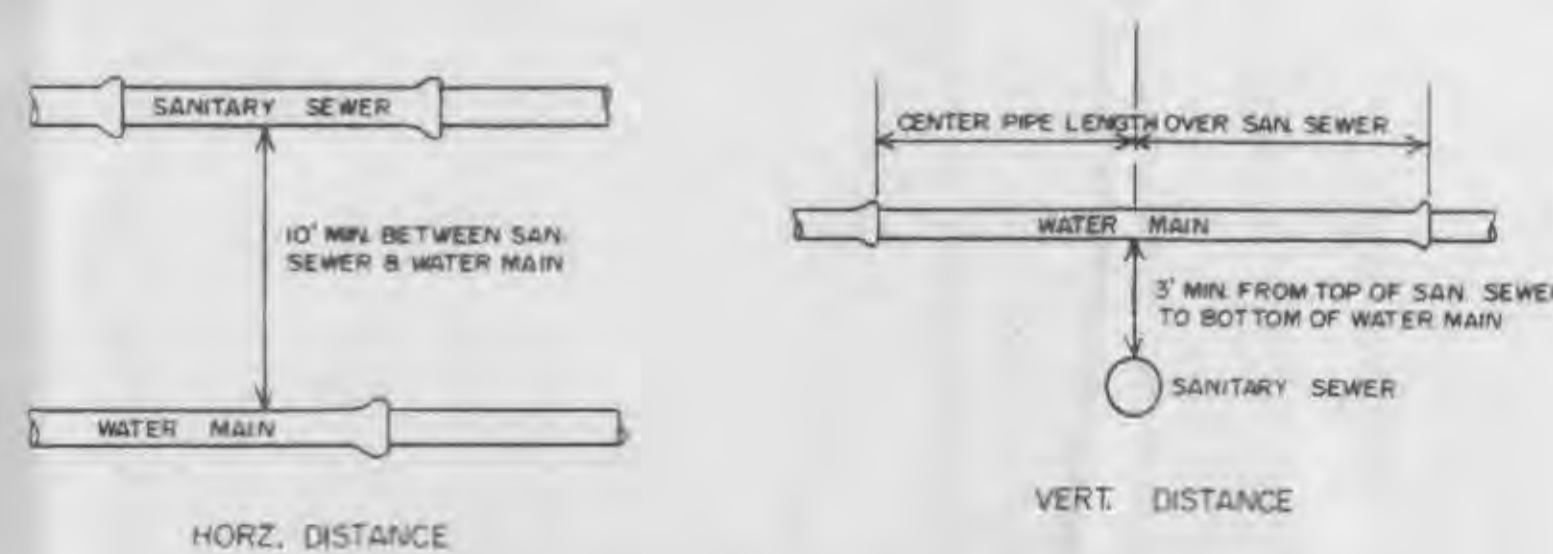
GATE VALVE W/ THRUST-BLOCK DETAIL
NO SCALE

MAIN SIZE	MIN. THRUSTBLOCK BEARING DIMENSIONS TO BEAR AGAINST UNDISTURBED EARTH				
	45° BEND	22 1/2° BEND	TEE	VALVE	CROSS
2"	5'x1'	5'x1'	5'x1'	5'x1'	5'x1'
4"	1'x1'	1'x1'	2'x1'	2'x1'	1'x1'
6"	1.5'x1'	1'x1'	2'x1'	2'x1'	1'x1'
8"	2'x1'	1'x1'	2'x2.5'	2'x2'	1'x1.5'
10"	2'x2.5'	1.5'x2'	2'x3.5'	2'x3'	2'x2'

THRUST-BLOCK SCHEDULE



TYPICAL THRUST-BLOCK DETAIL



TYPICAL WATER & SEWER SEPARATION
NO SCALE

