STANDARD PLANS	
II-28F	II-43B
II-29B	II-44C
II-39D	IV-84B
II-40C	VI-124B
II-41B	VI-125D
II-42A	E-4-A-10E

CITY OF DETROIT
CITY ENGINEERING DIVISION - E.P.M.D.

IN CO-OPERATION WITH

MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

AND

FEDERAL HIGHWAY ADMINISTRATION

PLAN AND PROFILE OF PROPOSED

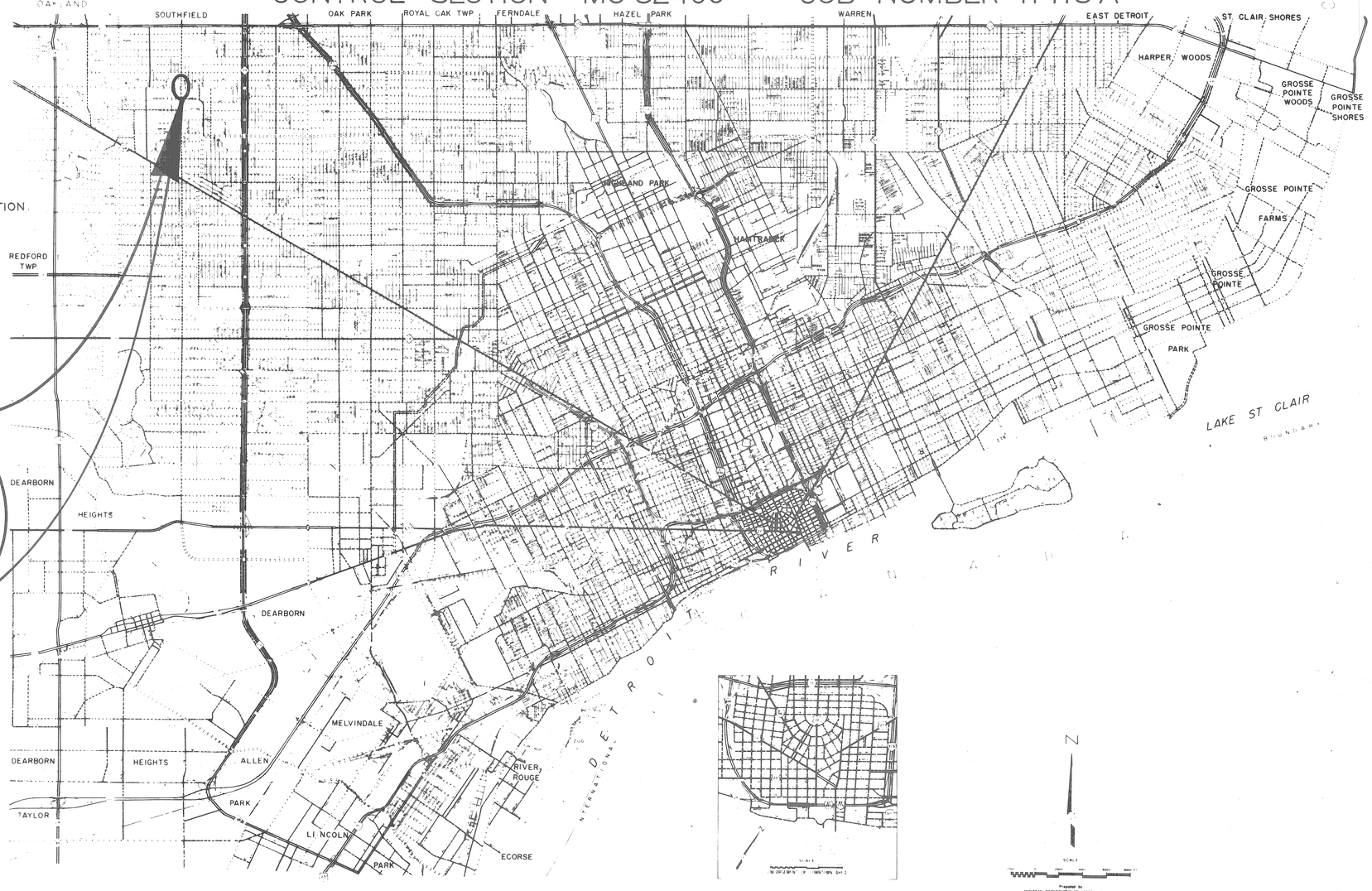
FEDERAL AID URBAN PROJECT NO. MICHIGAN M 2000 (039)

CONTROL SECTION MU 82400 JOB NUMBER 11413 A

B.P.R. DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MICH.				
STREET	CITY	COUNTY	TWP	SHEET NO.	TOTAL SHEETS
	DETROIT	WAYNE		1	

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS CURRENT STANDARD SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS.

INDEX TO SHEETS



ITEM Nº 251

BOARD OF WAYNE COUNTY ROAD COMMISSIONERS APPROVAL

BY John Konnoe — ASS'T CHIEF ENGINEER–DESIGN DIVISION — DATE 11-29-78

BY [illegible] — COUNTY HIGHWAY ENGINEER — DATE 12-1-78

CONTRACT FOR INTERSECTION IMPROVEMENT

LOCAL AUTHORITY APPROVAL
CITY OF DETROIT
CITY ENGINEERING DIVISION
ENVIRONMENTAL PROTECTION & MAINTENANCE DEPARTMENT

APPROVED BY [illegible] — ASSISTANT CITY ENGINEER — DATE 11/17/78

APPROVED BY [illegible] — CITY ENGINEER — DATE 11/17/78

RECOMMENDED FOR APPROVAL

BY W. O. Henry Jr. — E.A.U. ENGINEER — DATE 1-4-79

PLANS CHECKED BY Gary D. Taylor — DATE 1-4-79

DEPARTMENT OF STATE HIGHWAYS APPROVAL
APPROVED FOR COMMISSION

BY Eugene Cudy — DEPUTY DIRECTOR–HIGHWAYS — DATE 1/5/79

PREPARED UNDER SUPERVISION OF

Allen E. Poyer — REGISTERED PROFESSIONAL ENGINEER — REGISTRATION NO. 9264

CITY OF DETROIT — ORGANIZATION

DETROIT MICHIGAN — ADDRESS

(SEAL)

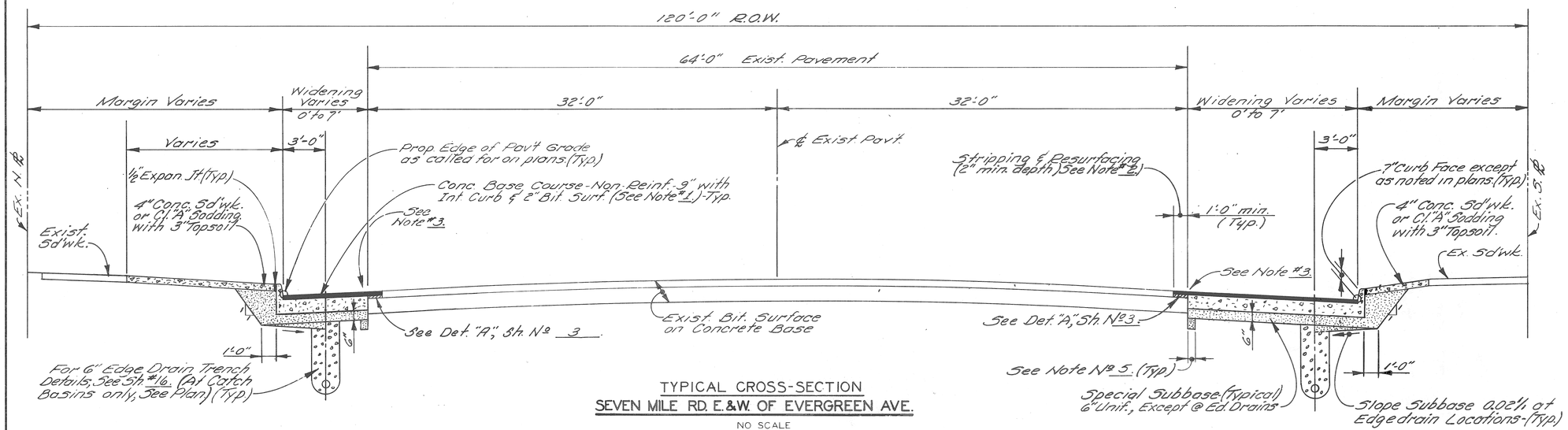
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED [redacted]

DISTRICT ENGINEER — DATE

FILE NO. IBM 350 STENCIL		STATE PROJECT	FEDERAL PROJECT	SHEET NO.
				1

C.S. MU 82400 JOB Nº 11413A M2000 (039)



TYPICAL CROSS-SECTION
SEVEN MILE RD. E. & W. OF EVERGREEN AVE.
NO SCALE

JOINT LEGEND

(B) Longitudinal Pav't Joints according to MDSHT Std. Plan II-41-B.

GENERAL NOTES

1. The prop. curb shall be "Integral Straight Curb" with "Conc. Curb - Straight" as an option. For details, See Sh. #14. For Bituminous appl. rates, See chart, Sh. #3.
2. The Contractor shall saw cut (2" min. depth) a longitudinal line along the limit of the one ft. (min.) stripping. This work is incidental to "Removing Bituminous Surface."
3. Saw plane of weakness joints over the exist. joints. This work will be paid for as "Sawed Longitudinal Plane of Weakness Joints."
4. Backfill, if req'd, under prop. sd'wks & driveways shall be Granular Matl. Class II (Incidental to prop. sidewalk & driveway construction)
5. Fill exist. curb void with "Special Subbase."
6. See Evergreen Ave. typical cross-sections for base repair quantities to be used where directed by the Engineer.

COORD	DESCRIPTION	GR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY	MAP / COMLY
DRAWN BY	MAP
TRACED BY	
CHECKED BY	COMLY

APPROVED

ENGINEER OF STREETS
Allen E. Hagen
HIGHWAY ENGINEER

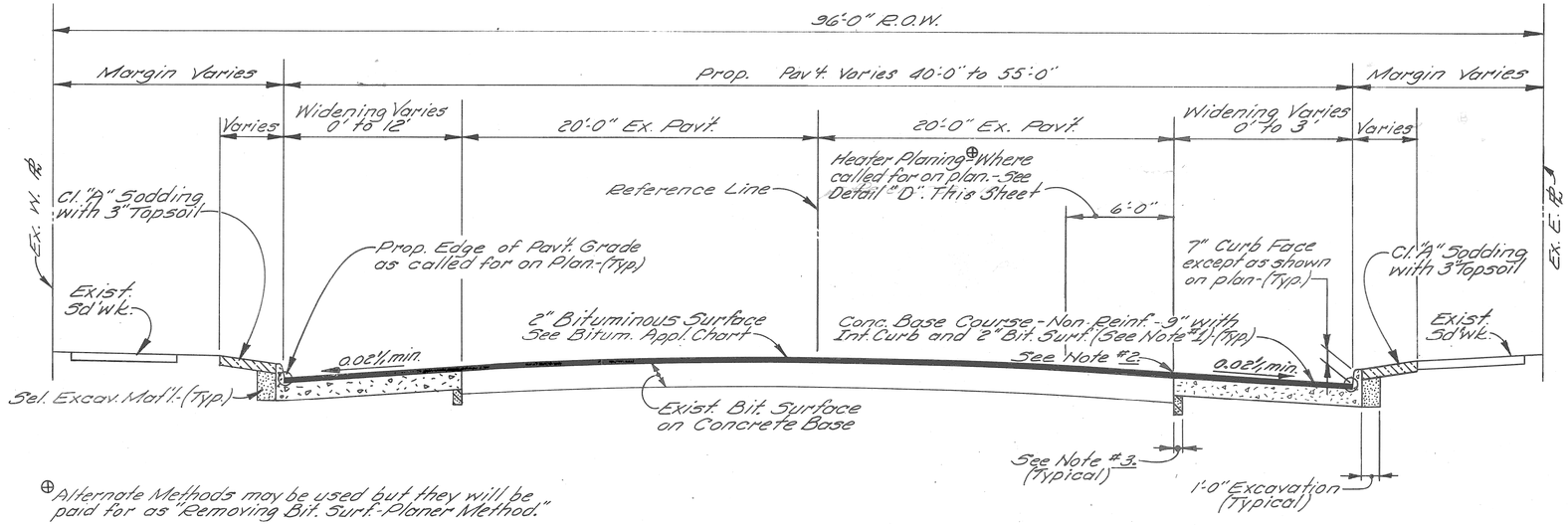
CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
BUREAUS OF STREETS AND HIGHWAYS

SEVEN MILE ROAD - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

TYPICAL CROSS-SECTIONS - SEVEN MILE RD.

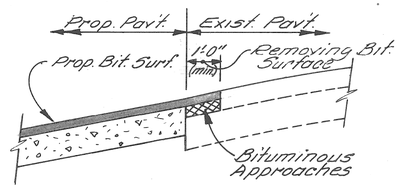
SHEET 2 OF 42 SHEETS
CONTRACT NO. 11413A
ASSIGNMENT NO.
DATE 11-78

1 2 3 4 5 6 7 8 9 10 11

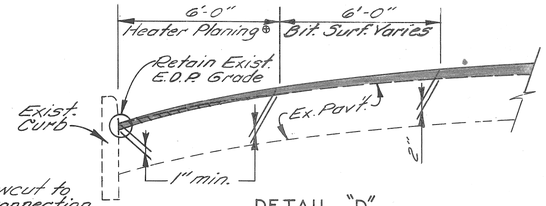


⊕ Alternate Methods may be used but they will be paid for as "Removing Bit. Surf.-Planer Method."

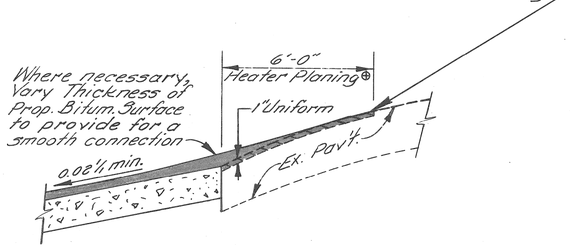
TYPICAL CROSS-SECTION
EVERGREEN AVE. S. OF SEVEN MILE RD.
NO SCALE



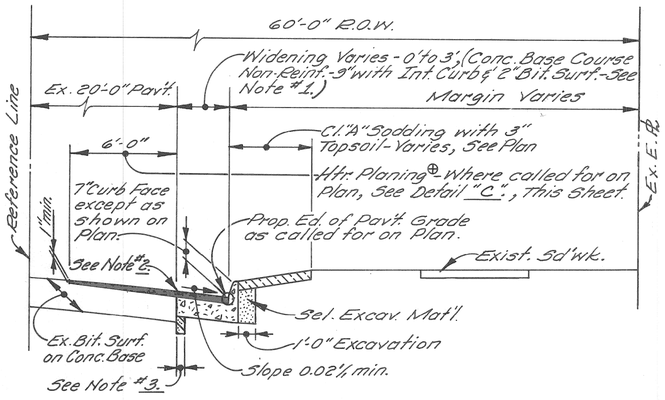
DETAIL "A"
NO SCALE



DETAIL "D"
NO SCALE



DETAIL "C"
NO SCALE



TYPICAL CROSS-SECTION
EVERGREEN AVE. N. OF SEVEN MILE RD.
NO SCALE

BITUMINOUS APPLICATION CHART			
ITEM	RATE OF APPLICATION	ESTIMATED THICKNESS	ASPHALT PENETRATION
Bit. Conc. Leveling Course (25A)	110#/S.Y.	1 inch	85-100
Bit. Conc. Wearing Course 31A-Type M	110#/S.Y.	1 inch	85-100
Bit. Aggregate Shoulders	340#/S.Y.	3 inches	200-250
Bit. Bond Coat 0-0.10 Gal./Sq. Yd. to Rigid Bases and 0-0.05 Gal./Sq. Yd. Tack Coat between layers.			

MISC. QUANT. - SEVEN MI. - EVERGREEN			
Item	W.C.R.C.	C.O.D.	Units
Drum Guide Rail	200	50	Lin. Ft.
Barricade Type II (Drums) Lighted-Furn.	143	75	Each
Barricade Type II (Drums) Lighted-Oper.	95	50	Each
Mobilization	½	½	Lump Sum
Minor Traffic Devices	½	½	Lump Sum
Lighted Arrow Type A-Operated	2	2	Each
Lighted Arrow Type A-Furnished	2	2	Each
On the Job Training	½	½	Each
Barricade Type III	3	3	Each

Those additional quantities are provided for SEVEN MI.-EVERGREEN in the event they are needed as determined by the Engineer.		QUANTITIES W.C.R.C.	QUANTITIES C.O.D.
Subgrade Undercutting, Type II	Cu. Yd.	24	13
4" Concrete Sidewalk	Sq. Ft.	610	180
Removing Sidewalk	Sq. Yd.	70	20
△ Removing Old Pav't. (Patching)	Sq. Yd.	20	20
△ Conc. Pav't. Patching, Type N.S. 9", Non-Reinf.	Sq. Yd.	20	20
△ Bit. Conc. Leveling Course (25A)	Tons	5	5
△ Bit. Conc. Wearing Course 31A, Type M	Tons	5	5
Cleaning Existing Storm Drainage Structures	Ea.	1	1
Reconstructing Structures	Lin. Ft.	5	5
Bit. Aggregate Shoulders	Tons	2	2
Catch Basin "A" with 8-in. Cast Iron Trap (W.C.R.C.)	Ea.	1	—
Class "A" Sodding	Sq. Yd.	—	130
Topsoil Surface-3in.	Sq. Yd.	—	130

△ These quantities estimated for use where, in the opinion of the Engineer, Base Repair is required.

JOINT LEGEND

(B) Longitudinal Pav't. Joints according to M.D.S.H. Std. Plan II-41-B.

GENERAL NOTES

1. The prop. curb shall be "Integral Straight Curb" with "Conc. Curb-Straight" as an option. For details, See Sh. No. 14.
2. Saw plane of weakness joints over the existing joint. This work will be paid for as "Sawed Longitudinal Plane of Weakness Joint."
3. Fill exist. curb void with Granular Mat. Class II (Incidental to Pavement Construction.)
4. Backfill, if req'd. under prop. sd'wks. and/or pav't. shall be Gran. Matl.-Cl. II (Incidental to prop. sdwk. and/or pav't. const.)

REVISIONS LOCATED BY COORDINATES ON SHEET								REFERENCE DRAWINGS
COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE			

DESIGNED BY M.R./Comly
DRAWN BY
TRACED BY
CHECKED BY Comly

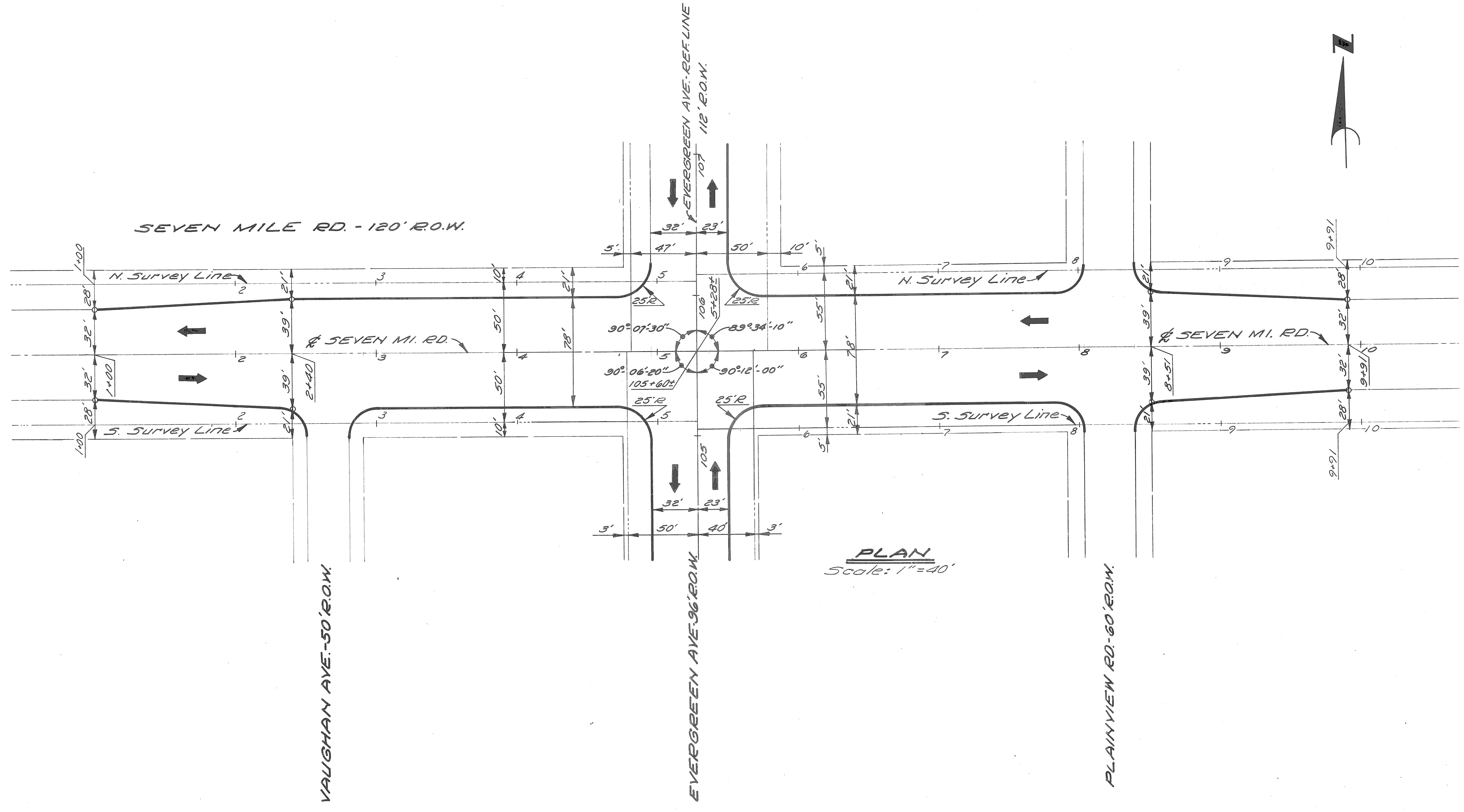
APPROVED:
ENGINEER OF STREETS
HIGHWAY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION-EPMD
BUREAUS OF STREETS AND HIGHWAYS

SEVEN MILE RD. - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

TYPICAL CROSS-SECTIONS - EVERGREEN AVE.

SHEET 3 OF 42 SHEETS
CONTRACT NO. 11413A
ASSIGNMENT NO.
DATE 11-78



NOTES:

1. All proposed street return radii are to be 20' unless otherwise noted.
2. For Evergreen Ave. Alignment, See Sh. No. 5.

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY
TRACED BY
CHECKED BY

APPROVED:
ENGINEER OF STREETS
HIGHWAY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION · EPMD
BUREAUS OF STREETS AND HIGHWAYS

SEVEN MILE RD. – EVERGREEN AVE.
INTERSECTION IMPROVEMENT

ALIGNMENT – SEVEN MILE RD.

SHEET 4 OF 42 SHEETS
CONTRACT NO. 11413A
ASSIGNMENT NO.
DATE 11-78

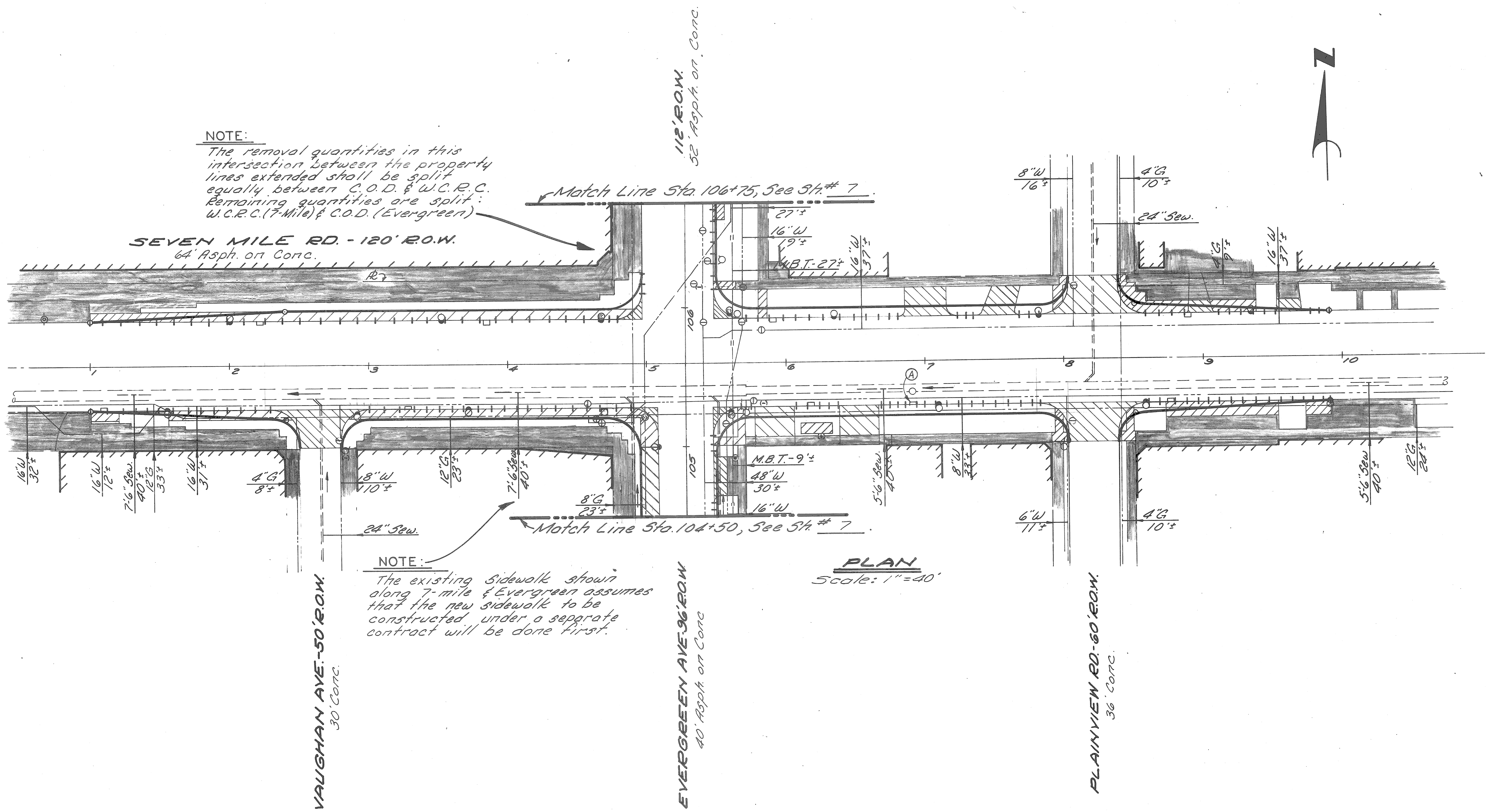
NOTES:

1. All proposed alley return radii are to be 10'
2. For Seven Mile Rd. Alignment, See Sh. No 4.

REFERENCE DRAWINGS	DESIGNED BY		APPROVED: [signature]	CITY OF DETROIT	SEVEN MILE RD. - EVERGREEN AVE.	SHEET 5 OF 42 SHEETS
	DRAWN BY	[initials]		CITY ENGINEERING DIVISION	INTERSECTION IMPROVEMENT	CONTRACT NO. 11413A
	TRACED BY			E. P. M. D.	ALIGNMENT - EVERGREEN AVE.	DRWG NO.
	CHECKED BY	[initials]				DATE 11-78

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE

REVISIONS LOCATED BY COORDINATES ON SHEET



REMOVAL LEGEND

- Removing Pavement
- Removing Sidewalk
- Removing Curb
- Ⓐ Abandoning Drainage Structures
- Sidewalk or Driveway to Remain

NOTES:

1. For Utility Legend, See Sh. # 17.
2. Locations of exist. utility lines are based on the best available records & are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO CONSTRUCTION 647-7344

DESIGNED BY	
DRAWN BY	Sucech
TRACED BY	
CHECKED BY	IK/WB
APPROVED	Allen E. [signature], ENGINEER OF STREETS, HIGHWAY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION · EPMD
BUREAUS OF STREETS AND HIGHWAYS

SEVEN MILE RD. - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

REMOVALS — SEVEN MILE RD.

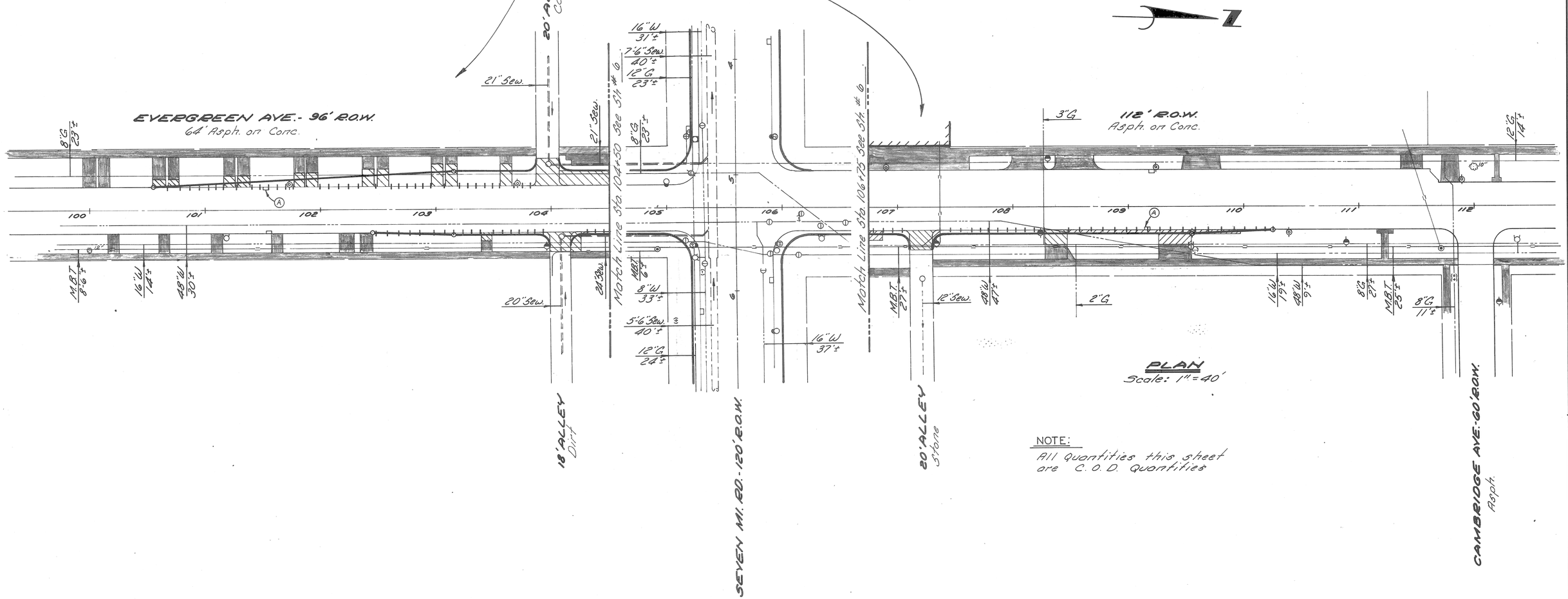
SHEET	6 OF 42 SHEETS
CONTRACT NO.	11413A
ASSIGNMENT NO.	
DATE	11-78

REVISIONS LOCATED BY COORDINATES ON SHEET

COOR'D	DESCRIPTION	DR'N	CH'D	AP'VD	DATE

K&E 17 0152 12-73 57141

NOTE:
New sidewalk will be placed in these areas under separate contract. This drawing shows this sidewalk as existing although it may not be constructed at the beginning of this contract.



PLAN
Scale: 1" = 40'

NOTE:
All Quantities this sheet are C.O.D. Quantities

REMOVAL LEGEND

- Removing Pavement
- Removing Sidewalk
- Removing Curb
- (A) Abandoning Drainage Structures
- Sidewalk or Driveway to Remain

NOTES:
1. For Utility Legend, See Sh # 17.
2. Locations of existing utility lines are based on the best available records & are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO CONSTRUCTION 647-7344

DESCRIPTION	DR'N	CK'D	APV'D	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET				

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY Bucech
TRACED BY
CHECKED BY WB/RC

APPROVED: Allen E. Krogan

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

SEVEN MILE RD. - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

REMOVALS — EVERGREEN AVE.

SHEET 7 OF 42 SHEETS
CONTRACT No. 11413A
DRWG No.
DATE 11-78

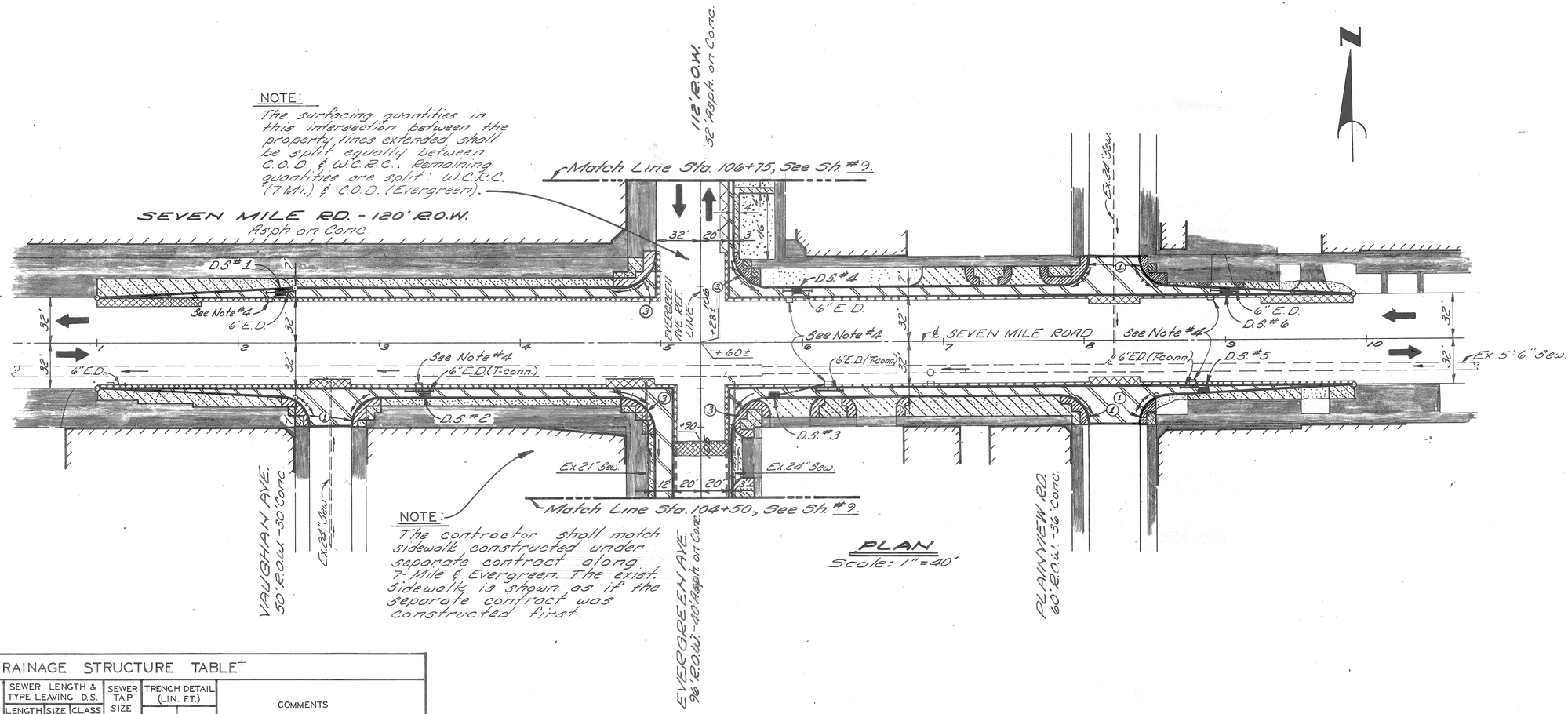
R. CARROLL, INC. 378 1818

C.B.M. Elev. 162.26 Arrow on Hydrant S.E. Corner Seven Mile Rd. & Vaughan

C.B.M. Elev. 163.28 Arrow on Hydrant S.E. Corner Seven Mile Rd. & Evergreen

P.B.M. # 115-256 Elev. 160.847 N.E. Corner Evergreen & Seven Mi.

C.B.M. Elev. 164.09 Arrow on Hydrant S.W. Corner Seven Mile Rd. & Plainview



PLAN
Scale: 1" = 40'

NOTE:
The contractor shall match sidewalk constructed under separate contract along 7-Mile & Evergreen. The exist. sidewalk is shown as if the separate contract was constructed first.

DRAINAGE STRUCTURE TABLE+

DRAINAGE STRUCT. NO. (D.S.)	TYPE OF STRUCT.	EDGE DRAINS 6" (LIN. FT.)	SEW. TRAP SIZE (IN.)	SEWER TYPE LEAVING D.S. LENGTH (FT.)	SIZE (IN.)	CLASS C-76-	SEWER TAP SIZE (IN.)	TRENCH DETAIL (LIN. FT.) A	TRENCH DETAIL (LIN. FT.) B	COMMENTS
1	Std. Inlet	20	—	12	12	IV	12	12	—	
2	C.B. "L"**	22	—	10	12	IV	6 & 12	10	—	
3	C.B. "L"**	22	—	40	12	IV	6 & 12	40	—	
4	Std. Inlet	20	↘	11	12	IV	12	11	—	
5	C.B. "L"**	22	—	11	12	IV	6 & 12	11	—	
6	Std. Inlet	20	—	13	12	IV	12	13	—	
	Ex. C.B. & Std. 1499	10	—	—	—	—	6	—	—	

+Use W.C.R.C. standards for constructing all drainage structures this sheet except for C.B. "L". (See C.O.D. standards.)

**Use Std. Inlet instead C.B. "L" if this will not interfere with the nearby existing 12" Gas line.

SURFACING LEGEND

- Existing Sidewalk or Driveway to Remain
- Conc. Base Course - Non-Reinf. - 9" with Int. Curb & 2" Bit. Surf.
- Removing Bituminous Surface & Resurface*
- Conc. Pav't. - Non-Reinf. - 8" (Driveway)
- 4" Concrete Sidewalk
- 6" Concrete Sidewalk (Sd'wk Ramp Areas paid for Separately)
- Class "A" Sodding with 3" Topsoil
- Existing Building
- Removing Bit. Surf. - Planer Meth.*** (See Det. # "C" Sh. # 3.)
- Prop. 2" Bituminous Resurfacing
- ① Sidewalk Ramp, Type 1
- ③ Sidewalk Ramp, Type 3

***Alternate Methods of removing Bit. Surface may be used but they will be paid for as "Removing Bituminous Surface - Planer Method."

*For one foot (min.) stripping adjacent to prop. pav't, See Detail "A", Sh. # 3.

GENERAL NOTES

1. For Alignment, See Sh. No. 4.
2. For Utility Legend, See Sh. No. 17.
3. For Driveway Details, See Sh. No. 17.
4. Remove C.B. Frame & Cover and replace with W.C.R.C. manhole Frame and Cover "A" (Removal is Incidental to new cover.)

REVISIONS LOCATED BY COORDINATES ON SHEET						
COORD	DESCRIPTION	DR'N	CK'D	AP'VD	DATE	

REFERENCE DRAWINGS

DESIGNED BY	
DRAWN BY	MHP
TRACED BY	
CHECKED BY	I.H.K. / B.C.

APPROVED:
ENGINEER OF STREETS
HIGHWAY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
BUREAUS OF STREETS AND HIGHWAYS

SEVEN MILE RD. - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

PLAN — SEVEN MILE RD.

SHEET 8 OF 42 SHEETS
CONTRACT NO. 11413A
ASSIGNMENT NO.
DATE 11-78

K&E 17 0153 12-73 3714

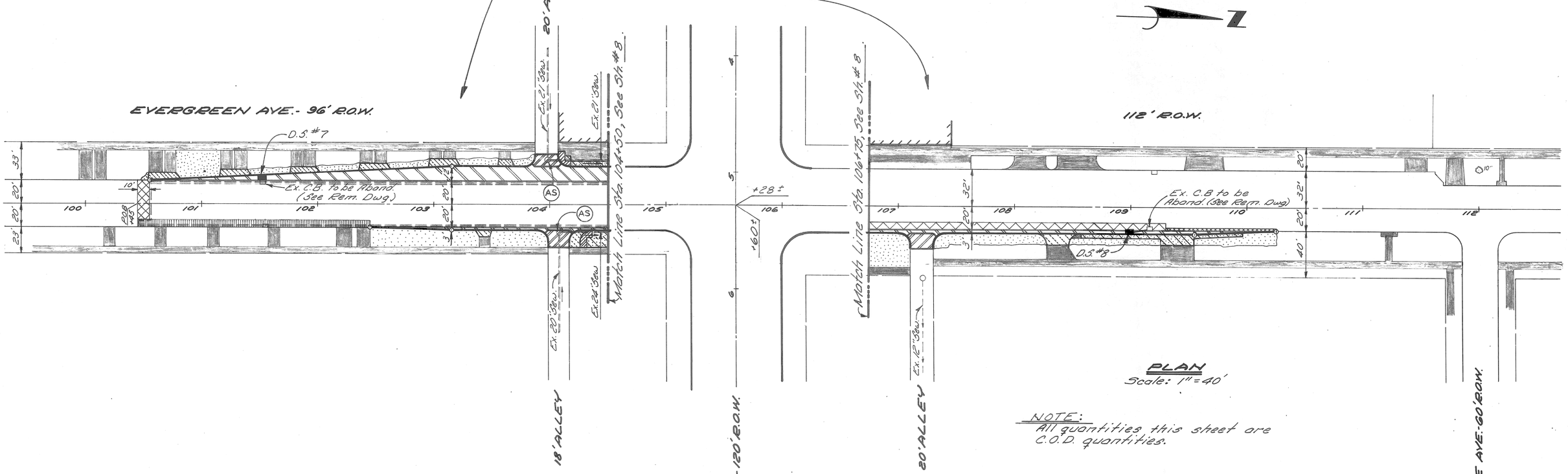
C.B.M. Elev. 163.28 Arrow on Hydrant
S.E. Corner Seven Mile Rd & Evergreen

P.B.M. #115-256 Elev. 160.847
N.E. Corner Evergreen & Seven Mi.

C.B.M. Elev. 163.00 Arrow on Hydrant
East side of Evergreen @ Sta. 109+55.5

C.B.M. Elev. 164.00 Arrow on Hydrant
N.E. Corner Evergreen & Combridge

NOTE:
The contractor shall match sidewalk constructed under separate contract in the 7-mile – Evergreen intersection. The Existing sidewalk is shown as if the separate contract was constructed first.



PLAN
Scale: 1" = 40'

NOTE:
All quantities this sheet are C.O.D. quantities.

DRAINAGE STRUCTURE TABLE+

DRAINAGE STRUCT. NO. (D.S.)	TYPE OF STRUCT.	WITH TRAP (T)	SEWER LENGTH & TYPE LEAVING D.S. LENGTH (FT)	SIZE (IN)	CLASS C-76-	TRENCH DETAIL (LIN. FT.) 8	9	COMMENTS
7	C.B."B"	T	2	12	IV	—	2	
8	C.B "B"	T	15	12	IV	—	15	

+Use C.O.D. standards for constructing all drainage structures this sheet.

SURFACING LEGEND

- Existing Sidewalk or Driveway to Remain
- Conc. Base Course-Non-Reinf.-9" with Int. Curb & 2" Bit. Surf.
- Conc. Pavt.-Non-Reinf.-9" (Alley)
- Conc. Pavt.-Non-Reinf.-8" (Driveway)
- Conc. Pavt.-Non-Reinf.-6" (Driveway)
- 4" Concrete Sidewalk
- Class "A" Sodding with 3" Topsoil
- Existing Building
- Removing Bituminous Surface & Resurface*
- 6" Concrete Sidewalk
- Removing Bit. Surf.-Planer Meth.** (See Det. "D" Sh. #3)
- Prop. 2" Bituminous Resurfacing
- (AS) Adjusting Structures
- Removing Bit. Surf.-Planer Meth.** (See Det. "C" Sh. #3)

GENERAL NOTES

1. For Alignment, See Sh. No. 5.
2. For Utility Legend, See Sh. No. 17.
3. For Driveway Details, See Sh. No. 17.

**Alternate Methods of removing Bituminous surface may be used but they will be paid for as "Removing Bituminous Surface – Planer Method."

*For one foot stripping adjacent to prop. pav't. See Detail A, Sh. #3.

CODE	DESCRIPTION	DRN	CK'D	APV'D	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY
DRAWN BY Sucech
TRACED BY
CHECKED BY R.P. / R.C.

APPROVED: Allen E. Morgan

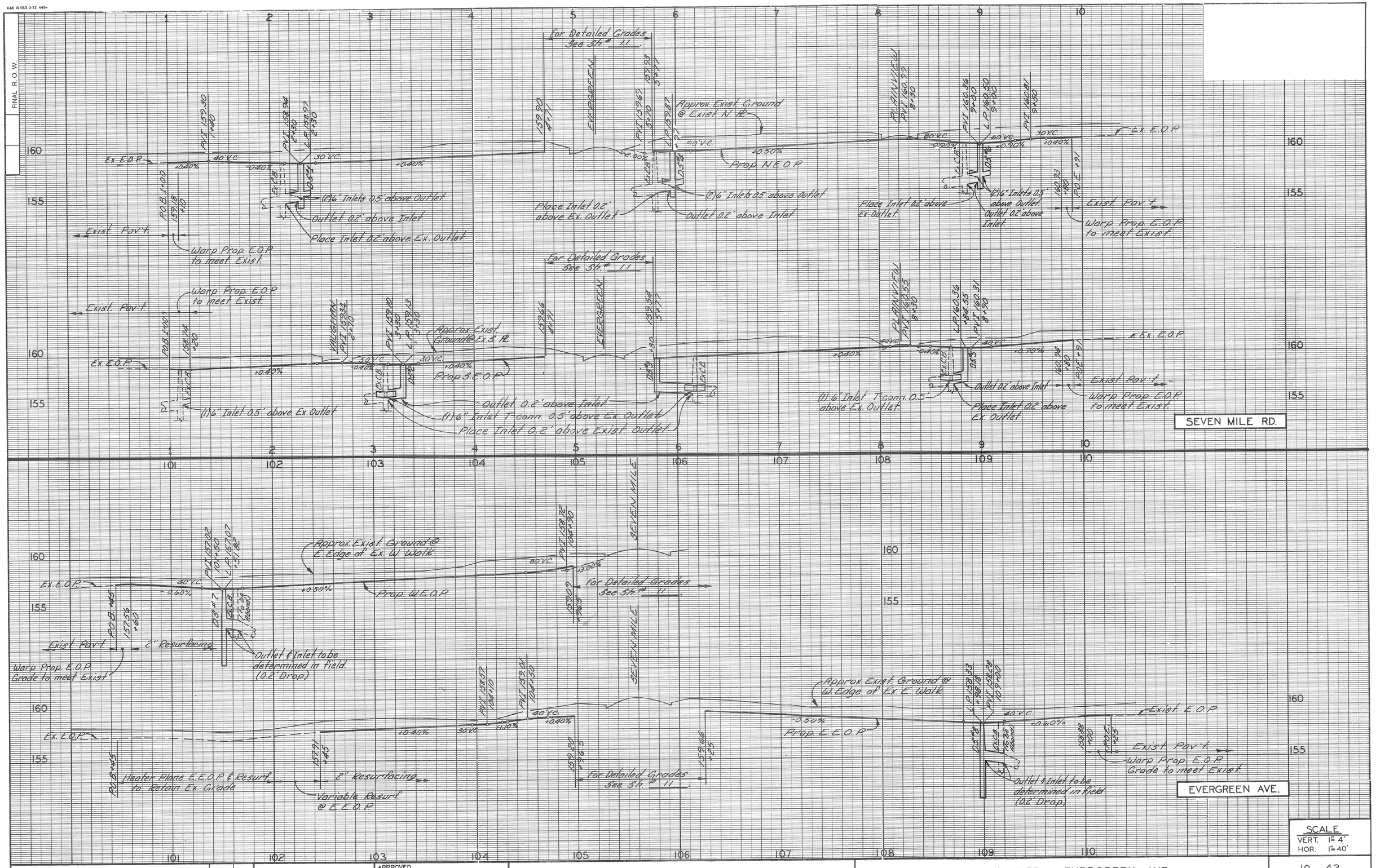
CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

SEVEN MILE RD. – EVERGREEN AVE.
INTERSECTION IMPROVEMENT

PLAN – EVERGREEN AVE

SHEET 9 OF 42 SHEETS
CONTRACT No. 11413A
DRWG No.
DATE 11-78

K&E 19 1153 3-72 448-



REVISION'S	DR'N	CK'D	DRWN BY M. Sucech CK'D BY R. Comly

APPROVED
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P. M.D.

SEVEN MILE RD. — EVERGREEN AVE
INTERSECTION IMPROVEMENT

PROFILES,— SEVEN MILE AND EVERGREEN

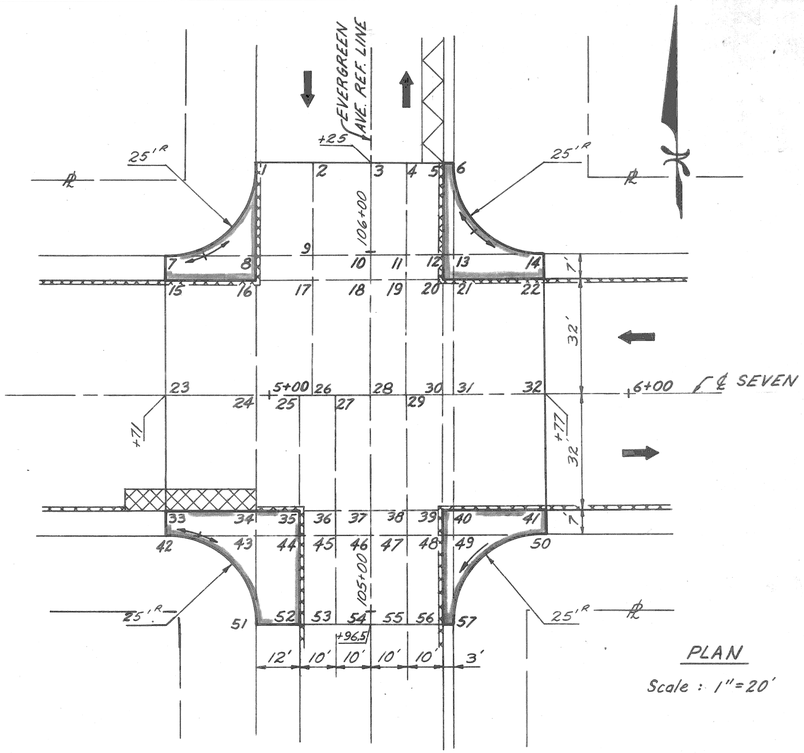
SHEET 10 OF 42 SHEETS
CONTRACT NO. 11413A
DATE 11-78

EDCO+ 127M 1-75 59771

SCALE	HORIZONTAL / VERTICAL	BOOK NO. PG. / PAVING COMPLETED	LEVEL / DATE	BEFORE STARTING CONSTRUCTION.....CONTRACTOR MUST CHECK WITH UTILITIES FOR LOCATIONS OF EXISTING STRUCTURES WHETHER OR NOT INDICATED ON PLANS.

NOTE – FOR SYMBOLS Ⓐ ETC. SEE STANDARD DETAIL DRAWING NO C-4171

BENCH MARKS ELEV

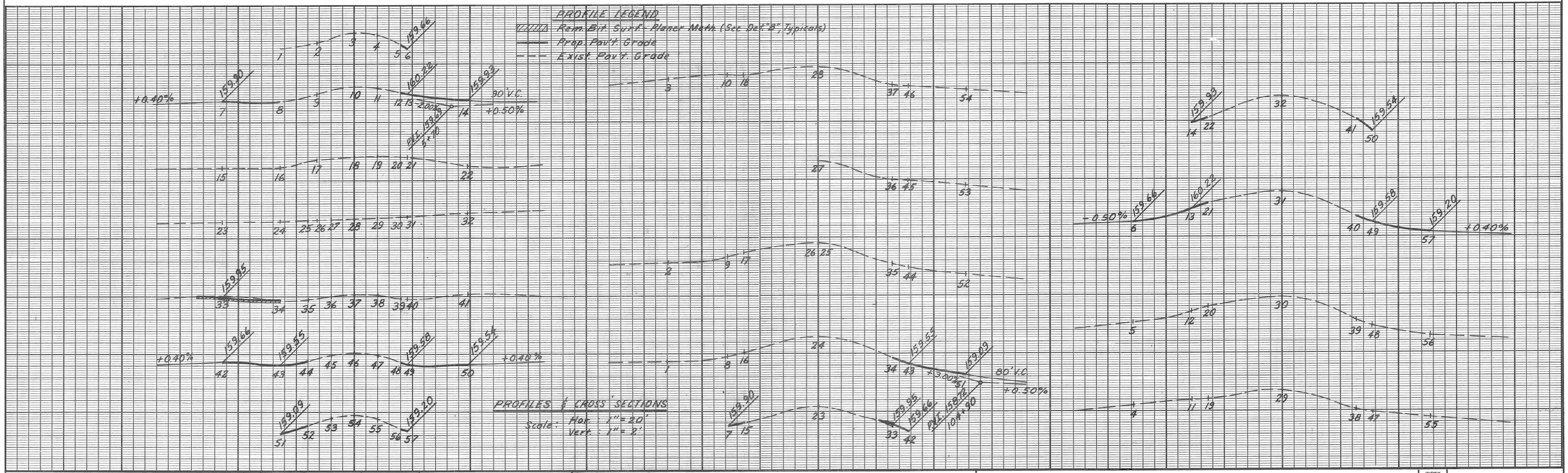


PLAN

Scale : 1"=20'

PLAN LEGEND

- Prop. Pav't. Limits
- Exist. or Prop. Pav't. Edge Outside Det. Grade Area
- Removing Bituminous Surface
- Removing Bit. Surf.- Planer Meth. (See Det. "C," Typ. Cross Section)



DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS				

	BY	CHECKED BY
PLAN	Comly	
GRADE	Comly	
ESTIMATE		
FINAL	CHECK FK	REVIEW

APPROVED:

ENGINEER OF STREETS

HIGHWAY ENGINEER

CITY OF DETROIT

BUREAUS OF STREETS AND HIGHWAYS

CITY ENGINEERING DIVISION

E.P.M.D.

SEVEN MILE ROAD – EVERGREEN AVE. INTERSECTION IMPROVEMENT

DETAILED GRADES FOR SEVEN MILE RD. AT EVERGREEN AVE.

INDEX NO.

TOPO NO.

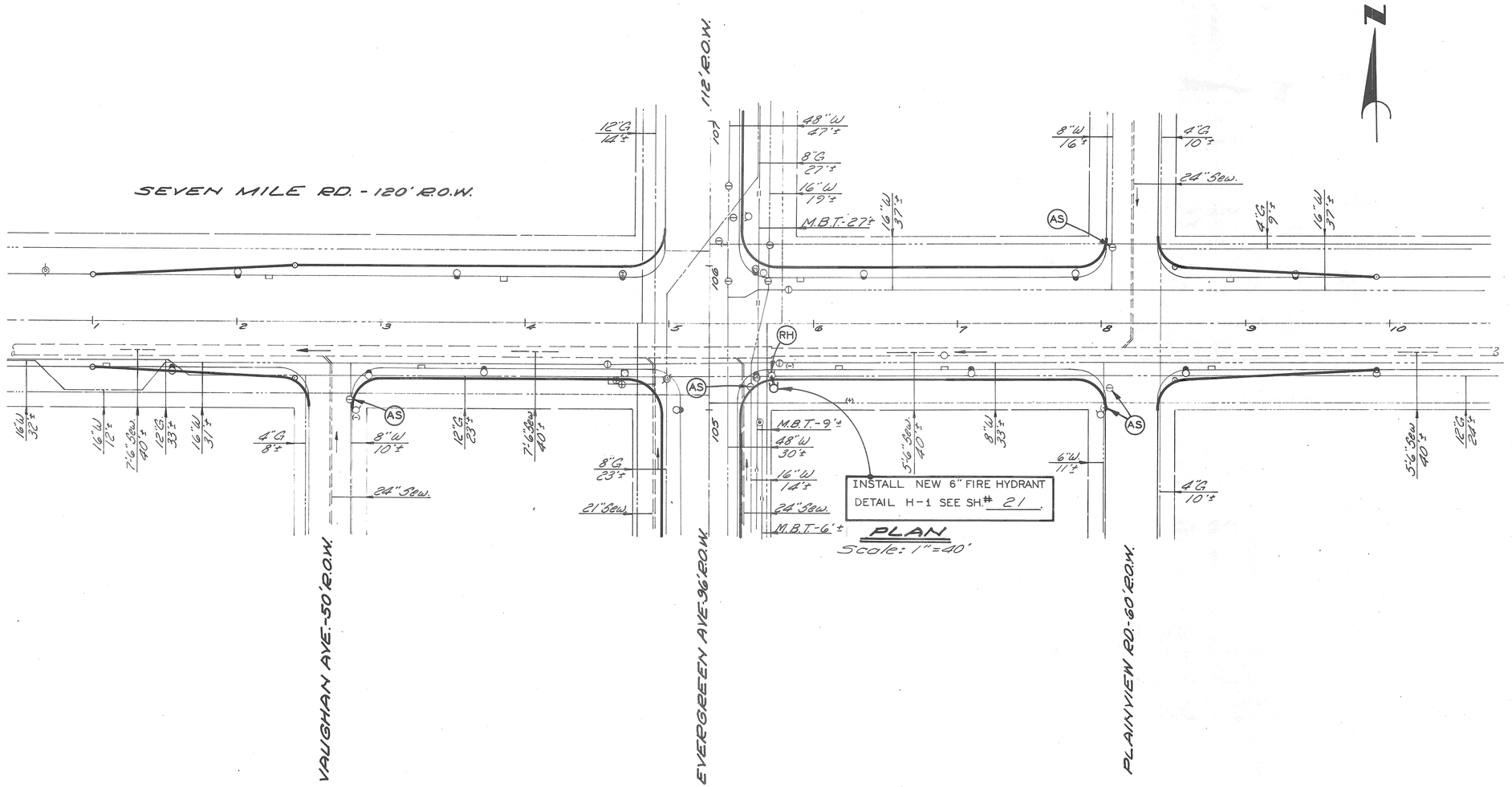
INDEXED

SHEET 11 OF 42 SHEETS

CONTRACT NO. 11413A

ASSIGNMENT NO. 76-22-57

DATE 11-78



LEGEND

(AS) ---- Adjusting Structures

(RH) ---- Remove Existing Fire Hydrants (Incidental to new hydrant)

NOTES:

1. For Utility Legend, See Sh. # 17.
2. Locations of exist. utility lines are based on the best available records & are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647-7344

COOR'D	DESCRIPTION	DR'N	CK'D	AP'VD	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET					

REFERENCE DRAWINGS

DESIGNED BY

DRAWN BY Sucech

TRACED BY

CHECKED BY IK

APPROVED:

ENGINEER OF STREETS

HIGHWAY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION - EPMD
BUREAUS OF STREETS AND HIGHWAYS

SEVEN MILE RD. - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

UTILITIES — SEVEN MILE RD.

SHEET 12 OF 42 SHEETS

CONTRACT NO. 11413A

ASSIGNMENT NO.

DATE 11-78

LEGEND

(AS) ---Adjusting Structures

[H-] ---Install Fire Hydrant

(RH) ---Remove Existing Fire Hydrant (Incidental to new hydrant)

NOTES:

1. For Utility Legend, See Sh. # 17.
2. Locations of existing utility lines are based on the best available records & are not guaranteed for accuracy.

CALL MISS DIG
48 HOURS PRIOR TO
CONSTRUCTION 647-7344

COOR'D	DESCRIPTION	DR'N	CK'D	AP'V'D	DATE	REFERENCE DRAWINGS
REVISIONS LOCATED BY COORDINATES ON SHEET						

DESIGNED BY	
DRAWN BY	Bucech
TRACED BY	
CHECKED BY	WB

APPROVED: Allen E Fogen

CITY OF DETROIT
CITY ENGINEERING DIVISION
E.P.M.D.

SEVEN MILE RD. - EVERGREEN AVE.
INTERSECTION IMPROVEMENT

UTILITIES — EVERGREEN AVE.

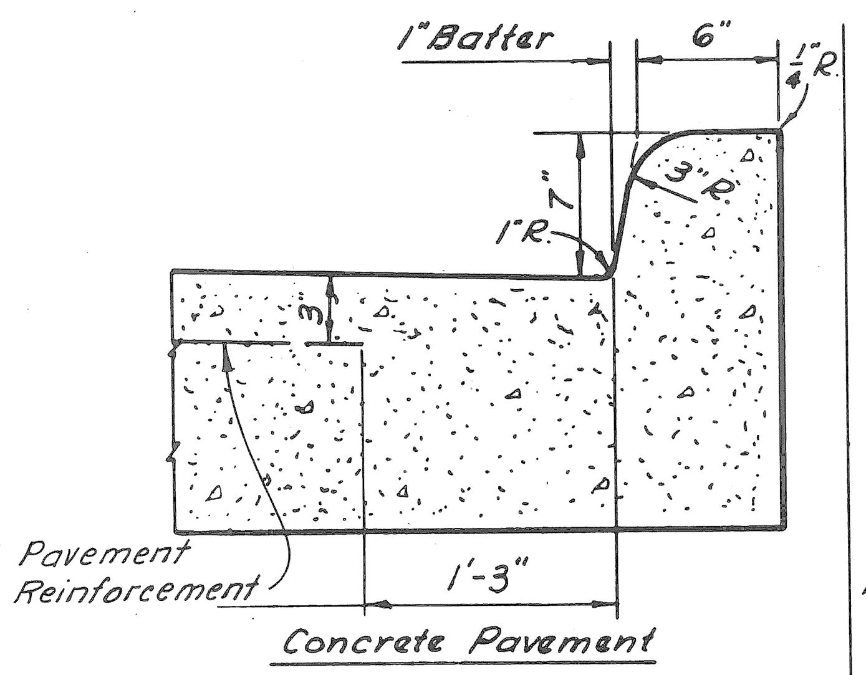
SHEET 13 OF 42 SHEETS
CONTRACT NO. 11413A
DRWG NO.
DATE 11-78

INTEGRAL CURBS

ALL TRANSVERSE JOINTS IN THE CONCRETE PAVEMENT SHALL EXTEND ENTIRELY THROUGH THE INTEGRAL CURB AND BE OF THE SAME KIND AND THICKNESS AS PROVIDED FOR THE PAVEMENT, EXCEPT THAT A PREMOULDED BITUMINOUS FILLER SHALL BE USED IN THE INTEGRAL CURB WHEN PLACING A TEMPORARY FILLER, SUCH AS STYROFOAM, IN THE PAVEMENT. THE JOINT MATERIAL SHALL BE PRECUT SO AS TO CONFORM TO THE GEOMETRIC SHAPE AND CROSS SECTIONAL AREA OF THE CURB, AND SHALL BE PLACED IN CONTACT WITH THE FILLER MATERIAL IN THE PAVEMENT.

INTEGRAL CURBS, WHICH ARE PLACED AS PART OF A CONCRETE BASE COURSE PAVEMENT SHALL HAVE TRANSVERSE PLANE OF WEAKNESS JOINTS, FORMED BY PLACING A PREMOULDED BITUMINOUS FILLER 1/4" THICK, ENTIRELY THROUGH THE CURB, IN EXACT ALIGNMENT WITH ALL JOINTS IN THE BASE COURSE PAVEMENT. THE JOINT MATERIAL SHALL BE PRECUT SO AS TO CONFORM TO THE GEOMETRIC SHAPE AND CROSS SECTIONAL AREA OF THE CURB.

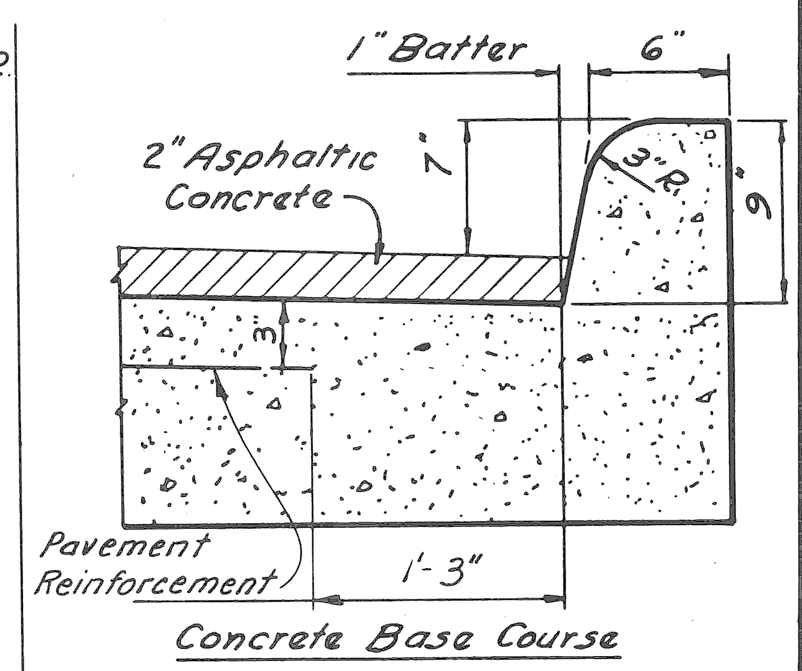
THE EDGES OF ALL TRANSVERSE JOINTS IN THE INTEGRAL CURB SHALL BE ROUNDED WITH AN APPROVED FINISHING TOOL HAVING A RADIUS OF 1/4 INCH.



Rev. 5-12-76

Type 1

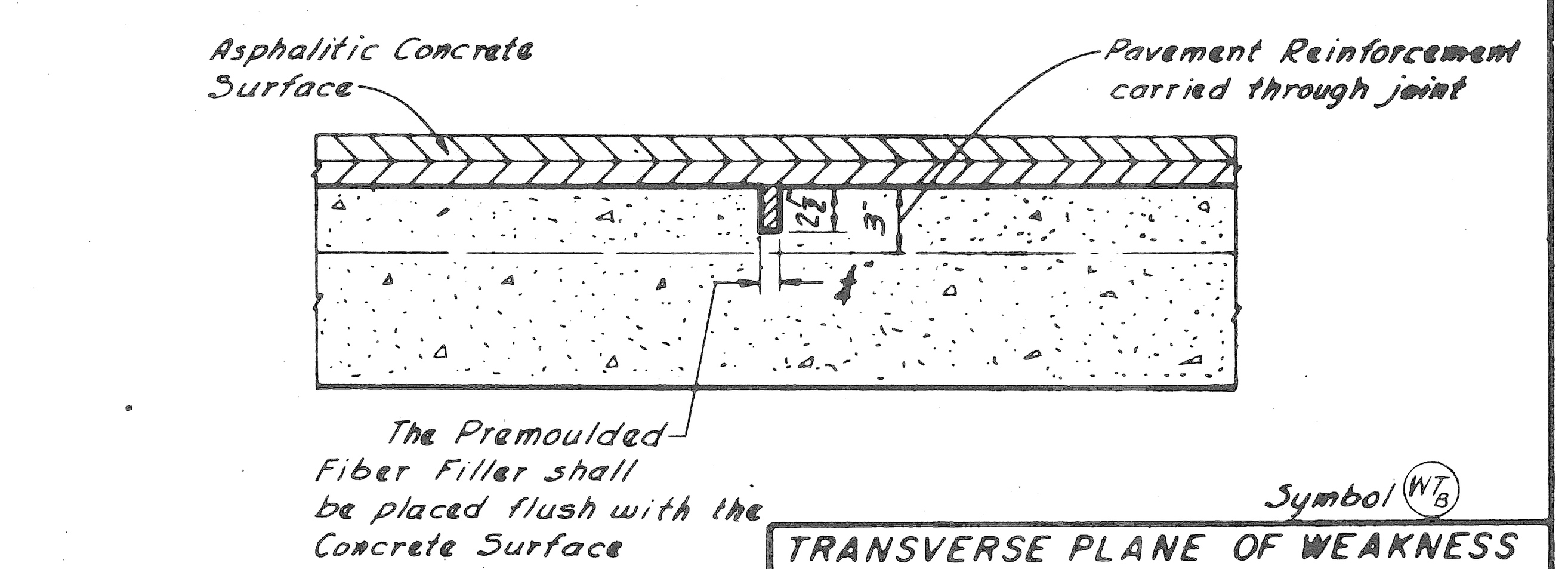
INTEGRAL STRAIGHT CURB



Rev. 5-12-76

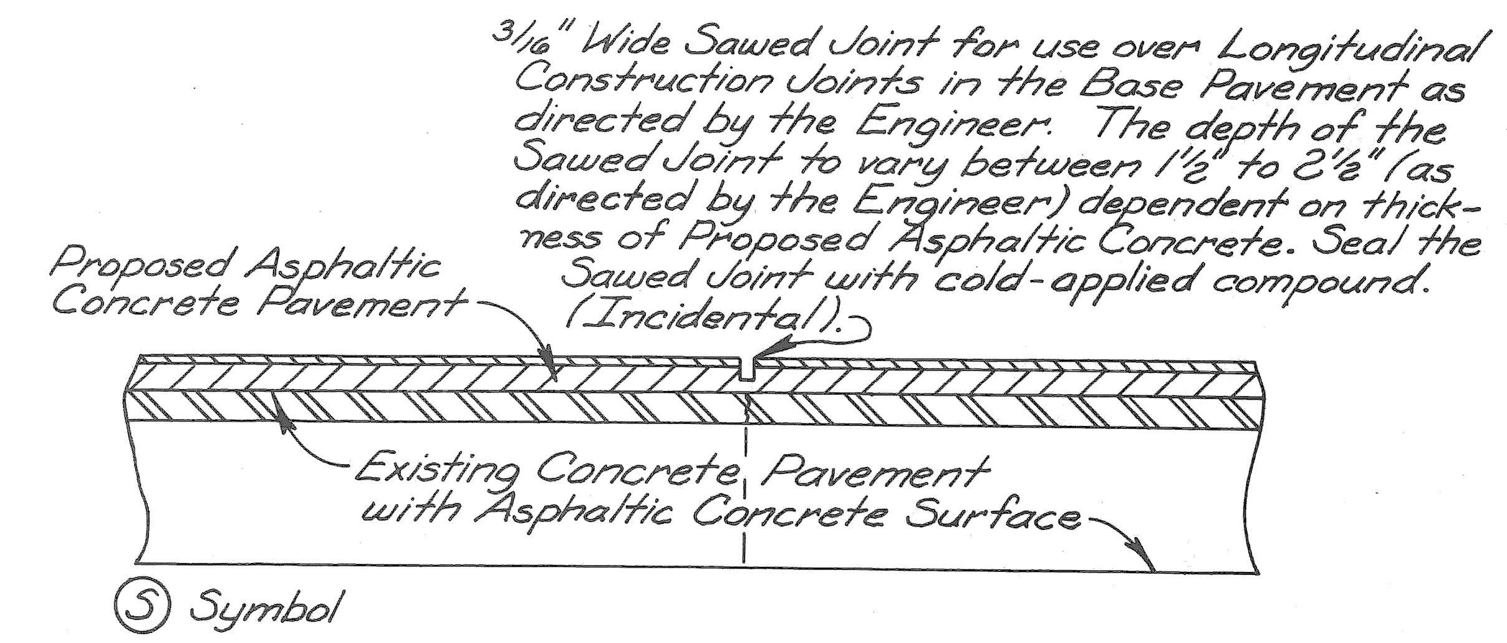
Type 2

INTEGRAL STRAIGHT CURB



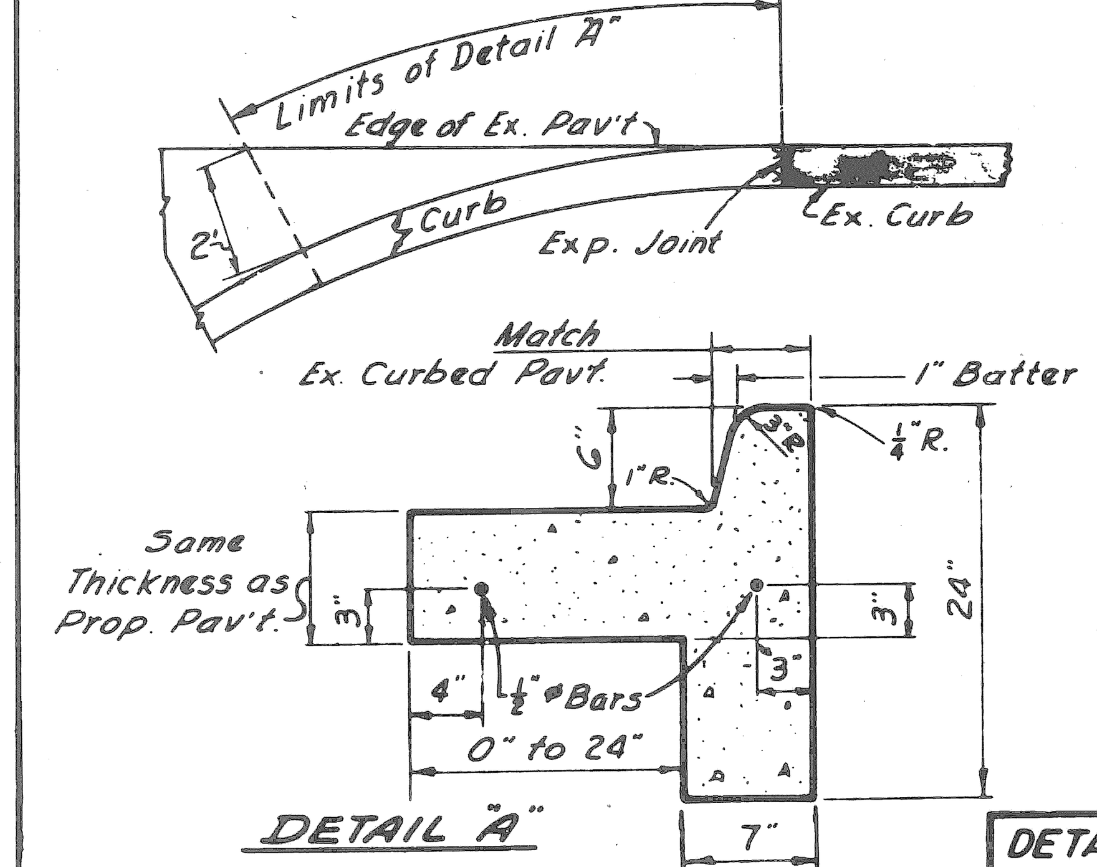
Symbol WT_B

TRANSVERSE PLANE OF WEAKNESS JOINT FOR CONCRETE BASE COURSE

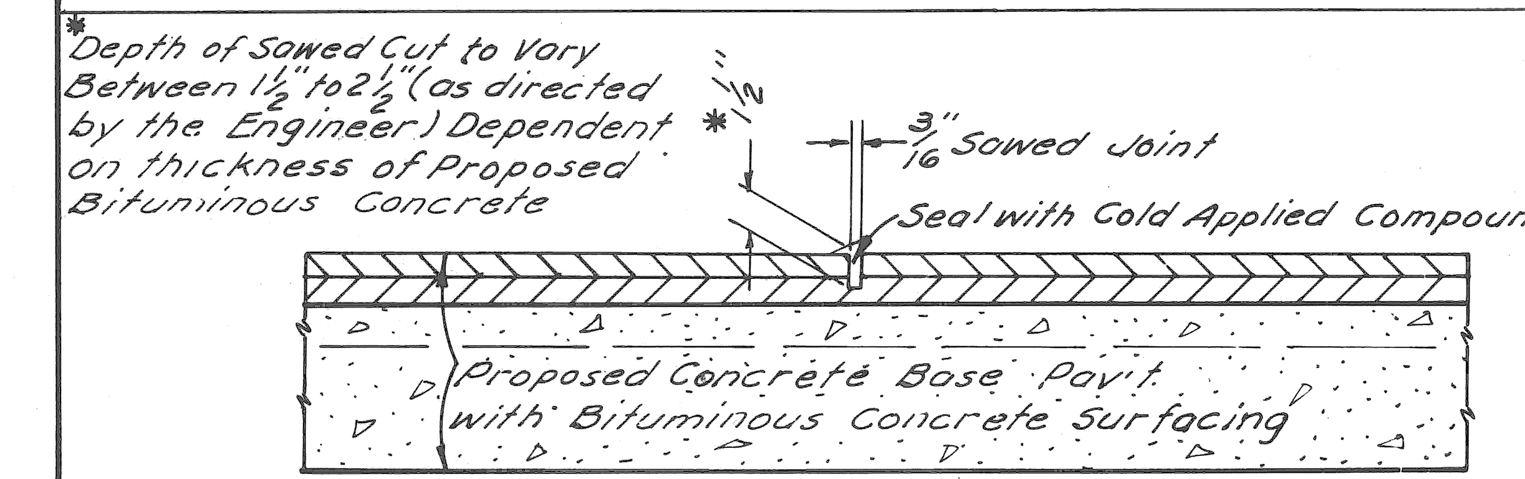


(S) Symbol

SAWED LONGITUDINAL PLANE OF WEAKNESS JOINT IN ASPHALTIC CONCRETE SURFACE



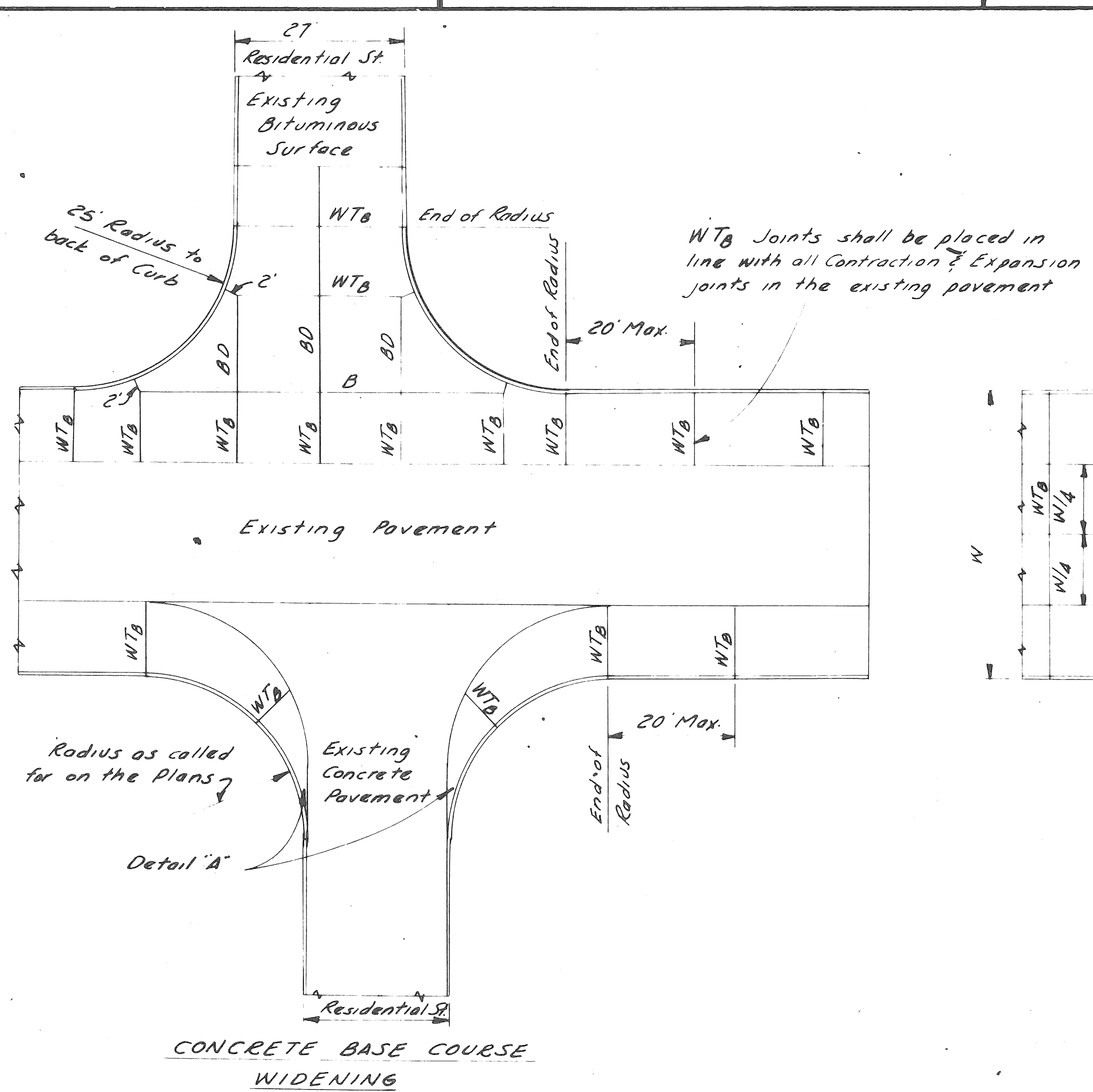
DETAIL OF CURB RETURN JOINING EXISTING PAVEMENT



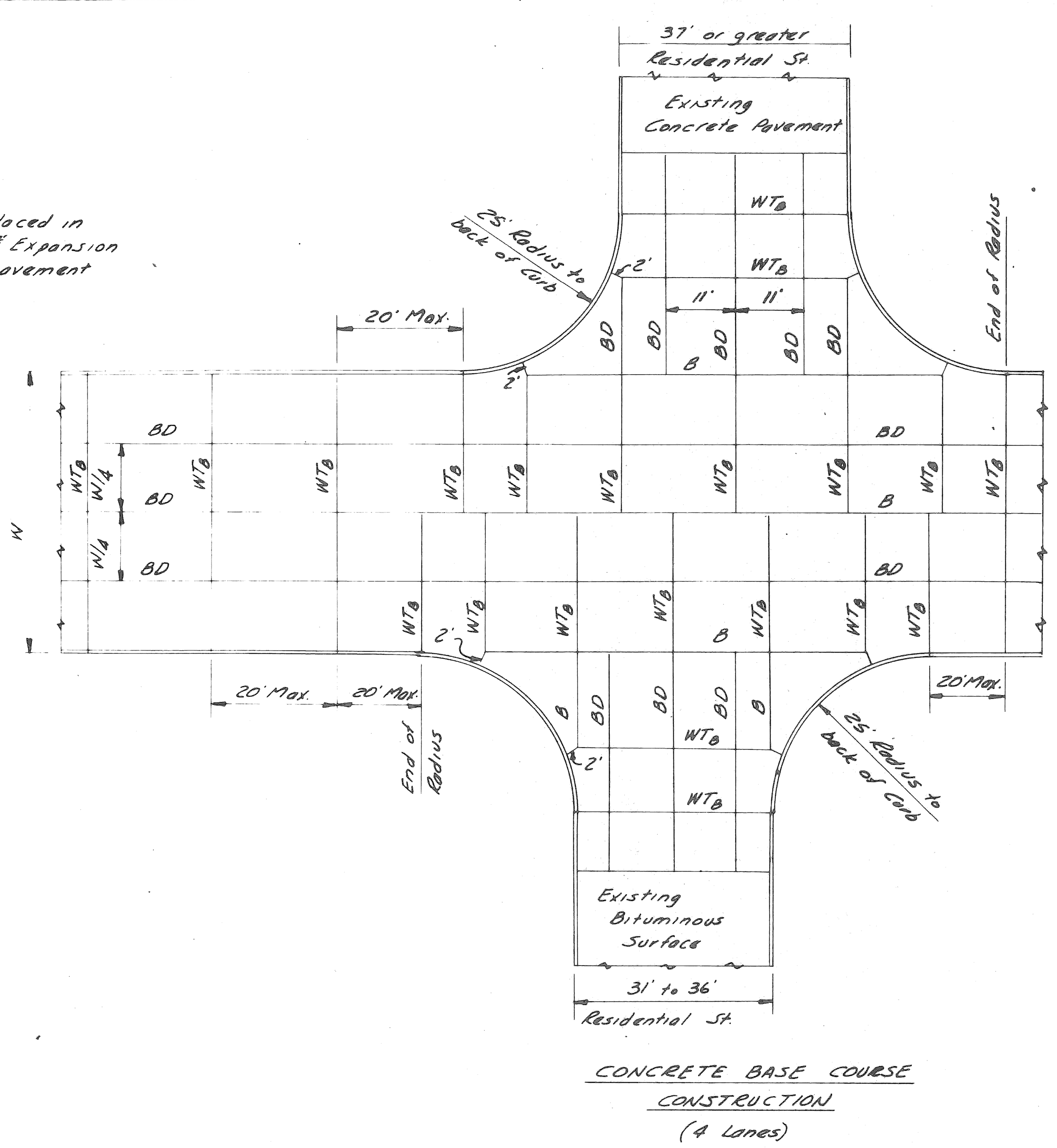
Symbol (S)

Added 6-7-74.

SAWED LONGITUDINAL PLANE OF WEAKNESS JOINT IN BITUMINOUS CONCRETE SURFACE

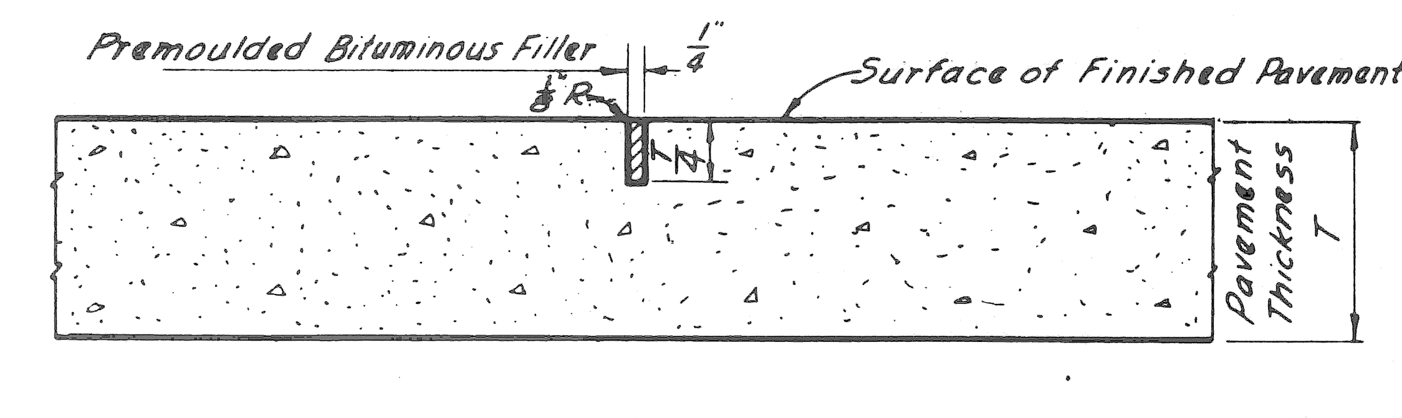


CONCRETE BASE COURSE WIDENING



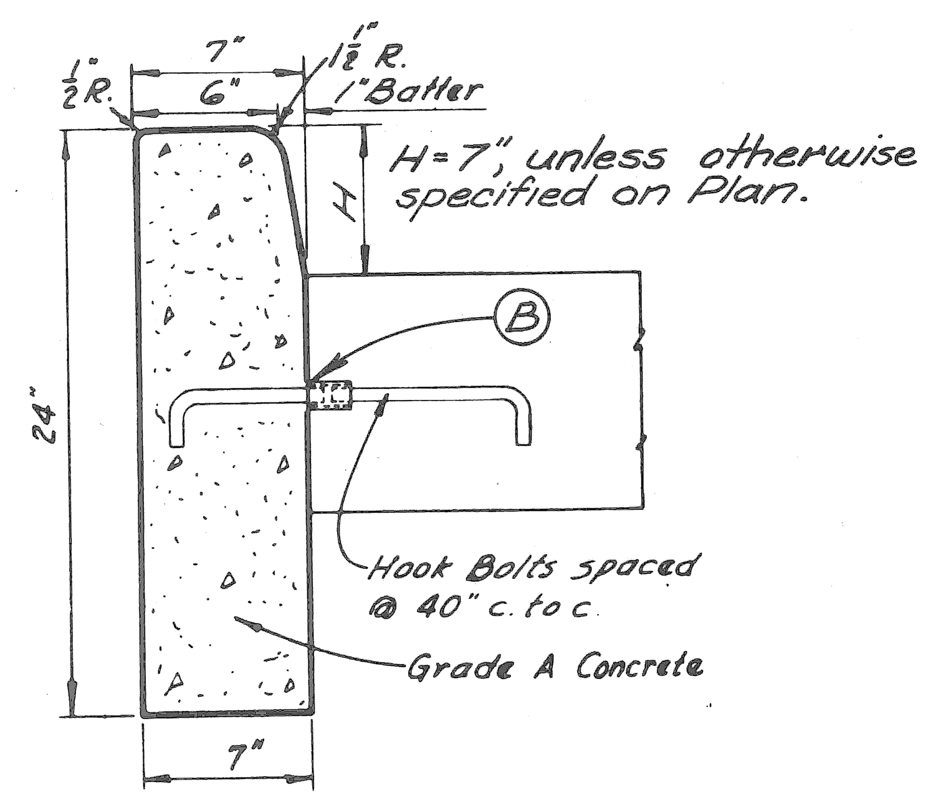
CONCRETE BASE COURSE CONSTRUCTION (4 Lanes)

TYPICAL REINFORCED CONCRETE BASE COURSE JOINT LAYOUT



Symbol (WT)

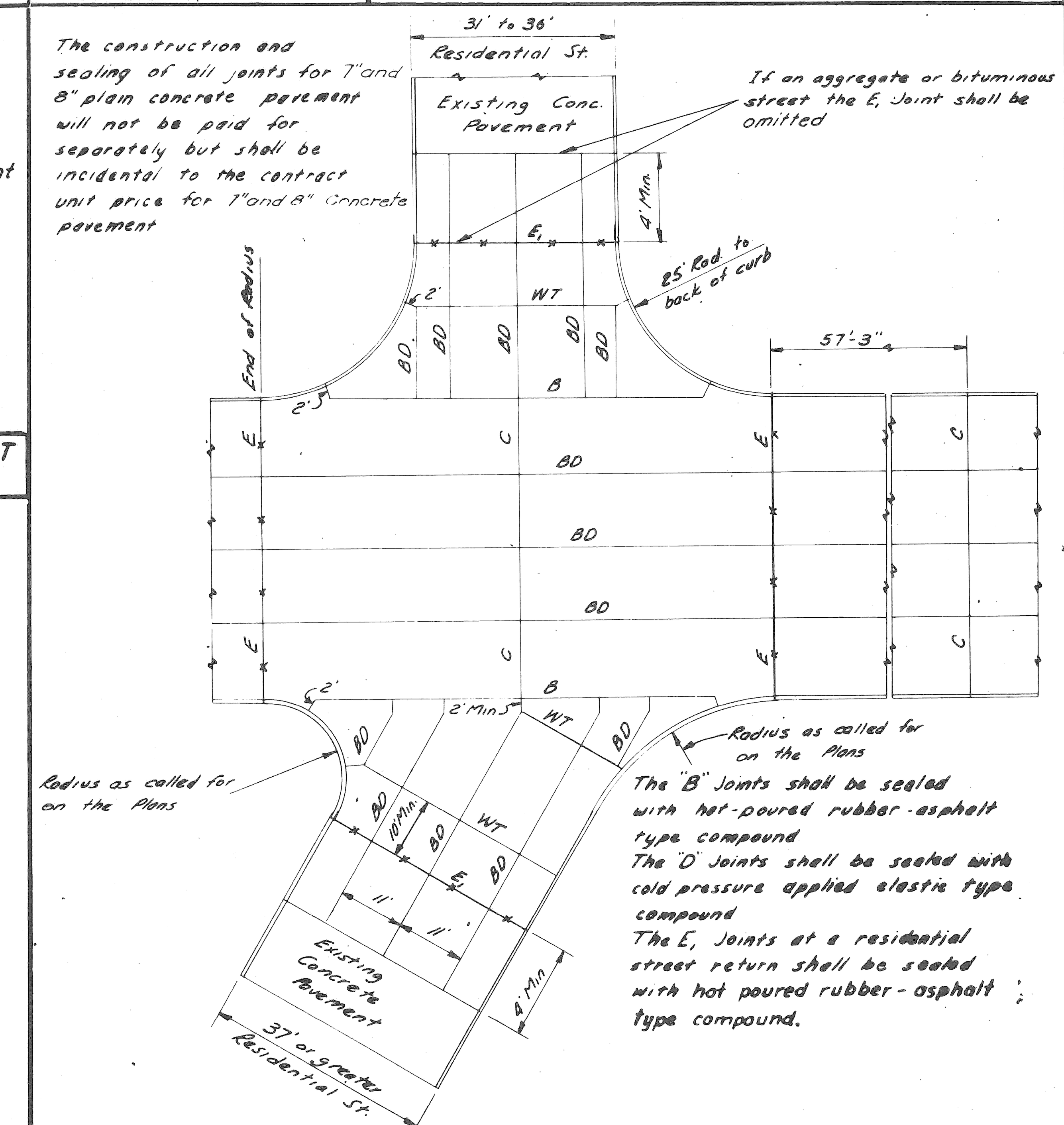
TRANSVERSE PLANE OF WEAKNESS JOINT FOR PLAIN CONCRETE PAVEMENT



END AREA = 1.14 Sq. Ft.

Type 1

CONCRETE CURB - STRAIGHT



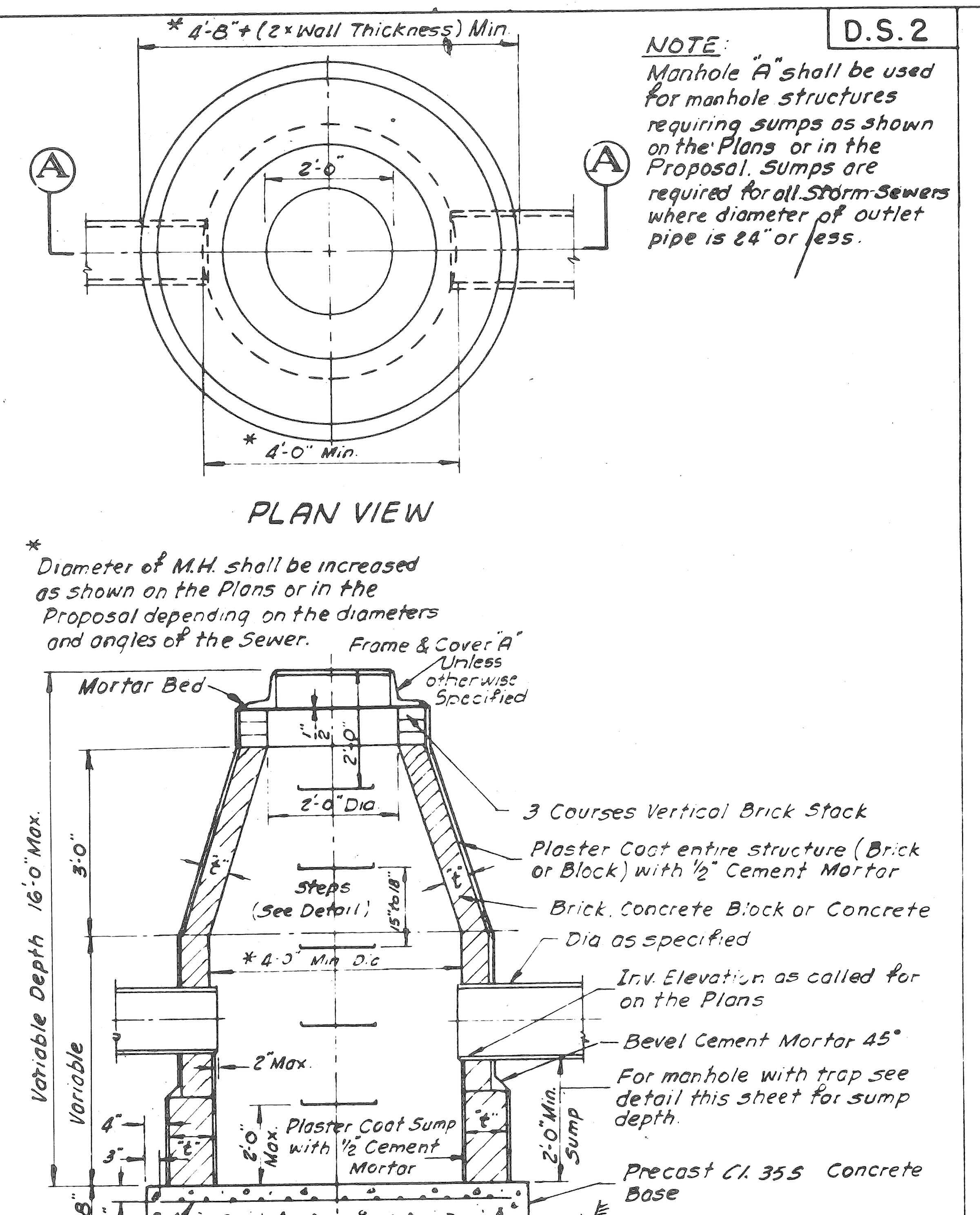
TYPICAL PLAIN CONCRETE PAVEMENT JOINT LAYOUT AT RESIDENTIAL STREET RETURN

BOARD OF WAYNE COUNTY ROAD COMMISSIONERS DETROIT MICHIGAN DESIGN DIVISION	SCALE: NO SCALE DATE: 12-1-72 DRAWN BY: E.M.B. CHECKED BY: A.E.S.	PRIMARY ROAD STANDARDS CORRECT [signature] REG. PRO. ENG. ENGINEER OF HIGHWAY DESIGN APPROVED M. Jozefiak REG. PRO. ENG. CHIEF ENGINEER-DESIGN DIVISION

CONTRACT NO. 11413A

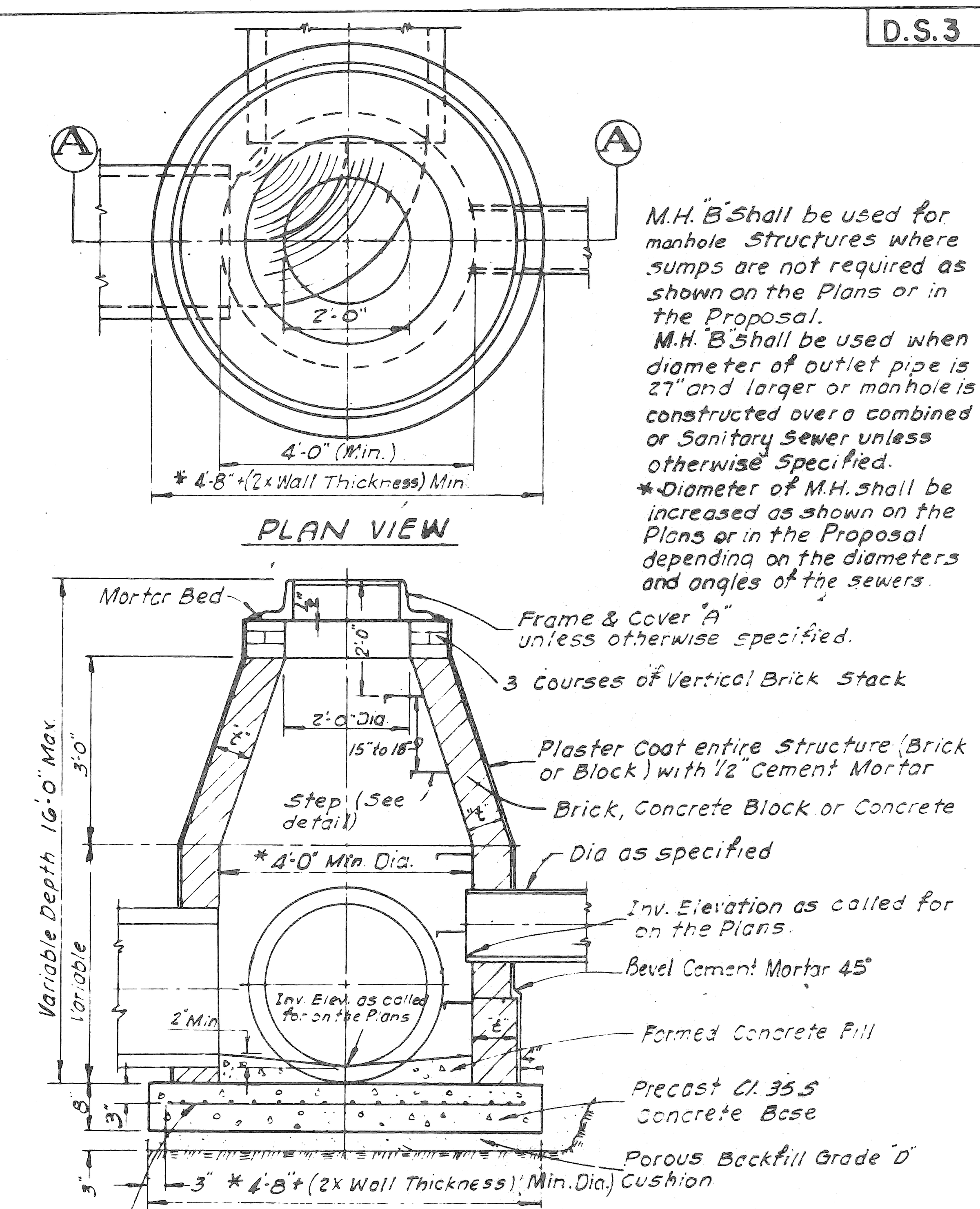
File No. C-17-1DD6 14 OF 42

D.S. 2 — MANHOLE "A"



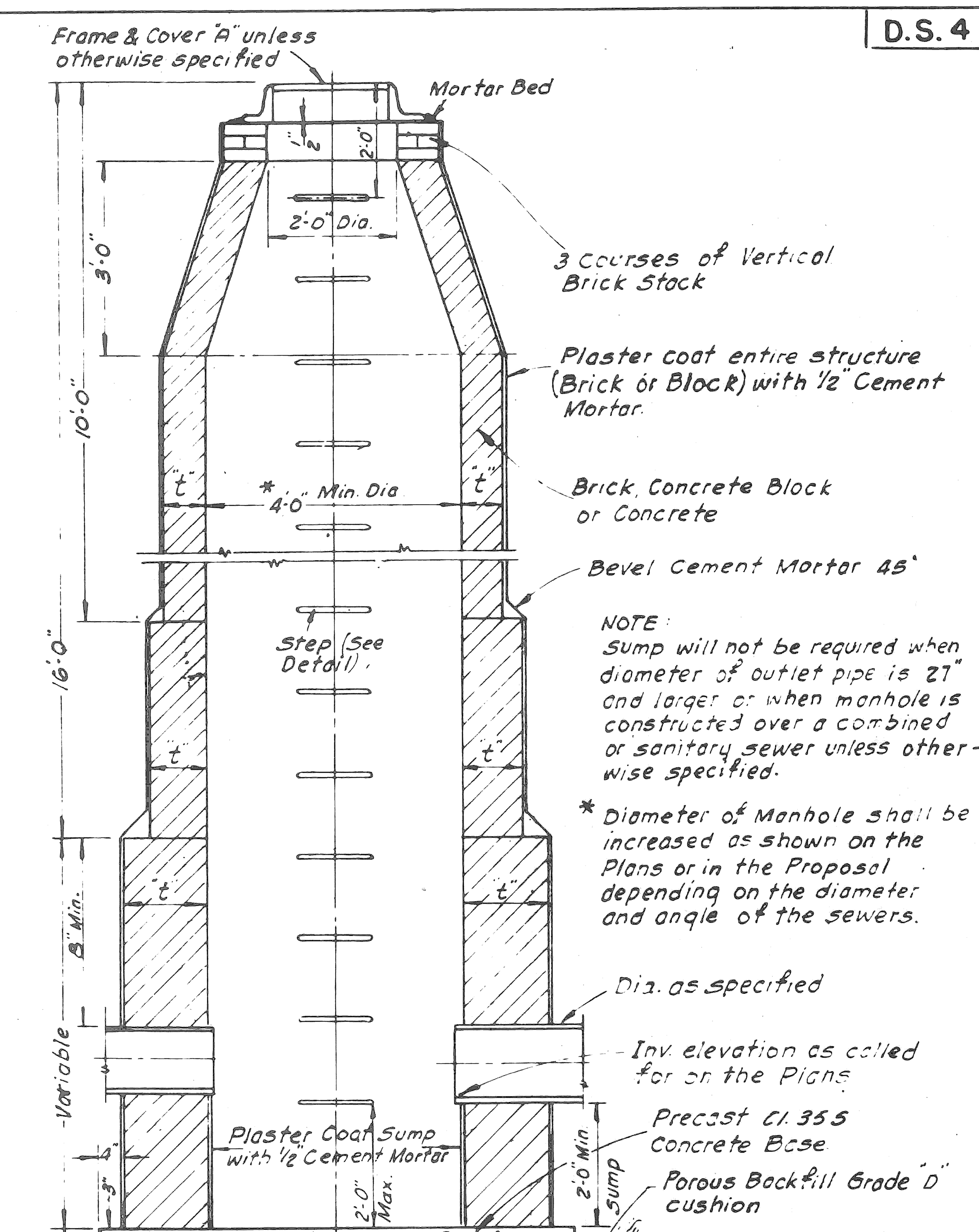
WALL THICKNESS "t"		
Depth	Brick	Concrete or Block
0'-10'	8"	6"
10'-16'	12"	8"

D.S. 3 — MANHOLE "B"



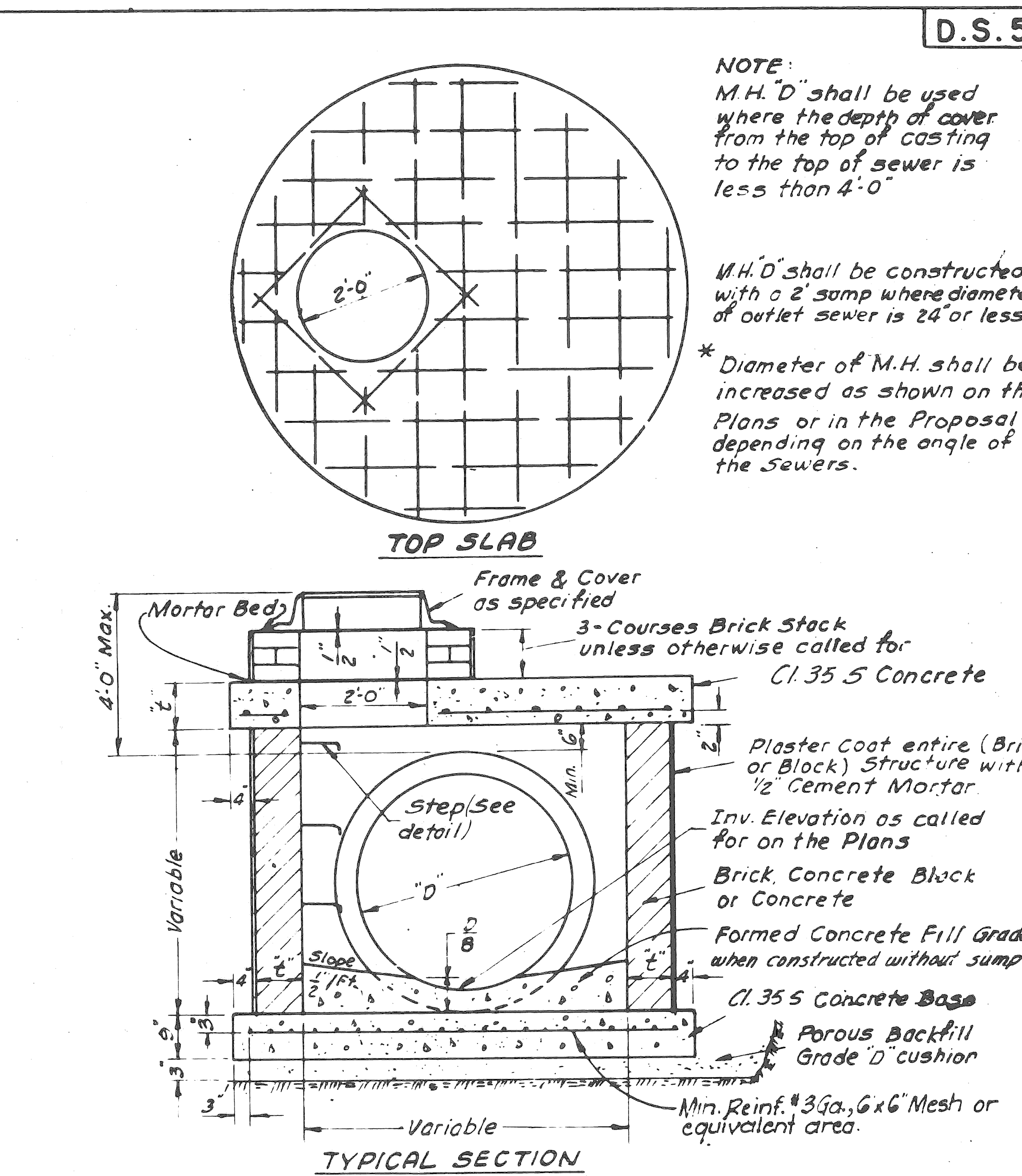
WALL THICKNESS "t"		
Depth	Brick	Concrete or Block
0'-10'	8"	6"
10'-16'	12"	8"

D.S. 4 — MANHOLE "C"



WALL THICKNESS "t"		
Depth	Brick	Concrete or Block
0'-10'	8"	6"
10'-16'	12"	8"
16'-25'	16"	12"

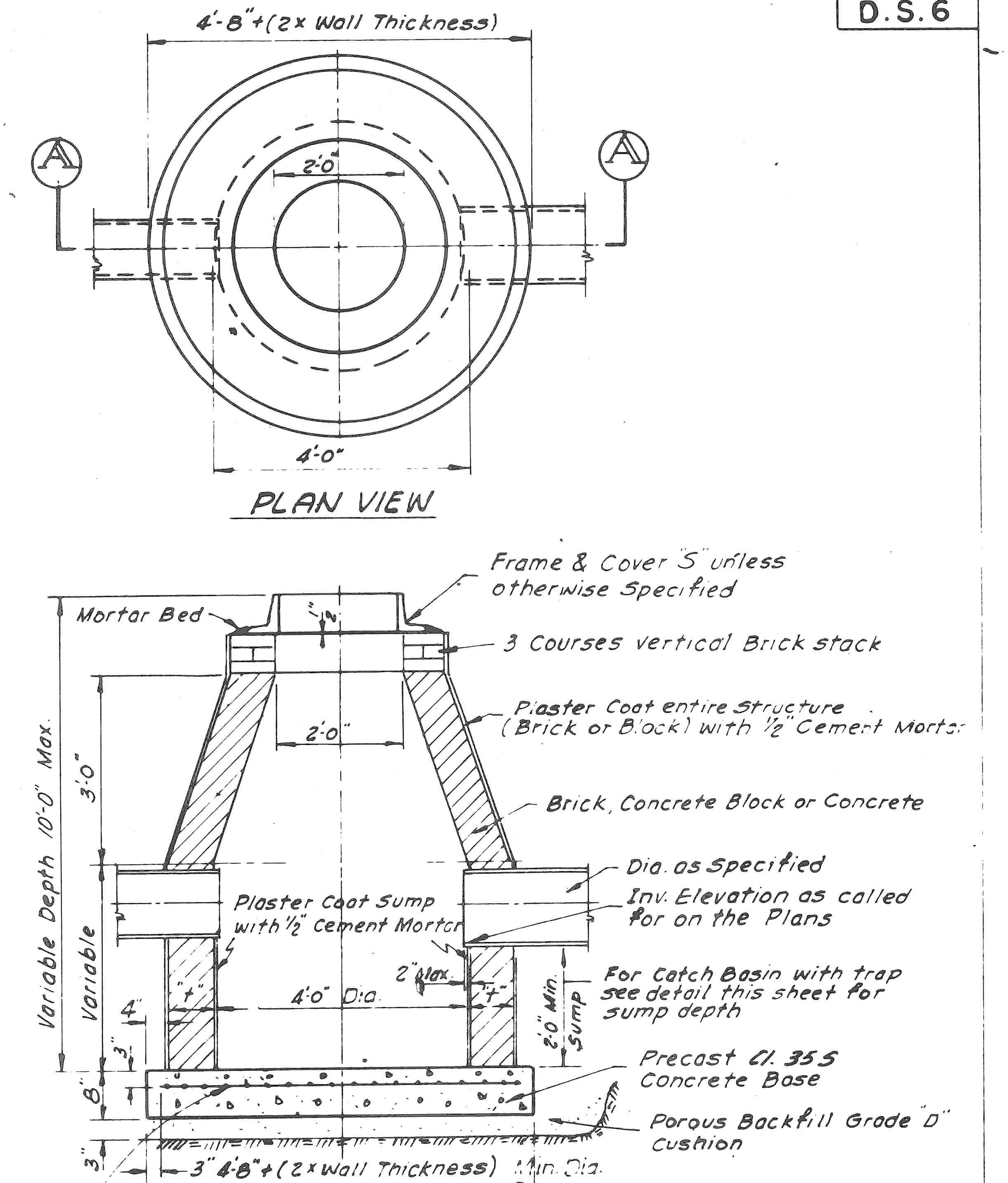
D.S. 5 — MANHOLE "D"



Outlet "D"	M.H. I.D.	Top Slab "t"	Walls "t"	Reinforcing Steel
24" or less	4'-0"	9"	8"	3/8" @ 9" Ea. Way
30"	* 4'-0"	9"	8"	3/8" @ 9" Ea. Way
36"	* 4'-0"	9"	12"	3/8" @ 9" Ea. Way
42"	* 5'-0"	10"	12"	3/8" @ 9" Ea. Way
48" 54"	* 6'-0"	11"	12"	1/2" @ 9" Ea. Way

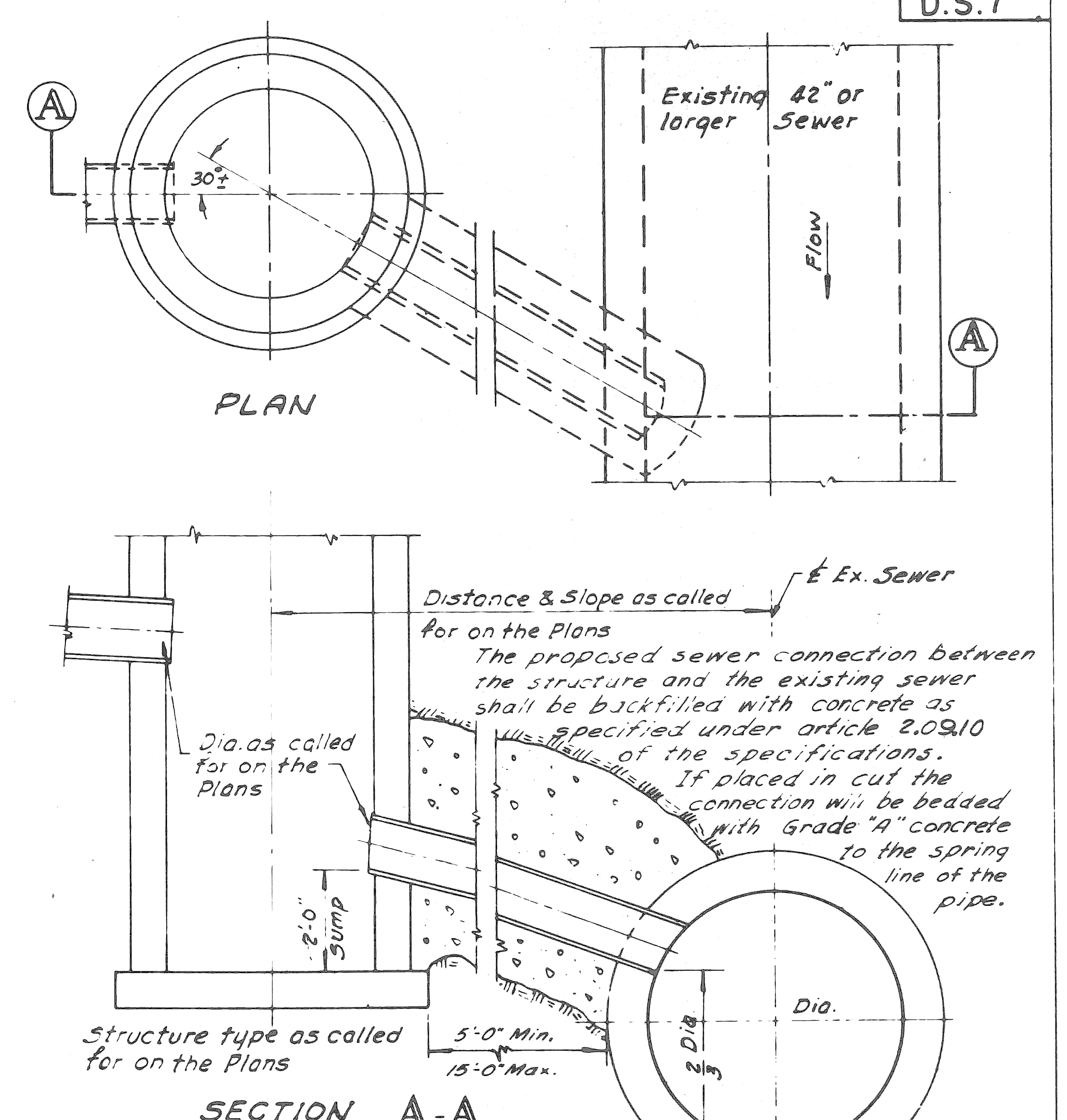
M.H. I.D.	Top Slab "t"	Walls "t"	Reinforcing Steel (slab)
7'-0"	12"	12"	1/2" at 5" Ea. Way
8'-0"	12"	12"	1" at 5" Ea. Way

D.S. 6 — CATCH BASIN "A"



WALL THICKNESS "t"		
Depth	Brick	Concrete or Block
0'-10'	8"	6"

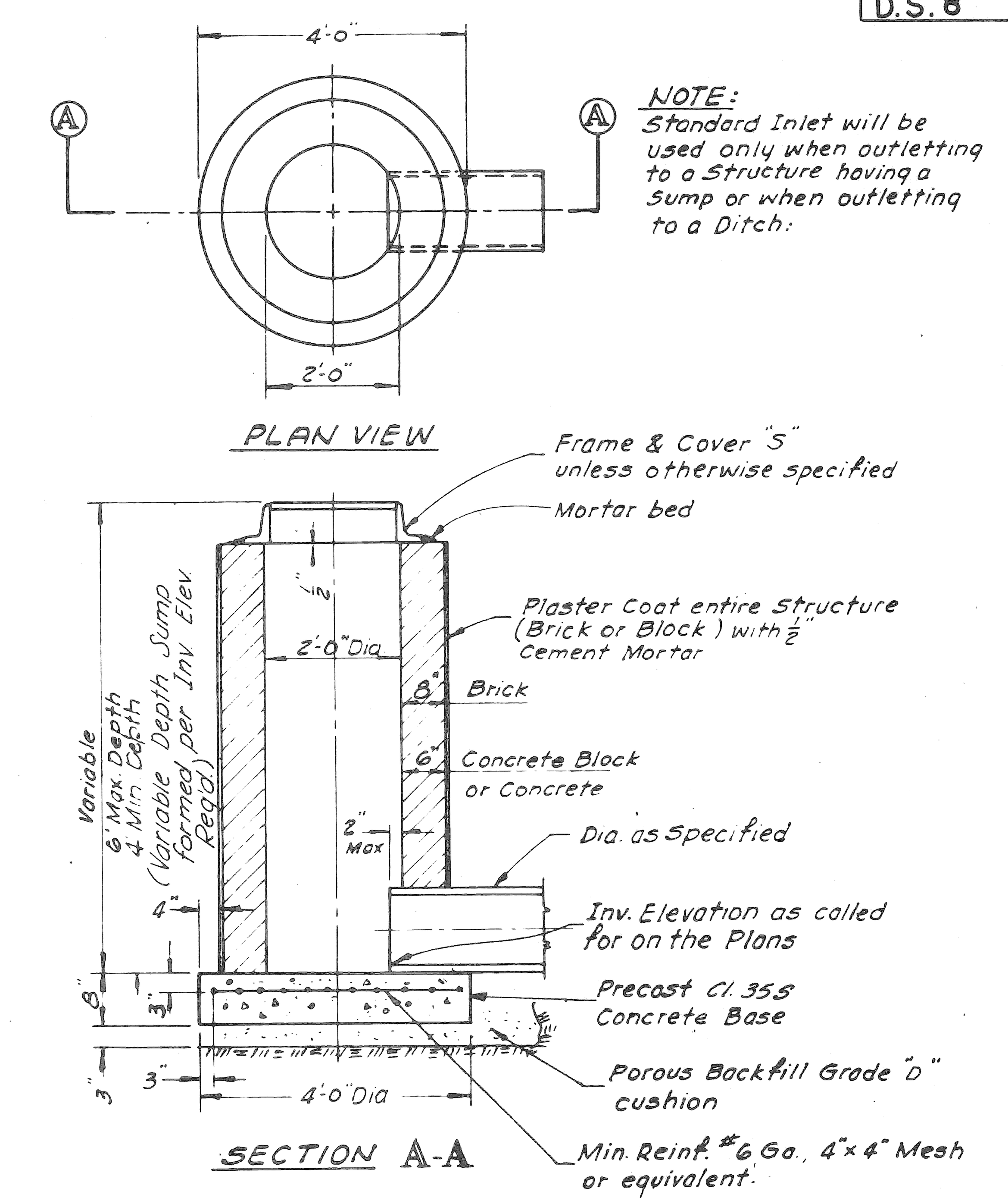
D.S. 7



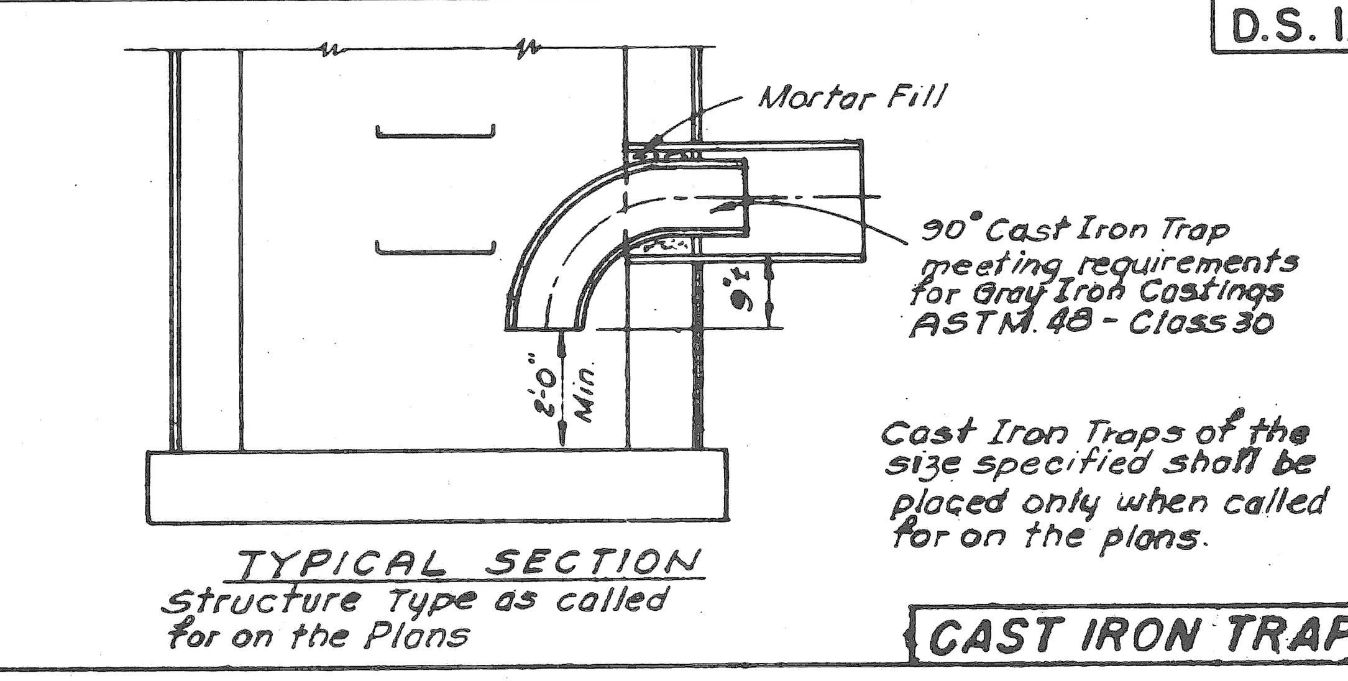
TYPICAL CONNECTION TO EXISTING SEWERS 42" AND LARGER

NOTE:
Backfilling of the tunnel or open cut sewer and connecting into the existing sewer will not be paid for separately but shall be considered as incidental to the unit price per lineal foot for the item of sewer specified.

D.S. 8 — STANDARD INLET



D.S. 1 — CAST IRON TRAP



GENERAL NOTES

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT MICHIGAN DEPARTMENT OF STATE HIGHWAYS STANDARD SPECIFICATIONS AND AS FOLLOWS:

• THE CONTRACT UNIT PRICE BID FOR CONSTRUCTING EACH MANHOLE, CATCH BASIN, OR INLET SHALL INCLUDE EXCAVATION AND BACKFILLING WITH POROUS MATERIAL, GRADE "D", AS REQUIRED.

ALL VERTICAL HOLES IN CONCRETE BLOCK STRUCTURES SHALL BE COMPLETELY FILLED WITH MORTAR. VERTICAL JOINTS SHALL BE "BUTTERED".

THE FIRST PIPE LENGTH ENTERING OR LEAVING ANY STRUCTURE SHALL BE TEMPORARILY SUPPORTED BY SUITABLE MEANS UNTIL THE STRUCTURE IS COMPLETED AND BACKFILLED.

A "POURED Cl.35S CONCRETE BASE", WITHOUT STEEL REINFORCEMENT, MAY BE SUBSTITUTED FOR A PRECAST BASE WHEN APPROVED BY THE ENGINEER. THE POROUS BACKFILL CUSHION WILL NOT BE REQUIRED UNDER THE POURED BASE, UNLESS THE CONTRACTOR HAS EXCAVATED BELOW THE REQUIRED ELEVATION, AT WHICH TIME THE ENGINEER WILL DECIDE AS TO THE MERITS OF INCREASING THE THICKNESS OF THE CONCRETE BASE OR THE USE OF A POROUS BACKFILL CUSHION.

BOARD OF
WAYNE COUNTY ROAD COMMISSIONERS
DETROIT MICHIGAN
DESIGN DIVISION

NO SCALE
DATE 12-1-72
DRAWN BY E.M.B.
CHECKED BY A.E.S.

PRIMARY ROAD STANDARDS

CORRECT — ENGINEER OF HIGHWAY DESIGN, REG. PRO. ENG.
APPROVED — CHIEF ENGINEER - DESIGN DIVISION, REG. PRO. ENG.

CONTRACT NO. 11413A

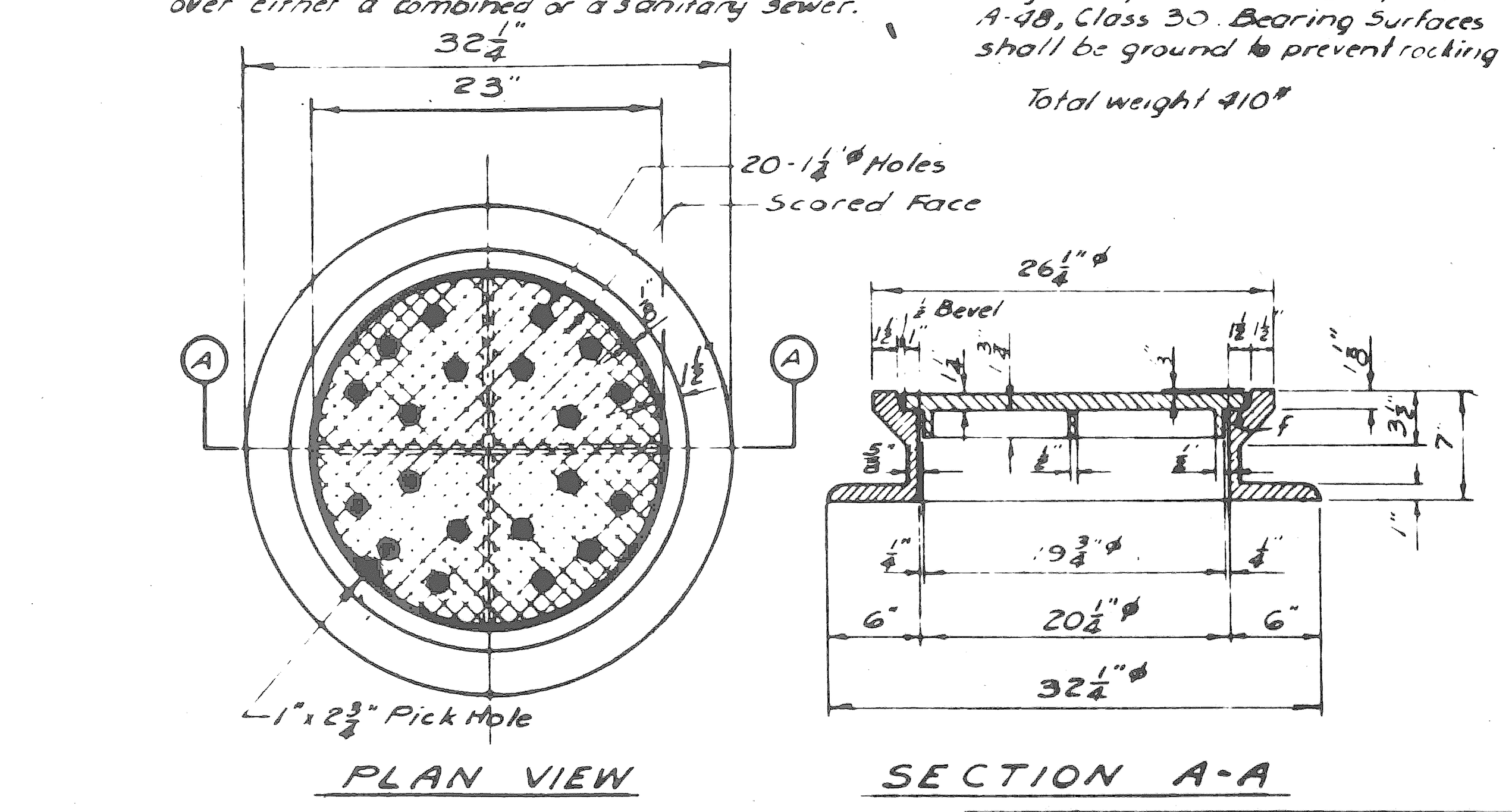
File No. C-17-1AA5

FRAME & COVER "A" — D.S. 11

Note:- A solid cover shall be provided in lieu of the perforated cover shown, when the cover is to be used on a structure which will be constructed over either a combined or a sanitary sewer.

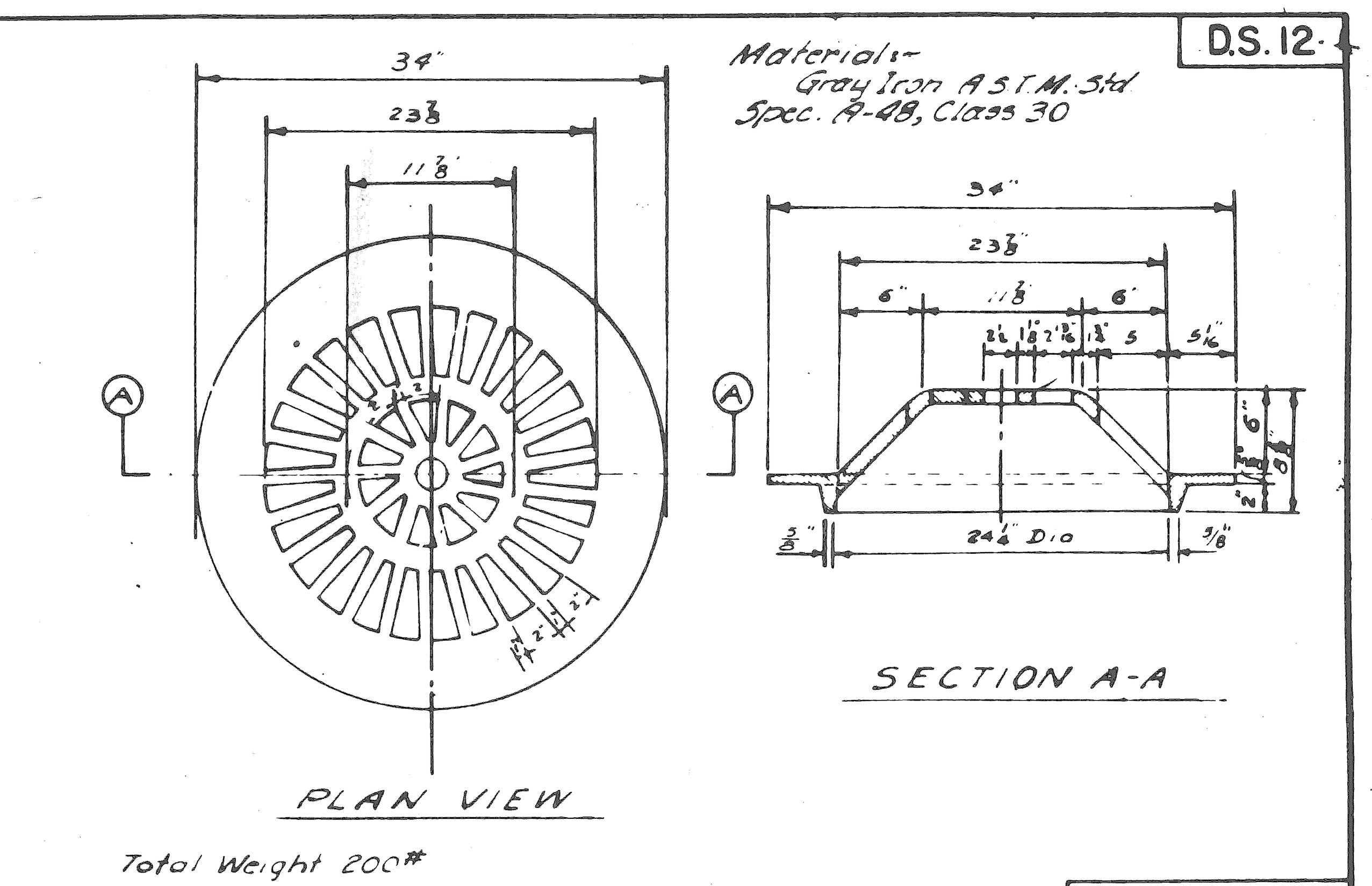
Material
Gray Iron, A.S.T.M. Std Spec. A-48, Class 30. Bearing Surfaces shall be ground to prevent rocking.

Total weight 410#



COVER "C" — D.S. 12

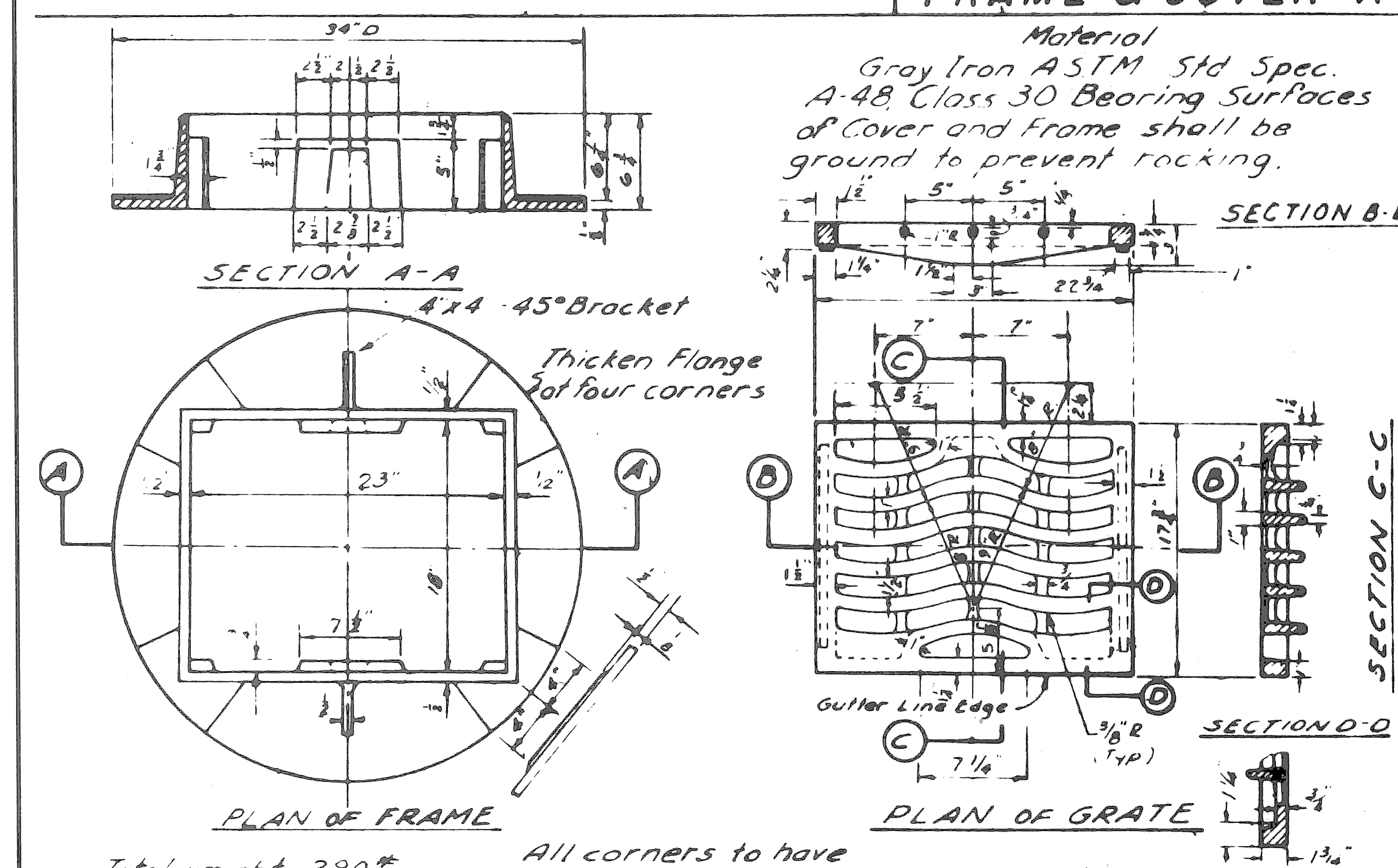
Material:- Gray Iron A.S.T.M. Std Spec. A-48, Class 30



Total Weight 200#

FRAME & GRATE "S"

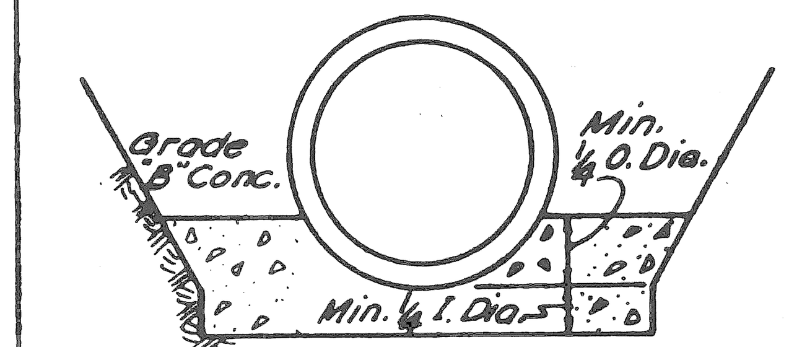
Material
Gray Iron ASTM Std Spec. A-48 Class 30 Bearing Surfaces of Cover and Frame shall be ground to prevent rocking.



Total weight 290#

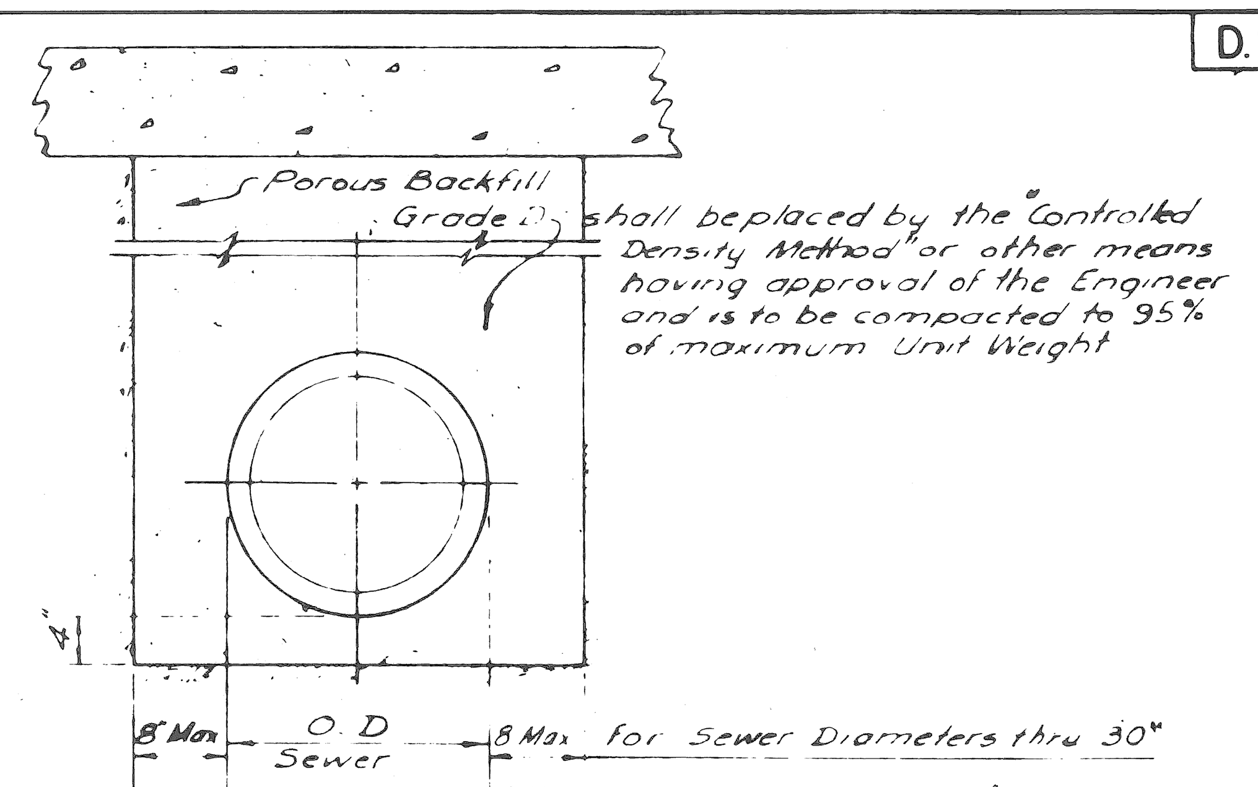
All corners to have ¼" radii or ⅛" radius Fillets.

CONCRETE CRADLE



Added 12-1-75

SEWER TRENCH "A" — D.S. 13



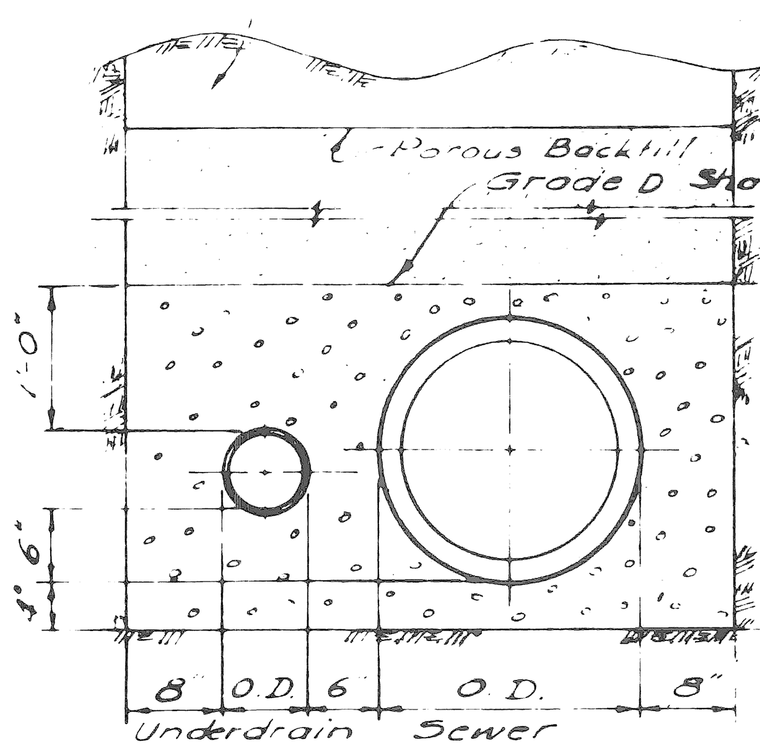
Porous Backfill Grade D shall be placed by the "Controlled Density Method" or other means having approval of the Engineer and is to be compacted to 95% of maximum Unit Weight.

- 8" Max. for Sewer Diameters thru 30"
- 12" Max. for Sewer Diameters 36" thru 48"
- 18" Max. for Sewer Diameters 54" & larger

Trench "A" shall be used under Road Surfaces, Pavement, Sidewalk, Curb, Aggregate & Paved Drives and where the edge of Trench is within 3 feet of the Pavement.

SEWER TRENCH "C" — D.S. 14

4" minimum Clay cover Seal unless otherwise Specified

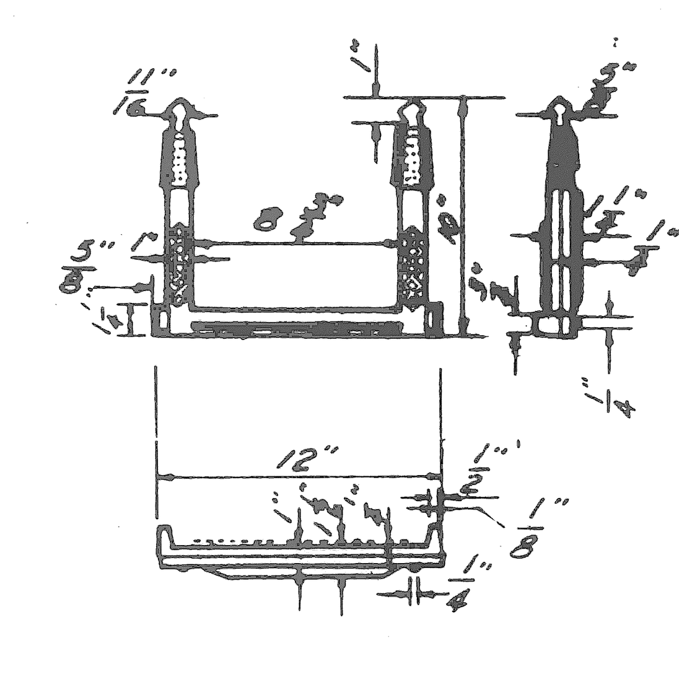


Porous Backfill Grade D shall be placed and compacted as required under conditions for Trench "A" or "B".

Porous Backfill Grade B shall be placed in layers not exceeding 6" in depth and thoroughly Compacted by Mechanical Tamping.

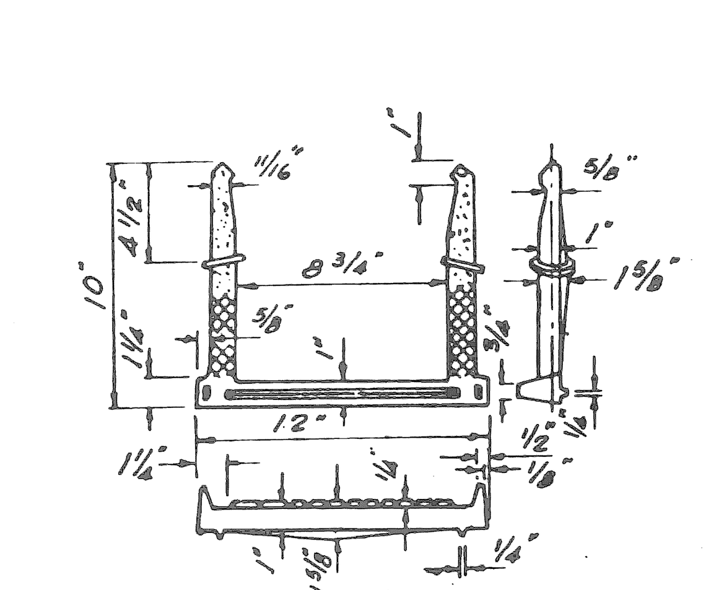
Backfill of Sewer Trenches where Underdrains occupy the same trench.

D.S. 15



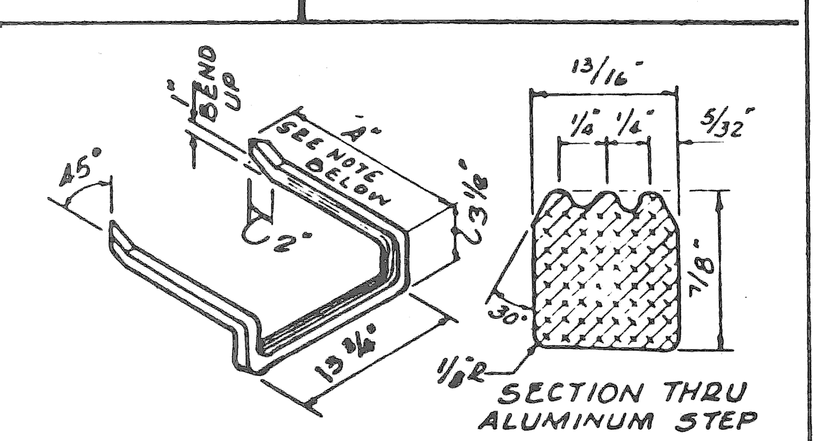
PLASTIC COATED STEEL STEP (as approved)

Added 12-1-75



NOTE: THIS STEP FOR USE IN PRECAST STRUCTURES ONLY.

PLASTIC COATED STEEL STEP (as approved)



ALUMINUM STEP

NOTE:

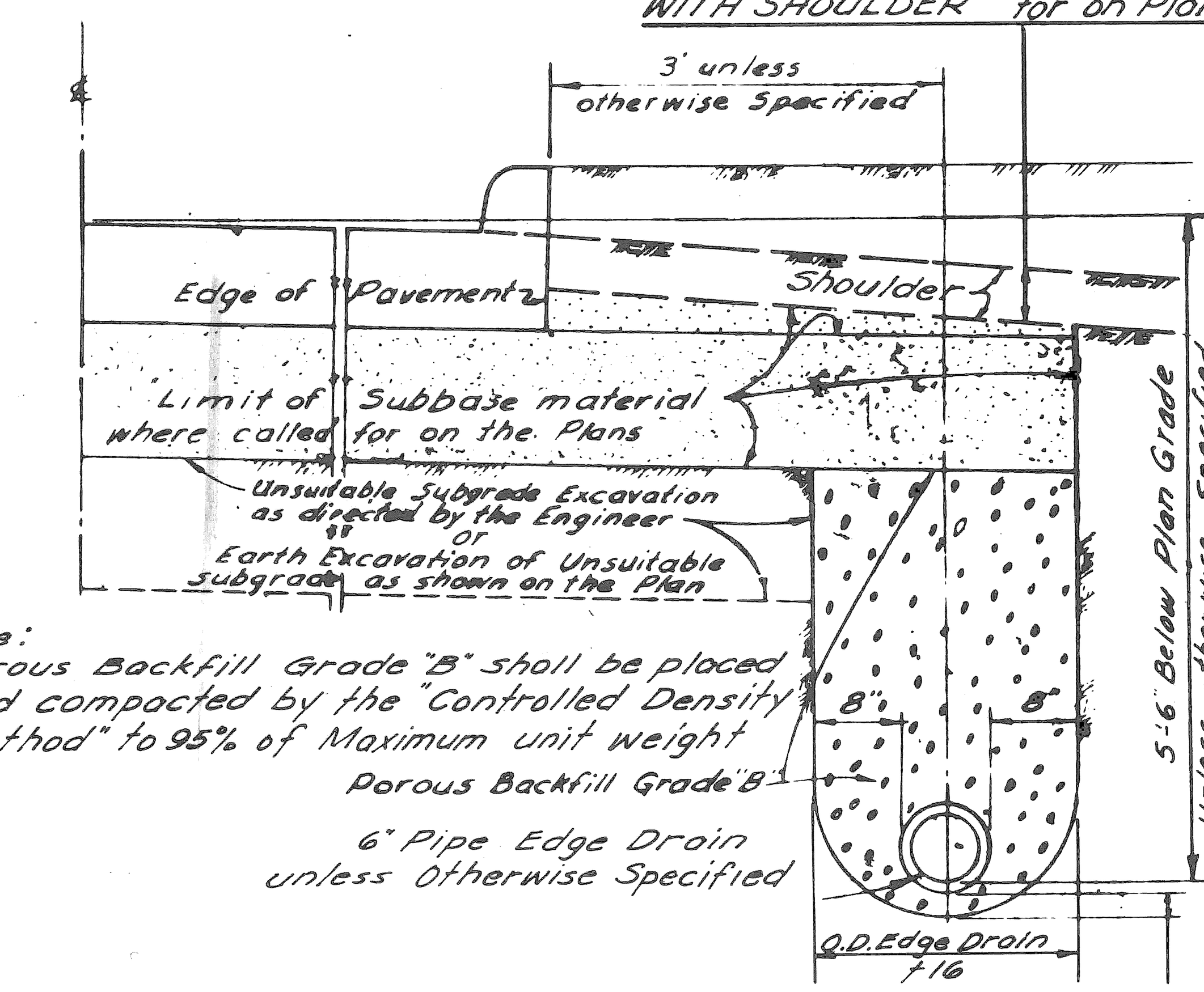
1. MANHOLE STEPS SHALL CONFORM TO THE REQUIREMENTS FOR ALUMINUM ALLOY EXTRUDED BARS, RODS, SHAPES AND TUBES A.S.T.M. B-221-68, ALLOY 6061 & TEMPER T-6.
2. DIMENSION "A" SHALL BE 11" FOR USE WITH PRECAST MANHOLE CONSTRUCTION AND 14" FOR USE WITH BRICK OR BLOCK MANHOLE CONSTRUCTION.
3. IN LIEU OF GROOVES, ALTERNATE FOOT HOLD CONFIGURATIONS WILL BE CONSIDERED FOR APPROVAL.
4. STEPS SHALL PROJECT 6½" OUT FROM INSIDE FACE OF STRUCTURE WALL

STEPS ARE REQUIRED FOR ALL MANHOLES OVER 10 FEET DEEP

MANHOLE STEPS

EDGE DRAIN — D.S. 16

SLAB PAVEMENT Depth as called WITH SHOULDER for on Plans



Note: Porous Backfill Grade "B" shall be placed and compacted by the "Controlled Density Method" to 95% of Maximum unit weight.

Porous Backfill Grade B

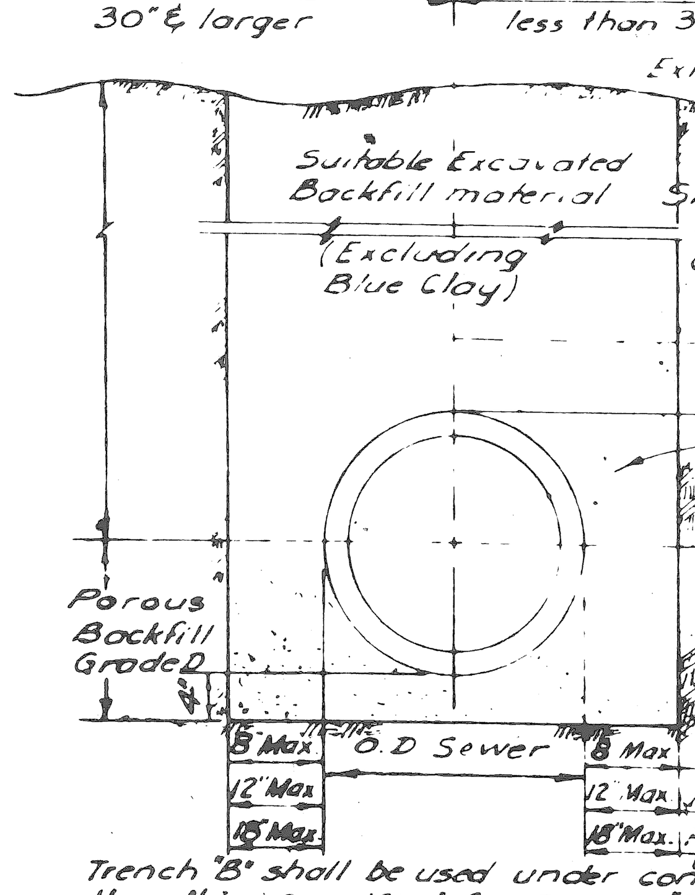
6" Pipe Edge Drain unless Otherwise Specified

Subgrade Undercutting will not include the area of the Pipe Edge Drain Trench.

Replacement of Edge Drain backfill in areas of Subgrade Undercutting is incidental to the undercut backfill. When Porous Material for backfill of Subgrade Undercutting is used, it will be allowed over the Edge Drain Trench.

SEWER TRENCH B

Backfill For Sewer Diameters 30" & larger — Backfill For Sewer Diameters less than 30"



Suitable Excavated Backfill material (Excluding Blue Clay) shall be placed in one foot layers and compacted by Mechanical Tamping or other effective means having approval of the Engineer, to a density of 90% of the maximum unit weight.

Porous Backfill Grade D shall be placed by the "Controlled Density Method" or other means having approval of the Engineer and is to be compacted to 95% of maximum Unit Weight.

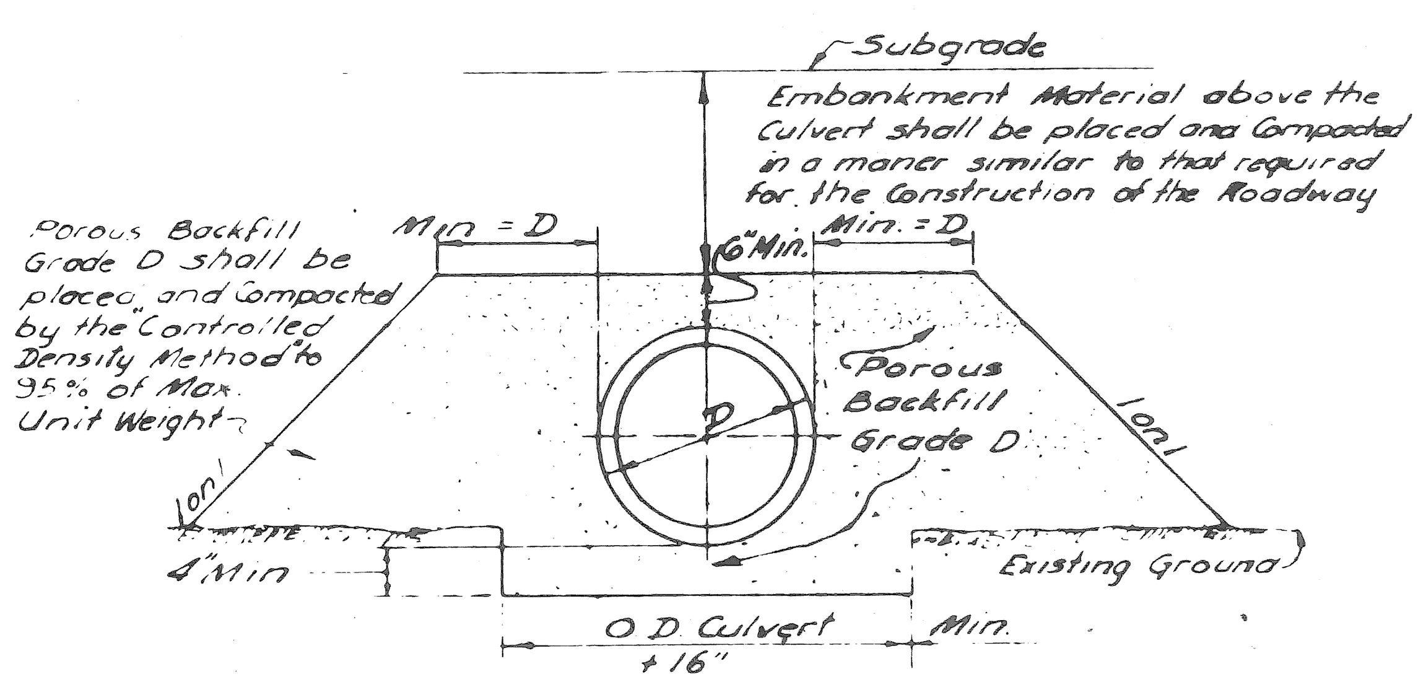
- 8" Max. For Sewer Diameters thru 30
- 12" Max. For Sewer Diameters 36" thru 48"
- 18" Max. For Sewer Diameters 54" & larger

Trench "B" shall be used under conditions other than Specified for Trench "A".

CULVERT INSTALLATION

Subgrade

Embankment Material above the Culvert shall be placed and Compacted in a manner similar to that required for the Construction of the Roadway.



Porous Backfill Grade D shall be placed and Compacted by the Controlled Density Method to 95% of Max. Unit Weight.

NOTE:- The Minimum Depth of Cover above the Culvert shall be 1 foot exclusive of pavement.

During construction the Contractor shall not operate any heavy equipment over the Culvert unless there is a minimum of 2 feet of Earth cover.

To be used where the Culvert projects above existing ground and is installed prior to building embankment.

GENERAL NOTES

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT MICHIGAN DEPARTMENT OF STATE HIGHWAYS STANDARD SPECIFICATIONS AND AS FOLLOWS:-

THE CONTRACT UNIT PRICE BID PER LINEAL FOOT FOR INSTALLING CULVERT, SEWER, EDGE DRAIN OR BANK DRAIN SHALL INCLUDE EXCAVATION AND FURNISHING AND BACKFILLING WITH SAND-GRAVEL MATERIAL OR POROUS MATERIAL, GRADE "B" AND "D" AS REQUIRED.

BOARD OF WAYNE COUNTY ROAD COMMISSIONERS, DETROIT MICHIGAN, DESIGN DIVISION	SCALE: NO SCALE	PRIMARY ROAD STANDARDS
	DATE: 12-1-72	CORRECT: ENGINEER OF HIGHWAY DESIGN
	DRAWN BY: E.M.B.	APPROVED: CHIEF ENGINEER DESIGN DIVISION
	CHECKED BY: A.E.S.	

STANDARD SYMBOLS FOR UTILITIES

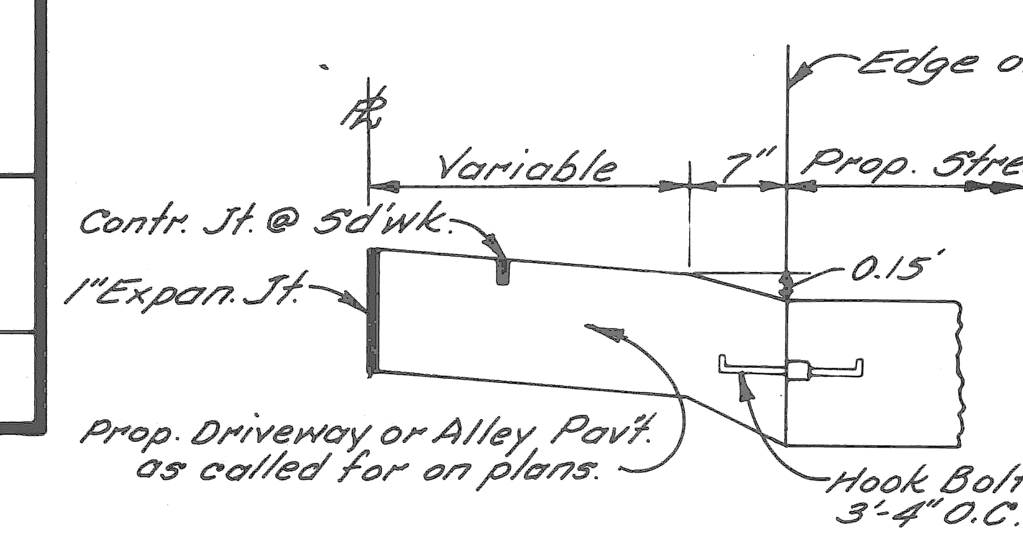
COLOR	SYMBOL	DESCRIPTION
BLACK		PROPERTY AND LOT LINES
		PROPOSED CURB LINES AND HEADERS AT RETURNS
		EXISTING CURB LINES OR EDGE OF PAVEMENT
		PROPOSED CURB OR PAVING ON INTERSECTING STREET
		PROPOSED SEWER TO CATCH BASINS
	12"CR, INV ELEV, 15"CR	EXISTING LATERAL SEWERS
		EXISTING PUBLIC SEWERS
		EXISTING GAS LINES
		EXISTING WATER LINES
BLACK	CURB LINE	ELEV OF SEWER INVERT; PROPOSED C.B. M.H. & INLET SEWER
		ELEV; EXISTING C.B. M.H. & INLET SEWERS
		PROPOSED C.B. M.H. & INLET SEWERS ON INTERSECTING STREETS

SYMBOL	DESCRIPTION
	SEWER MANHOLE
	P.L.C. HANDHOLE / P.L.C. MANHOLE
	WATER MANHOLE OR GRATE
	GAS MANHOLE OR GRATE
	WESTERN UNION MANHOLE
	MICHIGAN BELL MANHOLE
	EDISON STEAM MANHOLE
	EDISON ELECTRIC MANHOLE
	FIRE DEPT MANHOLE
	POLICE DEPT MANHOLE
	D.S.R. MANHOLE
	FIRE DEPT STANDARD HYDRANT
	FIRE DEPT HIGH PRESSURE HYDRANT
	FIRE DEPT CALL BOX
	FIRE DEPT HIGH PRESSURE MANHOLE
	POLICE DEPT CALL BOX
	P.L.C. LIGHT POLE
	P.L.C. POLE
	TELEPHONE POLE
	EDISON POLE
	TRAFFIC CONTROL BOX

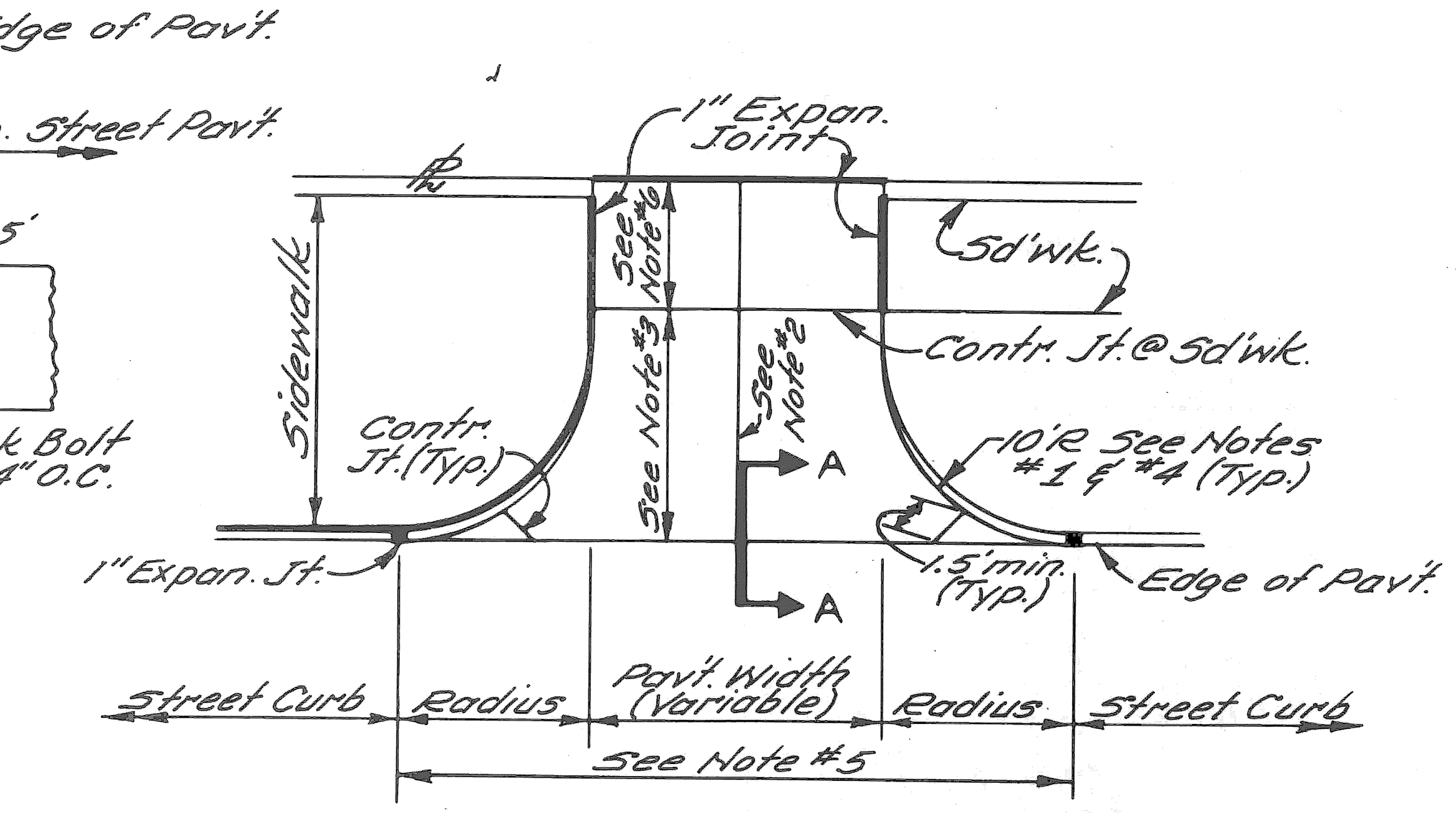
SYMBOL	DESCRIPTION
#	STREET SIGN POST
	CATCH BASIN
(W)	WATER METER
(-)	WATER SHUT OFF
(+)	GAS SHUT OFF
	GAS DRIP
	DRAIN OR VENT
	GUY POLE
	MAIL BOX
	AREAWAY OR COAL CHUTE
	FLAG POLE
	SPRINKLER BOX
	DEAD MANHOLE
	TREE
	PLC & FD MANHOLE FILLED WITH SAND
	TRACK DRAIN
	TRAFFIC SIGN POST
(Z)	TRAFFIC SIGNAL LIGHT
	TRAFFIC SIGNAL ON LIGHT POST
II	D.S.R. DANGER PLATE
	R.R. SIGNAL CONTROL BOX

SYMBOL	DESCRIPTION
	DETROIT EDISON ELECTRIC CONDUIT
	DETROIT EDISON STEAM CONDUIT
	WESTERN UNION DUCTS
	MICHIGAN BELL TELEPHONE DUCTS
	P.L.C. CONDUITS
	DETROIT FIRE OR POLICE DEPT. CONDUITS (PLC COMMUNICATIONS)

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN
PAVING
DETAIL NO 25
DWG NO. C-902-A



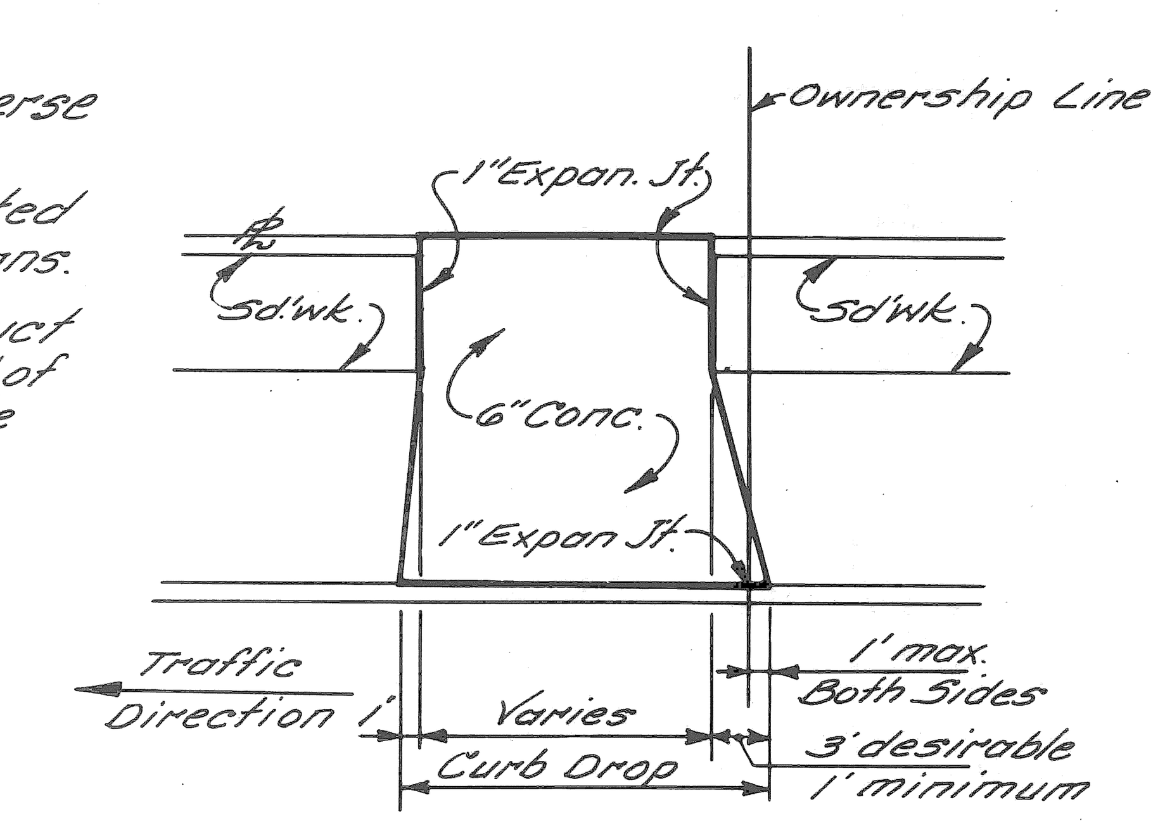
SECTION A-A
SCALE 1"=1'



COMMERCIAL DRIVEWAY OR ALLEY DETAIL
SCALE 1"=10'

GENERAL NOTES
COMMERCIAL DRIVEWAYS & ALLEYS

1. Transition edge of driveway or alley from curb at the street to no curb at the end of the driveway or alley radius.
2. Where driveway or alley exceeds 15' in width a contraction joint shall be placed longitudinally along ℄.
3. When distance exceeds 15', a transverse contraction joint will be required.
4. Radius 10' unless otherwise directed by the Engineer, or as shown on plans.
5. All work & materials req'd to construct the driveway or alley between the end of returns will be paid for as "Concrete Pavement" of the specified thickness.
6. Minimum & Maximum Slopes of 1/4"/ft. & 3/4"/ft. shall be used in the sidewalk area.



RESIDENTIAL DRIVEWAY DETAIL
SCALE 1"=10'

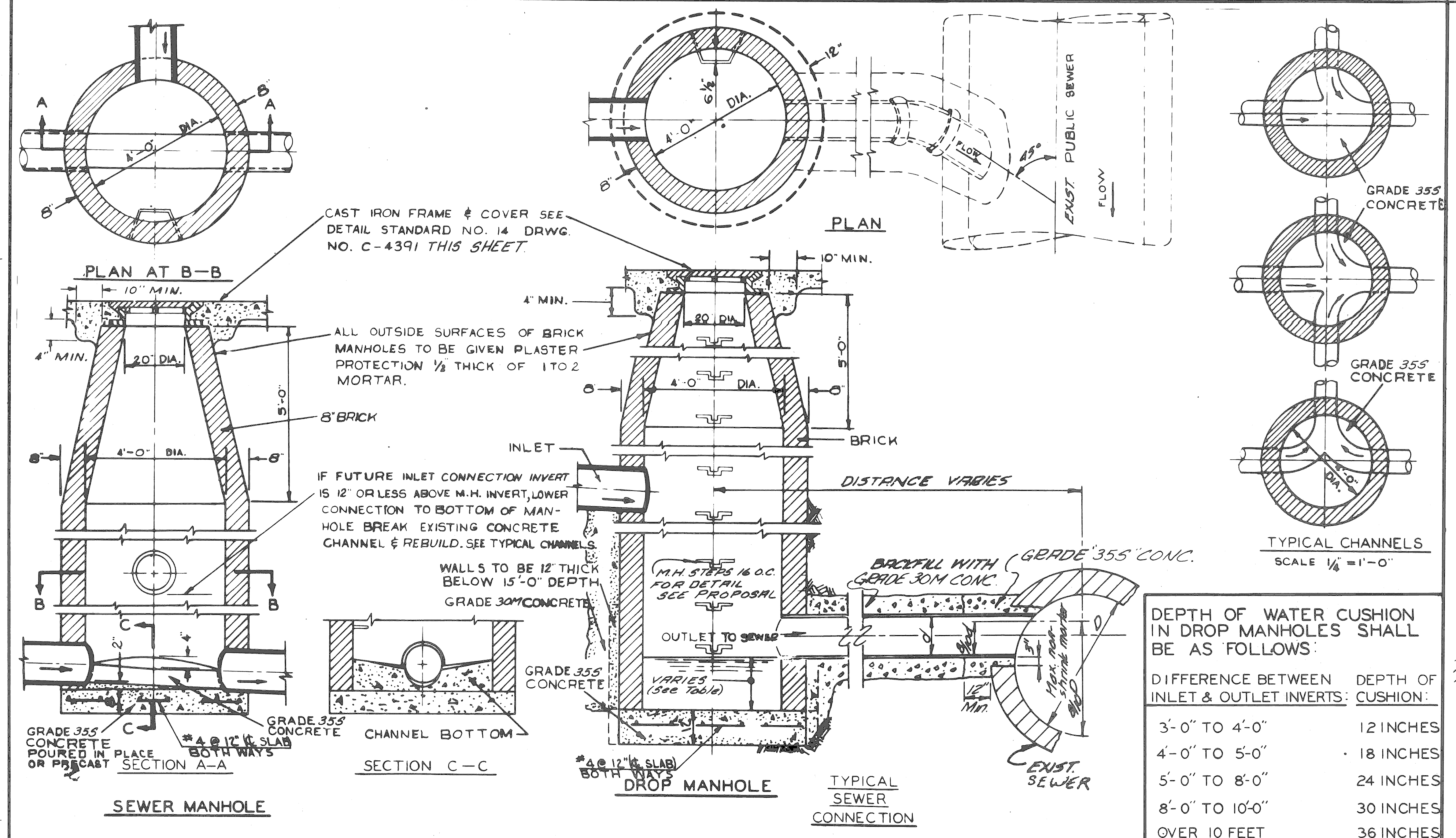
DESIGNED BY	
DRAWN BY	J.R.D.
TRACED BY	
CHECKED BY	

APPROVED
ENGINEER OF EXPRESSWAYS

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

SEVEN MILE RD. — EVERGREEN AVE.
INTERSECTION IMPROVEMENT
SPECIAL STANDARDS & SPECIAL DETAILS

SHEET 17 OF 42 SHEETS
CONTRACT NO 11413A
ASSIGNMENT No.
DATE 11-78



DEPTH OF WATER CUSHION IN DROP MANHOLES SHALL BE AS FOLLOWS:

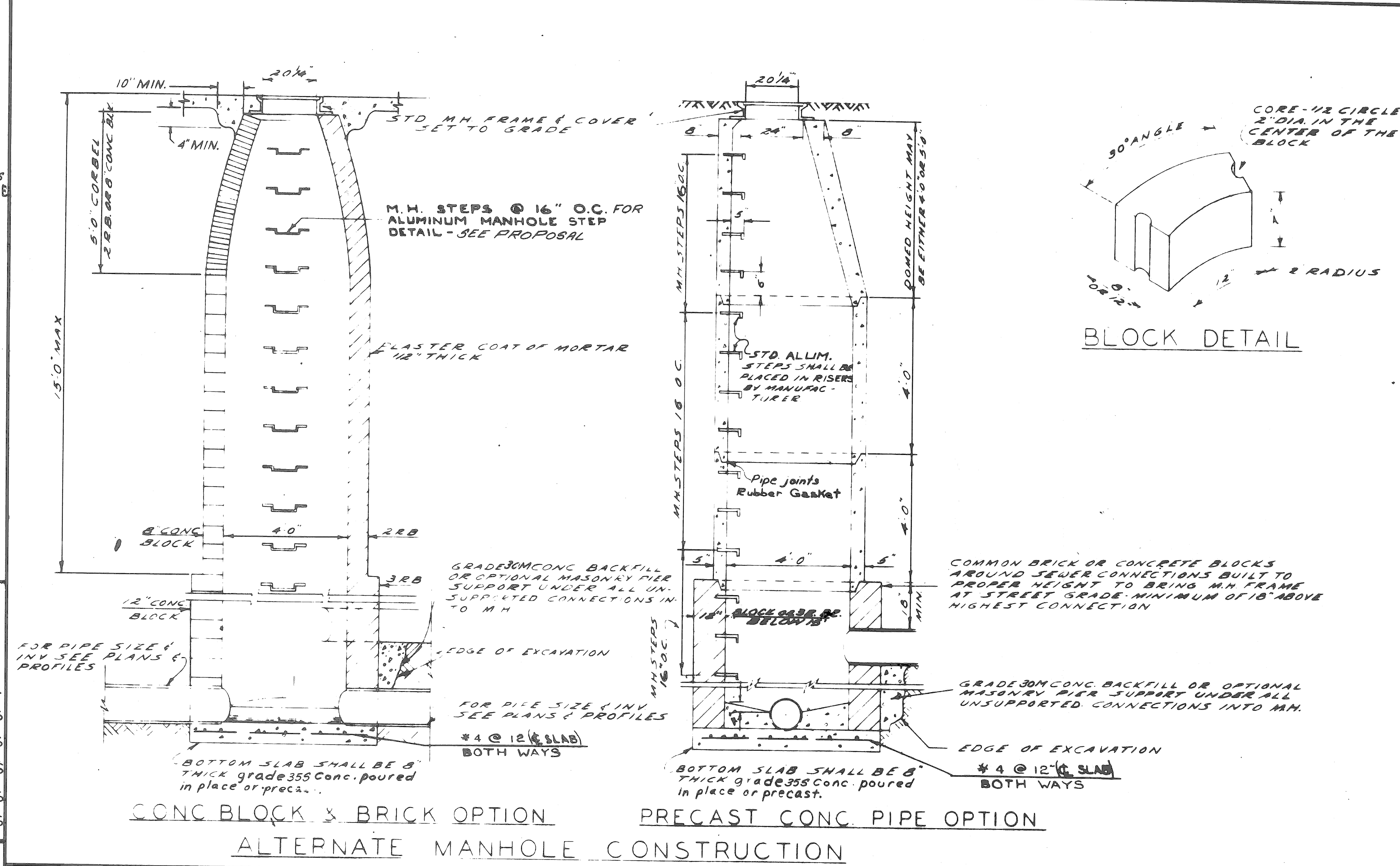
DIFFERENCE BETWEEN INLET & OUTLET INVERTS:	DEPTH OF CUSHION:
3'-0" TO 4'-0"	12 INCHES
4'-0" TO 5'-0"	18 INCHES
5'-0" TO 8'-0"	24 INCHES
8'-0" TO 10'-0"	30 INCHES
OVER 10 FEET	36 INCHES

REVISIONS — Revis'd M.H. Steps | Base Slab — DESCRIPTION — DRWCKD APPR DATE
DESIGNED BY — DRAWN BY J. Clark — TRACED BY — CHECKED BY
APPROVED BY — ENGINEER OF STREETS — ASST. CITY ENGINEER — CITY ENGINEER

DETAILS OF STANDARD
SEWER & DROP MANHOLES

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS.
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN

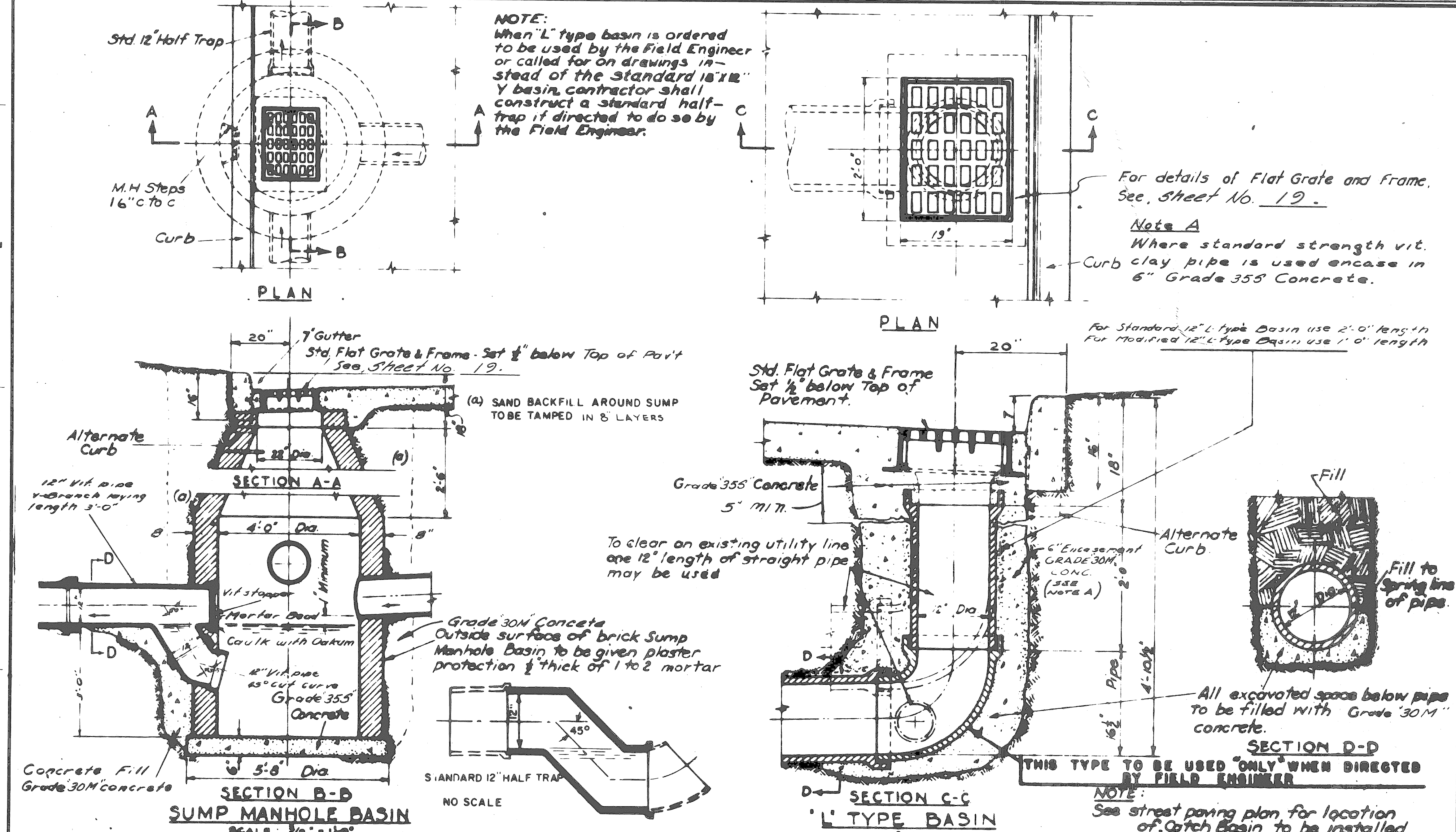
BOOK NO __ PG. __ SCALE 3/8" = 1'-0" DATE: 8-27-66 DETAIL STANDARD NO 10 DWG NO C-4387
1971 1970 1969 1968 1967



DESIGNED BY — DRAWN BY T.P. MIRIANI — TRACED BY — CHECKED BY Kauwas
Revised bottom slab & steps J.C.G.B. — Changed Title
APPROVED — ENGINEER OF STREETS — CITY ENGINEER

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN
DETAIL STANDARD NO. 18

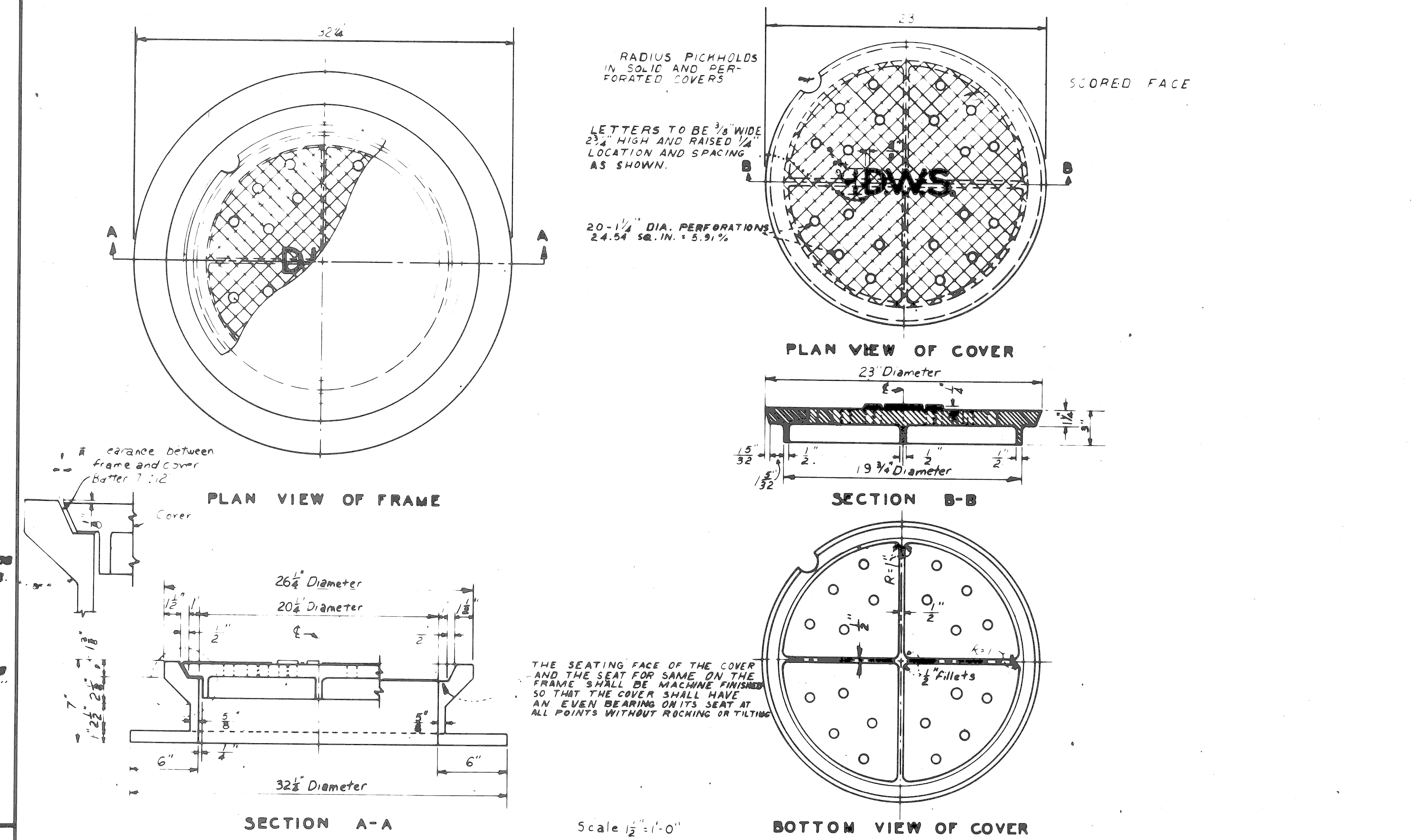
STD SEWER MANHOLES
CONSTRUCTION ALTERNATES
SCALE NONE — DATE 5-29-63 — DWG NO C-4395A



DESIGNED BY — DRAWN BY — TRACED BY — CHECKED BY Kauwas
Revised M.H. Steps J.C. G.B. — DESCRIPTION — REVISIONS
APPROVED — ENGINEER OF STREETS — ASST. CITY ENGINEER — CITY ENGINEER

TYPICAL
SUMP MANHOLE & "L" TYPE
CATCH BASINS

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN
SCALE AS SHOWN DATE MAR. 1, 1963 DETAIL STANDARD NO. 12 DWG C-4388
1971 1970 1969 1968 1967 1966 1965 1964 1963 1962 1961 1960



DESIGNED BY — DRAWN BY Erickson — TRACED BY — CHECKED BY N. Kauwas
Detroit Pkwy Cover — DESCRIPTION — REVISIONS
APPROVED — ENGINEER OF STREETS — ASST. CITY ENGINEER — CITY ENGINEER

DETAILS OF STANDARD
- MANHOLE FRAME AND COVER -

CITY OF DETROIT
DEPARTMENT OF PUBLIC WORKS
CITY ENGINEER'S OFFICE
BUREAU OF DESIGN
DWG. No C-43

REVISIONS LOCATED BY COORDINATES ON SHEET	REFERENCE DRAWINGS	DESIGNED BY	DRAWN BY	TRACED BY	CHECKED BY	APPROVED:	CITY ENGINEER

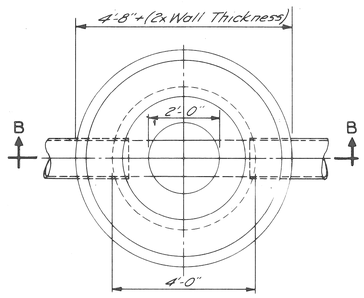
CITY OF DETROIT
CITY ENGINEERING DIV. E.P.M.D

SEVEN MILE RD. — EVERGREEN AVE.
INTERSECTION IMPROVEMENT

SPECIAL DETAILS

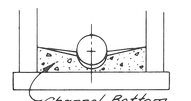
SHEET 18 OF 42 SHEETS
CONTRACT NO 11413A
ASSIG.
DATE 11-78

K&E 17 0133 1-67

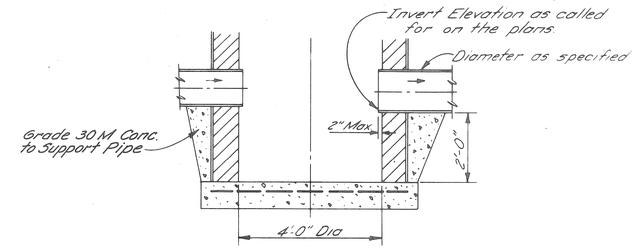


PLAN VIEW

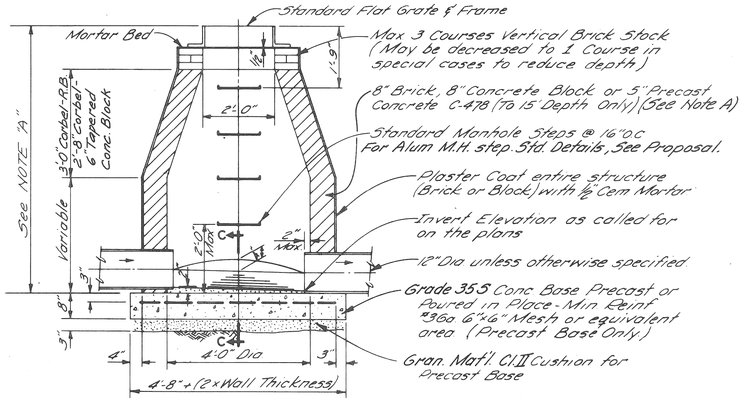
NOTE "A"
Wall thickness below a depth of 15 feet shall be 12 inches.



SECTION C-C



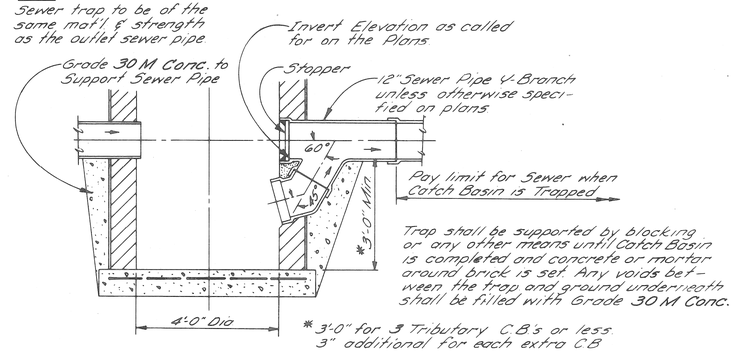
DETAIL OF SUMP FOR CATCH BASIN "B"
NO SCALE



SECTION B-B

CATCH BASIN "B"
NO SCALE

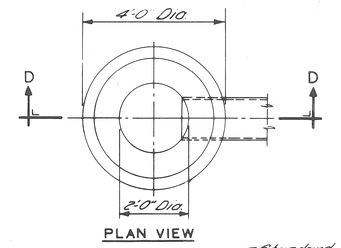
NOTE:
Sewer trap to be of the same mat'l & strength as the outlet sewer pipe.



Trap shall be supported by blocking or any other means until Catch Basin is completed and concrete or mortar around brick is set. Any voids between the trap and ground underneath shall be filled with Grade 30 M Conc.

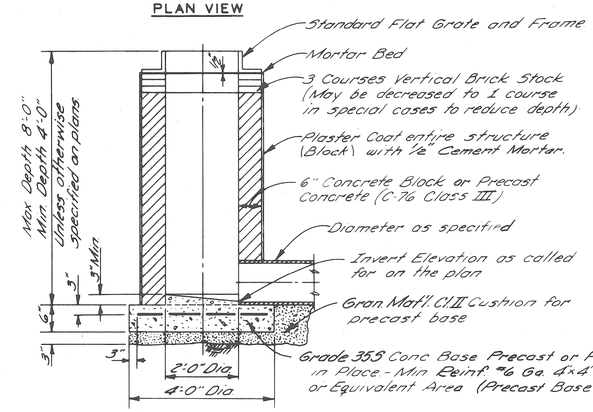
* 3'-0" for 3 Tributory C.B.'s or less. 3" additional for each extra C.B.

DETAIL OF TRAP FOR CATCH BASIN "B"
NO SCALE



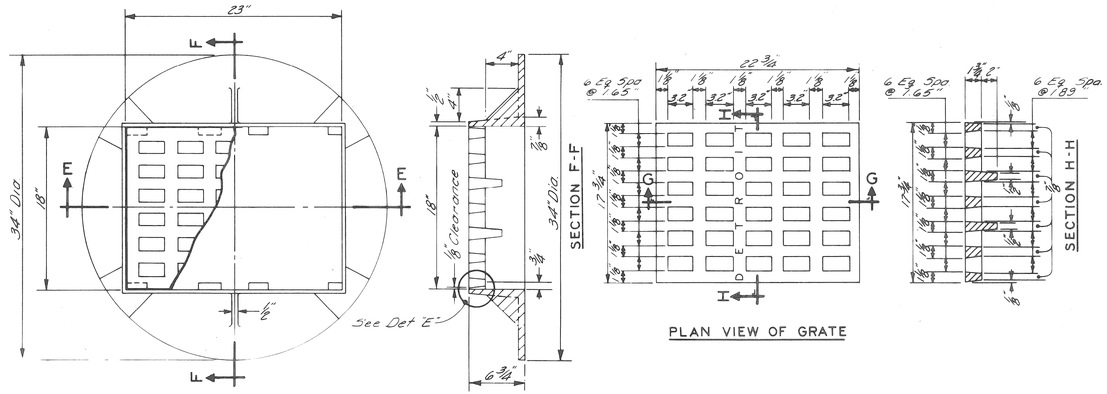
PLAN VIEW

NOTE:
Catch Basin "A" will be used only when outletting to a Catch Basin "B"

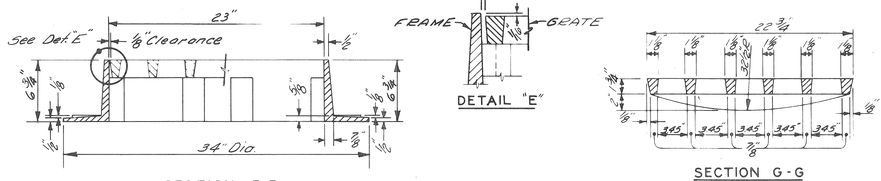


SECTION D-D

CATCH BASIN "A"
NO SCALE



PLAN VIEW OF FRAME



SECTION E-E

SECTION G-G

STANDARD FLAT GRATE AND FRAME
NO SCALE

GENERAL NOTES

1. The materials & workmanship shall be in accordance with the current Standard Specifications.
2. Center of Catch Basin shall be 20 inches from back of curb.
3. All sizes & flow lines of pipe, and elevations for top & bottom of structures shall be determined from the plans or construction requirements.
   The bell shall be removed from the first length of outlet pipe projecting through the wall of the structures.
   When any structure is constructed of precast concrete or concrete block, the top of the masonry shall be left sufficiently low to permit proper adjustment of cover to grade by the use of mortar or bricks as directed by the Engineer.
4. A Trap, as detailed on this sheet, shall be placed where called for in the outlet sewer line of Catch Basins "B".
   This trap shall be set into the masonry wall as shown on the detail. The space between the faces of the wall & the trap shall be completely filled with cement, mortar or concrete, so as to hold Trap securely in place.
   Tile Traps will be paid for separately at the Contract Unit Price each, which price shall include the extra catch basin construction required and for furnishing and installing the trap.
5. A plaster coat of mortar 1/2 inch in thickness shall be applied to the outer surface of the structure as shown. A 1/2 inch cement plaster coat shall be placed on the inside of all sumps.
6. Contractor shall verify elevations of existing utilities to enable construction to indicated elevations shown on drawings. If necessary, invert elevations shown on the drawings may be altered in the field to clear existing utilities. Such alterations, upward or downward, shall be at no change in contract price.
7. When precast concrete pipe sections are used for catch basins, either a section of the inlet and outlet pipes or an opening or eye for the inlet & outlet pipes shall be cast into the wall of the catch basin pipe when it is being manufactured. Eyes in precast pipe sections shall be furnished to accommodate a flexible joint connection such as Press-Wedge by Press Seal Gasket Corp or Res-Seal by Scales Mfg. Corp.
8. Pay limit for sewers shall be inside faces of structures unless otherwise noted.

DESCRIPTION	DES	CHD	APP	DATE
REVISIONS LOCATED BY COORDINATES ON SHEET				

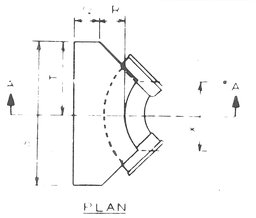
DESIGNED BY
DRAWN BY M. POLITO
TRACED BY
CHECKED BY D. MILZ

APPROVED: John Erickson
ENGINEER OF STREETS
ENGINEER OF EXPRESSWAYS
HEAD CIVIL ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION
E. P. M. D.

DETAILS OF STANDARD CATCH BASINS "A" & "B" AND FLAT GRATE & FRAME

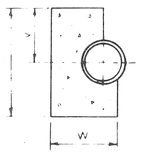
SHEET 19 OF 42 SHEETS
CONTRACT No 11413A
ASSIGN. NO.
DATE 11-78

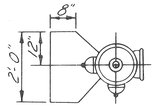


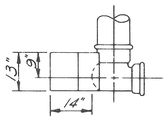
SCHEDULE OF THRUST BLOCK DIMENSIONS								
BEND SIZE	CODE							
	Q	R	S	T	U	V	W	X
6"ϕ 8" 90°	0'9"	1'0"	3'4"	1'8"	2'6"	1'3"	1'11"	1'2"
12" 90°	0'9"	1'4"	5'6"	2'9"	3'0"	1'6"	2'4"	1'8"
16" 90°	1'0"	1'8"	6'0"	3'0"	5'0"	2'6"	3'0"	2'8"
6"ϕ 8" 45°	0'9"	1'0"	2'4"	1'2"	2'0"	1'0"	1'11"	1'4"
12" 45	0'9"	1'4"	3'6"	1'9"	2'6"	1'3"	2'4"	1'4"
16" 45°	1'0"	1'8"	5'4"	2'8"	3'0"	1'6"	3'0"	2'6"
6"ϕ 8" 12 22½	0'9"	1'0"	2'6"	1'3"	2'0"	1'0"	2'0"	1'4"
16 22½	1'0"	1'8"	3'4"	1'8"	2'6"	1'3	3'0	1'2"

DETAIL OF STANDARD THRUST BLOCKS FOR BENDS

No Scale

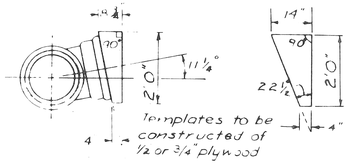






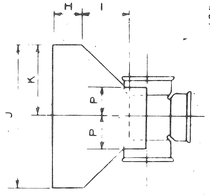
THRUST BLOCK FOR 6" HYDRANT

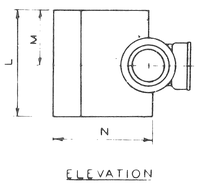
No Scale



TEMPLATE FOR SETTING TEES AT 11¼° & 22½° ANGLES

No Scale





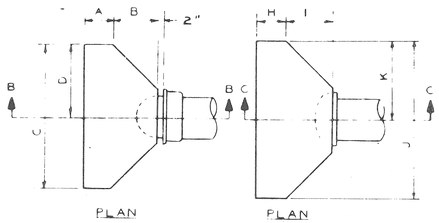
SCHEDULE OF THRUST BLOCK DIMENSIONS								
TEE SIZE	CODE							
	H	I	J	K	L	M	N	P
8" x 8"	0'9"	1'0"	3'0"	1'6"	2'0"	1'0"	8" 2'3"	8" 0'6"
12" x 8"							12" 2'5"	12" 0'8"
16" x 8"							16" 2'9"	16" 0'6"
12" x 12"	0'9"	1'4"	4'0"	2'0"	3'0"	1'6"	12" 2'9"	8" 0'8"
16" x 12"							16" 3'1"	16" 0'8"
16" x 16"	1'0"	1'8"	5'0"	2'6"	4'0"	2'0"	16" 3'8"	16" 0'11"

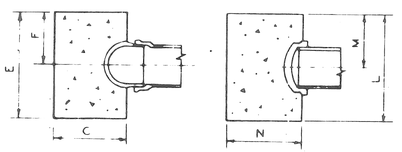
DETAIL OF STANDARD THRUST BLOCKS FOR TEES

No Scale

NOTES

The bearing face of all thrust blocks shall be poured against undisturbed earth Thrust Blocks will be required on all Bends 6 inches in Diameter or larger and greater than 11¼°.



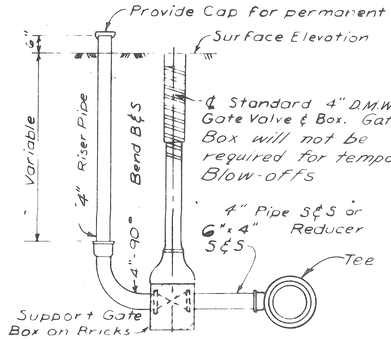


SCHEDULE OF THRUST BLOCK DIMENSIONS								
PLUG SIZE	CODE							
	A	B	C	D	E	F	G	
6"ϕ 8"	0'9"	1'2"	3'0"	1'6"	2'0"	1'0"	1'11"	
12"	0'9"	1'4"	4'0"	2'0"	3'0"	1'6"	2'1"	
16"	1'0"	1'8"	5'0"	2'6"	4'0"	2'0"	2'8"	
CAP SIZE	CODE							
	H	I	J	K	L	M	N	
6"ϕ 8"	0'9"	1'2"	3'0"	1'6"	2'0"	1'0"	1'11"	
12"	0'9"	1'4"	4'0"	2'0"	3'0"	1'6"	2'1"	
16"	1'0"	1'8"	5'0"	*2'6"	4'0"	2'0"	2'8"	

DETAIL OF STANDARD THRUST BLOCKS

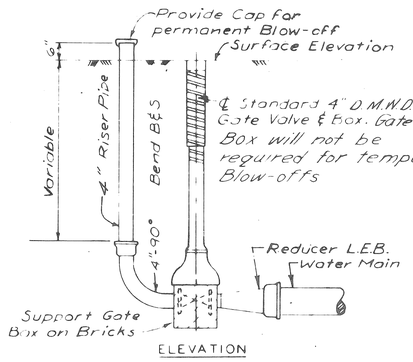
*FOR PLUGS & CAPS

No Scale



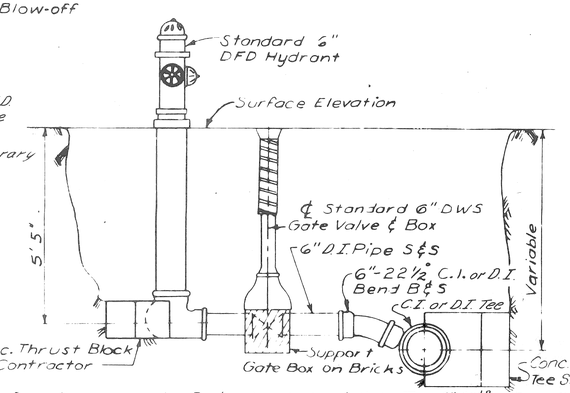
DETAIL OF 4" BLOW OFF

No Scale



DETAIL OF 4" BLOW-OFF

No Scale

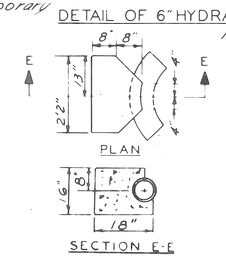


From the new main the Contractor shall install the Tee, 6"-22½° Bend B&S, 6" Pipe, 6' D.M.W.D. Gate Valve & Box, 6" Pipe, Concrete Thrust Blocks, and Hydrant.
From any existing main the complete Hydrant installation shall be done by the Contractor.

Hydrants to be a minimum of 6' behind Curb, unless otherwise noted on the drawings
Dimensions given from the Curb are from Pavement Joint line which is at face of Curb.

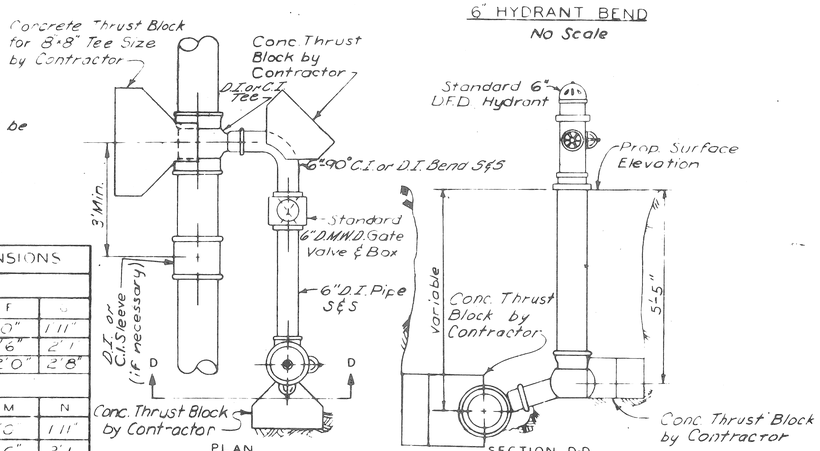
DETAIL OF 6" HYDRANT INSTALLATION

No Scale



THRUST BLOCK FOR 6" HYDRANT BEND

No Scale



From the new main the Contractor shall install the Tee, 6"-90° Bend S&S, 6" Pipe, 6' D.M.W.D. Gate Valve & Box, 6" Pipe Concrete Thrust Blocks and Hydrant.
From any existing main the complete Hydrant installation shall be done by the Contractor.

Hydrants to be a minimum of 6' behind the Curb, unless otherwise shown on the drawings.
Dimensions given from Curb are from Pavement Joint line which is at face of Curb

DETAIL OF 6" HYDRANT INSTALLATION

No Scale

GENERAL NOTES

"Ductile Iron Pipe in sizes 3" through 16" is permitted as a part of the Cast Iron Pipe Specifications."

PROJECT NO. 11413A | ASSIGN No.

FIRE HYDRANT MISCELLANEOUS DETAILS.

REVISIONS			
NO	DESCRIPTION	DATE	BY

SQUAD BOSS	R.B.P.
DRAWN BY	M.P.
TRACED BY	
CHECKED BY	J.C.
SHEET	OK

GENERAL NOTES

Existing Water Mains, as shown, indicate approximate location only as shown by D.M.W.D. records and no guarantee is made as to completeness or accuracy.

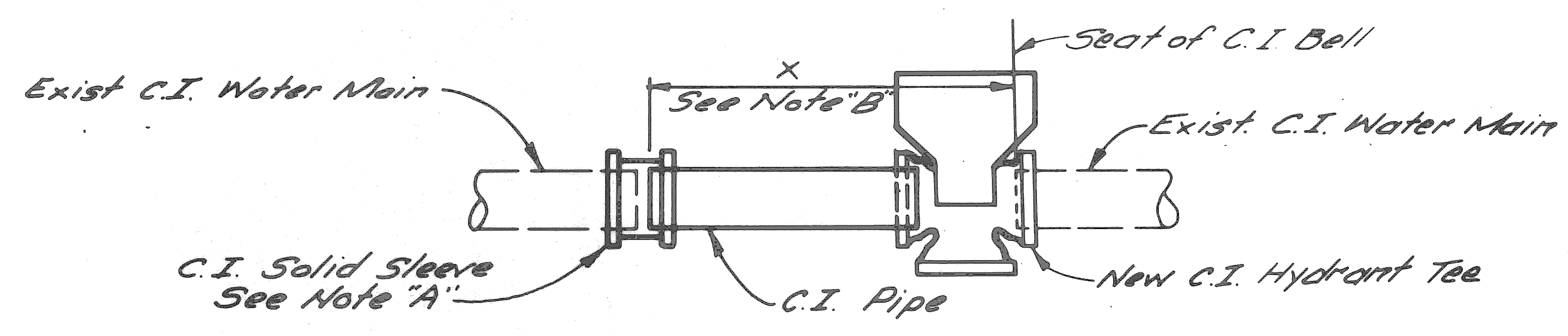
The locations and elevations of existing utilities are shown in accordance with available data. The Contractor shall expose these utilities, where required, to determine actual locations.

Other utilities may be making alterations to their existing systems in the vicinity of the Water Main construction shown on the plans. These utilities should be consulted for the latest information regarding the location of their facilities.

A minimum clearance of one foot vertically and three and one half feet horizontally shall be maintained between the Water Main and other utilities, unless otherwise shown on the plans or approved by the Engineer. If a conflict is indicated between the Water Main and any other utility, that utility should be consulted.

The location of Fire Hydrants, as shown, are approximate. D.F.D. will give exact location of Proposed Fire Hydrants prior to installation.

"Ductile Iron Pipe in sizes 3" through 16" is permitted as a part of the Cast Iron Pipe Specifications."



PLAN

DETAIL "A"

HYDRANT CONNECTION TO WATER MAIN

NO SCALE

NOTES FOR CONTRACTOR'S CONNECTIONS

Contractor shall cut and cap or plug existing Water Mains to remain in service where required in accordance with supplemental specifications.

4" C.I. Blow-off Assemblies, C.I. Plugs and Caps to be installed and/or removed by Contractor have not been shown.

Contractor shall install and later remove all temporary C.I. Plugs, Tees and Blow-off Assemblies.

Contractor shall furnish and install C.I. Pipe and Fittings necessary to complete the connections shown.

Contractor shall construct all Concrete Thrust Blocks and Gate Wells.

Contractor shall install all Temporary bracing for Water Main work.

It is not normally anticipated that bends requiring Thrust Blocks will be required for Connections unless otherwise shown.

NOTE "A"

Plugs and caps, temporary blow-offs, air valves, corporation stops, pipe jacks, solid sleeves, jointing material, bracing and blocking are incidental to water main construction and will not be paid for separately.

NOTE "B"

Limits shown for dimension "X" shall be used to measure laid length of pipe.

CONSTRUCTION NOTES

Encasements and Thrust Blocks shall be poured against undisturbed earth. Bottom 3" of Encasement may be poured separate from Encasement and used as a subfooting.

All Encasements and Thrust Blocks shall terminate at the face of pipe bells.

Removal of abandoned Water Mains as required for clearance to construct the Proposed Water Mains is incidental to Water Main Construction.

Sheeting and bracing, where required, shall be installed by the Contractor as incidental to Water Main const.

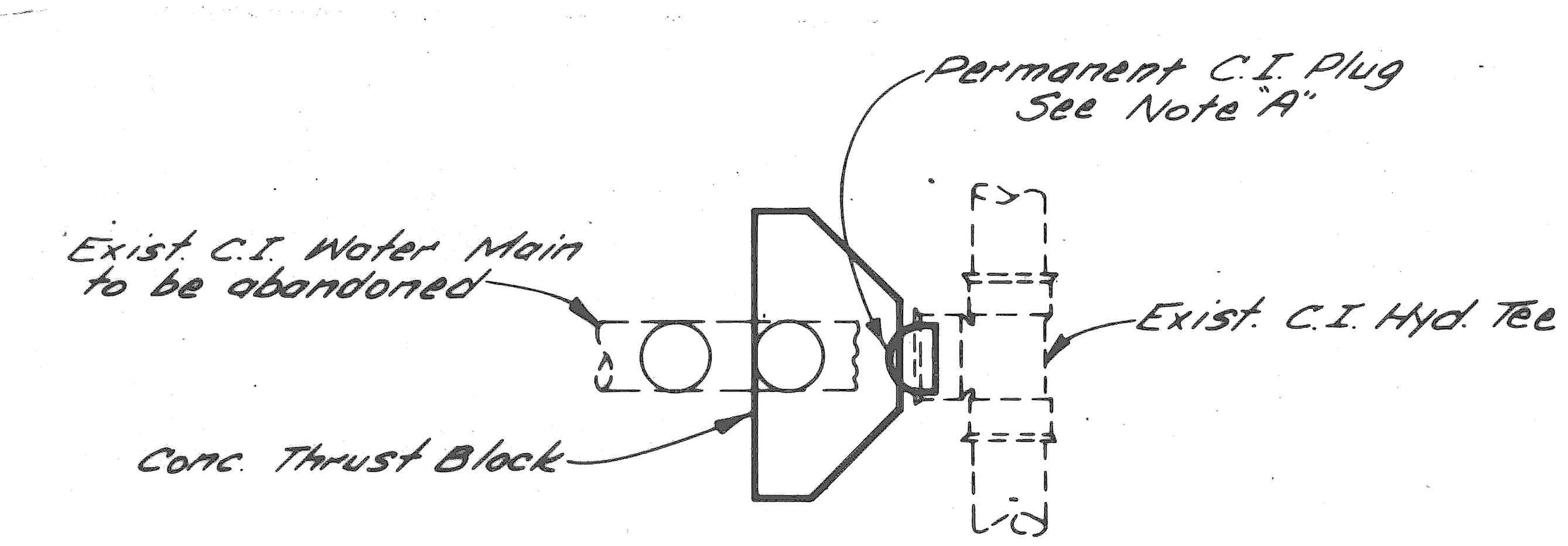
Scheduling of the connections shall be governed by the "Sequence of Operations" and "Flushing and Chlorination" specifications which are included in the Water Main portion of the Proposal.

SCHEDULE OF HYDRANT INSTALLATION ON EXISTING MAINS DETAILS H-1 THROUGH H- *

DETAIL Nº	FROM SHEET Nº	SIZE OF NEW OR EX. HYD. TEE	6" PIPE FROM HYDRANT TO EX. MAIN: LENGTH	6" PIPE FROM HYDRANT TO EX. MAIN: TRENCH DETAIL	DETAIL "A": PIPE SIZE	DETAIL "A": X	DETAIL "A": TRENCH DETAIL
H-1	12	Ex. 8" x 6"	9'	12			

(A) 6" Gate Valve & Gate Box shall be furnished & installed with Hydrant.

* Information herein is to be considered only as a guide. Final figures depend upon the exact location of the hydrant as determined by the Fire Department just prior to installation.



PLAN

DETAIL "C"

DETAIL OF ABANDONMENT OF EXISTING HYDRANT CONNECTION TO WATER MAIN

NO SCALE

PAY ITEMS
ALL "A" DETAILS, "C" DETAILS, GATE BOXES, VALVES, TEES, EXCAVATION, BACKFILL, WATER MAIN PIPING AND CONNECTIONS TO WATER MAINS ARE INCIDENTAL TO THE INSTALLATION OF THE NEW FIRE HYDRANTS AND ARE, THEREFORE, INCLUDED IN THE PAY ITEM "6"-FIRE HYDRANT."

REVISIONS LOCATED BY COORDINATES ON SHEET — DESCRIPTION

DESIGNED BY: I.H.K. | DRAWN BY: Polito | TRACED BY: | CHECKED BY: R.B.P.

APPROVED: Allen E. Kroger — ENGINEER OF EXPRESSWAYS

- CITY OF DETROIT
- CITY ENGINEERING DEPARTMENT

SEVEN MILE RD. — EVERGREEN AVE.
INTERSECTION IMPROVEMENT

FIRE HYDRANTS
(CONTRACTOR'S CONNECTIONS)

SHEET 21 OF 42 SHEETS
PROJECT No. 11413A
ASSIGN No.
DATE 11-78

QUANTITY SHEET – E (AS PER PLANS)

SEVEN MILE ROAD – EVERGREEN AVENUE CITY OF DETROIT QUANTITIES

SEVEN MILE ROAD – EVERGREEN AVE. WAYNE COUNTY QUANTITIES

ITEMS	SHEET NO'S.	CITY OF DETROIT TOTALS	UNITS	3 TYPICAL CROSS SECTIONS	8 7 MILE ROAD PLAN	9 EVERGREEN PLAN	6 7 MILE ROAD REMOVAL	7 EVERGREEN REMOVAL	12 7 MILE ROAD UTILITIES	13 EVERGREEN UTILITIES	21 FIRE HYDRANTS	SHEET NO'S.	WAYNE COUNTY TOTALS	UNITS	3 TYPICAL CROSS SECTIONS	8 7 MILE ROAD PLAN	9 EVERGREEN PLAN	6 7 MILE ROAD REMOVAL	7 EVERGREEN REMOVAL	12 7 MILE ROAD UTILITIES	13 EVERGREEN UTILITIES	21 FIRE HYDRANTS	CONTRACT TOTALS	UNITS
ROADWAYS & MISCELLANEOUS																								
Removing Pavement		529	S.Y.				127	402					699	S.Y.				699						1228	S.Y.
Removing Curb		777	L.F.				100	677					1220	L.F.				1220						1997	L.F.
Removing Sidewalk		177	S.Y.	20			64	93					956	S.Y.	70			886						1133	S.Y.
Abandoning Drainage Structures		2	Ea.					2					1	Ea.				1						3	Ea.
Removing Old Pavement (Patching)		20	S.Y.	20									20	S.Y.	20									40	S.Y.
Removing Bituminous Surface		115	S.Y.		67	48							337	S.Y.		337								452	S.Y.
Removing Bituminous Surface - Planer Method		337	S.Y.		34	303							–	S.Y.										337	S.Y.
Earth Excavation		461	C.Y.			461							839	C.Y.		839								1300	C.Y.
Subgrade Undercutting, Type II		13	C.Y.	13									24	C.Y.	24									37	C.Y.
Special Subbase		–	C.Y.										396	C.Y.		396								396	C.Y.
Conc. Base Course - Nonreinf. - 9" with Int. Curb		782	S.Y.		213	569							1464	S.Y.		1464								2246	S.Y.
Bituminous Conc. Leveling Course (25A)		163	Tons	5	18	140							104	Tons	5	99								267	Tons
Bituminous Conc. Wearing Course (31A) Type M		163	Tons	5	18	140							104	Tons	5	99								267	Tons
Sawed Longitudinal Plane of Weakness Joints		1219	L.F.		269	950							1688	L.F.		1688								2907	L.F.
Bituminous Approaches		3	Tons		3								37	Tons		37								40	Tons
Bituminous Aggregate Shoulders		2	Tons	2									2	Tons	2									4	Tons
Concrete Pav't. Nonreinf. - 6"		101	S.Y.			101							–	S.Y.										101	S.Y.
Concrete Pav't. Nonreinf. - 8"		67	S.Y.		26	41							212	S.Y.		212								279	S.Y.
Concrete Pav't. Nonreinf. - 9"		87	S.Y.			87							–	S.Y.										87	S.Y.
Cement		1	Tons		1								2	Tons		2								3	Tons
Conc. Pav't. Patching, Type N3, 9" Nonreinf.		20	S.Y.	20									20	S.Y.	20									40	S.Y.
12" Sewer C-76-IV, Trench Detail "A"		–	L.F.										97	L.F.		97								97	L.F.
12" Sewer C-76-IV, Trench Detail "B"		17	L.F.			17							–	L.F.										17	L.F.
6" Sewer Tap		–	Ea.										4	Ea.		4								4	Ea.
12" Sewer Tap		–	Ea.										6	Ea.		6								6	Ea.
Reconstructing Structures		5	L.F.	5									5	L.F.	5									10	L.F.
Catch Basin "A"		–	Ea.										3	Ea.		3								3	Ea.
Catch Basin "B"		2	Ea.			2							–	Ea.										2	Ea.
Standard Inlet		–	Ea.										3	Ea.		3								3	Ea.
Frame & Cover "A"		–	Ea.										6	Ea.		6								6	Ea.
Cleaning Exist. Storm Drainage Structures		1	Ea.	1									1	Ea.	1									2	Ea.
Adjusting Structures		3	Ea.			2				1			5	Ea.						5				8	Ea.
12" Sewer Traps		2	Ea.			2							–	Ea.										2	Ea.
Edge Drains - 6" (C.S.P. or Bit. Fiber Pipe)		–	L.F.										136	L.F.		136								136	L.F.
4" Conc. Sidewalk		2011	S.F.	180	845	986							9466	S.F.	610	8856								11477	S.F.
6" Conc. Sidewalk		595	S.F.		403	192							1599	S.F.		1599								2194	S.F.
Sidewalk Ramp, Type 1		–	S.F.										216	S.F.		216								216	S.F.
Sidewalk Ramp, Type 3		–	S.F.										81	S.F.		81								81	S.F.
Conditioning Exist. Pav't.		7	Tons			7							–	Tons										7	Tons
Lighted Arrow Type A, Furnished		2	Ea.	2									2	Ea.	2									4	Ea.
Lighted Arrow Type A, Operated		2	Ea.	2									2	Ea.	2									4	Ea.
Barricade Type III		3	Ea.	3									3	Ea.	3									6	Ea.
Barricade Type II (Drums) Lighted - Furnished		75	Ea.	75									143	Ea.	143									218	Ea.
Barricade Type II (Drums) Lighted - Operated		50	Ea.	50									95	Ea.	95									145	Ea.
Drum Guide Rail		50	L.F.	50									200	L.F.	200									250	L.F.
Class "A" Sodding		1077	S.Y.	130	156	791							200	S.Y.		200								1277	S.Y.
Water		3	Units		1	2							1	Units		1								4	Units
Topsoil Surface - 3 In.		1077	S.Y.	130	156	791							200	S.Y.		200								1277	S.Y.
6" Fire Hydrant (Incl. 6" Gate Valve, Gate Box, & Related Piping)		–	Ea.										1	Ea.								1		1	Ea.
Catch Basin "A" with 8" Cast Iron Trap (W.C.R.C.)		–	Ea.										1	Ea.	1									1	Ea.
Mobilization		0.5	Lump Sum	0.5									0.5	Lump Sum	0.5									1	Lump Sum
Minor Traffic Devices		0.5	Lump Sum	0.5									0.5	Lump Sum	0.5									1	Lump Sum
On the Job Training		0.5	Ea.	0.5									0.5	Ea.	0.5									1	Ea.

PLAN ESTIMATE BY _____ DATE _____ CHECKED BY _____ DATE _____ DATE _____ DATA COMPLETED _____ PROJ. ENG. DATE _____ HISTORY CHECKED ENTERED ON PLANS BY _____ DATE 11-78

QUANTITIES SEVEN MILE - EVERGREEN 11413A SHEET NO. 22 OF 42

QUANTITY SHEET – E (AS CONSTRUCTED)

SEVEN MILE ROAD – EVERGREEN AVENUE CITY OF DETROIT QUANTITIES

SEVEN MILE ROAD – EVERGREEN AVE. WAYNE COUNTY QUANTITIES

ITEMS	SHEET NO'S.	3	8	9	6	7	12	13	21						SHEET NO'S.	3	8	9	6	7	12	13	21				CONTRACT TOTALS	UNITS
	CITY OF DETROIT TOTALS	UNITS	TYPICAL CROSS SECTIONS	7 MILE ROAD PLAN	EVERGREEN PLAN	7 MILE ROAD REMOVAL	EVERGREEN REMOVAL	7 MILE ROAD UTILITIES	EVERGREEN UTILITIES	FIRE HYDRANTS					WAYNE COUNTY TOTALS	UNITS	TYPICAL CROSS SECTIONS	7 MILE ROAD PLAN	EVERGREEN PLAN	7 MILE ROAD REMOVAL	EVERGREEN REMOVAL	7 MILE ROAD UTILITIES	EVERGREEN UTILITIES	FIRE HYDRANTS				
ROADWAYS & MISCELLANEOUS																												
Removing Pavement	602	S.Y.				131	471								696	S.Y.				696							1298	S.Y.
Removing Curb	949	L.F.				122	827								1203	L.F.				1203							2152	L.F.
Removing Sidewalk	159	S.Y.				77	82								838	S.Y.				838							997	S.Y.
Abandoning Drainage Structures	2	EA.					2								1	EA.				1							3	EA.
Removing Old Pavement (Patching)	0	S.Y.	0												0	S.Y.	0										0	S.Y.
Removing Bituminous Surface	96	S.Y.		52	44										204	S.Y.		204									300	S.Y.
Removing Bituminous Surface - Planer Method	482	S.Y.		77	405										222	S.Y.		222									704	S.Y.
Earth Excavation	356	C.Y.			356										648	C.Y.		648									1004	C.Y.
Subgrade Undercutting, Type II	25	C.Y.	25												48	C.Y.	48										73	C.Y.
Special Subbase	0	C.Y.													373	C.Y.		373									373	C.Y.
Conc. Base Course - Nonreinf. - 9" with Int. Curb	797	S.Y.		218	579										1557	S.Y.			1557								2354	S.Y.
Bituminous Conc. Leveling Course (25A)	75	Tons		9	66										47	Tons	0	47									122	Tons
Bituminous Conc. Wearing Course (31A) Type M	257	Tons	8	28	221										164	Tons	8	156									421	Tons
Sawed Longitudinal Plane of Weakness Joints	1203	L.F.		275	928										1692	L.F.		1692									2895	L.F.
Bituminous Approaches	5	Tons		0	5										0	Tons		0									5	Tons
Bituminous Aggregate Shoulders	3	Tons	3												0	Tons	0										3	Tons
Concrete Pav't. Nonreinf. - 6"	141	S.Y.			141										0	S.Y.											141	S.Y.
Concrete Pav't. Nonreinf. - 8"	86	S.Y.		30	56										208	S.Y.		208									294	S.Y.
Concrete Pav't. Nonreinf. - 9"	114	S.Y.			114										0	S.Y.											114	S.Y.
Cement	4	Tons		1	3										1	Tons		1									5	Tons
Conc. Pav't. Patching, Type N3, 9" Nonreinf.	0	S.Y.													0	S.Y.											0	S.Y.
12" Sewer C-76-III, Trench Detail "A"	0	L.F.													82	L.F.		82									82	L.F.
12" Sewer C-76-III, Trench Detail "B"	2	L.F.			2										0	L.F.											2	L.F.
6" Sewer Tap	0	EA.													4	EA.		4									4	EA.
12" Sewer Tap	0	EA.													6	EA.		6									6	EA.
Reconstructing Structures	0	L.F.													1	L.F.	1										1	L.F.
Catch Basin "L"	0	EA.													3	EA.		3									3	EA.
Catch Basin "B"	2	EA.			2										0	EA.											2	EA.
Standard Inlet	0	EA.													3	EA.		3									3	EA.
Frame & Cover "A"	0	EA.													6	EA.		6									6	EA.
Cleaning Exist. Storm Drainage Structures	0	EA.													7	EA.	7										7	EA.
Adjusting Structures	3	EA.			2				1						6	EA.		1				5					9	EA.
12" Sewer Traps	2	EA.			2										0	EA.											2	EA.
Edge Drains - 6" (C.S.P. or Bit. Fiber Pipe)	0	L.F.													130	L.F.		130									130	L.F.
4" Conc. Sidewalk	1912	S.F.		923	989										8483	S.F.		8483									10395	S.F.
6" Conc. Sidewalk	372	S.F.		273	99										917	S.F.		917									1289	S.F.
Sidewalk Ramp, Type 1	0	S.F.													580	S.F.		580									580	S.F.
Sidewalk Ramp, Type 3	0	S.F.													0	S.F.											0	S.F.
Conditioning Exist. Pav't.	11	Tons			11										0	Tons											11	Tons
Lighted Arrow Type A, Furnished	1	EA.	1												1	EA.	1										2	EA.
Lighted Arrow Type A, Operated	1	EA.	1												1	EA.	1										2	EA.
Barricade Type III	3	EA.	3												2	EA.	2										5	EA.
Barricade Type II (Drums) Lighted - Furnished	42	EA.	42												81	EA.	81										123	EA.
Barricade Type II (Drums) Lighted - Operated	42	EA.	42												81	EA.	81										123	EA.
Drum Guide Rail	0	L.F.	0												0	L.F.											0	L.F.
Class "A" Sodding	377	S.Y.		62	315										191	S.Y.		191									568	S.Y.
Water	0	Units													0	Units											0	Units
Topsoil Surface - 3 In.	377	S.Y.		62	315										191	S.Y.		191									568	S.Y.
6" Fire Hydrant (Incl. 6" Gate Valve, Gate Box, & Related Piping)	0	EA.													1	EA.								1			1	EA.
Catch Basin "A" with 8" Cast Iron Trap (W.C.R.C.)	0	EA.													0	EA.											0	EA.
Mobilization	0.5	Lump Sum	0.5												0.5	Lump Sum	0.5										1.00	Lump Sum
Minor Traffic Devices	0.5	Lump Sum	0.5												0.5	Lump Sum	0.5										1.00	Lump Sum
On the Job Training	0.05	EA.	0.05												0.05	EA.	0.05										0.10	EA.

PLAN ESTIMATE BY _____ DATE _____ CHECKED BY _____ DATE _____ DATE _____ DATA COMPLETED _____ PROJ. ENG. _____ DATE _____ HISTORY CHECKED ENTERED ON PLANS BY _____ DATE 11-78

QUANTITIES SEVEN MILE - EVERGREEN 11413A SHEET NO. 23 OF 42