

DESIGN STANDARDS AND SPECIFICATIONS
FOR
PLAT ROADS AND PRIVATE WORK ON
COUNTY RIGHT OF WAY

KING COUNTY ENGINEERS OFFICE
JEAN L. DESPAIN
KING COUNTY ENGINEER

1967

RESOLUTION NO. 33864

PASSED THIS 10th DAY OF July 1967

CHAIRMAN

John T. O'Brien

E. J. ...

Frank ...

BOARD OF COUNTY COMMISSIONERS
KING COUNTY, WASHINGTON

GENERAL REQUIREMENTS

Workmanship and materials shall be in accordance with the Washington State Department of Highways Standard Specifications and the Design Standards of Road Construction of 1963 as adopted by King County Resolution No. 25121

A plan and profile of the proposed road, showing the following data, shall be submitted to the King County Engineer for approval prior to construction.

PLAN

1. Road alignment in stations of 100-foot intervals.
2. Bearings on road centerline.
3. Curve data on all horizontal curves.
4. Right-of-way lines and widths for proposed road and side streets.
5. All topography within the right-of-way limits, include all utilities.
6. Label all streets and adjoining subdivisions.
7. Typical roadway section of proposed road.
8. Existing and proposed drainage structures (indicate direction of flow).
9. Suggested map scale 1"=100' or 1"=50'.

PROFILE

1. Original ground line.
2. Stationing in intervals of 100 feet.
3. Control elevation on border of sheet.
4. Grade line showing grade percents and vertical curves.
5. Indicate datum used and all bench marks.

GENERAL REQUIREMENTS
(Continued)

6. Profile scale shall be Vertical 1"=10', Horizontal 1"=100' or Vertical 1"=5' Horizontal 1"=50'.

Note: Profile scale shall be 10:1 ratio, Horizontal to Vertical. Plan and profile sheets shall be submitted on 23" x 36" sheets, or 23" x 18".

DEFINITIONS AND TERMS

1. RESIDENTIAL ACCESS STREET (48 ft. to 54 ft. R/W)
Normal residential streets to serve maximum of 100 lots or units.
2. NEIGHBORHOOD COLLECTOR STREET (56 ft. to 60 ft. R/W)
To serve maximum of 350 lots or units.
3. COMMUNITY ARTERIAL STREET (58 ft., 60 ft. or 64 ft. R/W)
To serve maximum of 1,500 lots or units.
4. COMMERCIAL ACCESS STREET (60 ft. R/W)
40 ft. minimum width between curbs.
5. MAJOR THOROUGHFARES (84 ft. to 100 ft. R/W)
To be by Special Determination.
6. PRIVATE ACCESS STREETS
Pavement width may be reduced to 20 ft. for private residential streets serving 10 lots or less.
7. ONE-WAY STREETS (40 ft. R/W)

One-way streets may be utilized with 20 ft. minimum width between curbs, under appropriate circumstances, such as serving adjacent lots on one side only.

GENERAL NOTES

1. DRAINAGE

Maximum length of surface drainage for thickened edge pavements or curb sections shall not exceed 300 feet, unless otherwise approved by the County Engineer.

Maximum spacing between catch basins shall not exceed 300 feet. Suggested catch basin spacing and % grade are as follows:

150 feet	-	0.5%	to	1.5%
	-	12.0%	or	greater
200 feet	-	1.5%	to	3.0%
	-	8.0%	to	12.0%
300 feet	-	3.0%	to	8.0%

All culvert pipe, except when used for individual driveways on ditched roadways, shall have a rubber gasket joint or cement grouted joint. Eight-inch (8") minimum plain concrete culvert pipe with a maximum length of 40 feet may be used between inlet and catch basin.

Catch basins shall be Type "TA" and may be poured in place, concrete block or precast, in accordance with approved plans.

For depths over 5 feet to flow line, standard manholes or Type II catch basins will be required.

All drainage must be shown on the roadway plan and shall be submitted to the County Engineer for approval, prior to construction.

Lined ditches may be required on grades over 8%.

Drainage easement to be located on one lot only and should be indicated both on final tracing for recording and the plan and profile sheet.

2. SURFACING

Source and types of surfacing materials must be approved by the County Engineer before construction begins.

Alternates:

On asphalt streets only, a minimum of 4" gravel base Class "B" or better, 2" of 5/8 minus crushed surfacing top course and 2" asphalt concrete Class "B" shall be required. In lieu of the above, 4" asphalt treated base and 2" asphalt concrete Class "B" may be substituted upon approval by the County Engineer.

GENERAL NOTES
(Continued)

3. UTILITIES

Utility locations are shown on the typical sections and any deviations are to be approved in writing by the County Engineer. Gas and water lines may be placed 10 feet from centerline on streets paved with curb and gutter or thickened edge sections, provided that mains and service connections to all lots are completed prior to placing any surfacing materials.

Water lines located on north and east side of street.

Gas lines located on south and west side of street.

Wherever feasible, underground utilities together with service crossings, shall be installed after subgrade has been completed, but before surfacing has been placed. Backfilling of trenches shall be in accordance with approved methods, as required by the County Engineer. See "Johns-Manville Spec. DS-348-61" for asbestos cement pipe.

4. No plat may be submitted for recording until the plan, profile and roadway section, including construction details for drainage and location of all utility facilities are approved and construction shall be in accordance with approved plans. Any variances must have prior approval by the County Engineer. At the time of the completion of the plat, "As Built" plans will be submitted to the County Engineer.

5. The thickened edge pavement, shown on SP-2 may have an alternate that would allow an extruded Portland cement curb that would be placed so that the outside edge of curb would be 6 inches from edge of the pavement, as shown on SP-5. Face of curb should conform to pavement dimensions shown for integral curb and gutter on SP-2.

6. The minimum roadway surfacing shall include a light bituminous treatment for grades of 0.5% to 12.0%. Asphalt concrete shall be required for grades 12.0% to 20.0% and Portland cement concrete for grades over 20.0%.

7. PLAT INSPECTION REQUIREMENTS

The following inspections will be required on all plat road construction effective December 1, 1966:

(a) Inspection No. 1 will be the underground drainage system prior to cover.

GENERAL NOTES
(Continued)

PLAT INSPECTION REQUIREMENTS - Continued

- (b) Inspection No. 2 will be required following installation of the drainage system, underground utilities, and completion of roadway grading to a suitable subgrade including gravel ballast if required.
- (c) Inspection No. 3 will be required following placing of crushed gravel surfacing and construction of curbing if required.
- (d) Inspection No. 4 (final) will be required following paving, cleaning of drainage system and all necessary clean up.

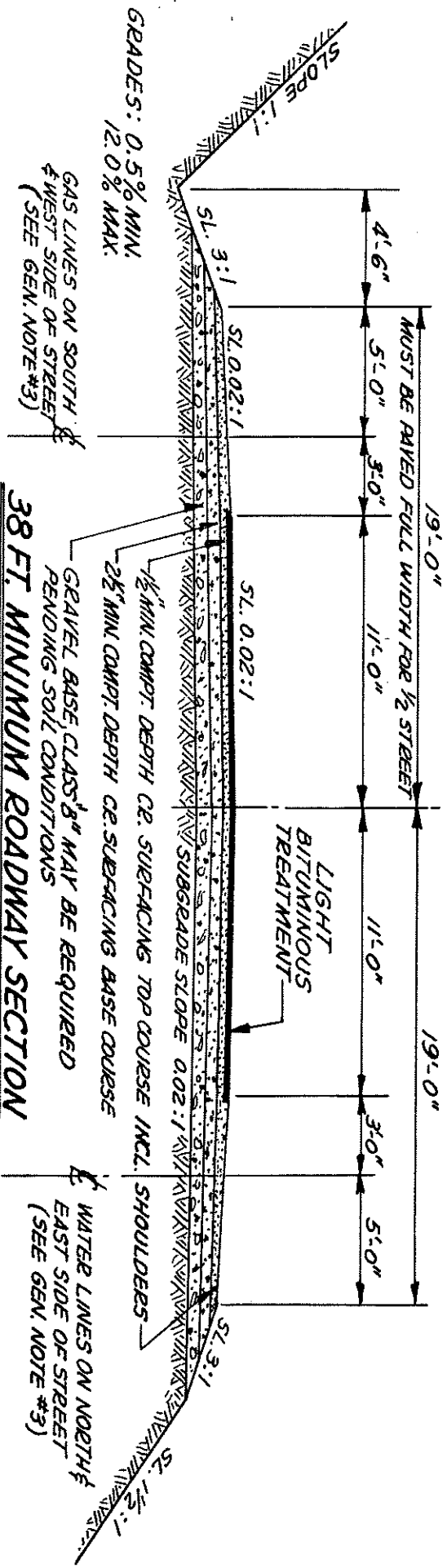
It shall be the responsibility of the developer to notify the District Engineer in advance of required inspection. Failure to comply will necessitate appropriate testing by the King County Materials Laboratory and/or furnishing certified bills for all materials. In the event this action is necessary, no further work will be permitted on the plat until all tests have been completed and all corrections are made to the satisfaction of the County Engineer.

It is recognized that an alternate construction schedule may be necessary in some instances. Any deviation from the above schedule must be brought to the attention of the District Engineer in sufficient time to arrange appropriate inspections.

South Road District No. 2
Main 2-5900, Extension 647

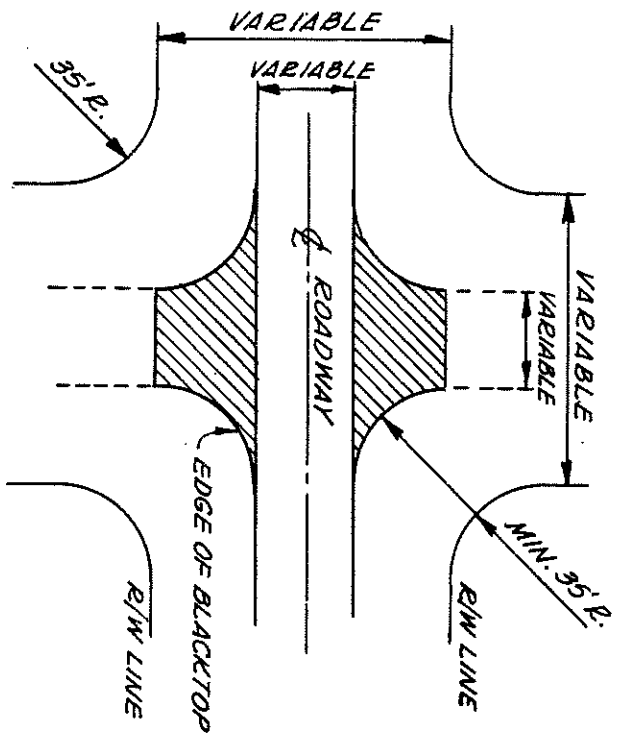
North Road District No. 3
Main 2-5900, Extension 647

- 8. Rolled curb may be used on tangent without integral sidewalk on cul-de-sac streets serving no more than 16 lots. The bulb of the cul-de-sac will be constructed using standard vertical curb and gutter without sidewalks.

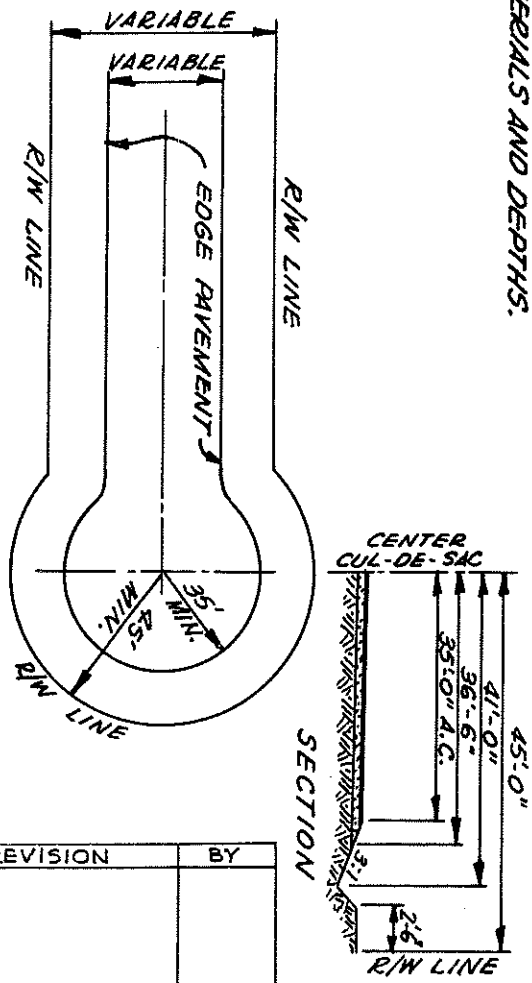


38 FT. MINIMUM ROADWAY SECTION
 22' BITUMINOUS TREATMENT

NOTE: SURFACING DEPTHS INDICATED ARE MINIMUM REQUIREMENTS. SOIL CONDITIONS, COLLECTOR OR ADJERIAL ROUTES MAY REQUIRE INCREASED SURFACING MATERIALS AND DEPTHS.

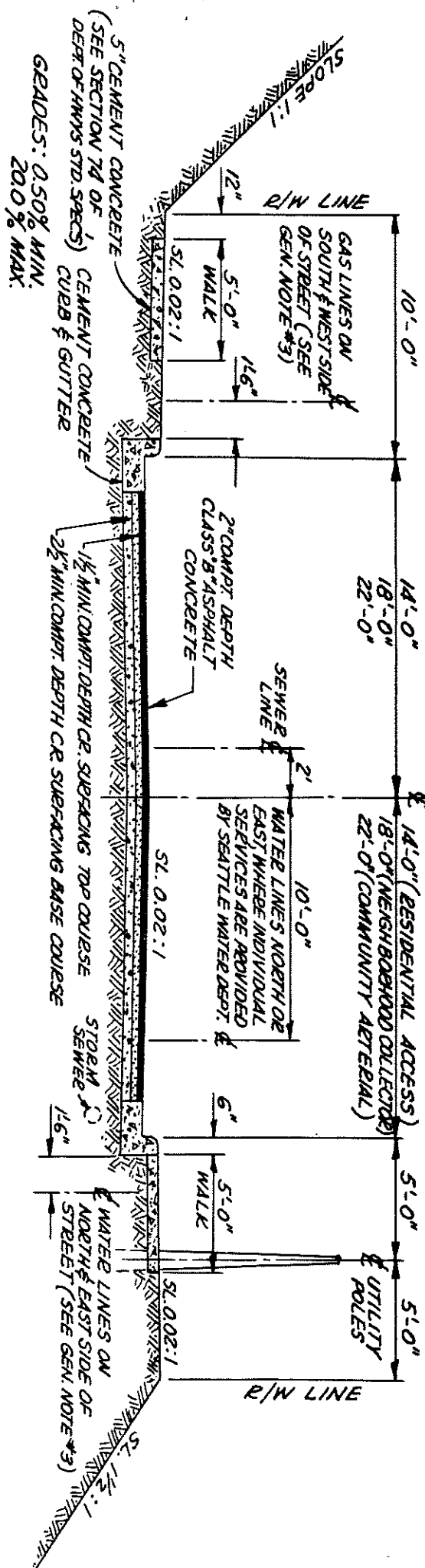


TYPICAL INTERSECTION DETAIL

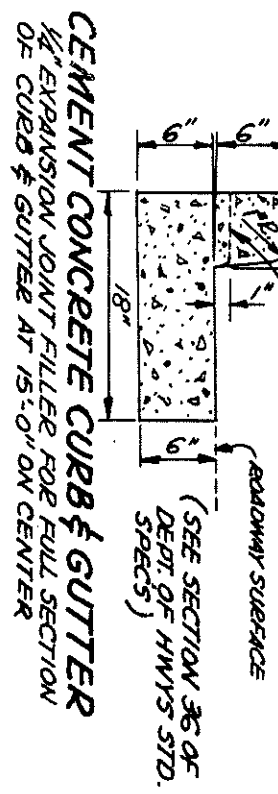


TYPICAL CUL-DE-SAC DETAIL

DATE	REVISION	BY

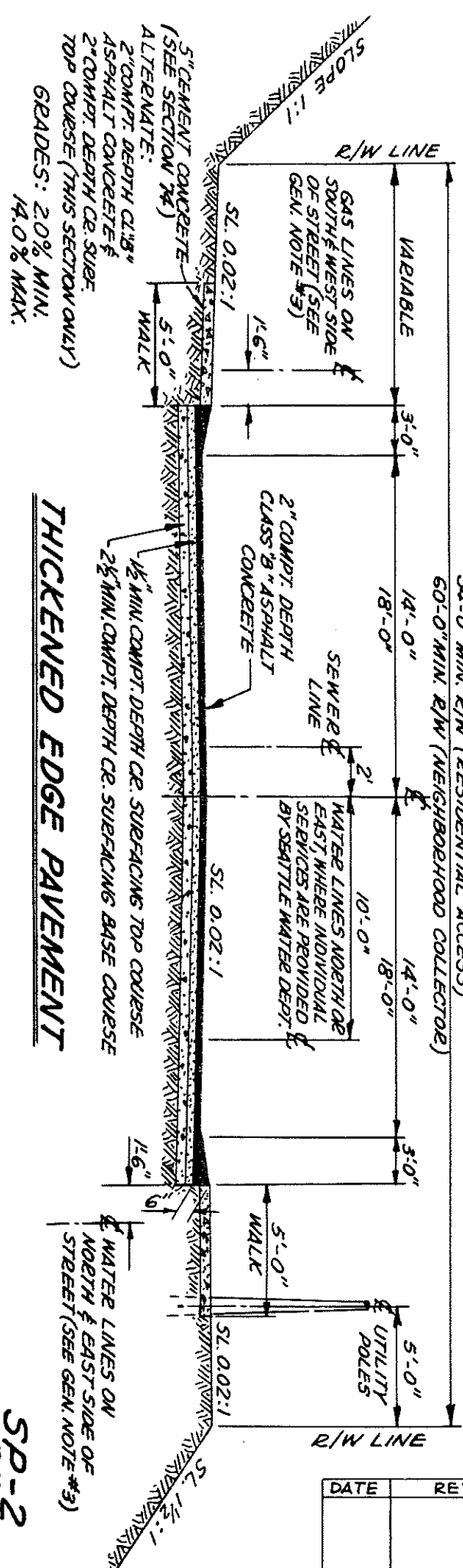


CURB AND GUTTER SECTION



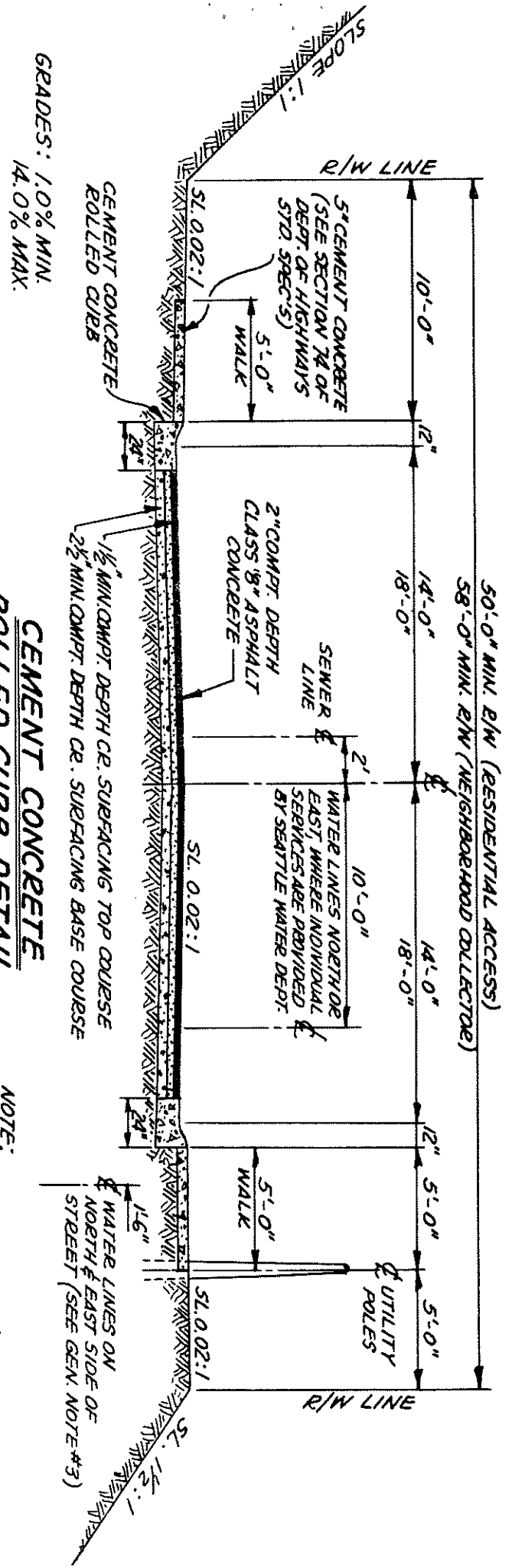
CEMENT CONCRETE CURB & GUTTER

NOTE: GRAVEL BASE, CLASS "B" MAY BE REQUIRED PENDING SOIL CONDITIONS. SURFACING DEPTHS INDICATED ARE MINIMUM REQUIREMENTS. SOIL CONDITIONS COLLECTOR OR ARTERIAL ROUTES MAY REQUIRE INCREASED SURFACING MATERIALS AND DEPTHS.



THICKENED EDGE PAVEMENT

DATE	REVISION	BY

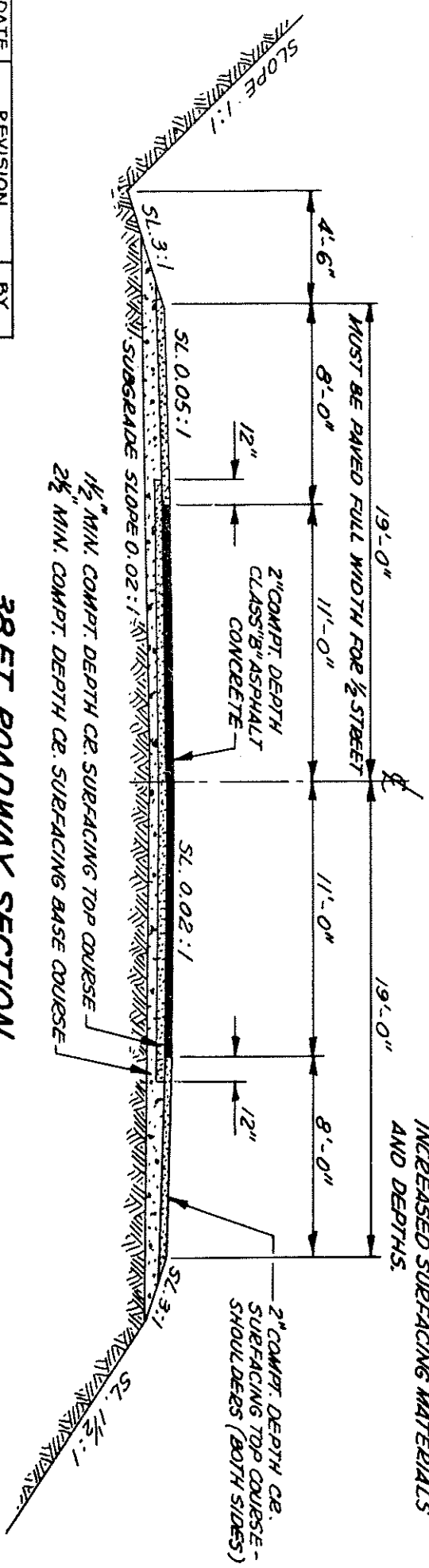


GRADES: 1.0% MIN.
14.0% MAX.

CEMENT CONCRETE ROLLED CURB DETAIL

NOTE: SIDEWALK AND ROLLED CURB MAY BE POURED INTEGRALLY OR SEPARATELY. (SEE SP-15)

NOTE: GRAVEL BASE, CLASS "B" MAY BE REQUIRED PENDING SOIL CONDITIONS. SURFACING DEPTHS INDICATED ARE MINIMUM REQUIREMENTS, SOIL CONDITIONS, COLLECTOR OR ARTERIAL ROUTES MAY REQUIRE INCREASED SURFACING MATERIALS AND DEPTHS.



38 FT. ROADWAY SECTION
22 ASPHALT CONCRETE PAVEMENT

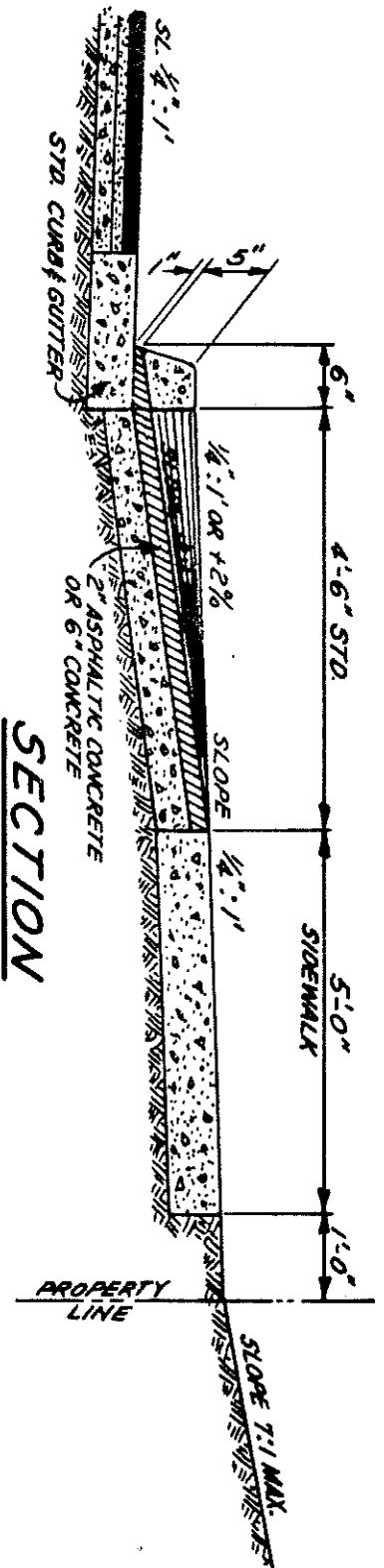
DATE	REVISION	BY

**APPROXIMATE SURFACING QUANTITIES
FOR 100 LINEAL FEET OF ROADWAY**

ROADWAY TYPES	Width		ALTERNATES											
	Finished	Subgrade	Top Course	Base Course	Gravel Base	Asphalt	Cover	Asph. Conc.	Top	Gr. Base	Asph. Conc.	Asphalt		
			1 1/2" Depth	2 1/2" Depth	Cl. B-1 1/2" Depth	Cement	Stone	Cl. B-2" Depth	Course 2" Depth	Class 4" Depth	Class "B" 2" Depth	Treated Base 4" Depth		
Minimum Roadway Section			Tons	Tons	Tons	Tons	Tons	Tons	C.Y.	Ton	C.Y.	Ton	Tons	Tons
Light Bituminous	38	42	34	57	140	.60	6							
Private Roadway and One-way Streets	20	18	15	25				23	14	20	28	40	23	46
Curb and Gutter	28	26	22	36				33	20	29	40	58	33	66
Curb and Gutter	36	34	29	48				43	26	38	52	76	43	86
Curb and Gutter	44	42	35	58				53	33	48	66	96	53	106
Thickened Edge(Inc.Edge)	34	34	29	48				50	26	38	52	76	50	86
Thickened Edge(Inc.Edge)	42	42	35	58				60	33	48	66	96	60	106
Asphalt Concrete														
38 Ft. Roadway Section	38	40	40	60				28	31	45	66	96	28	56

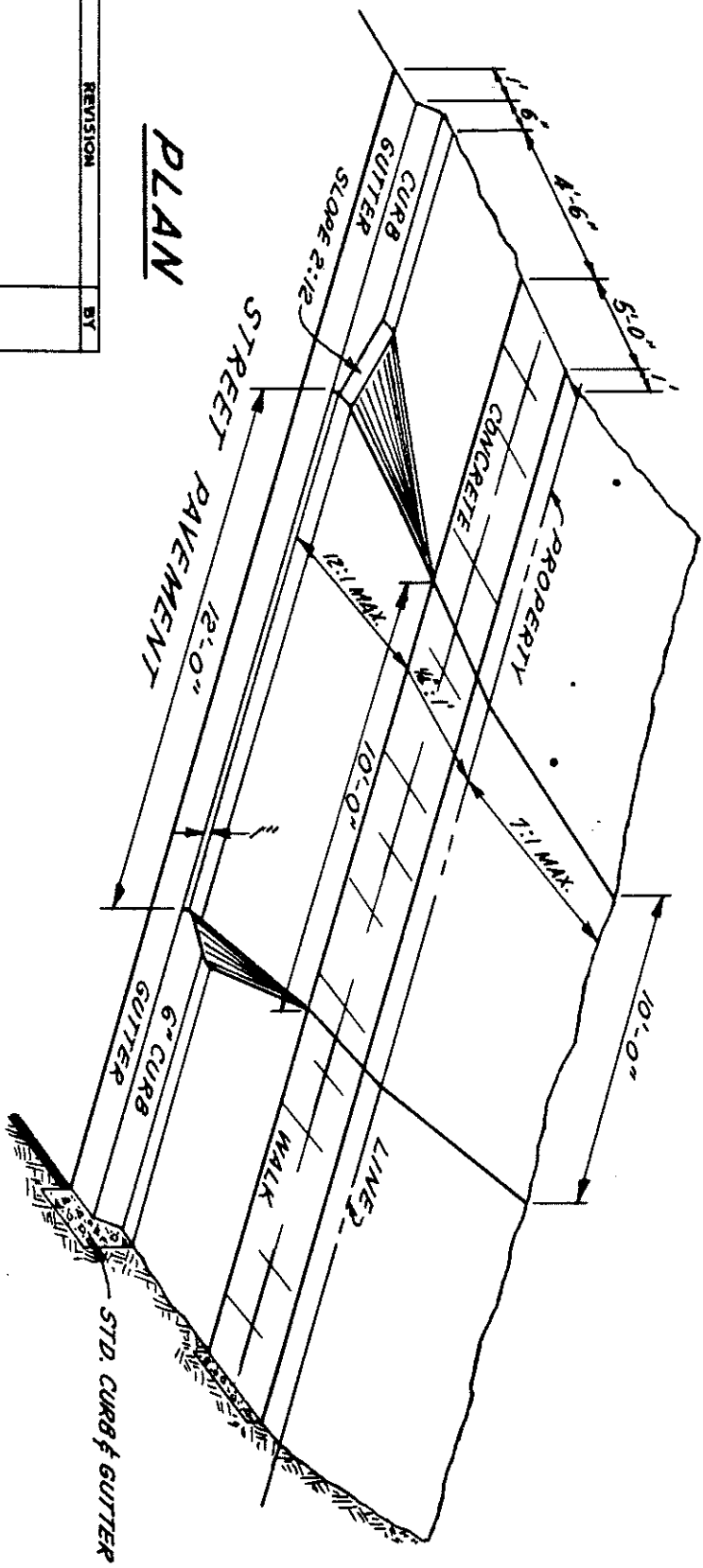
NOTES:

1. An increase of 25% has been allowed in the above quantities for compaction.
2. Cement concrete walks will require 56 Sq. Yds. per 100 feet. The walks will be 5 feet wide and 5 inches deep. Asphalt concrete walks will also require 56 Sq. Yds. per 100 feet. The asphalt concrete walks will be 5 feet wide and 2 inches deep, together with 2" depth crushed surfacing top course.
3. Curb and gutter are figured on a lineal foot basis.
4. One ton of asphalt concrete will cover 8.75 Sq. Yds., 2" depth.

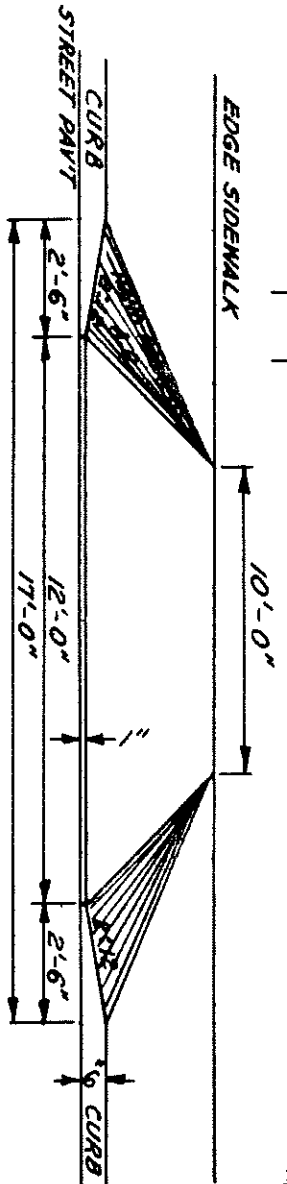


DATE	REVISION	BY

PLAN



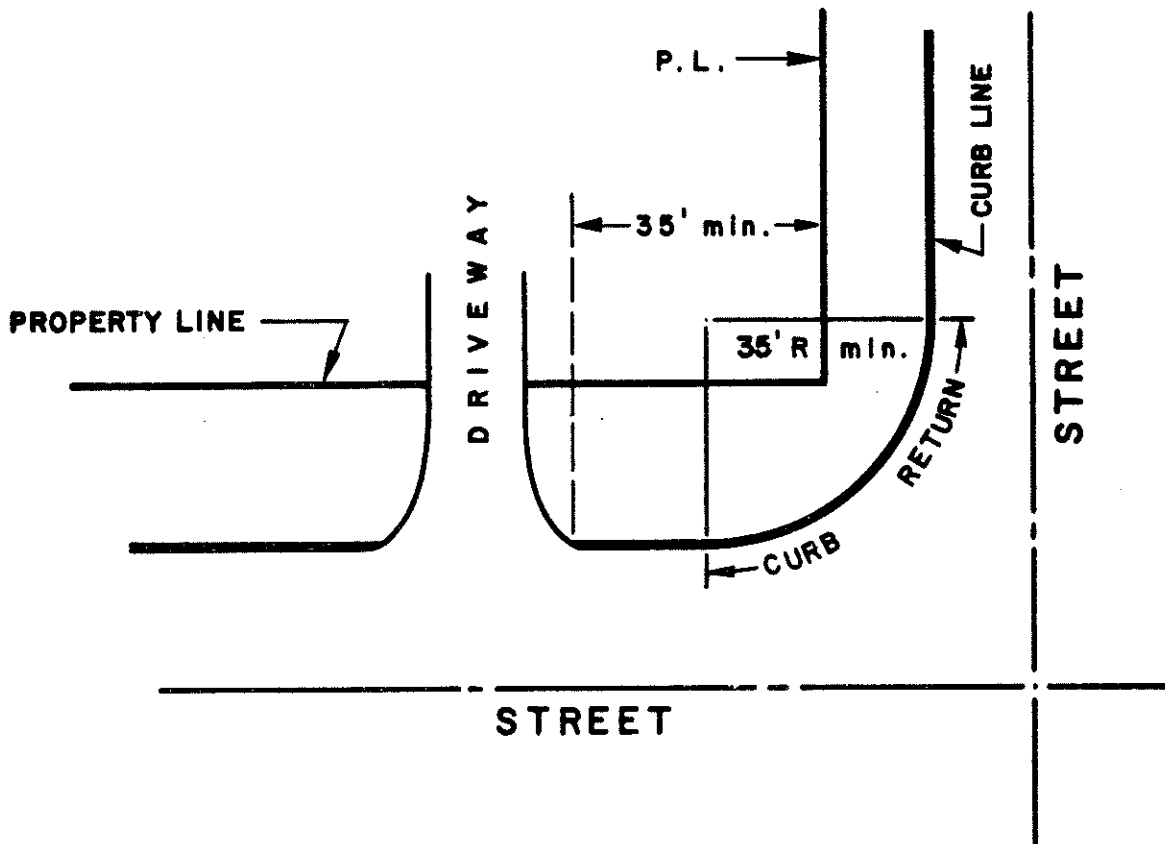
ELEVATION



CEMENT CONCRETE OR ASPHALTIC CONCRETE

DRIVEWAY

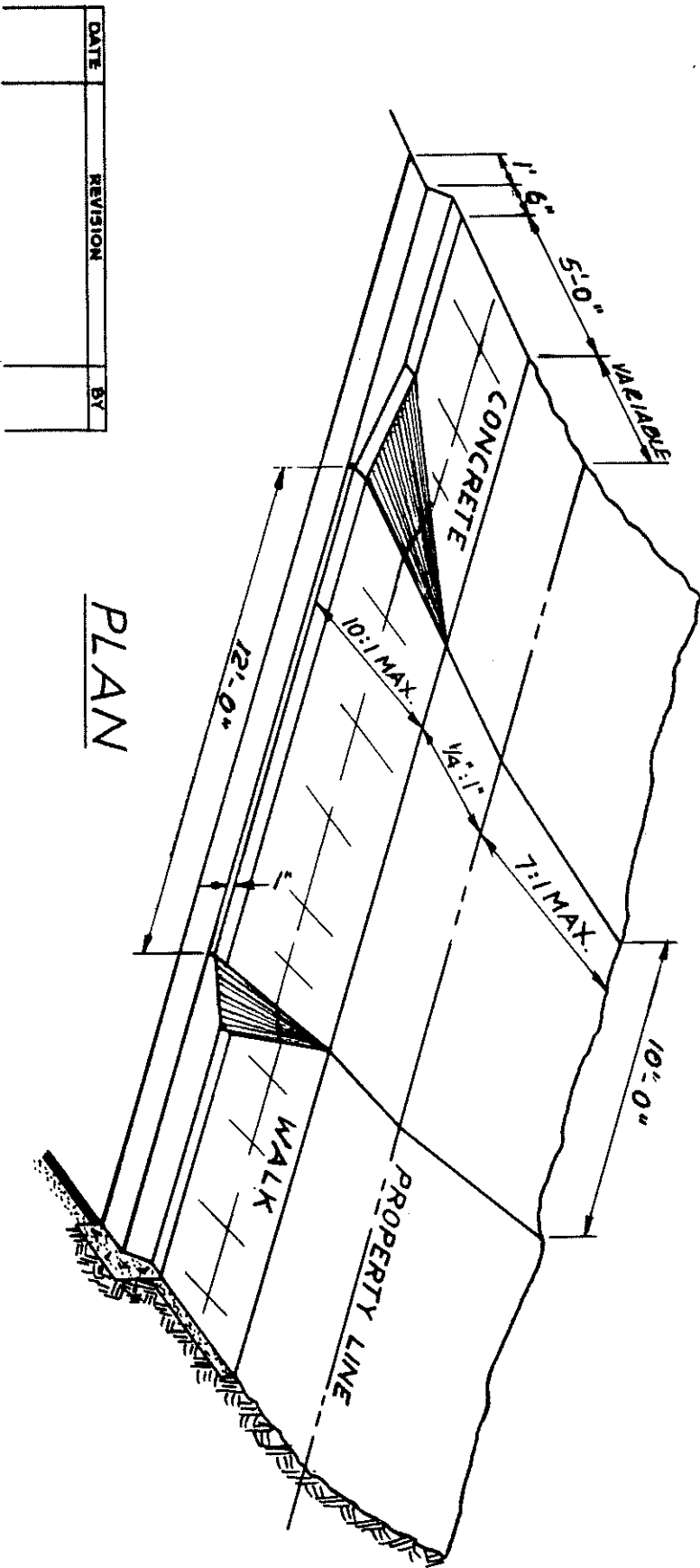
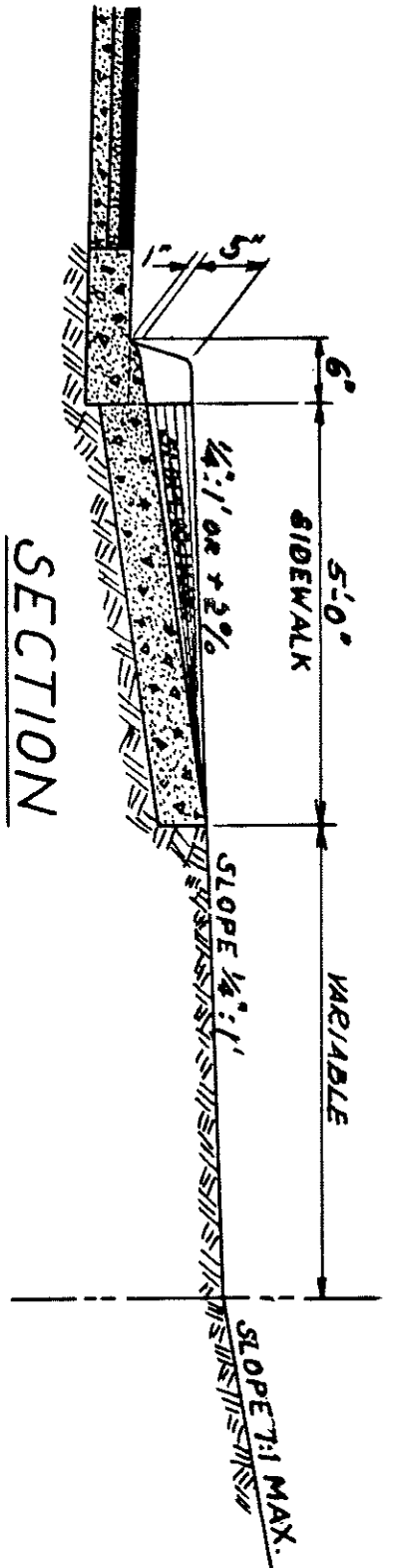
DETAILS



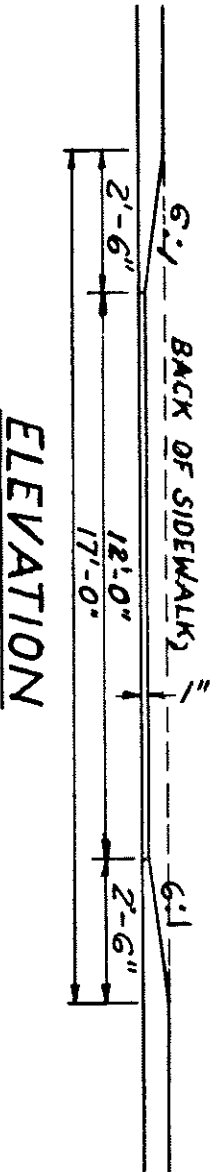
REQUIREMENTS

1. NO PORTION OF ANY DRIVEWAY SHALL BE PERMITTED WITHIN THIRTY-FIVE (35) FEET FROM THE PROPERTY LINES INTERSECTION POINT.
2. NO PORTION OF ANY DRIVEWAY SHALL BE PERMITTED IN THE CURB RETURN WHERE THE RADIUS FOR THE CURB RETURN IS LESS THAN THIRTY-FIVE (35) FEET.
THE MINIMUM CURB RETURN RADIUS SHALL BE THIRTY FIVE (35) FEET.
3. ON ALL CURB RETURNS WHERE THE RADIUS IS THIRTY FIVE (35) FEET OR MORE, DRIVEWAYS MAY ENCRUCH UPON EACH END OF THE RETURN A DISTANCE EQUAL TO 12.5% OR 1/8 OF THE TOTAL LENGTH OF THE ARC ON THE CURB RETURN, THUS LEAVING AT LEAST 75% OF THE ARC ON THE RETURN FACE FREE FROM DRIVEWAY ENCRUCHMENT, PROVIDED REQUIREMENT 1 IS MET.
4. ALL COMMERCIAL DRIVEWAYS MUST BE REVIEWED AND APPROVED BY THE TRAFFIC ENGINEER.
5. UNTIL STREET IS IMPROVED WITH STANDARD CURB SECTION, EXTRUDED CURBING SHALL BE INSTALLED ON PROPERTY LINE. REQUIREMENT NO. 1 WILL GOVERN DRIVEWAY LOCATION IN THIS CASE.

COUNTY ENGINEER	KING COUNTY ENGINEERING DEPT.	STANDARD DRAWING
	Driveway Location	NO. SP 6A
<i>J. L. DeSpain</i>	Adjacent To Curb Return And Property Lines	MARCH 1967

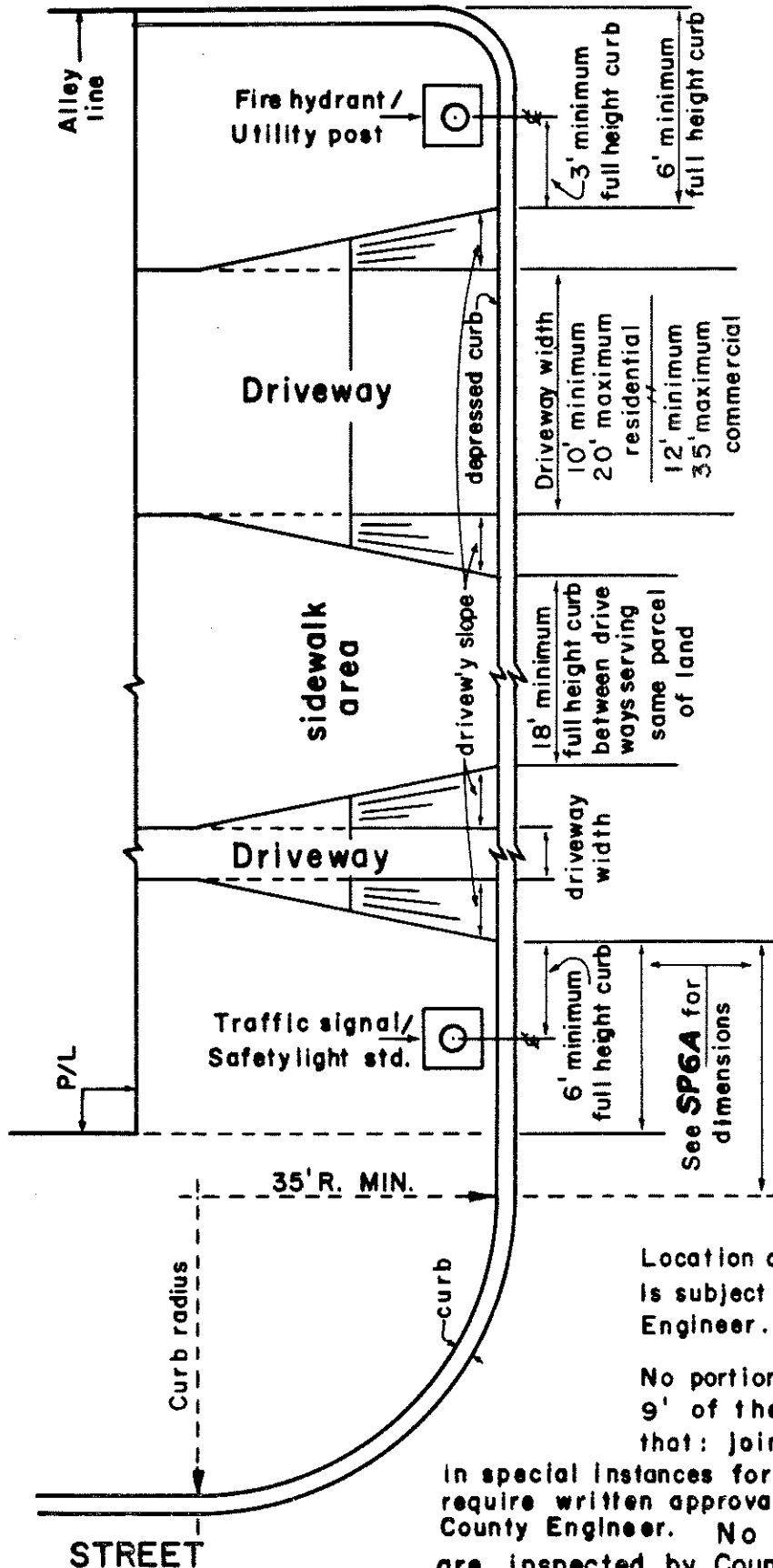


DATE	REVISION	BY



SIDEWALK ADJACENT
 DRIVEWAY
 DETAILS
 SP-7

ALLEY



Driveways shall be constructed in accordance with Standard Specifications and Drawings of the County of King.

A Residential Driveway is one that serves a dwelling or dwellings used by 4 families or less. All others are commercial driveways.

Driveway width shall be the net width of opening, exclusive of side slopes.

The maximum width of Residential Driveways shall be 20', minimum 10'.

The maximum width of Commercial Driveways shall be 35', minimum 12'; except where the street has a speed limit of 45 mph. or more, in which case the County Engineer may approve a 40' width.

Not more than one driveway shall be permitted for frontage less than 75'; and two driveways shall be permitted for frontage greater than 75'. Permission to have three or more driveways on a frontage greater than 150' must be approved by the County Engineer.

Where curb is not existing, the curb radius, location, and grade must be approved by the County Engineer.

As a condition of issuance of any driveway permit, all abandoned driveway area on the same frontage shall be removed and the curbing and sidewalk properly restored.

Location and extent of all commercial driveway is subject to approval of the County Traffic Engineer.

No portion of driveway shall be allowed within 9' of the extensions of property lines except that: joint use driveways may be permitted

in special instances for residential driveways only, and shall require written approval of both property owners and the County Engineer. No concrete shall be poured until forms are inspected by County Engineering Department.

COUNTY ENGINEER

J. L. DeSpain

KING COUNTY ENGINEERING DEPT.

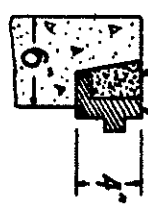
DRIVEWAY LOCATION
AND WIDTH REQUIREMENT

STANDARD DRAWING

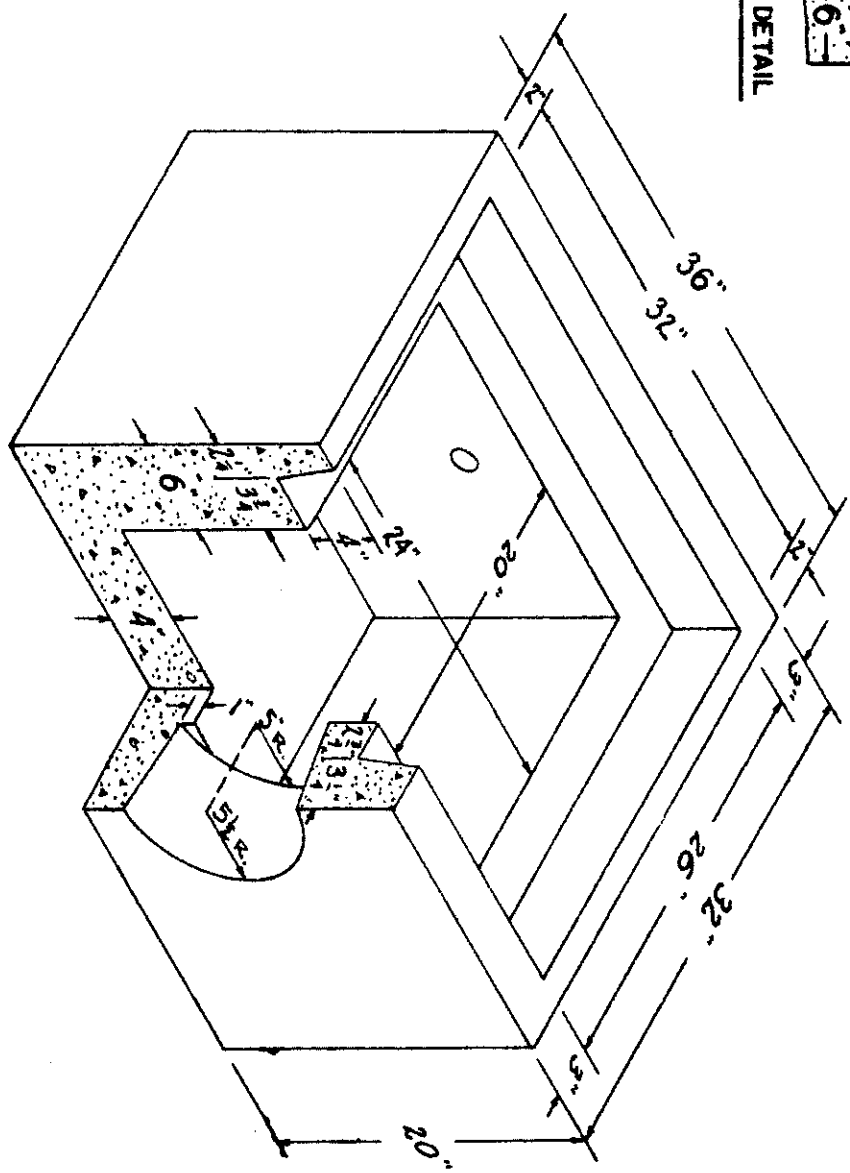
No. **SP 7A**

MARCH 1967

GROUT
#5435 F&C



TOP DETAIL



NOTE:
Pickup hole to be filled on job by contractor.
Cast iron frame and cover (not shown) shall be Olympic Foundry Co. No. 5435 or equal and shall be grouted in place after inlet is cast.

Weights:

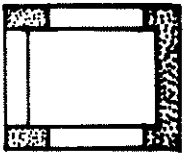
- Inlet - 1350 #
- No. 5435 F&C - 280 #
- Precast Concrete Inlet

AIA FILE NO.

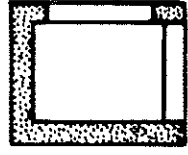
SUBJECT: PRECAST CONCRETE INLET



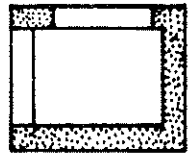
No. 1
3 WAY - 2 ENDS



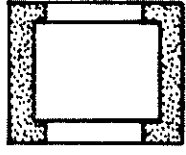
No. 2
3 WAY - 2 SIDES



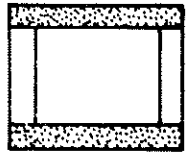
No. 3
2 WAY - LEFT HAND



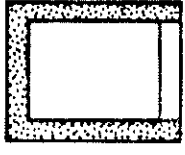
No. 4
2 WAY - RIGHT HAND



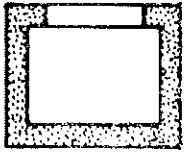
No. 5
2 WAY - BOTH SIDES



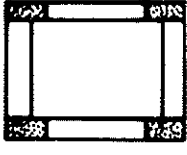
No. 6
2 WAY - BOTH ENDS



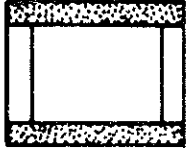
No. 7
1 END



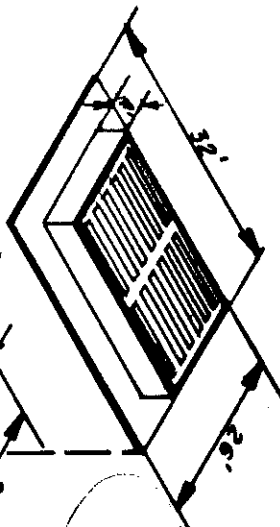
No. 8
1 SIDE



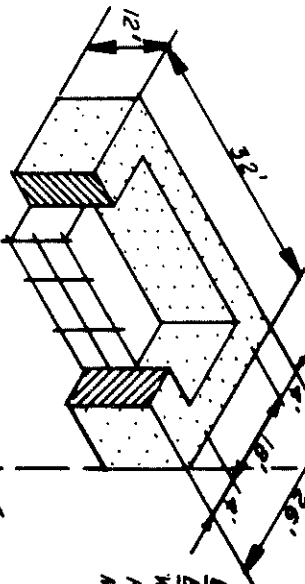
No. 9
4 WAY



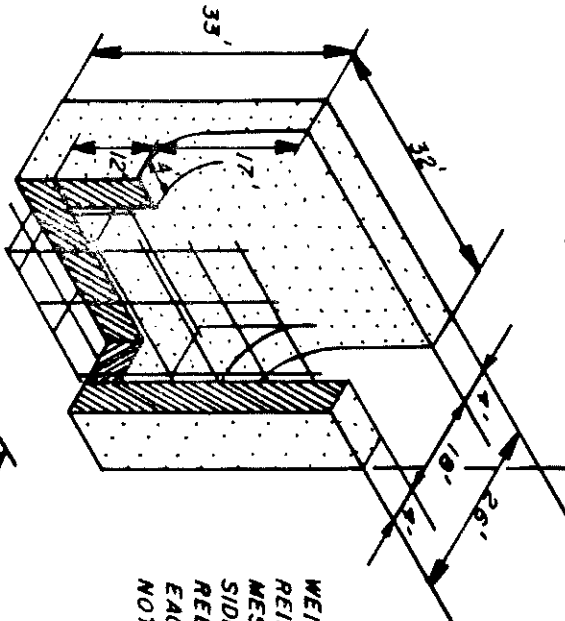
No. 10
STRAIGHT - THRU TROUGH



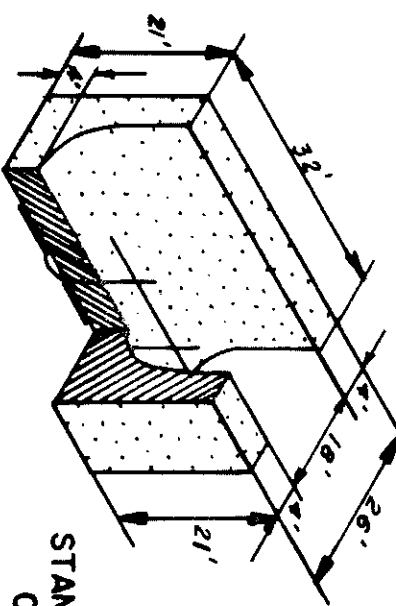
C.I. FRAME AND COVER:
No. 5435
WEIGHT: 280 LB.



EXTENSIONS FOR
BASINS:
WEIGHT: 415 LB.
REIN: 2" x 8"
MESH: 8/10

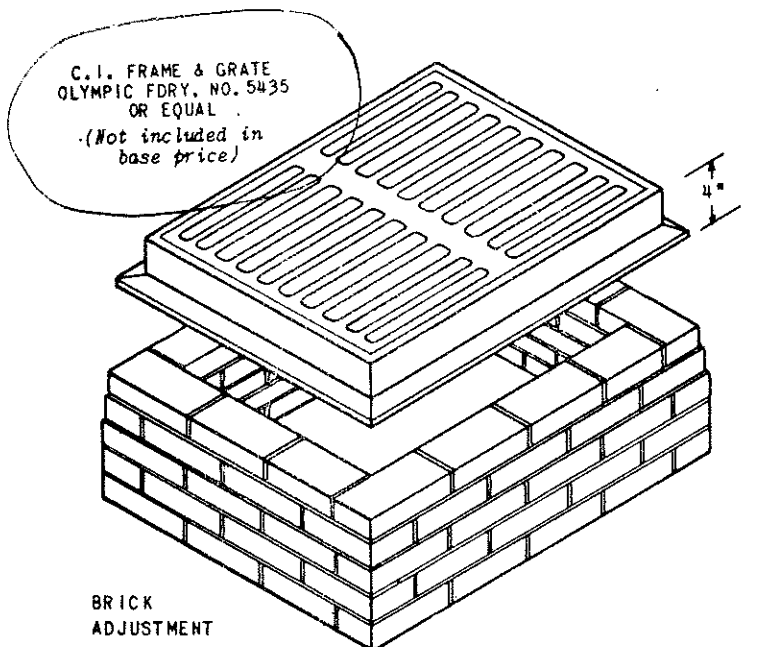


TYPE 6
WEIGHT: 1225 LB.
REIN: 2" x 8"
MESH: 8/10
SIDES No. 4
REBAR 12" o.c.
EACH WAY - BASE
NOTE: TYPICAL REINF.



TYPE 10

STANDARD PRECAST
CATCH BASIN



A precast reinforced concrete unit with integrally cast bottom.

City of Seattle requires a minimum of 5 courses of brick (14 brick per course) as grade adjustment and to obtain minimum depth of 16 inches below ground for outlet pipe as specified by city ordinance.

City of Seattle also requires that this type Catch Basin must be installed with 6" cast iron elbow (or tee with cleanout plug). See drawing. (Not included in base price.)

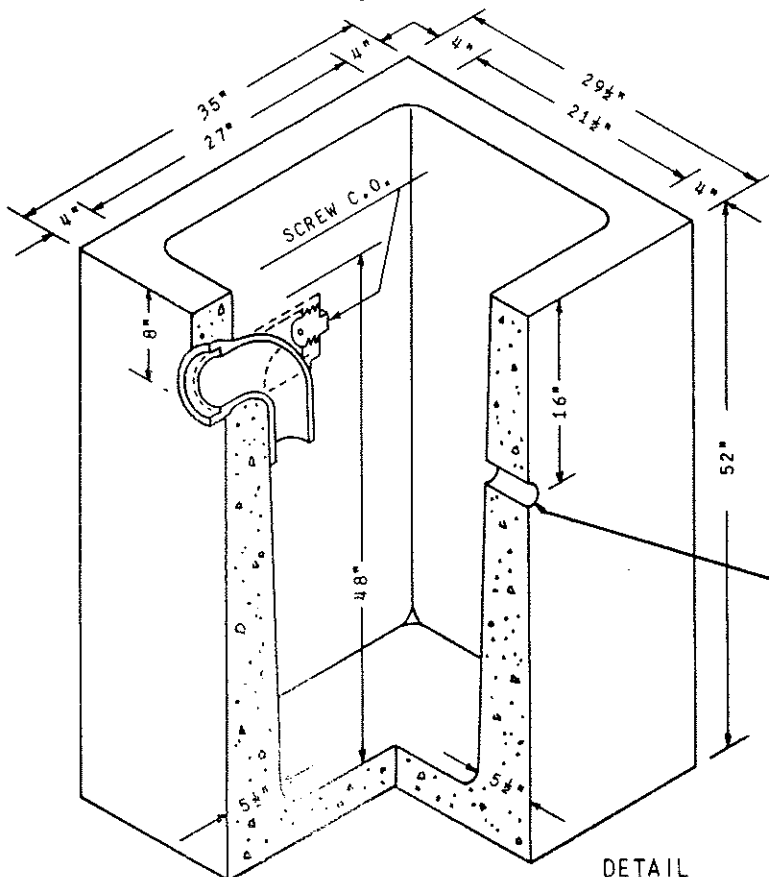
This unit with Atlas Foundry Co. Cast Steel Frame & Grate meets requirements for City of Tacoma Standard Catch Basin Type-1.

ADDENDUM (SEATTLE) 10/15/53:

4" C.I. 1/4 Bend may be used where drainage area does not exceed 6000 sq. ft. and slope of drain line is 2% or more.

6" C.I. 1/4 Bend should be used where drainage area is 6000-12,000 sq. ft. and drain line slope is 2% or more--or where area is less than 7000 sq. ft. and slope of drain line is less than 2%.

APPROX. WEIGHT 2500#
(Concrete Unit only)

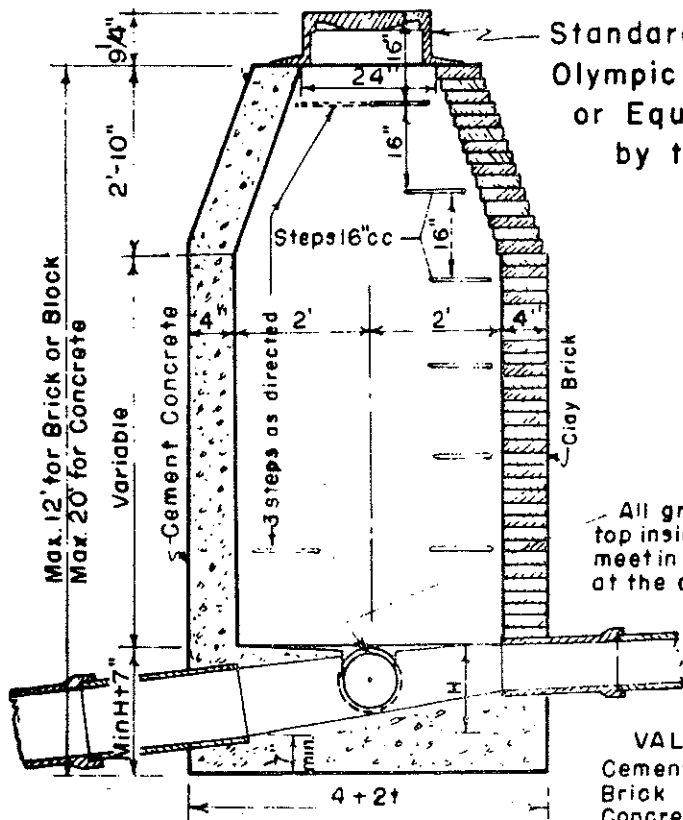


2" DIA. PICKUP HOLE TO BE FILLED ON JOB BY CONTRACTOR.

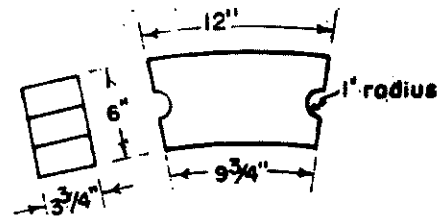
NOTES:

DETAIL

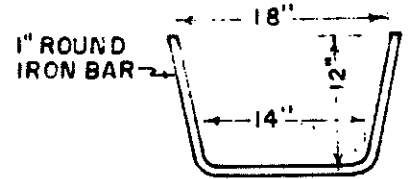
SP-10



Standard Manhole Ring & Cover
Olympic Foundry No. 5918
or Equal or as approved
by the Engineer



BLOCK DETAIL



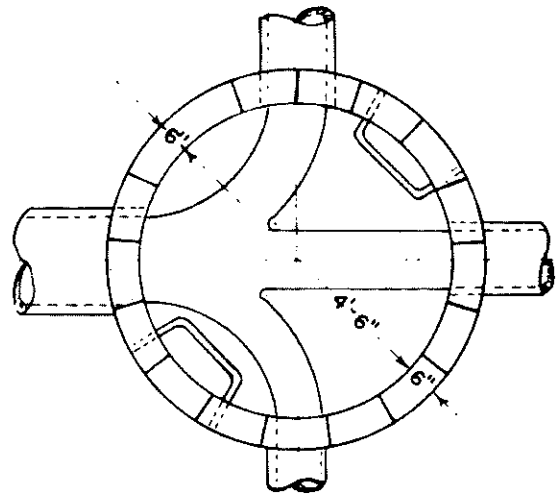
STEP DETAIL

All grade lines of the
top inside of pipes shall
meet in a common elevation
at the center of the manhole

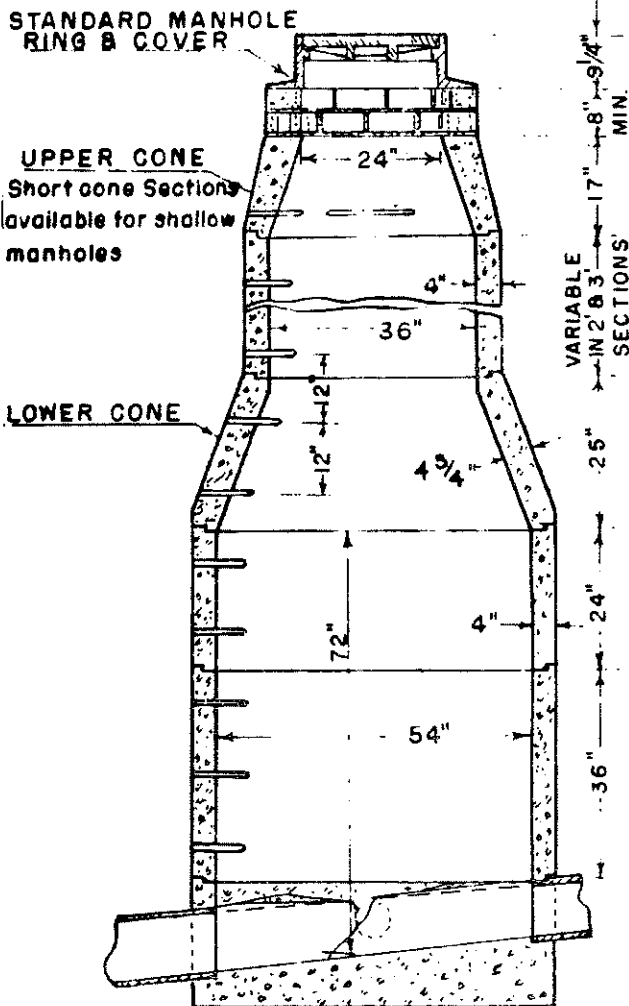
VALUES OF "t"

Cement Concrete	- 6"
Brick	- 8"
Concrete Block	- 6"

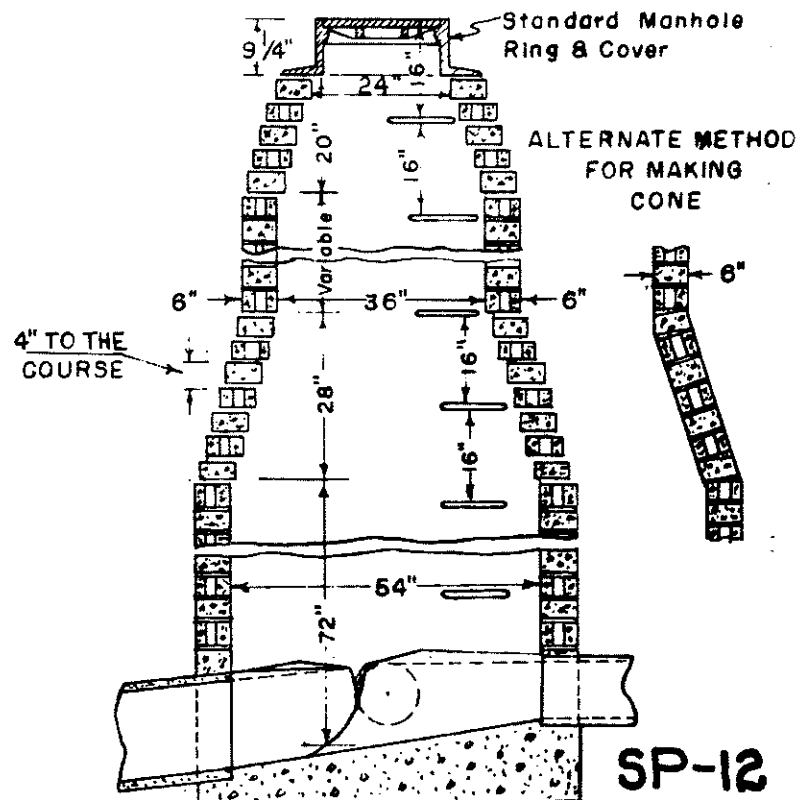
CEMENT CONCRETE OR BRICK MANHOLE



PLAN

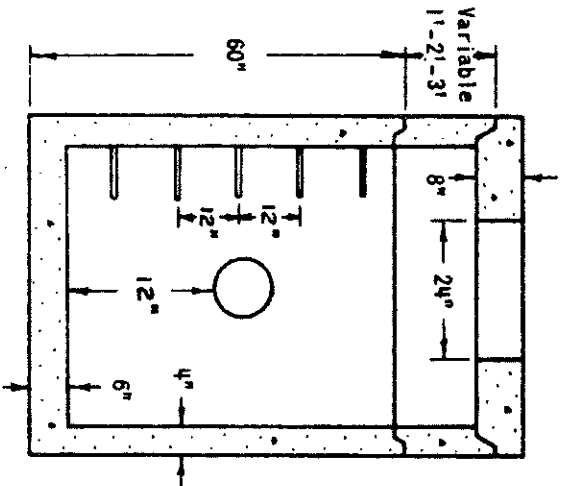
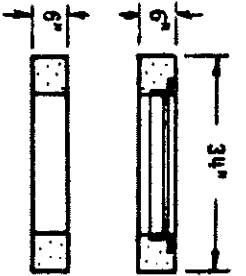


PRECAST REIN. CONC. MANHOLE



CONC. BLOCK MANHOLE

SP-12



"S" UNIT - Top slab for Type 2 catch basin with cast iron frame cast in Olympic Fdry. #5M34, State of Wash. #8 20. Castings are supplied by the contractor after inspection by the State Inspector.

"S" UNIT - Plain - For adjusting top slab to grade. One or more may be used for up to 12' depth. 34" x 36"

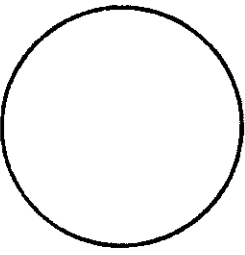
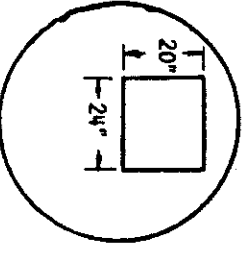
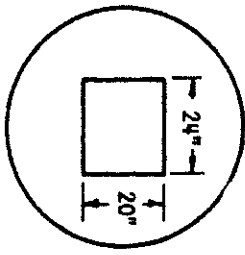
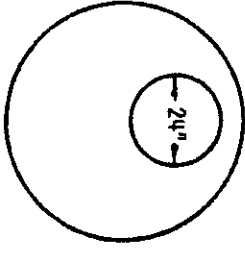
56" x 8" TOP SLAB - Units "W" - "N" - "P" or "R" as required by the individual or specifications. See diagram below.

48" Pre-cast barrel sections are available in 1 - 2 or 3 foot increments as required by grade.

48" Base may be either 3 ft. or 5 ft. deep overall. Inlets and outlets may be cast for pipe size up to and including 24", located vertically and horizontally, as required.

When ordering catch basins by telephone, specify the location of inlets and outlets with reference to the face of a clock. Place outlet at 12:00 o'clock and inlets at the corresponding hour of the clock.

Steps will be required.



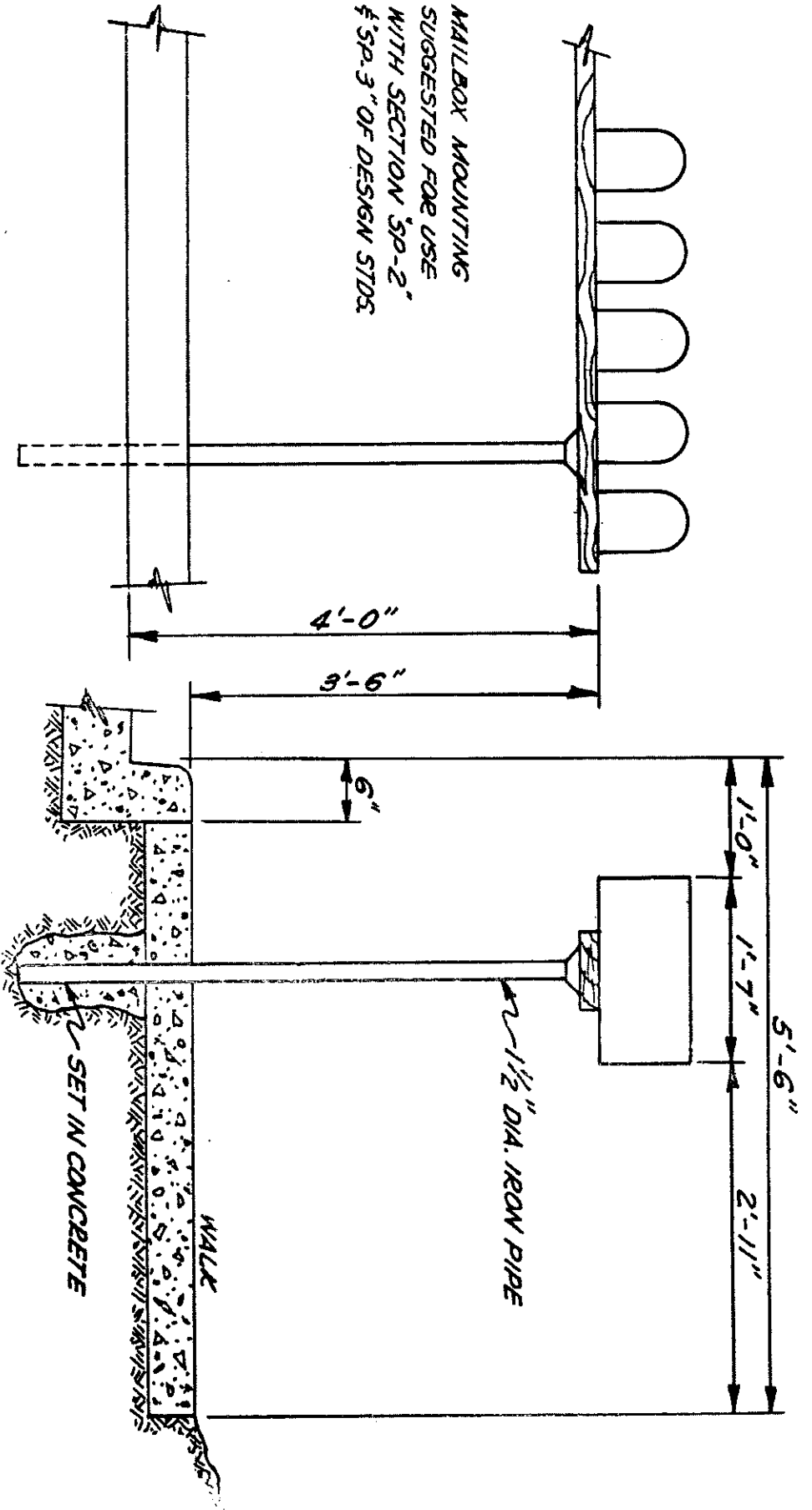
WEIGHT TABLE

48" x 5' Base	4350#
48" x 3' Base	3000#
48" x 3' Section	2040#
48" x 2' Section	1360#
48" x 1' Section	680#
Unit M 56" x 8" Slab	1400#
Unit N 56" x 8" Slab	1080#
Unit P 56" x 8" Slab	1080#
Unit R 56" x 8" Slab	1080#
Unit S Plain 34" x 30"	290#
Unit S W/Frame & Cover	525#

PRECAST CONCRETE CATCH BASIN

TYPE 2

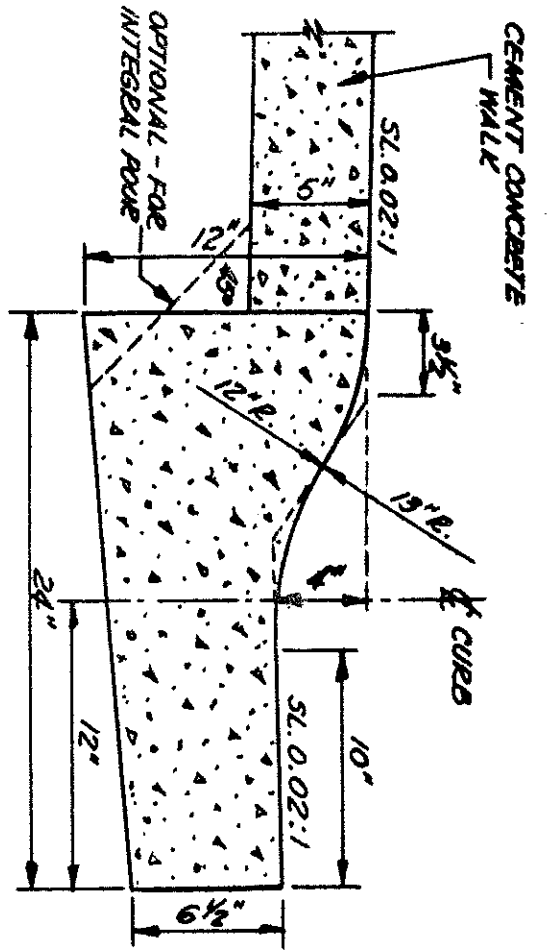
MAILBOX MOUNTING
 SUGGESTED FOR USE
 WITH SECTION 'SP-2'
 4" SP. 3" OF DESIGN STDS.



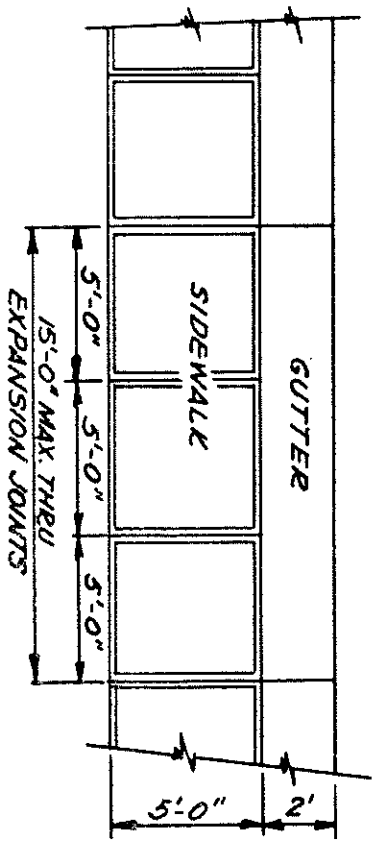
RESIDENTIAL MAILBOX MOUNTING

DATE	REVISION	BY

SP-14
 6-29-64

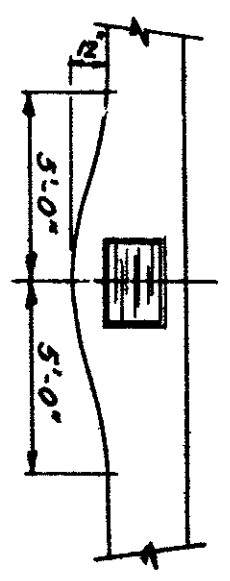


SECTION

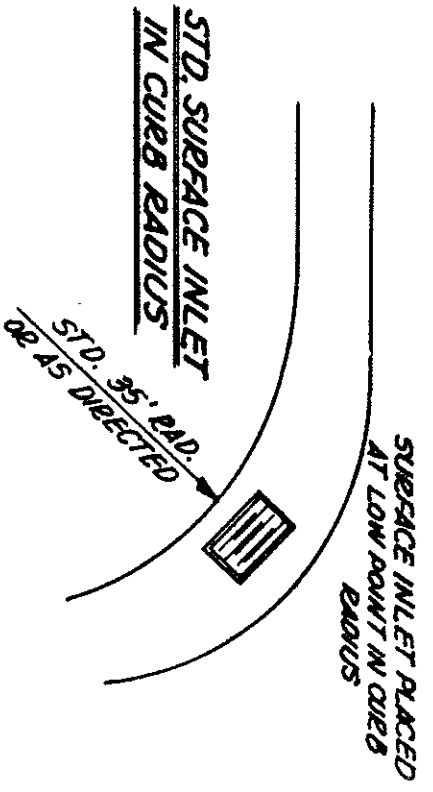


PLAN VIEW - SIDEWALK & GUTTER

DATE	REVISION	BY



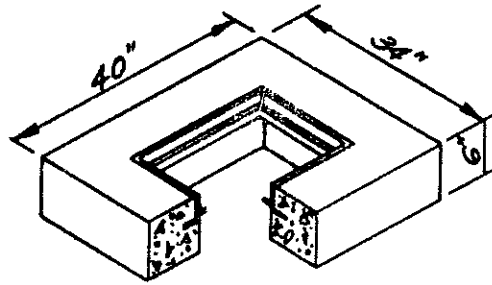
STD. SURFACE INLET IN STRAIGHT CURB



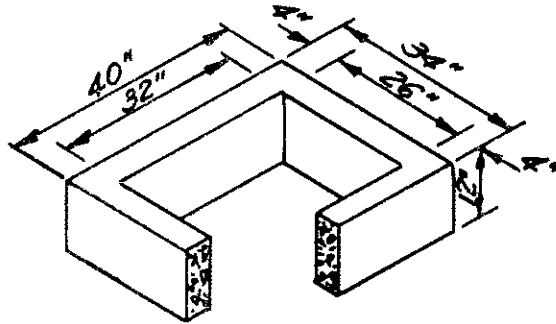
STD. SURFACE INLET IN CURB RADIUS

NOTE: THIS SECTION MAY BE USED ON "RESIDENTIAL ACCESS" STREETS AND "NEIGHBORHOOD COLLECTOR" STREETS WITH SIDEWALK ADJACENT TO CURB. TENTATIVE INSTALLATION SUBJECT TO APPROVAL BY COUNTY ENGINEER. FORMS SHALL BE USED EXCEPT WITH WRITTEN APPROVAL FROM THE COUNTY ENGINEER FOR OTHER METHODS. EXPANSION JOINTS SHALL CONFORM TO SEC. 74, 3.05 OF DEPT. OF HIGHWAYS STD. SPEC'S.

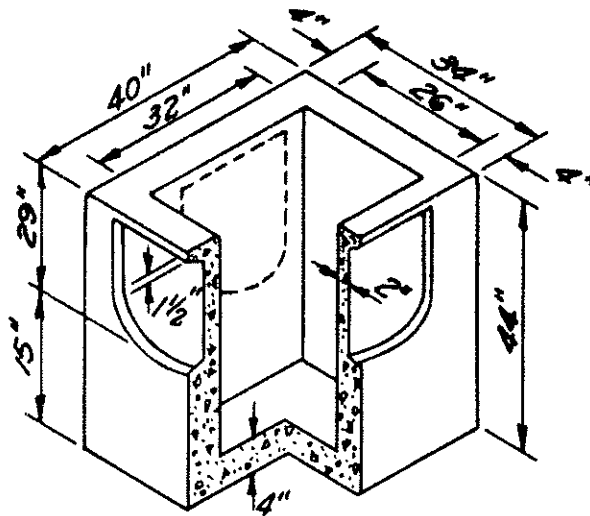
CEMENT CONCRETE
ROLLED CURB
 SIDEWALK ADJACENT ONLY



CAST IRON FRAME AND GRATE SHALL BE
 GRAY IRON CASTINGS ASTM DESIGNATION A-48
 (TO FIT OLYMPIC FDRY. #5435 FRAME & GRATE)



EXTENSION SECTIONS AVAILABLE
 ONLY IN ONE FOOT HEIGHTS



WIDE SIDE HAS KNOCK-OUT SECTION TO ACCOMMODATE
 18" PIPE. NARROW SIDE HAS KNOCK-OUT SECTION TO
 ACCOMMODATE 15" PIPE.

REINFORCING:

CIRCUMFERENTIAL STEEL TO BE NO.3 BARS
 AT 9" CENTERS. VERTICAL NO.3 BARS IN EACH
 CORNER. (SEE STANDARD PLAN B-34)

DATE	REVISION	BY

26" x 32" I.D.
CATCH BASIN-TYPE No. 1A

SP-16
 2-21-66

