

PLAN SYMBOLS

COUNTY LINE	---
SECTION LINE	----
QUARTER LINE	-----
SIXTEENTH LINE	-----
NEW RIGHT OF WAY LINE	-----
PRESENT RIGHT OF WAY LINE	-----
CONTROL OF ACCESS LINE	-----
PROPERTY LINE (EXCEPT LAND LINES)	-----
VACATED PLATTED PROPERTY	-----
CORPORATE OR CITY LIMITS	-----
TRUNK HIGHWAY CENTER LINE	-----
RETAINING WALL	-----
RAILROAD	-----
WATER LINE	-----
MEANDER CORNER	-----
DRAINAGE DITCH	-----
DRAIN TILE	-----
CULVERT	-----
GUARD RAIL	-----
BARBED WIRE FENCE	-----
CHAIN LINK FENCE	-----
STONE WALL OR FENCE	-----
HEDGE	-----
RAILROAD CROSSING SIGN	-----
MARSH	-----
TIMBER, ORCHARD, BRUSH, NURSERY	-----
OVERPASS (HIGHWAY OVER)	-----
UNDERPASS (HIGHWAY UNDER)	-----
BRIDGE	-----
BUILDING	-----
F FRAME C CONCRETE	-----
S STONE T TILE	-----
B BRICK ST STUCCO	-----
DECIDUOUS TREE	-----
CONIFEROUS TREE	-----
FRUIT TREE	-----
IRON PIPE OR ROD	-----
MONUMENT (STONE, CONCRETE OR METAL)	-----
SMALL SIGN	-----
SLOPE EASEMENT	-----

UTILITY SYMBOLS

POWER POLE	-----
TELEPHONE POLE	-----
ANCHOR	-----
STEEL TOWER	-----
STREET LIGHT	-----
PEDESTAL (TELEPHONE CABLE TERMINAL)	-----
SIGNAL WITH STREET LIGHT	-----
GAS MAIN / WATER MAIN	-----
WATER MAIN	-----
CONDUIT	-----
TELEPHONE CABLE IN CONDUIT	-----
ELECTRIC CABLE IN CONDUIT	-----
TELEPHONE MANHOLE	-----
ELECTRIC MANHOLE	-----
STORM MANHOLE	-----
SANITARY MANHOLE	-----
WATER & GAS MANHOLE	-----
STEAM MANHOLE	-----
HANDHOLE	-----
CATCH BASIN	-----
CATCH BASIN (DESIGN "G")	-----
PARKING METER	-----
FIRE HYDRANT	-----
NEW SANITARY SEWER	-----
NEW STORM SEWER	-----
PVC PERFORATED PIPE	-----
BURIED TELEPHONE CABLE	-----
BURIED ELECTRIC CABLE	-----
STORM SEWER	-----
SANITARY SEWER	-----
GAS MAIN	-----
TELEVISION CABLE	-----
EXTRA BRANCH	-----
FURNISH & INSTALL	-----
CUT OFF WATER AT MAIN	-----
WATER & GAS MAIN JOINT	-----
WATER & GAS BELL JOINT	-----
WATER & GAS MECHANICAL JOINT	-----
WATER & GAS TRANSITION COUPLING	-----
COPPER WATER SERVICE	-----
WATER & GAS VALVE(NEW)	-----
WATER & GAS SHUTOFF VALVE	-----

CITY OF DULUTH

DEPARTMENT OF PUBLIC WORKS

DIVISION OF ENGINEERING

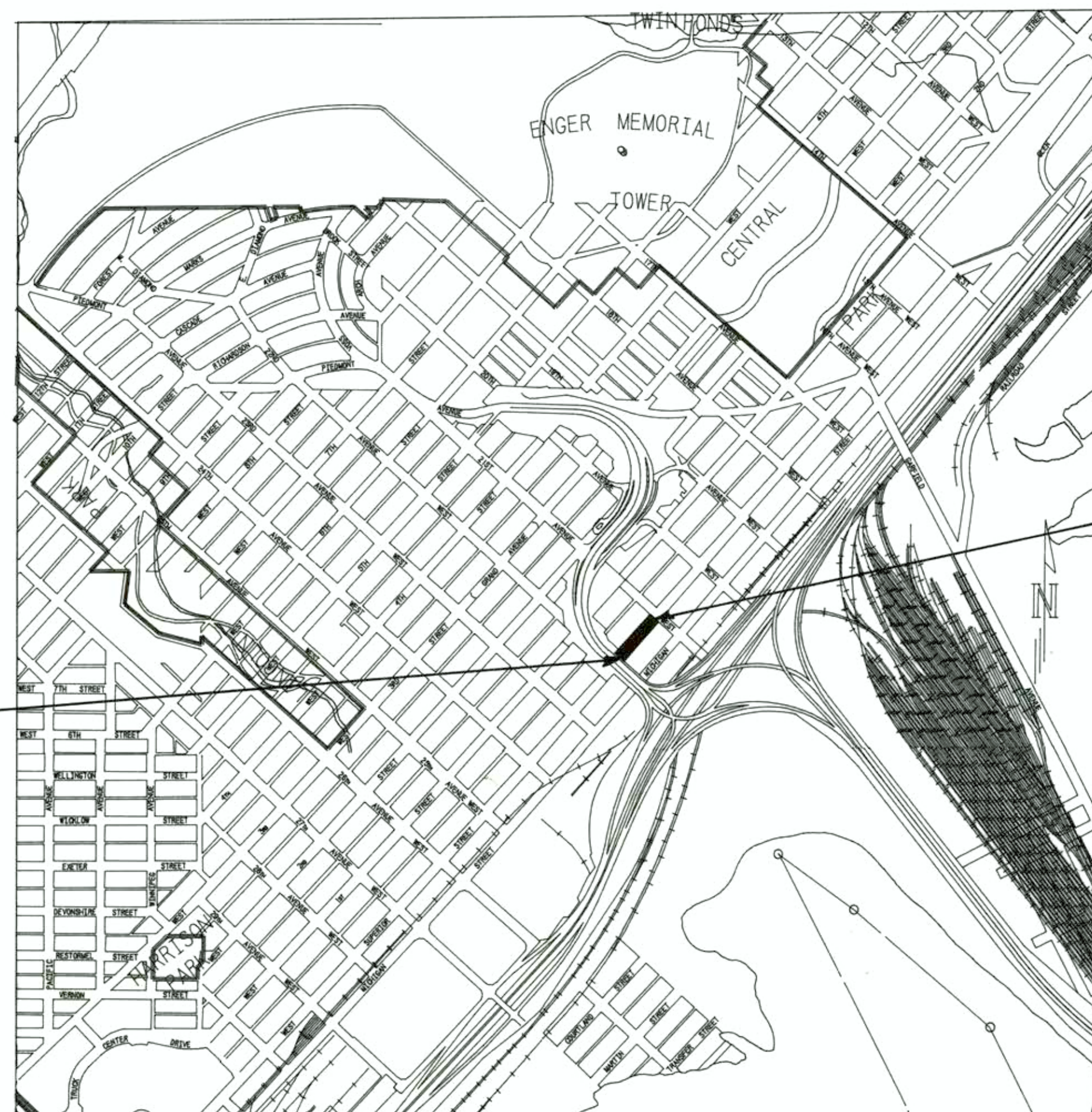
CONSTRUCTION PLANS FOR: WEST END STREETScape

LOCATED ON: SUPERIOR STREET BETWEEN 21ST AVE. WEST AND 22ND AVE. WEST

CITY PROJECT NO. 8155RS86

INDEX

- 1) TITLE SHEET
- 2) ESTIMATED QUANTITIES
- 3) MISC. DETAILS
- 4) LAYOUT & PROFILE
- 5) STORM SEWER & TYPICAL SECTION
- 6-8) LANDSCAPE
- 9-10) ELECTRICAL
- 11-13) CROSS SECTIONS



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Dean J. Beaman 5-27-87 10758
PROJECT ENGINEER DATE REG NO.

DESIGN SQUAD DATE REG NO.

BEGIN CITY PROJECT NO. 8155RS86

END CITY PROJECT NO. 8155RS86

CITY APPROVAL

APPROVED <i>Paul M. Dahlberg</i>	CHIEF ENGINEER STREETS	5/28/87	16138
APPROVED <i>Fleming M. Berg</i>	CHIEF ENGINEER SANITARY SEWERS	5-28-87	6360
APPROVED <i>Fleming M. Berg</i>	CITY ENGINEER	5-28-87	6360
APPROVED <i>Clyde Norki</i>	CHIEF ENGINEER WATER & GAS	5/28/87	11727

AS BUILT

GOVERNING SPECIFICATIONS

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN

STATEMENT OF ESTIMATED QUANTITIES					
SPEC. NO.	ITEM	UNIT	QUANTITY		
			ESTIMATE	FINAL	
1	2101.513	CLEAR AND GRUB RIGHT OF WAY	L.S.	1.0	1.0
	2104.501	REMOVE FENCE	L.F.	110.0	110.0
	2104.501	REMOVE INTEGRANT CURB (INCLUDES DOWELS)	L.F.	519.0	520.0
	2104.503	REMOVE CONC. WALK, BRICK, AND BASE	S.F.	14,500.0	15,259.0
	2104.505	REMOVE BITUMINOUS PAVEMENT	S.Y.	2,875.0	2,875.0
	2104.505	REMOVE CONC. BASE (INCLUDES CURB)(INCLUDES SAWING)	S.Y.	442.0	600.0
	2104.505	REMOVE CONCRETE TRENCH PAVEMENT	S.Y.	330.0	49.0
	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH	6.0	6.0
	2104.509	REMOVE LIGHT AND TRAFFIC BASE	EACH	7.0	8.0
	2104.509	REMOVE KIOSK AND FOOTING	EACH	1.0	1.0
2	2104.523	SALVAGE STREET LIGHT POLE AND LUMINAIRE	EACH	8.0	7.0
3	2201.501	CONCRETE BASE 8" THICK	S.Y.	260.0	374.0
3	2201.541	INTEGRANT CURB DESIGN B-6	L.F.	1032.0	1134.2
	2211.502	AGGREGATE BASE CLASS 5 (V.M.)	C.Y.	95.0	44.0
	2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	13.5	14.4
	2341.510	BINDER COURSE MIXTURE (5.0% A.C.)	TON	270.0	252.5
	2361.504	ASPHALT CEMENT	TON	10.1	10.9
	2361.508	WEARING COURSE MIXTURE (7.5% A.C.)	TON	135.0	145.5
	2451.503	GRANULAR BACKFILL	C.Y.	15.0	72.0
	2501.515	12" RCP APRON	EACH	1.0	1.0
4	2503.511	6" PVC PIPE SEWER	L.F.	228.0	280.5
	2503.511	12" RC PIPE SEWER, CLASS 3, DESIGN 3006C	L.F.	140.0	153.0
5	2506.509	CONSTRUCT CATCH BASIN, DESIGN G (INCLUDES CASTING)	EACH	5.0	5.0
	2506.512	RECONSTRUCT CATCH BASIN	L.F.	3.2	2.8
	2506.516	CASTING ASSEMBLIES (F & I)	EACH	1.0	7.0
	2506.521	INSTALL MANHOLE CASTINGS	EACH	1.0	6.0
	2506.522	ADJUST FRAME AND RING CASTING	EACH	5.0	4.0
6		FURNISH AND INSTALL POLYMER CONCRETE TRENCH DRAIN	L.F.	158.0	158.0
6		FURNISH AND INSTALL POLYMER CONCRETE CATCH BASIN	EACH	5.0	5.0
		ADJUST WATER AND GAS SERVICE BOXES	EACH	6.0	7.0
		FURNISH AND INSTALL 6" X 6" PVC WYE	EACH	1.0	1.0
		FURNISH AND INSTALL 6" RC PIPE CONNECTION	EACH	2.0	2.0
7		DRILLED 10" UTILITY ENTRANCE	L.F.	5.0	11.4
		ADJUST MONUMENT CASTING	EACH	1.0	2.0
8		LABOR	HR	30.0	75.0
9		TRENCH EXCAVATION FOR FIRE SERVICE CUT OFF	L.F.	6.0	9.5

1. IN MNDOT RIGHT OF WAY AND INCLUDES T-2 AND T-19.
2. LIGHT POLES AND LUMINAIRES WILL BE BROUGHT TO BUILDING MAINTENANCE AT 11TH AVE. W. AND MICHIGAN ST.
3. ALL CONCRETE USED ON PROJECT WIL BE STATE MIX 3A32.
4. PIPES USED TO CONNECT TRENCH DRAINS AND ROOF DRAINS TO CITY STORM SEWER.
5. CATCH BASIN FRAME CASTING 802A, STD. PLATE 4129E; GRATE CASTING 816, STD. PLATE 4154B.
6. INCLUDES CAST IRON GRATE AND CONCRETE SURROUNDING TRENCH DRAIN.
7. CONTRACTOR WILL DRILL 10" HOLE THROUGH BUILDING FOUNDATION AT LOCATION DETERMINED BY TH ENGINEER. PAYMENT WILL BE TO THE NEAREST TENTH OF A FOOT.
8. INCLUDES ALL LABOR AND MATERIAL FOR GROUTING AND TUCK POINTING ON BUILDING WALLS BEFORE NEW WALK IS CONSTRUCTED.
9. EXCAVATION, BACKFILL, & COMPACTION BY CONTRACTOR. CUT OFF BY WATER & GAS DEPARTMENT.

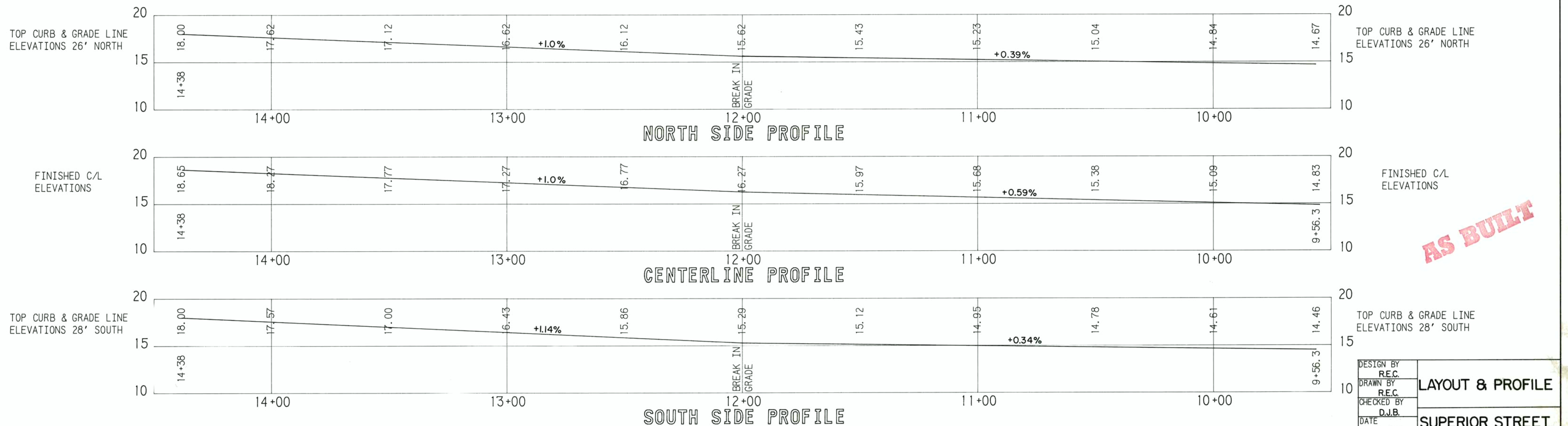
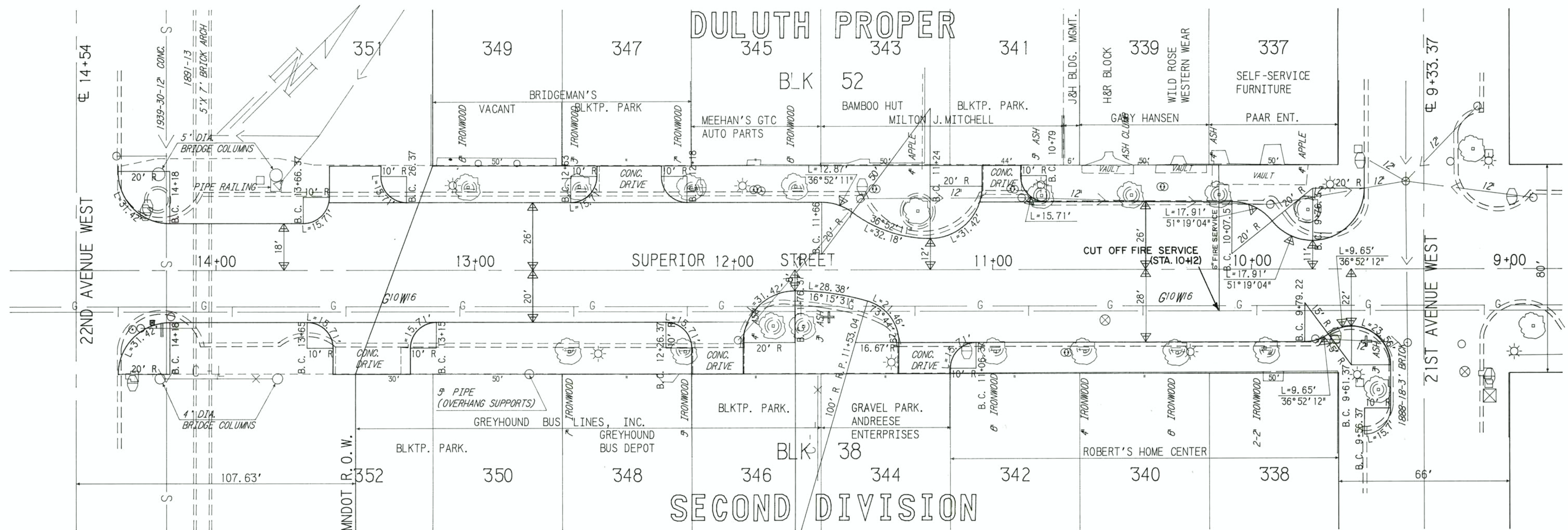
STATEMENT OF ESTIMATED QUANTITIES					
SPEC. NO.	ITEM	UNIT	QUANTITY		
			ESTIMATE	FINAL	
	02200	RELOCATE OR REMOVE LARGE BOULDERS	C.Y.	200.0	159.7
	02510	CONCRETE TREE GRATE CURB	EACH	19.0	19.0
	02515	2-1/4" PAVERS WITH 3/4" SETTING BED, ADHESIVE, 4" CONCRETE BASE, CLASS 5	S.F.	15,058.0	15,258.5
	02510	9" CONCRETE CROSSWALK HEADER	S.Y.	89.0	92.8
	02870	TREE GRATE WITH FRAME AND GUARD	EACH	17.0	17.0
	02870	TREE GRATE WITH FRAME	EACH	2.0	2.0
	02870	BOLLARDS-CAST ALUMINUM	EACH	7.0	7.0
	02870	BENCH-4' IN LENGTH	EACH	2.0	2.0
	02510	7" CONCRETE DRIVEWAY AND HEADER PAVEMENT	S.Y.	405.0	327.0
	02900	F & I SHADE TREE-3" DIA. /3 MAPLE, 3 LINDEN	EACH	6.0	6.0
	02900	F & I 2" DIA. RED SLENDOR CRABAPPLE	EACH	1.0	1.0
	02900	TRANSPLANT GREEN ASH	EACH	2.0	3.0
	02900	8' BLACK HILLS SPRUCE CONIFER	EACH	4.0	4.0
	02900	4' ARROWHEAD VIBURNUM	EACH	5.0	5.0
	02900	4' SIBERIAN PEA SHRUB	EACH	53.0	26.0
	02900	ALPINE CURRANT SHRUBS	EACH	16.0	11.0
	02900	FLEECE FLOWER-18" O.C.	EACH	930.0	900.0
	02900	FILTER FABRIC	S.Y.	524.0	708.0
	02900	EDGING	L.F.	590.0	575.5
	02870	GUARD RAIL POSTS-WOOD	EACH	88.0	84.0
	02900	WASHED STONE MULCH 3/4" TO 1-1/2"	C.Y.	88.0	93.0
	02900	WOOD CHIP MULCH-3"DEPTH	S.Y.	176.0	177.1
	02870	TRASH RECEPTACLE	EACH	4.0	4.0
	02870	TRASH RECEPTACLE LINER	EACH	12.0	12.0
		MODIFY VAULT NO. 1 (SELF SERVICE FURNITURE)	EACH	1.0	1.0
		MODIFY VAULT NO. 2 (WESTERN SHOP)	EACH	1.0	1.0
		MODIFY VAULT NO. 3 (H & R BLOCK)	EACH	1.0	1.0
	02580	LINE PAINT	L.F.	200.0	93.4
	01500	TEMPORARY ACCESS TO BUILDINGS	EACH	9.0	9.0
	02840	STREET NAME SIGNS	EACH	8.0	9.0
	02840	MODIFY KIOSK	EACH	1.0	1.0
	09800	PARKING METER REFINISHING	EACH	9.0	0.0
		TELESPAR CHANNEL FOR TRAFFIC CONTROL	L.F.	70.0	70.0
	16-10	POLE TYPE 1A	EACH	9.0	9.0
	16-10	POLE TYPE 2A	EACH	2.0	2.0
	16-10	POLE TYPE 2B	EACH	1.0	1.0
	16-19	RELOCATE EXISTING STREET LIGHTS	EACH	1.0	1.0
	16-11	POLE FOUNDATION (24" X 6')	EACH	12.0	12.0
	16-11	POLE FOUNDATION (30" X 6'-4')	EACH	1.0	1.0
	16-12,16-15	CONDUIT AND WIRE A	L.F.	960.0	990.1
	16-12,16-15	CONDUIT AND WIRE B	L.F.	30.0	24.3
	16-12,16-15	CONDUIT AND WIRE C	L.F.	50.0	84.0
	16-12,16-15	CONDUIT AND WIRE D	L.F.	50.0	63.0
	16-12,16-15	CONDUIT AND WIRE E	L.F.	70.0	101.0
	16-12,16-15	CONDUIT AND WIRE F	L.F.	80.0	84.5
	16-13	TRENCHING	L.F.	5.0	0.0
	16-14	HANDHOLES	EACH	1.0	2.0
	16-17	RE-CONNECT ELECTRICAL TO KIOSK	EACH	1.0	1.0
	16-20	TEMPORARY LIGHTING	L.S.	1.0	0.2
	16-21	REVISIONS TO ELECTRICAL CONTROLS	L.S.	1.0	1.0

I. SPEC. NOS. 022110, 023100, 023300, 024200, 024230

AS BUILT

DESIGN BY R.E.C.	ESTIMATED QUANTITIES
DRAWN BY R.E.C.	
CHECKED BY D.J.B.	SUPERIOR STREET
DATE 5/27/87	
SCALE NO SCALE	21ST TO 22ND AVES. W.

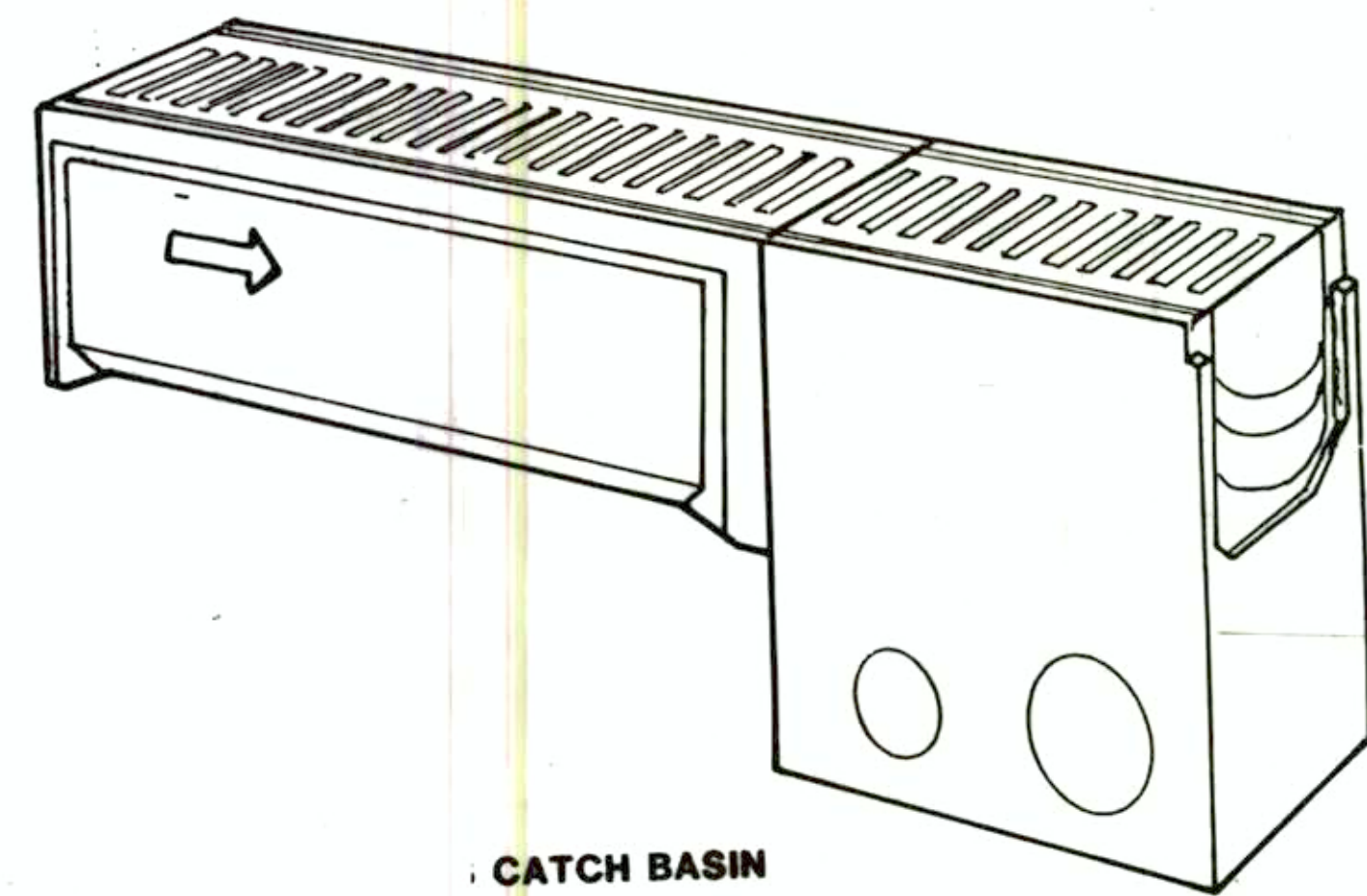
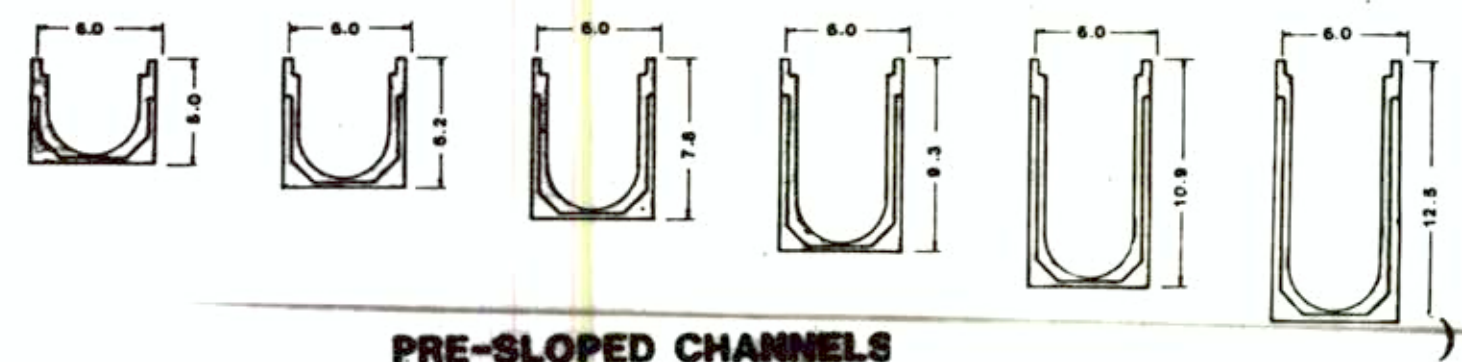
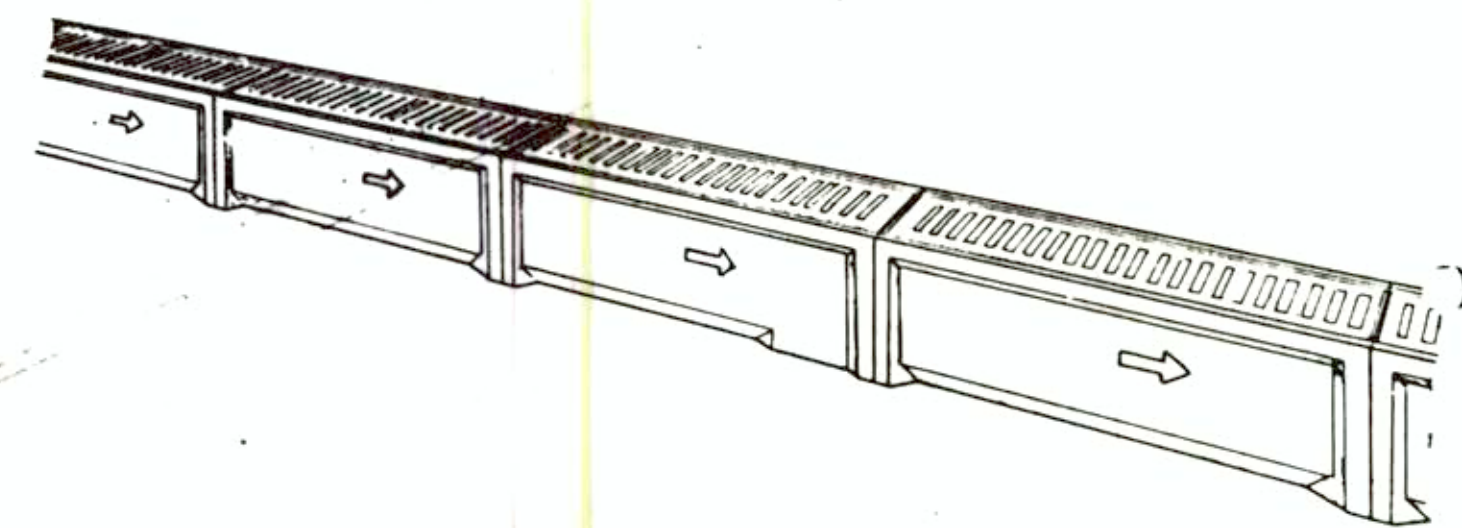
CITY OF DULUTH PROJECT NO. 8155RS86



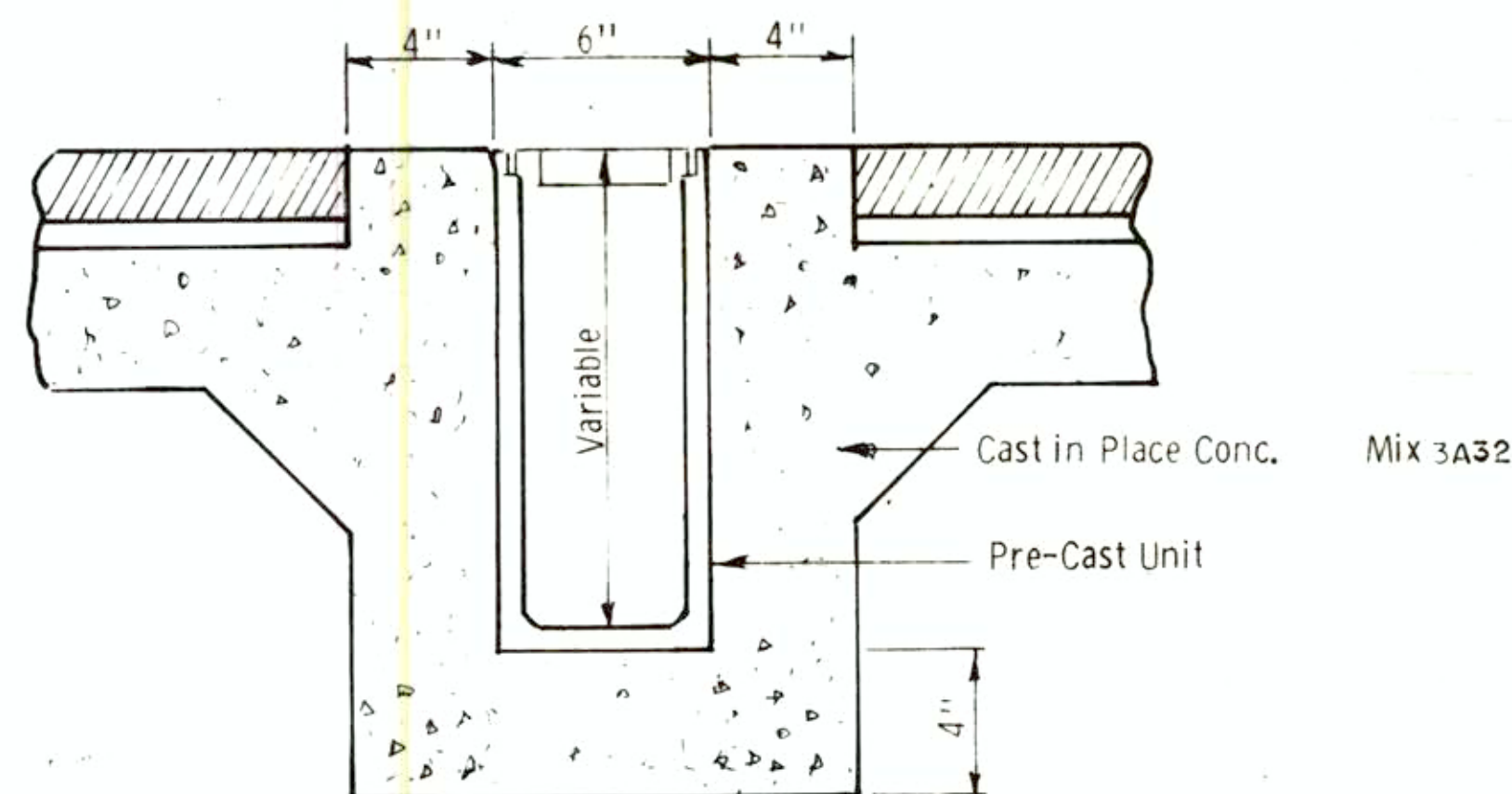
DESIGN BY R.E.C.	LAYOUT & PROFILE
DRAWN BY R.E.C.	
CHECKED BY D.J.B.	
DATE 5/27/87	
SCALE HORIZ. 1"=20'	SUPERIOR STREET 21ST TO 22ND AVES. W.
VERT. 1"=5'	

CITY OF DULUTH PROJECT NO. 8155RS86

The presloped channels consist of 25 individual drain sections. Each section is numbered and has a built-in slope gradient of .65%. All presloped channel sections are 4 feet long and 6 inches wide. Total length for all 25 sections is 100 feet.

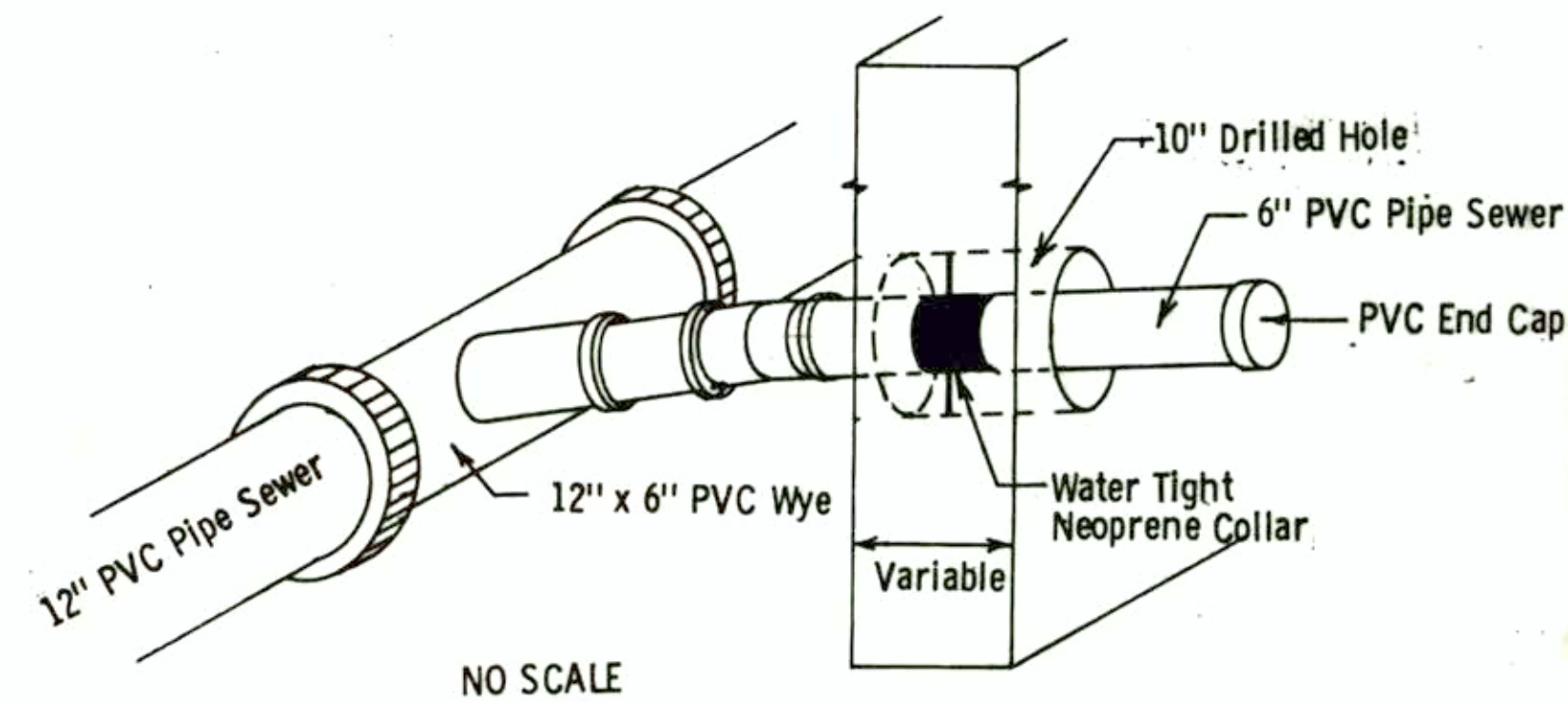


CATCH BASIN

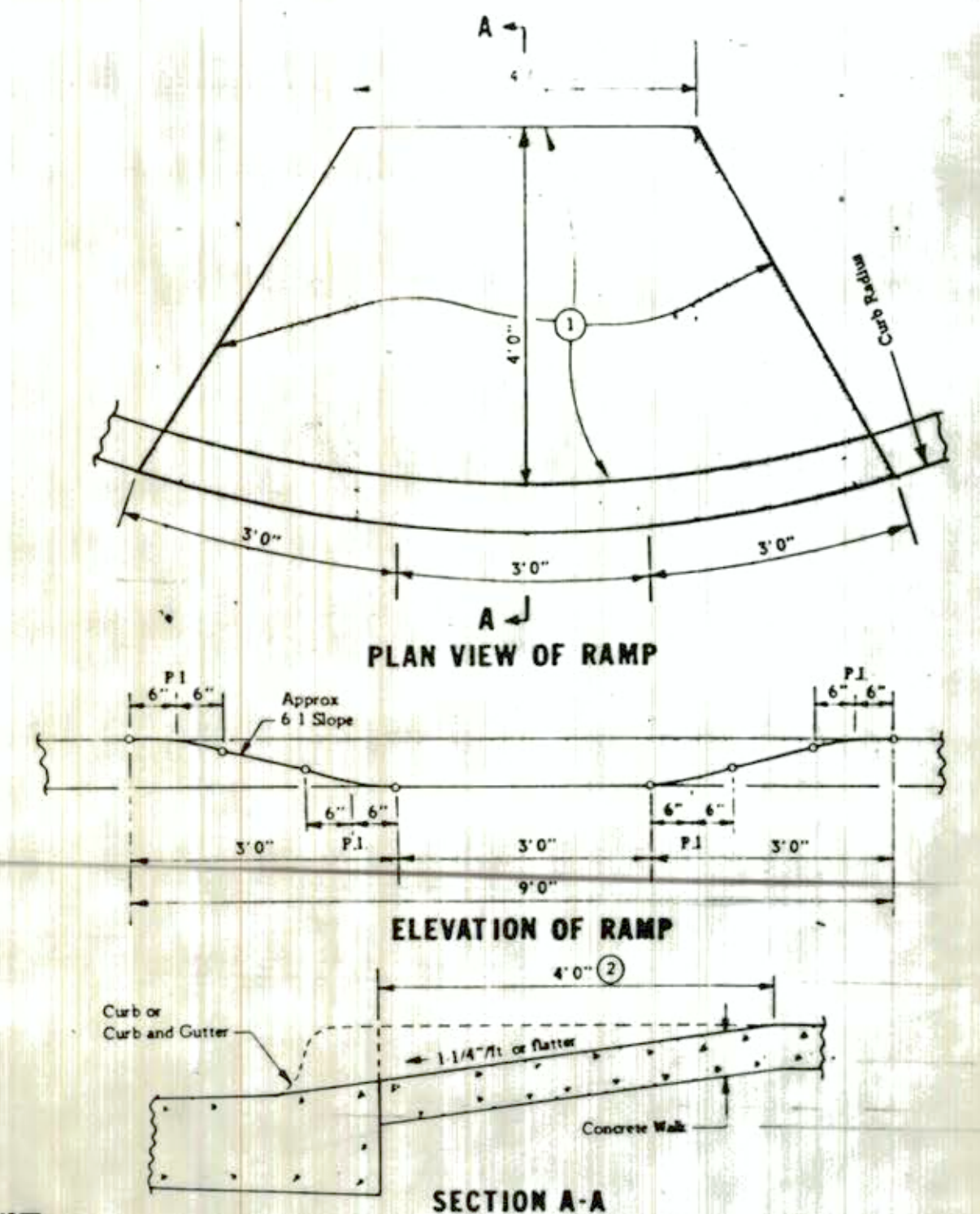


TYPICAL CROSS SECTION

TRENCH DRAIN



TYPICAL ROOF DRAIN SERVICE THROUGH BUILDING FOUNDATION OR VAULT WALL



NOTE:
The curb and curb transition on the ramp will be paid for as linear feet of concrete curb or concrete curb and gutter. The ramp area will be paid for as square feet of concrete walk. Surface treatment will be considered incidental.

1) Surface Treatment - This treatment shall consist of an aggregate surface finish. The aggregate shall meet the requirements of Spec 3137 CA-70 modified to 100% passing the 1/2" sieve. Immediately prior to placing the concrete, the surface shall be coated with an approved epoxy bonding agent.

In lieu of the above treatment, the contractor at his option after normal concrete finishing, may embed aggregate, meeting the requirements of Spec 3137 CA-70 modified to 100% of the material 1/2" to 3/8" in size, in the green concrete. The embedded aggregate shall protrude at least 3/16" above the concrete surface. The exposed aggregate may be lightly raked to wash mortar off of it.

2) 4' 0" dimensions may be increased where feasible, to provide a flatter slope.

PEDESTRIAN CURB RAMP

(Paver Brick Construction)

DRAINAGE, SEWER, AND UNDERGROUND ITEMS									CATCH BASINS				MAN HOLES		
									CONSTRUCT	RECONSTRUCT LIN. FT.	ADJUST	F&I CASTING ASSEMBLY	REMOVE	INSTALL M. H. CASTING	ADJUST
SYSTEM	STRUCTURE	LOCATION			ELEVATION										
	NO.	TYPE	STATION	L	R	EXIST. TOP	NEW TOP	OUTLET							
STORM	I	M. H.	9+40.2		32.5										I
	IA	C. B.	9+56.3		41.2				I				I		
	IB	M. H.	9+93.7		23.8	14.18		10.35						I	
	IC	C. B.	10+07.5		25.0		14.27	10.57	I						
	ID	C. B.	10+89		25.0	14.60	14.76	11.54		3.2		I			
	IE	C. B.	11+52.6		26.7	15.02		11.76					I		
	IF	C. B.	11+66		25.0		15.06	12.18	I						
	IG	C. B.	11+97	19.0			14.85	12.72	I						
	IH	C. B.	11+98.6	26.3	26.5	15.02		12.87					I		
	2	M. H.	9+39.7	26.5		NO	WORK								
	2A	C. B.	9+79.22	27.0		14.02	13.94	9.65	I				I		
	2B														
	3A	C. B.	13+61.4		54.0	15.42	16.10	12.17			I				
	3B	APRON	13+76.5		30.7	NO	WORK								
	3C	C. B.	14+37.7		43.7	NO	WORK								
	4	M. H.	14+30	27.0											I
	4A	C. B.	14+30	46.0							I				
	4B	C. B.	13+78.4	27.2									I		
ELEC.	5	M. H.	14+18.5	21.9											I

DESIGN BY RJN	MISC. DETAILS
DRAWN BY RJN	
CHECKED BY DJB	SUPERIOR STREET 21ST TO 22ND AVES. W.
DATE 5/27/87	
SCALE AS SHOWN	



LARSEN, HARVALA
& BERQUIST, INC.

Engineers and Architects

322 W. Michigan Street
Duluth, MN 55802
(218) 727-8446

AS BUILT

Harvey A. Harvala
5/22/87 9269

TITLE

WEST END BUSINESS DISTRICT
STREETSCAPE RENOVATION
21st AVE WEST to 22nd AVE WEST

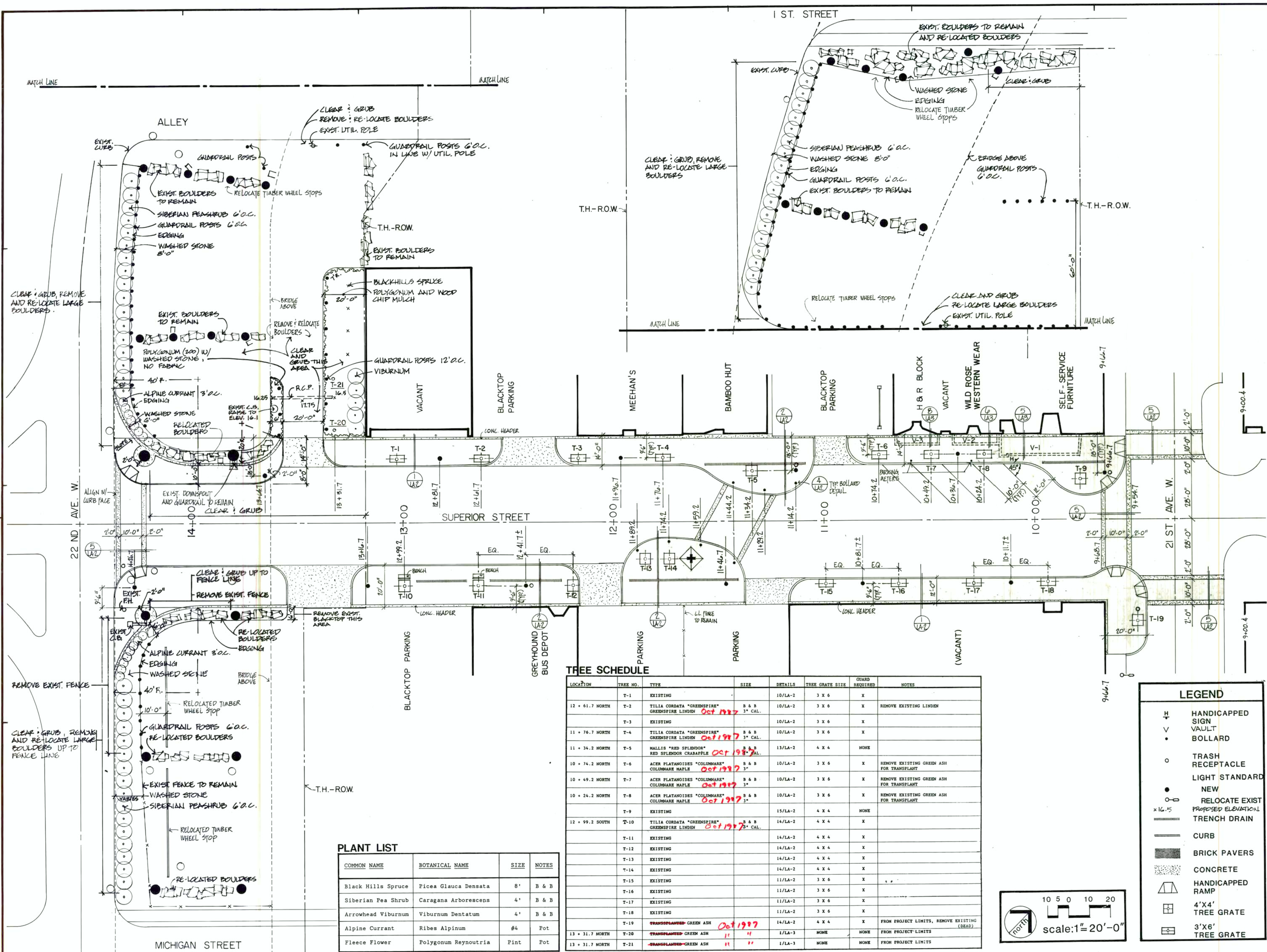
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DATE: 5/22/87

DRAWN: DB

CHECKED: ML

LA-1





LARSEN, HARVALA
& BERQUIST, INC.

Engineers and Architects

322 W. Michigan Street
Duluth, MN 55802
(218) 727-8446

AS BUILT

Harry H. Harvala
5/22/87 9269

TITLE

WEST END BUSINESS DISTRICT
STREETSCAPE RENOVATION
21st AVE WEST to 22nd AVE WEST

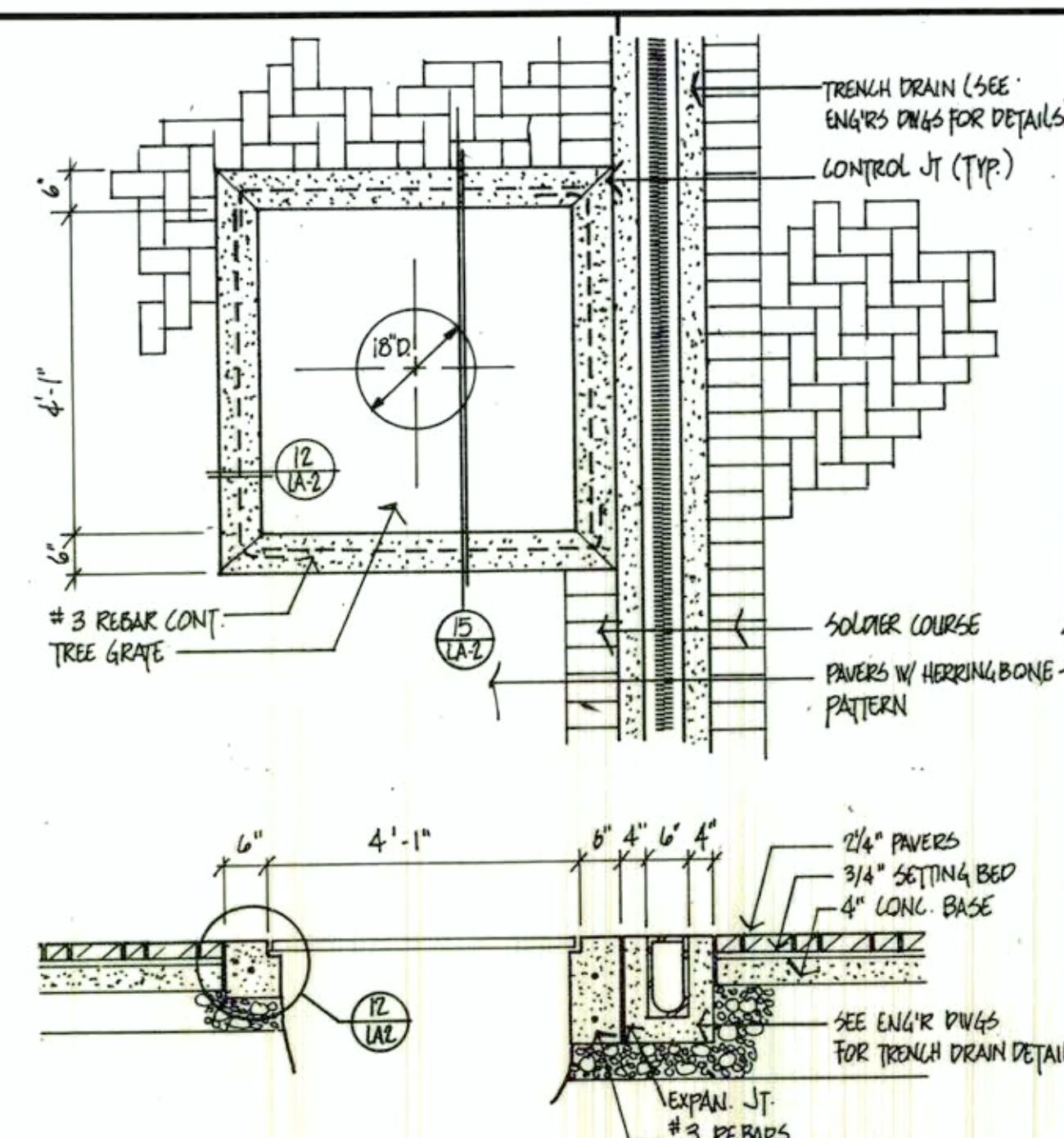
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DATE 5/22/87

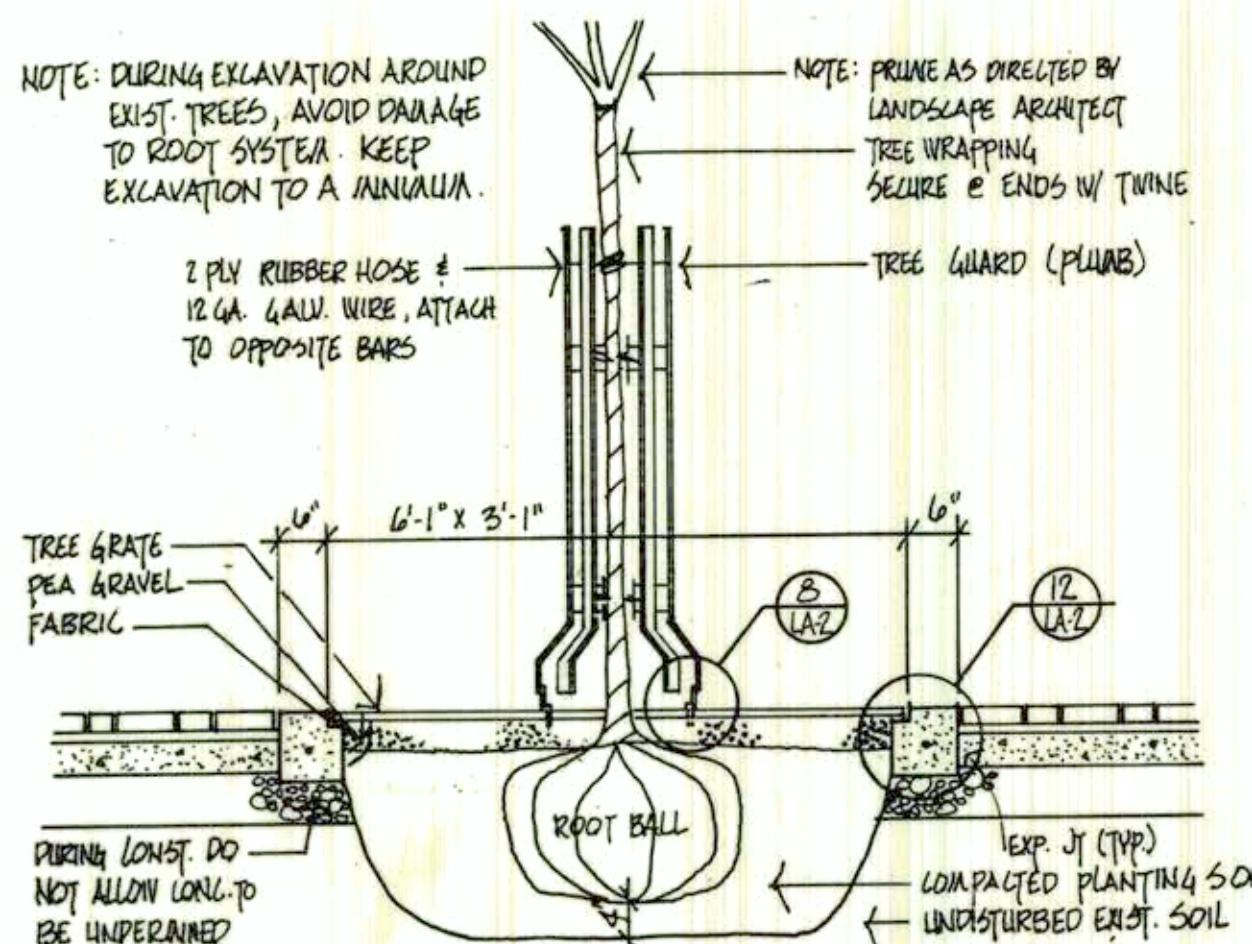
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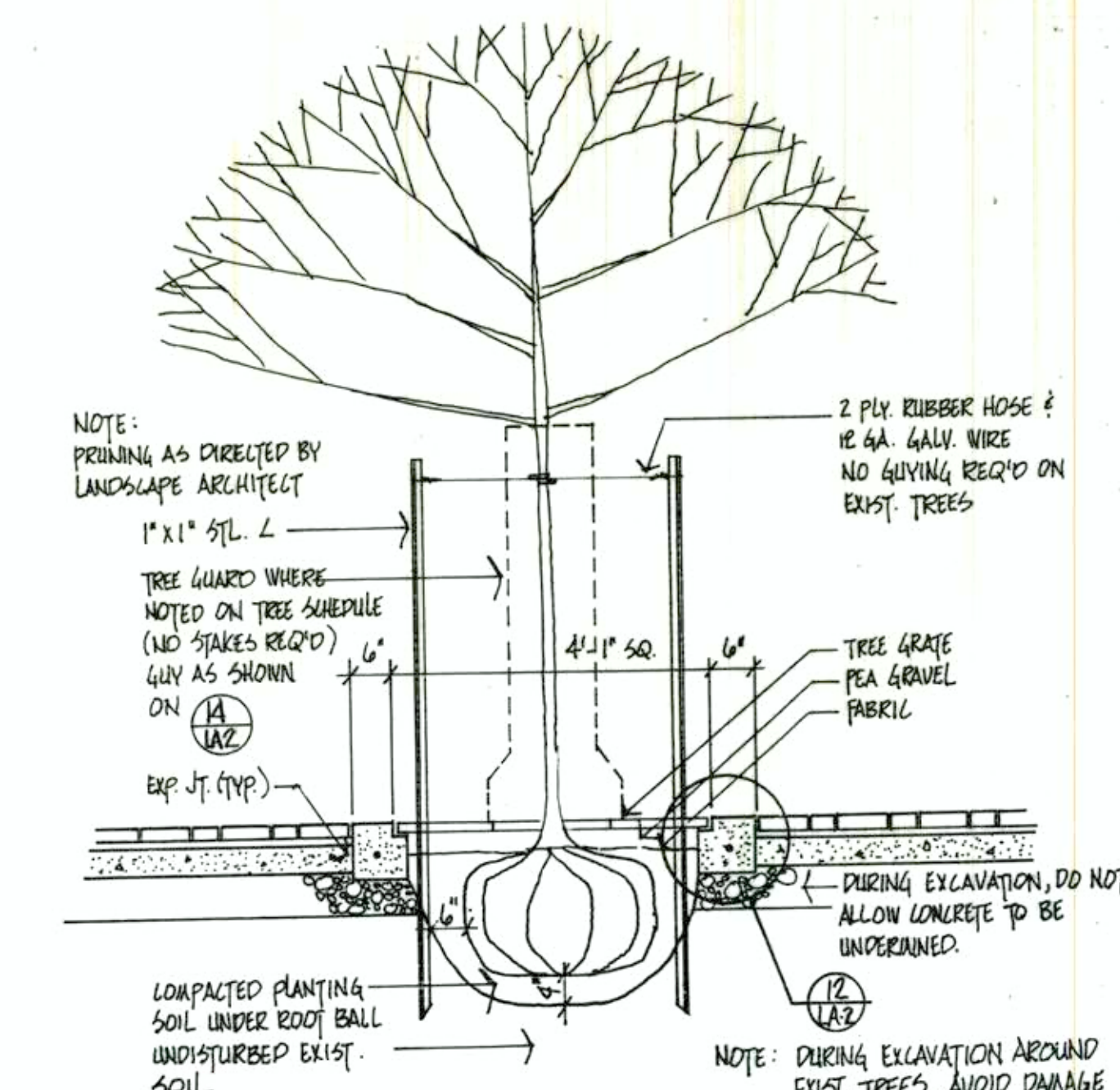
LA-2



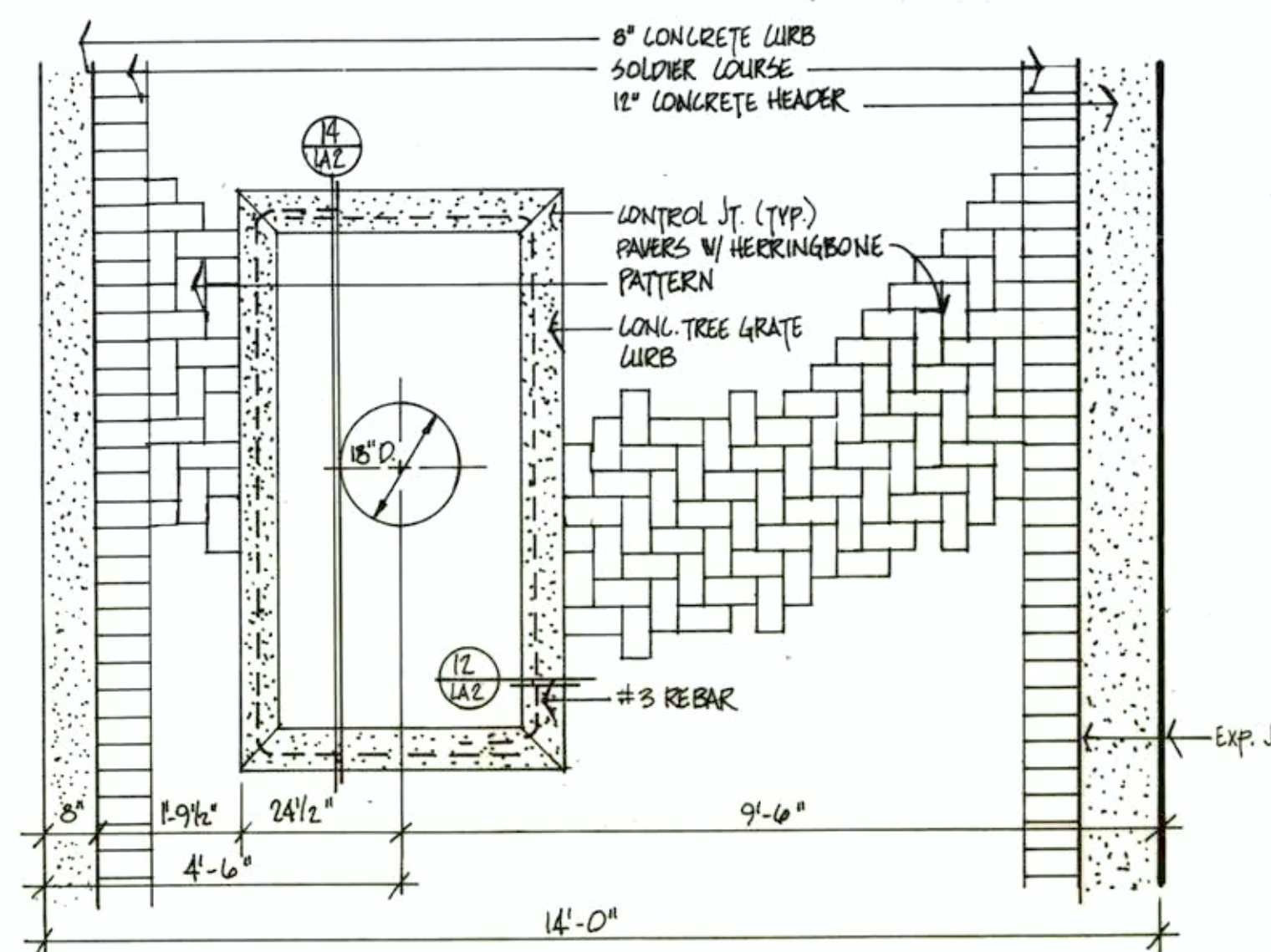
13 TREE GRATE/TRENCH DRAIN INTERFACE
1/2\"/>



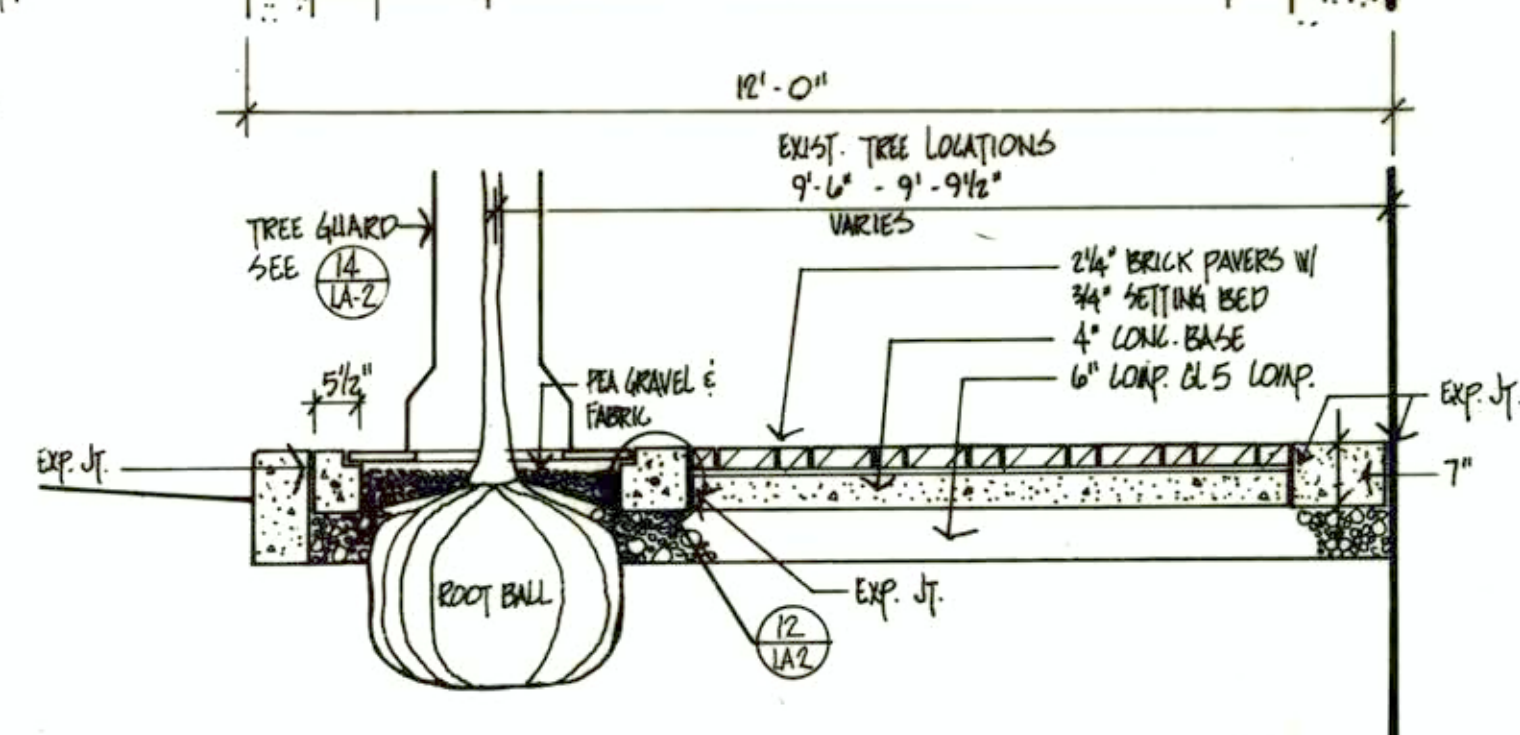
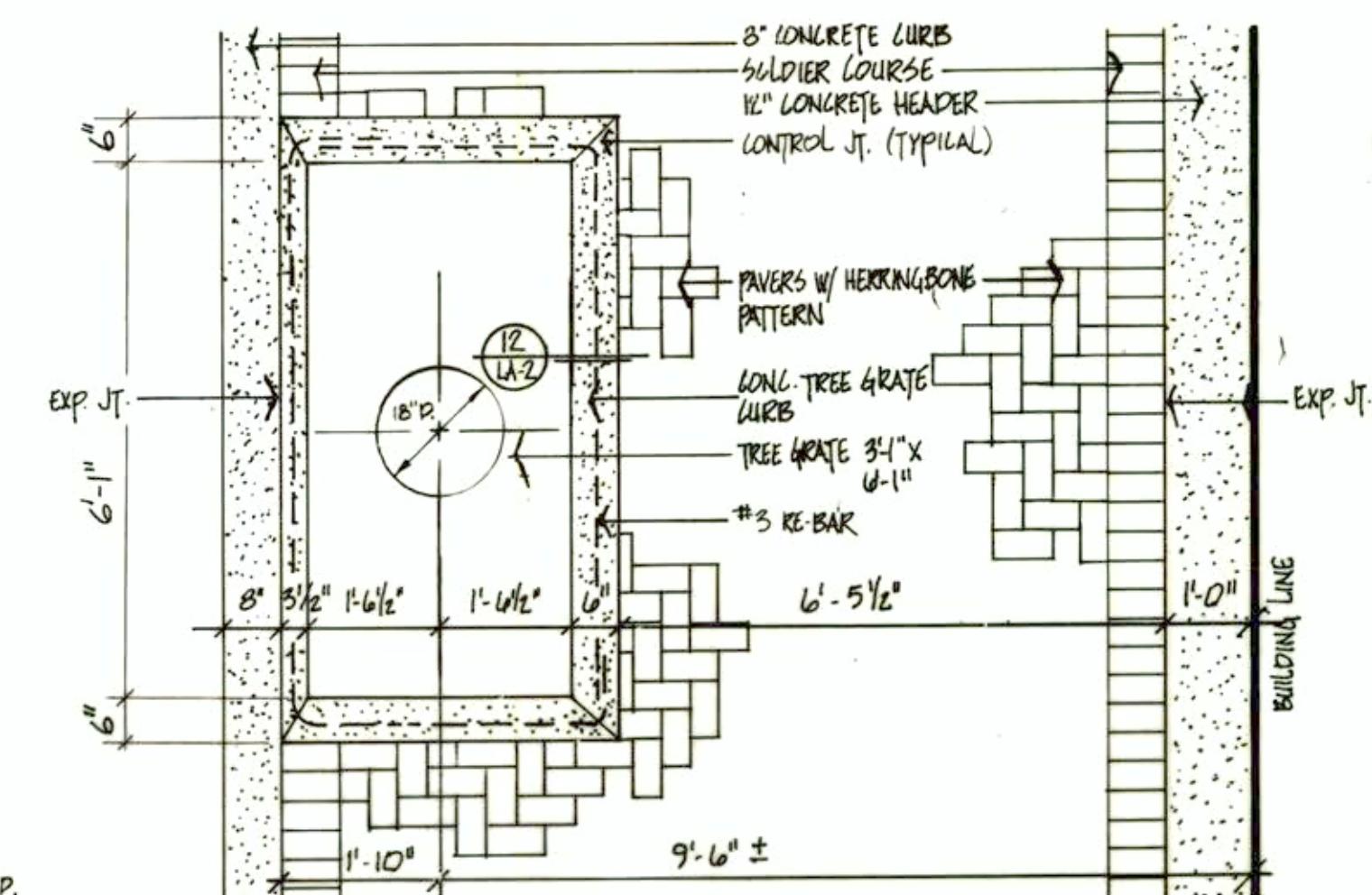
14 TREE GRATE/TREE GUARD - 3' x 6'
1/2\"/>



15 TREE GRATE - 4' SQUARE
1/2\"/>

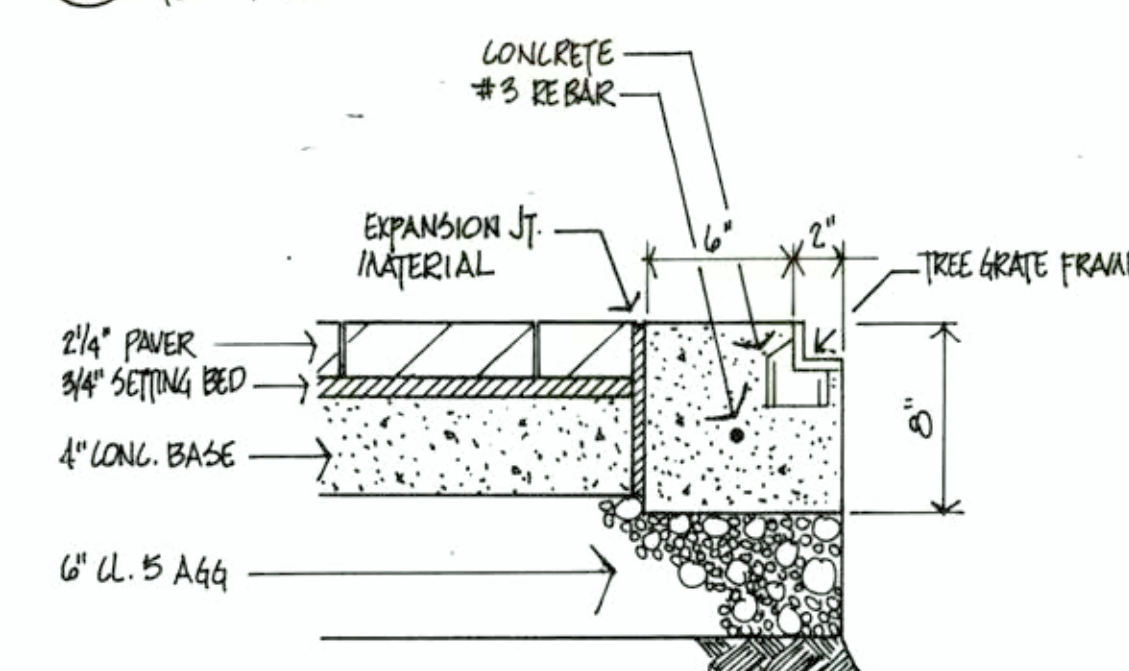


10 TREE GRATE & PAVING PLAN - 14' SIDEWALK (20' WALK SIMILAR)
1/2\"/>

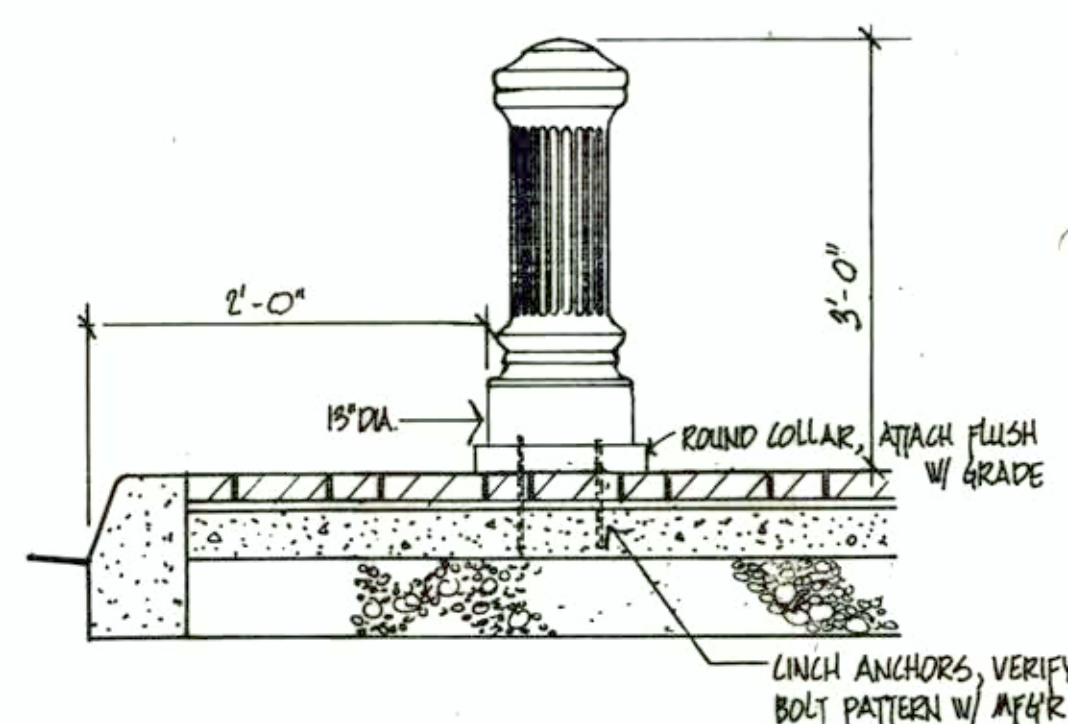


12 CONCRETE TREE GRATE CURB SECTION
1/2\"/>

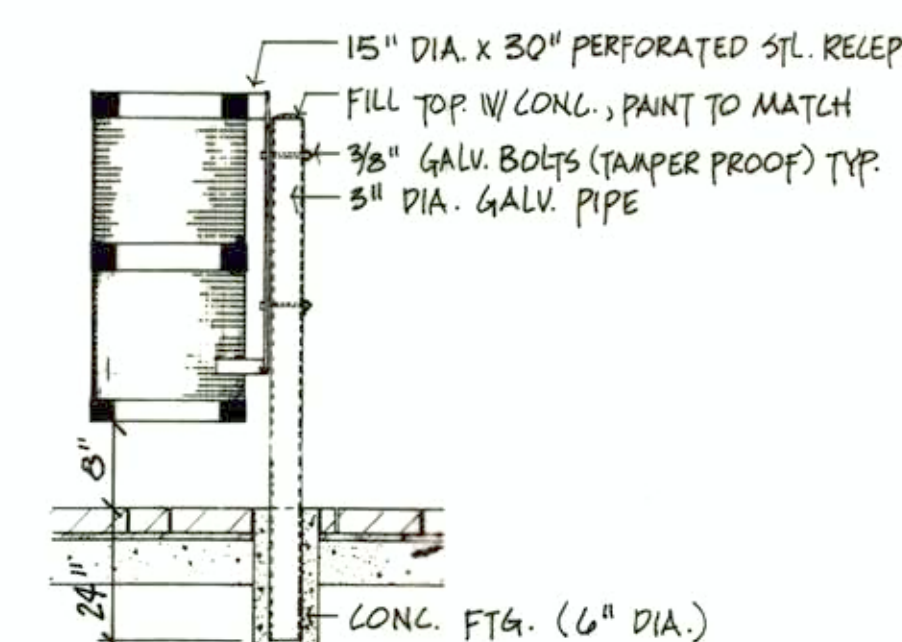
11 TREE GRATE & PAVING PLAN - 12' SIDEWALK
1/2\"/>



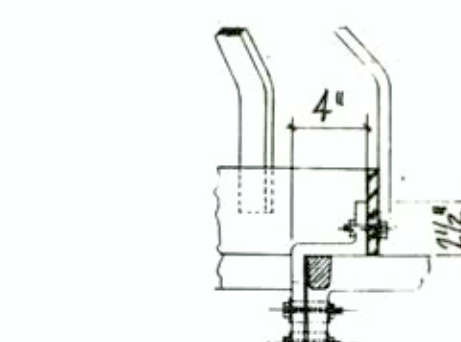
8 TREE GUARD BOLTING DETAIL
1/2\"/>



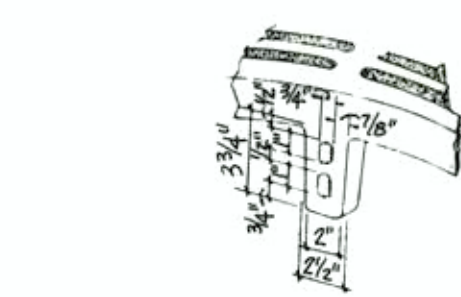
4 BOLLARD MOUNTING DETAIL
3/4\"/>



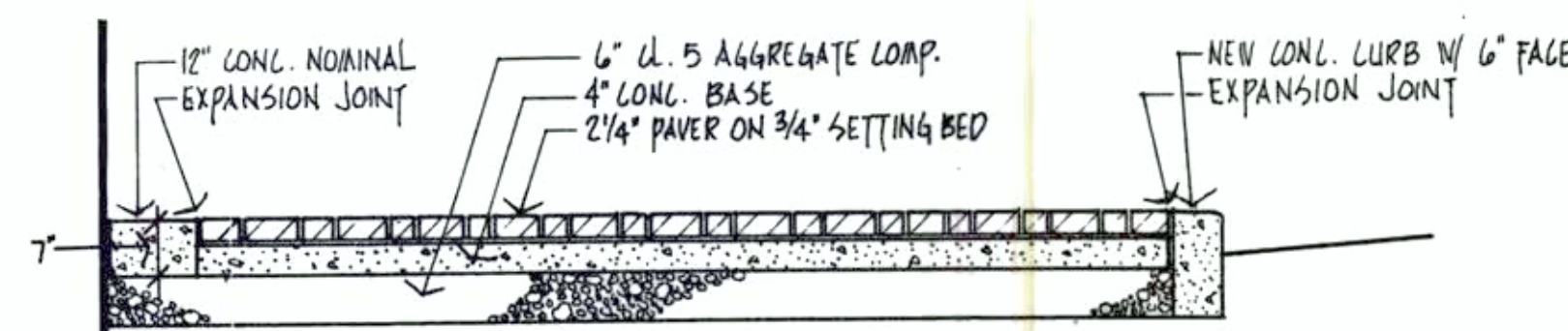
6 TRASH RECEPT. MOUNTING DETAIL
3/4\"/>



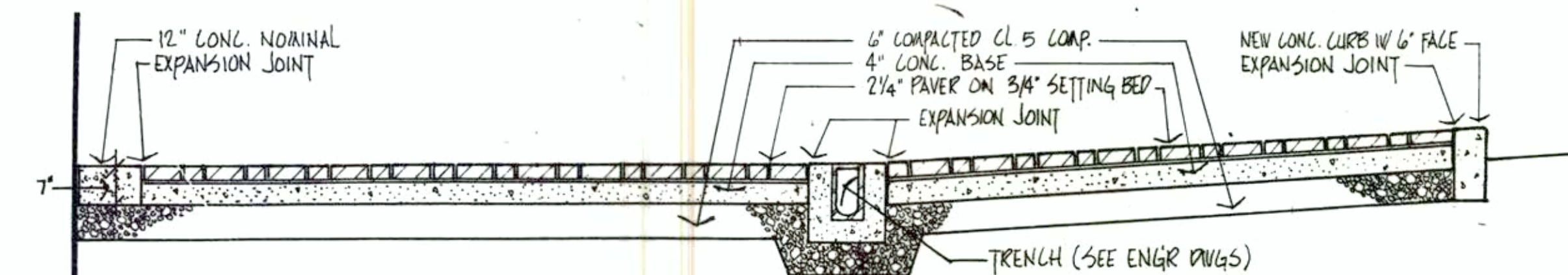
9 TREE GUARD LUG DETAIL
1/2\"/>



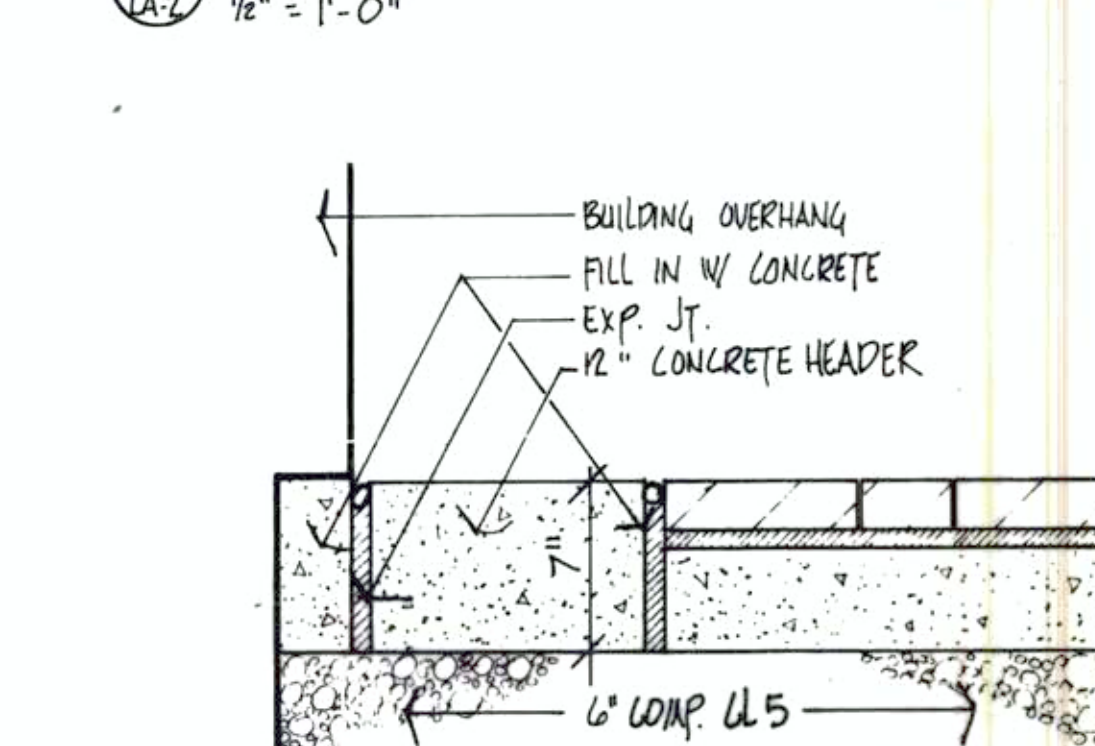
7 BRICK CROSSWALK
1\"/>



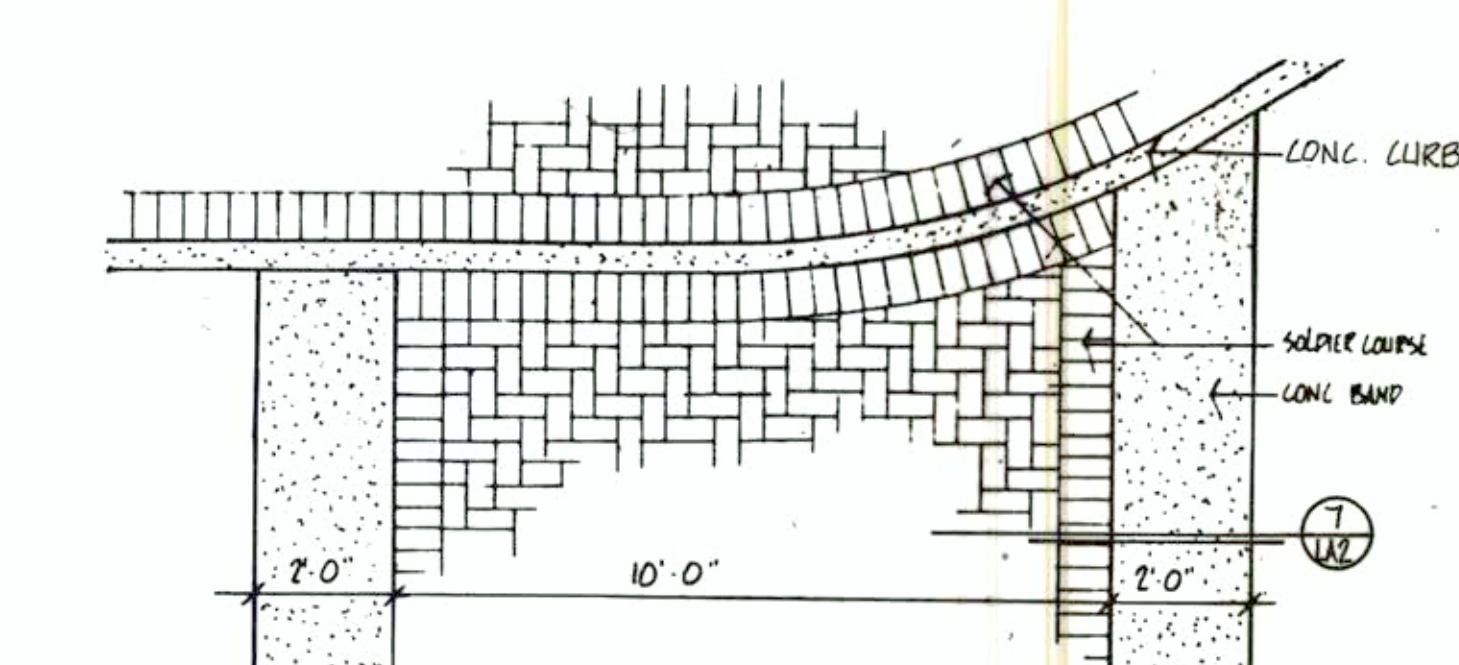
1 SECTION - TYPICAL 12' OR 14' SIDEWALK
1/2\"/>



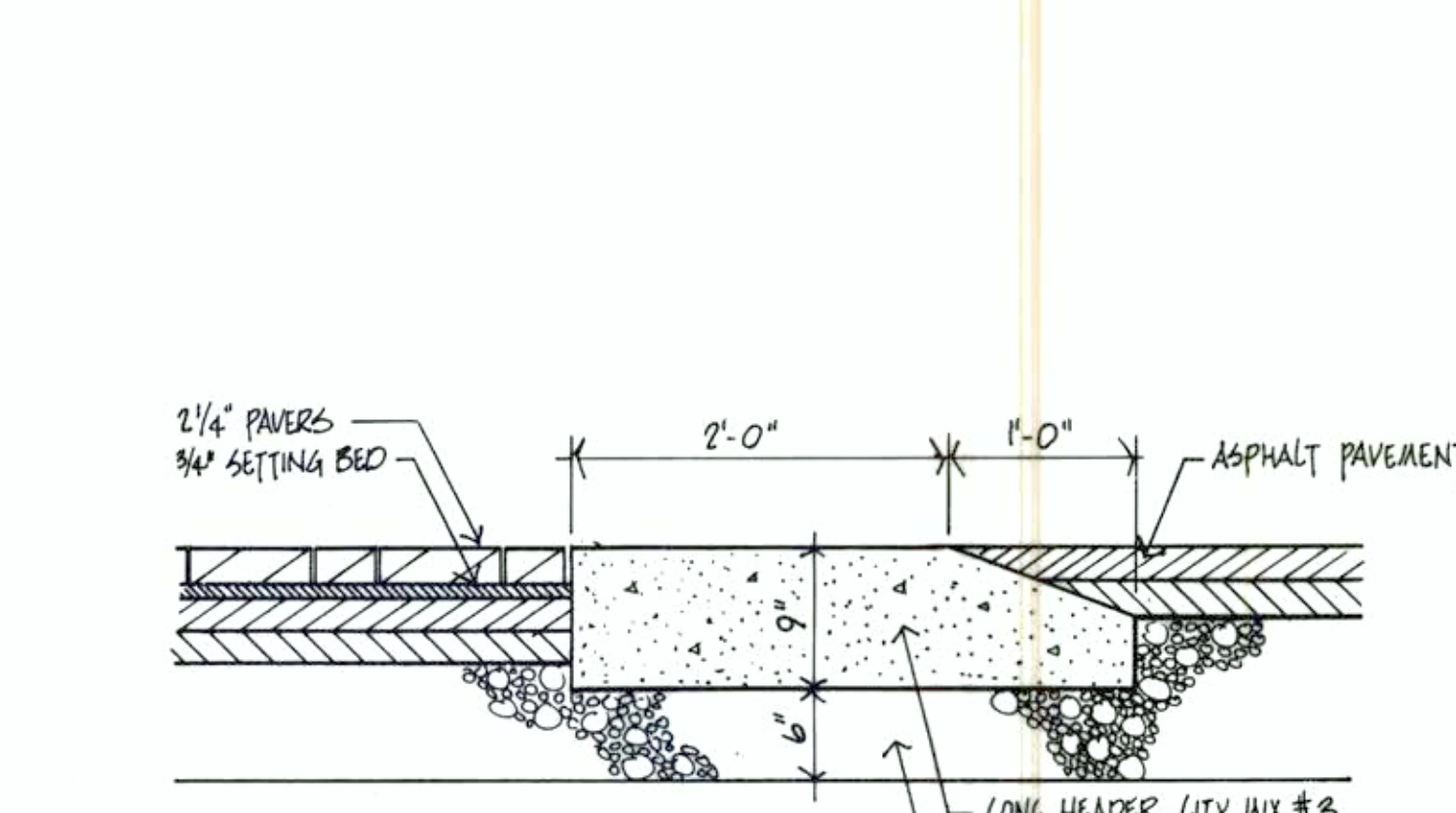
2 SECTION - TYPICAL SIDEWALK EXTENSION
1/2\"/>



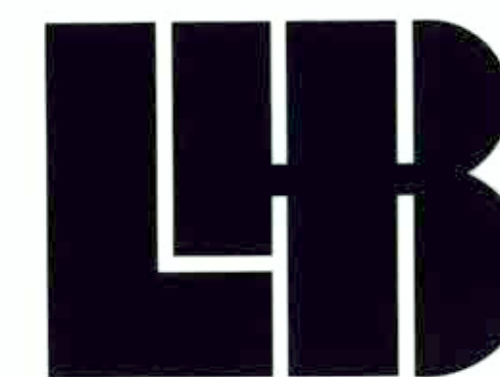
3 LONG. HEADER @ BUILDING OVERHANG
1\"/>



5 CROSSWALK PAVING PATTERN
3/8\"/>



12 CONCRETE TREE GRATE CURB SECTION
1/2\"/>

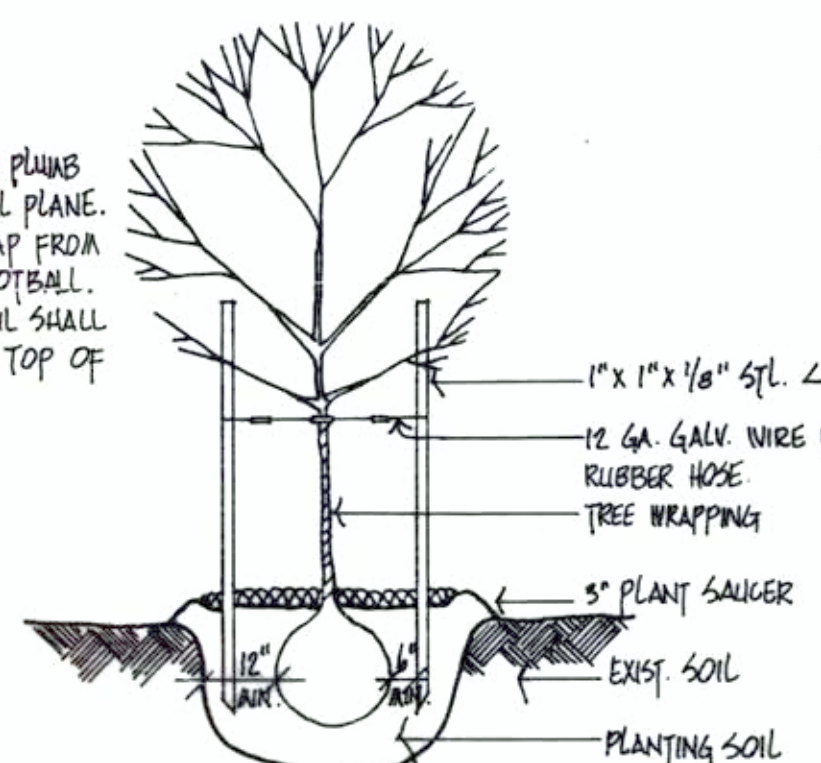


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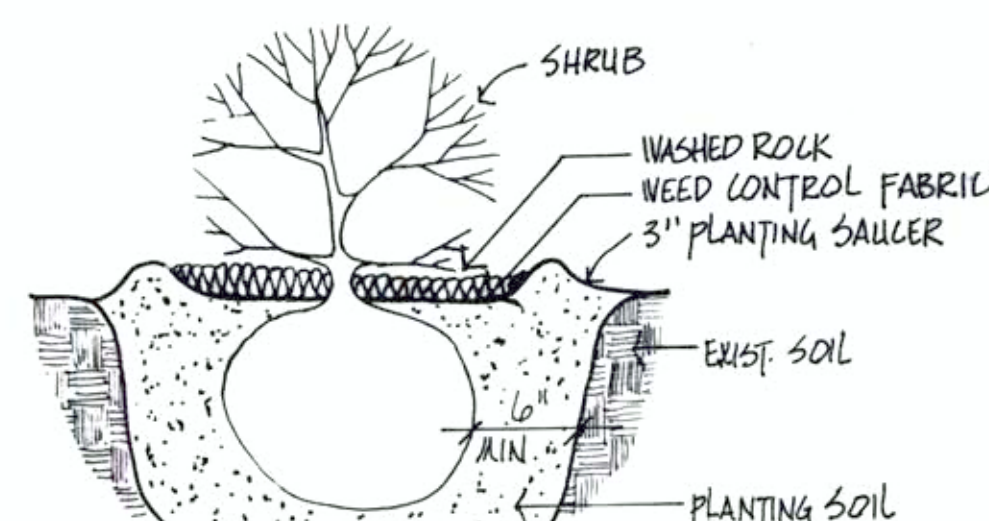
Engineers and Architects

322 W. Michigan Street
Duluth, MN 55802
(218) 727-8446

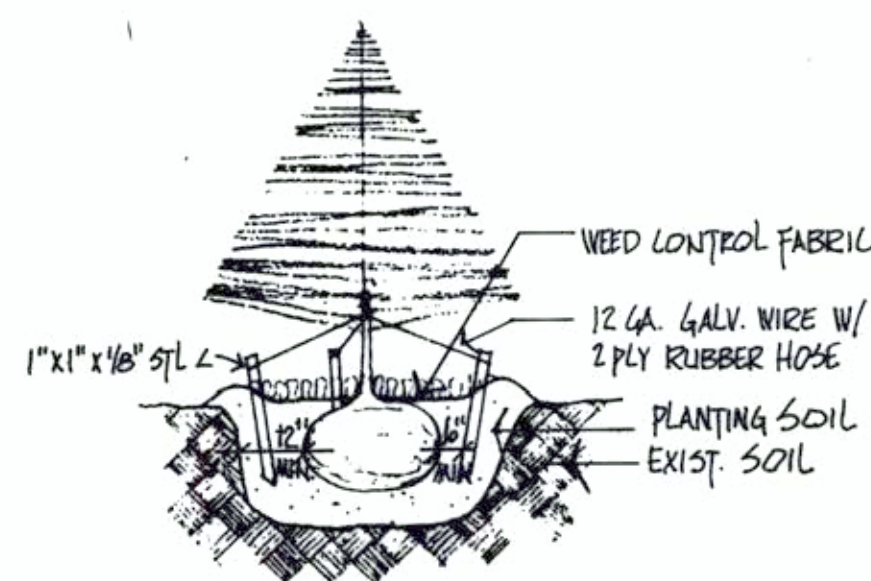
- NOTE:
- INSTALL TREES PLUMB
W/ HORIZONTAL PLANE.
- REMOVE BURLAP FROM
TOP 1/3 OF ROOT BALL.
- PLANTING SOIL SHALL
BE FLUSH W/ TOP OF
ROOT BALL.



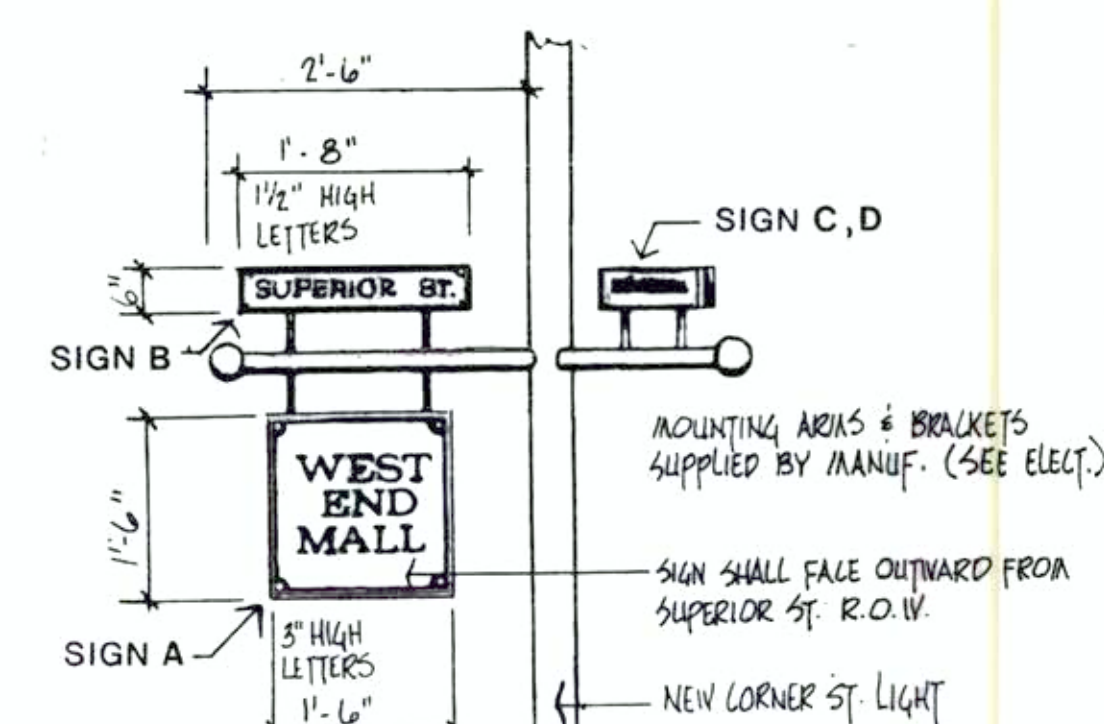
1 TREE PLANTING DETAIL
LA3 N.T.S.



2 SHRUB PLANTING DETAIL
LA3 N.T.S.



3 CONIF. TREE DETAIL
LA3 N.T.S.

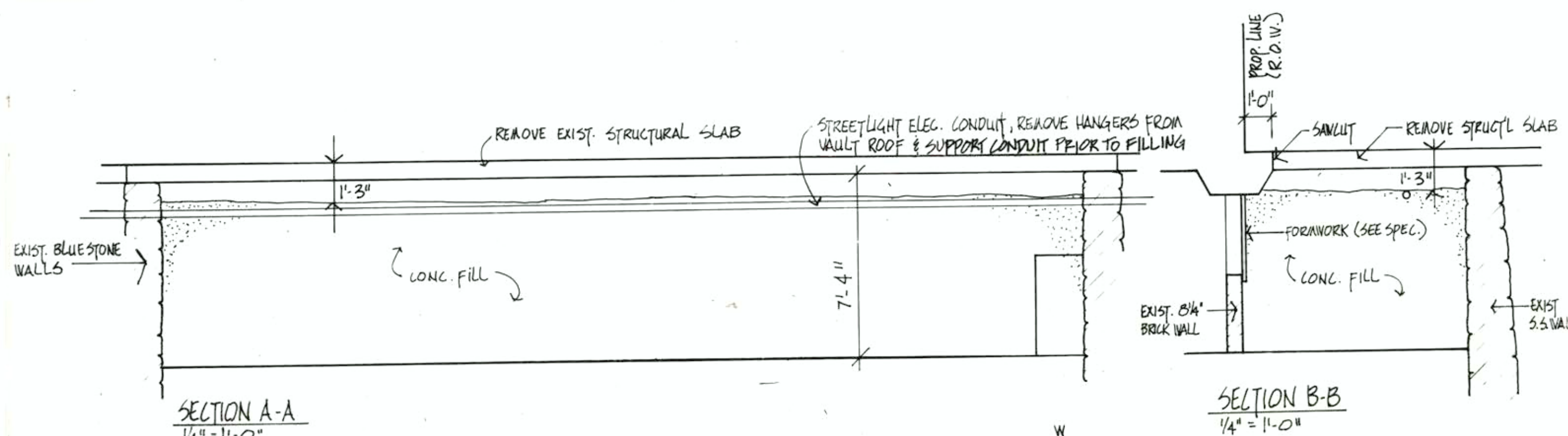


4 SIGN DETAIL
LA3 3/4" = 1'-0"

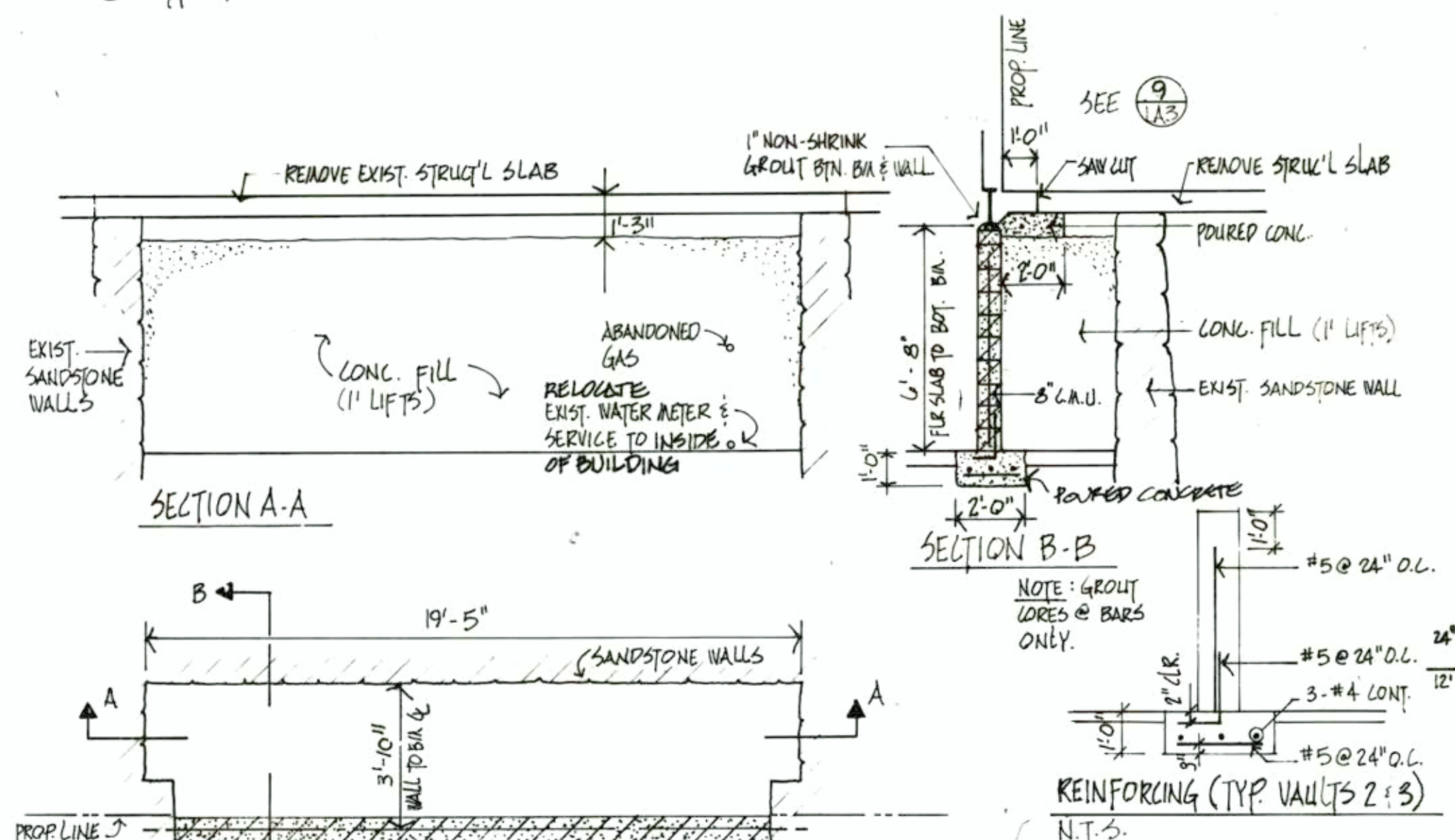
STYLE	QUANTITY	PRINTING	NOTE
A	1	WEST END MALL	BACKSIDE BLANK
B	4	SUPERIOR ST.	MOUNT (2) TOGETHER
C	2	21ST AVE. WEST	MOUNT (2) TOGETHER
D	2	22ND AVE. WEST	MOUNT (2) TOGETHER

NOTE:

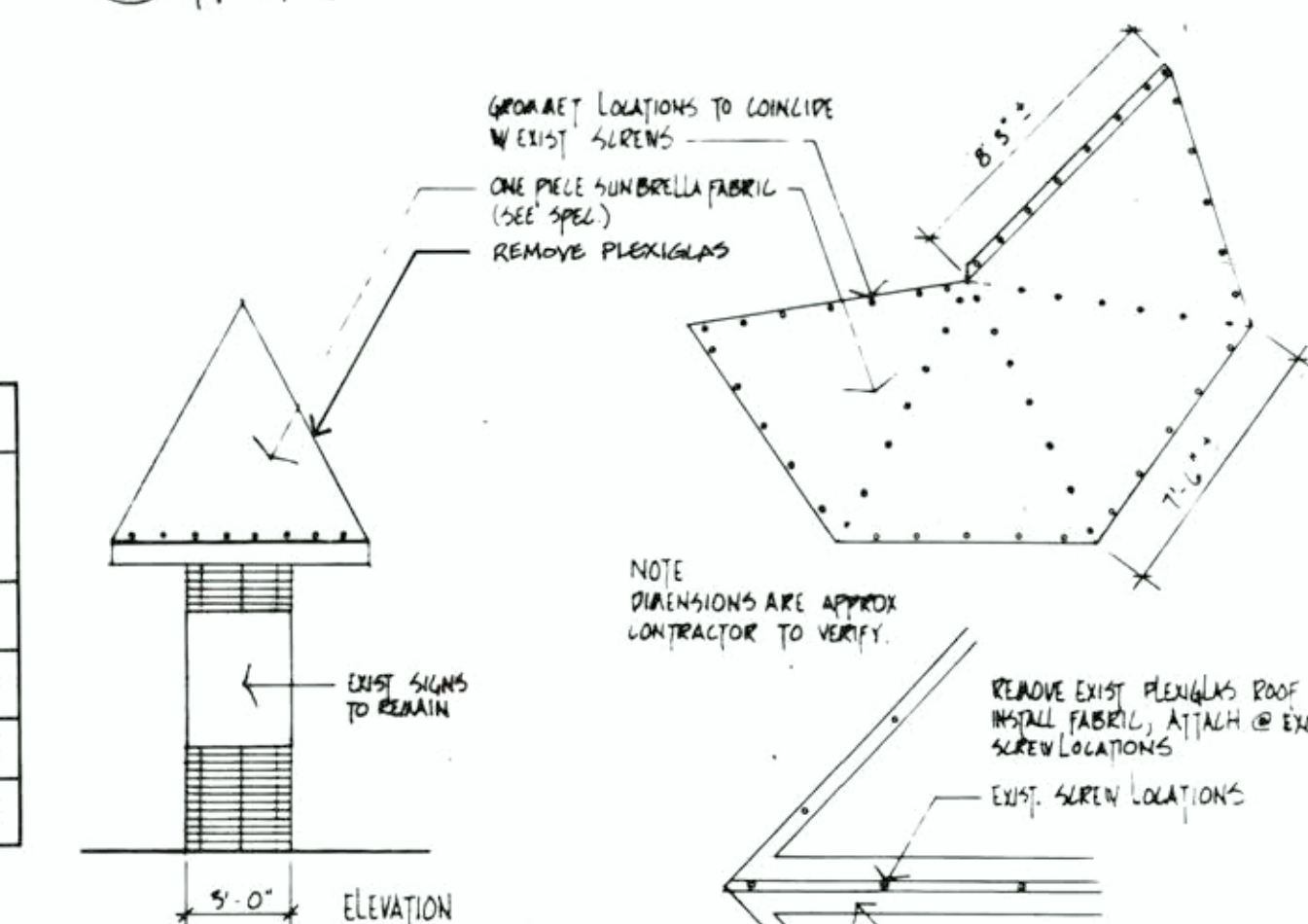
- ALL SIGNS TO HAVE IDENTICAL COLOR BORDER. DESIGN AND COLOR MUST BE APPROVED BY ARCHITECT.
- LETTERING STYLE ON ALL SIGNS TO BE CLARENDON BOLD.
- FACE OF BLANK SIGN TO BE PAINTED LIGHT GRAY.



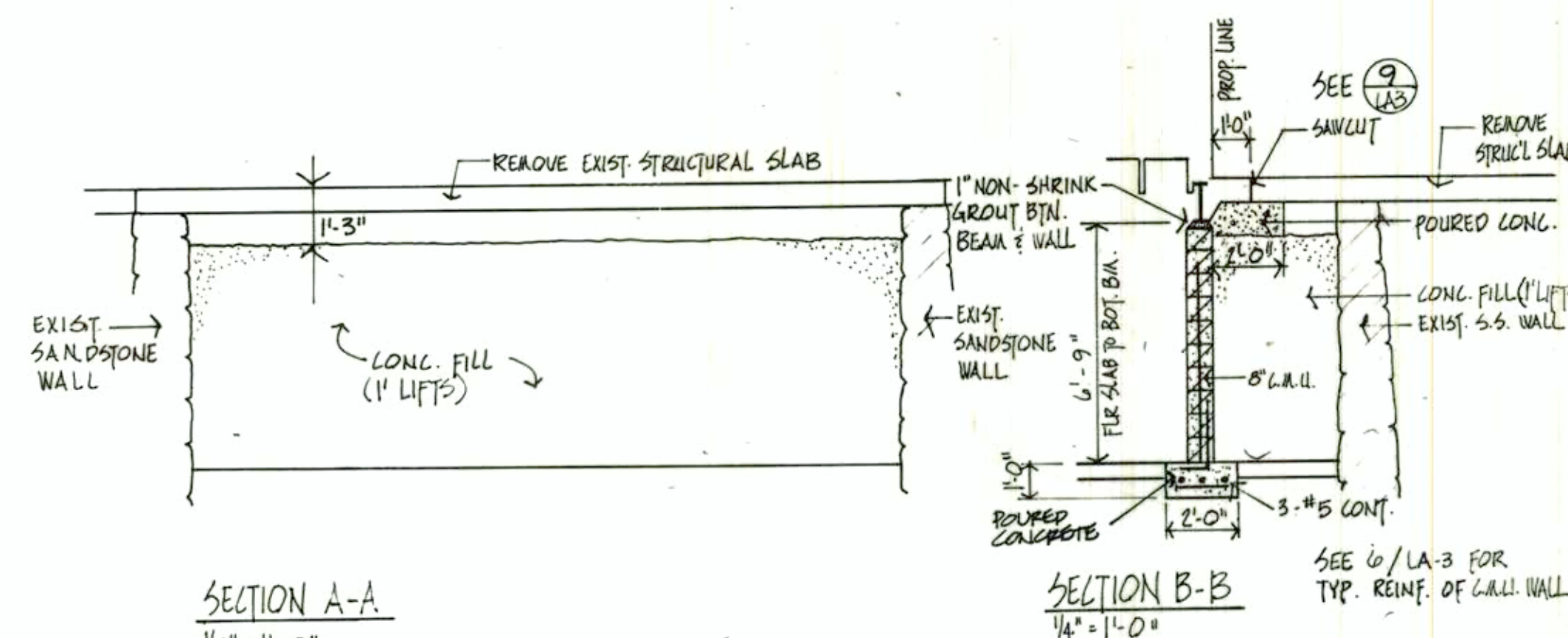
5 PLAN - VAULT NO. 1 (SELF-SERVE FURNITURE)
LA3 1/4" = 1'-0"



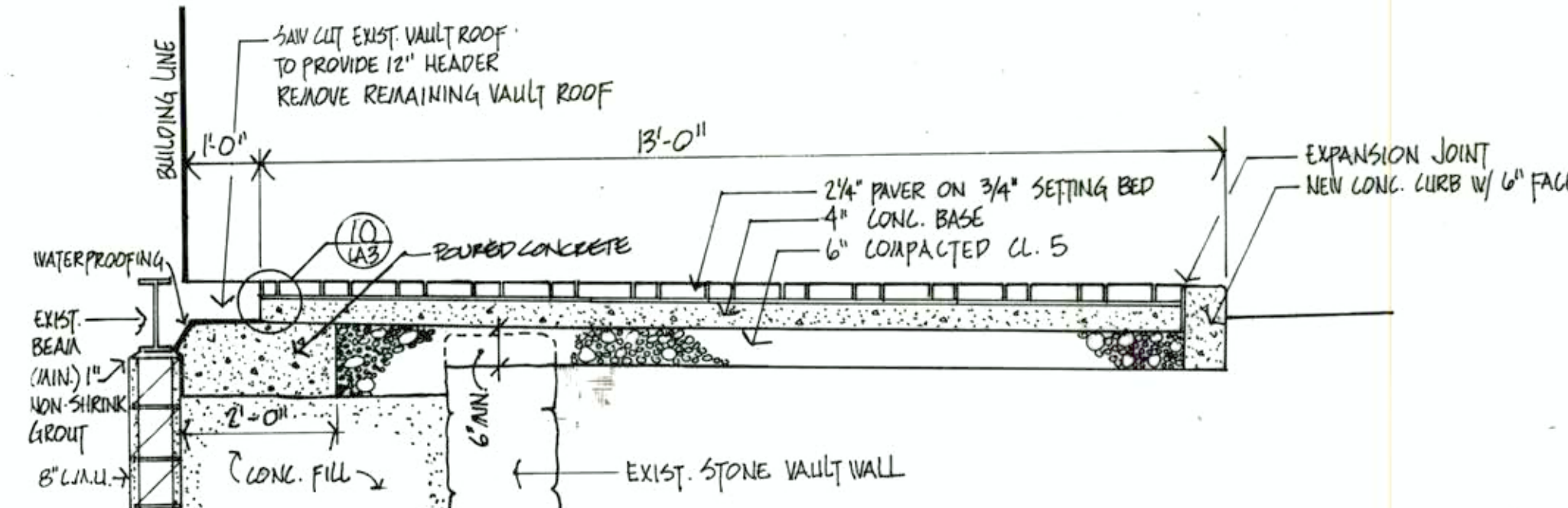
6 PLAN - VAULT NO. 2 (WESTERN SHOP)
LA3 1/4" = 1'-0"



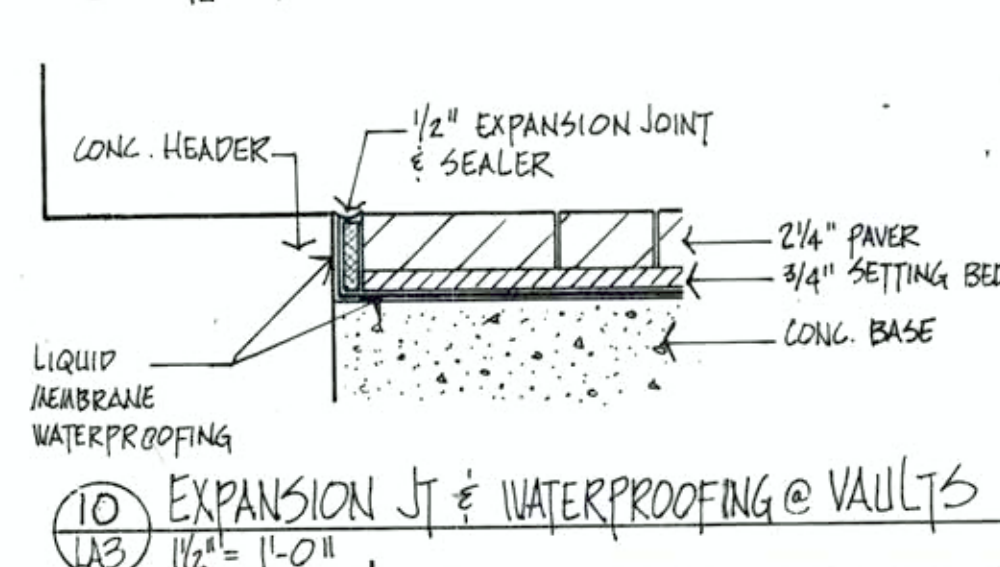
7 KIOSK FABRIC / FRAME
LA3 N.T.S.



8 PLAN - VAULT NO. 3 (H&R BLOCK)
LA3 1/4" = 1'-0"



9 SIDEWALK SECTION @ VAULT
LA3 1/2" = 1'-0"



10 EXPANSION JT & WATERPROOFING @ VAULTS
LA3 1/2" = 1'-0"

AS BUILT

Harry A. Harvala
5/22/87 REG. NO. 9269

TITLE
WEST END BUSINESS DISTRICT
STREETSCAPE RENOVATION
21st AVE WEST to 22nd AVE WEST

PROJECT NUMBER 86144

DATE 5/22/87

DRAWN DB

CHECKED MA

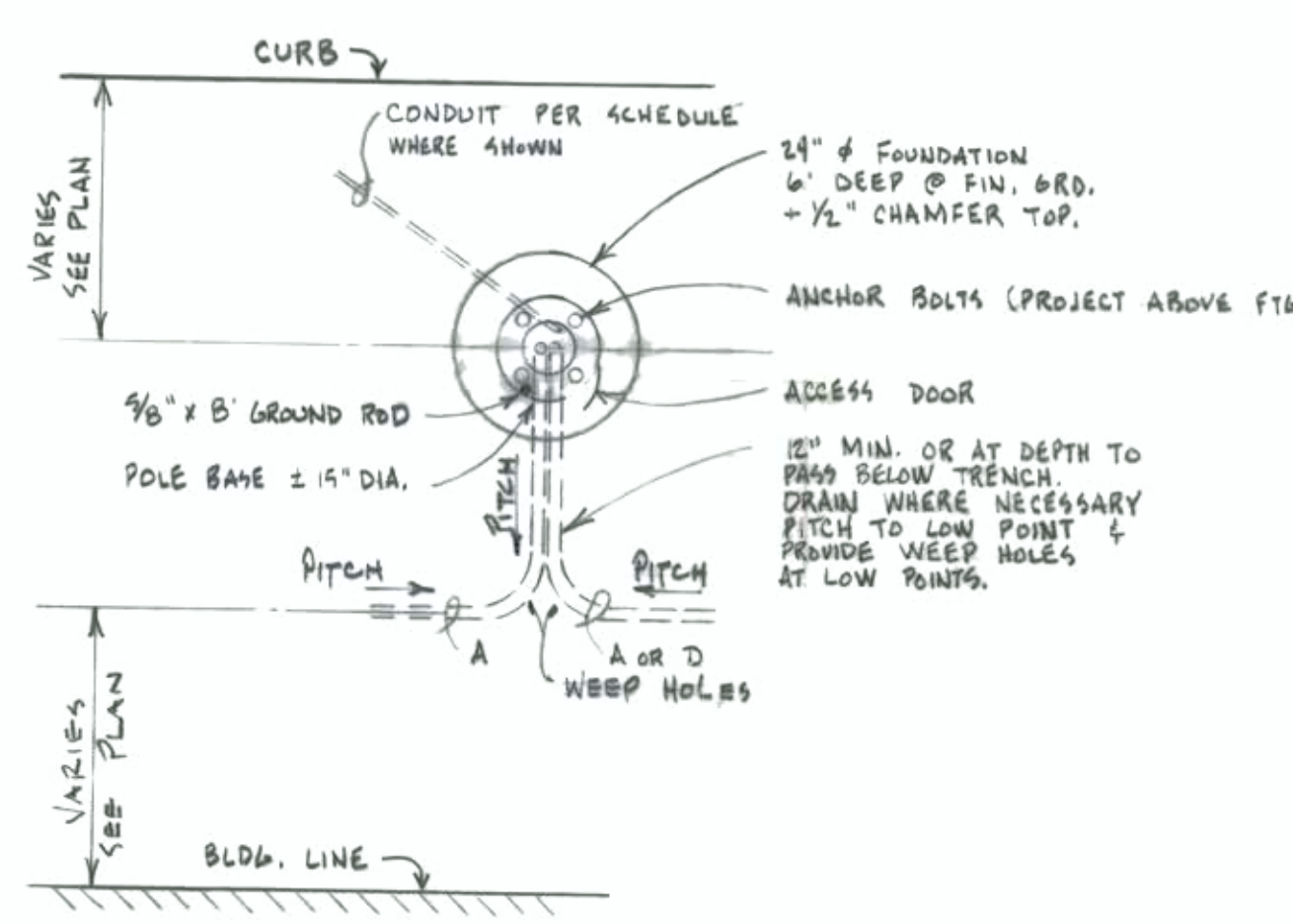
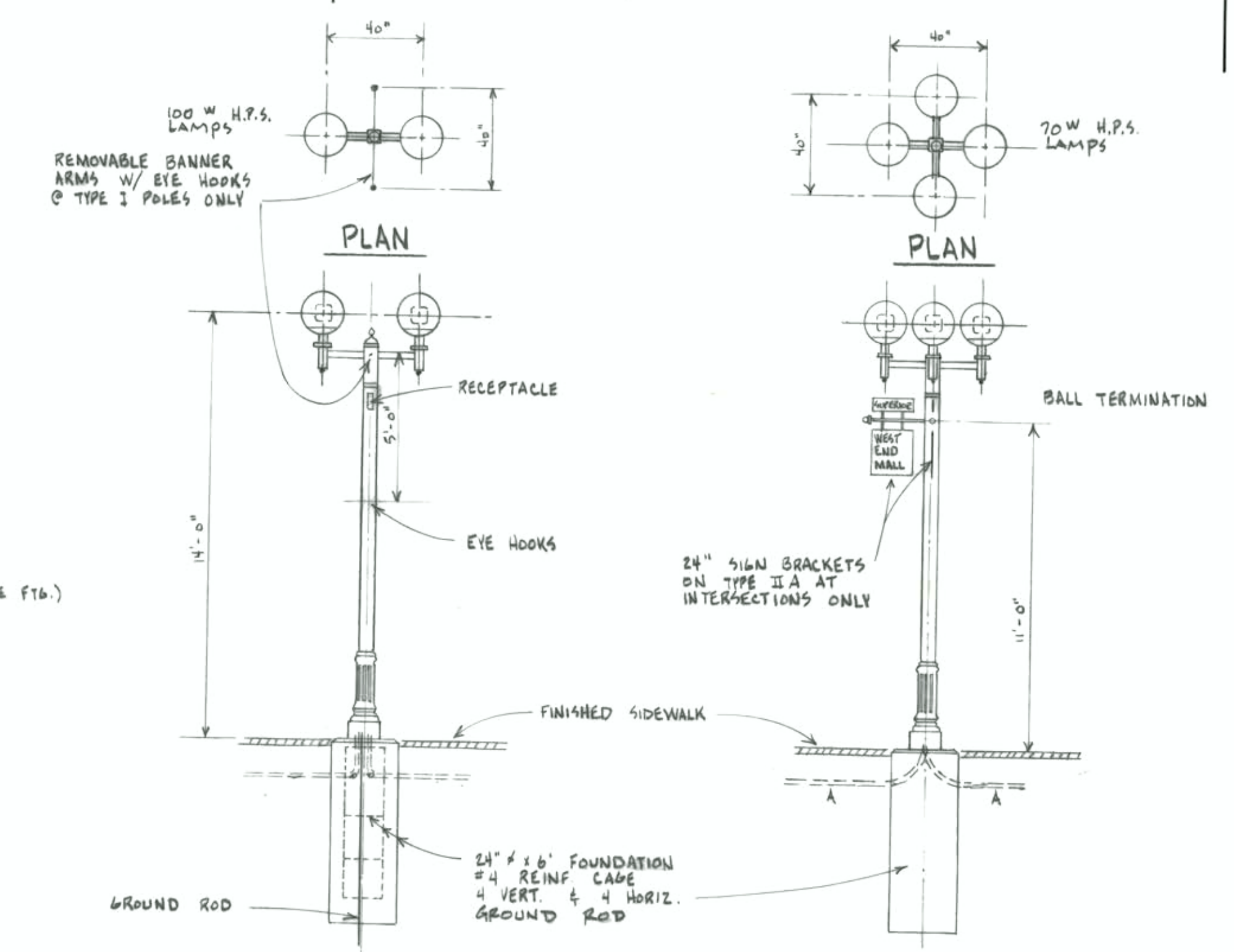
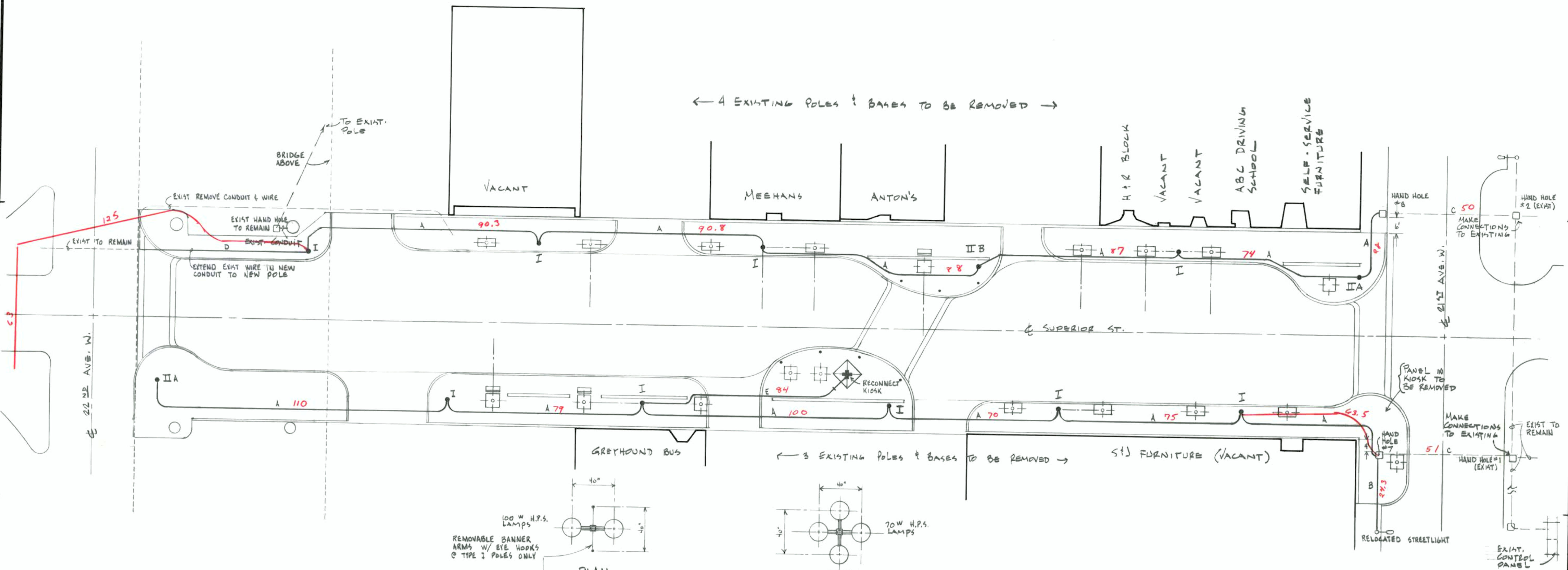
LA-3



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& BERQUIST, INC.

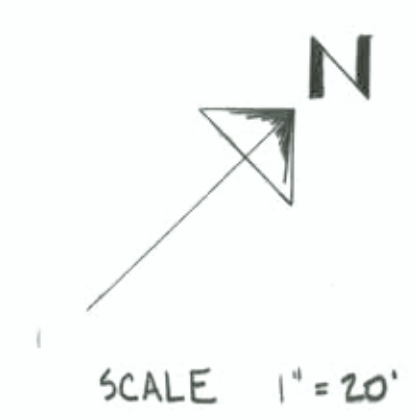
Engineers and Architects

322 W. Michigan Street
Duluth, MN 55802
(218) 727-8446



CONDUIT SCHEDULE		
A	2 #2 - ALL NITE 2 #2 - @ - 2 CIRCUITS 1 #2 - NEUTRAL 2 #4 - PART NITE 1 #6 - GROUND	2" C.
B	2 #2 - ALL NITE 1 #6 - GROUND	1 1/2" C.
C	REWIRE EXISTING CONDUIT 2 #2 - ALL NITE 2 #2 - @ - 2 CIRCUITS 1 #2 - NEUTRAL 1 #6 - GROUND 2 #4 - PART NITE	EXIST. C.
D	3 #12 - EXIST IN NEW CONDUIT EXTENSION	1 1/2" C. NEW
E	3 #12 -	1 1/2" C. EXIST

LEGEND	
---	EXISTING CONDUIT - SEE SCHEDULE
A	NEW CONDUIT - SEE SCHEDULE
IIA	LIGHT POLE - TYPE DENOTED



AS BUILT

TITLE
ELECTRICAL PLAN & DETAILS
WEST END BUSINESS DISTRICT
STREETSCAPE RENOVATION
21ST AVE. WEST TO 22ND AVE. WEST

PROJECT NUMBER: 86144
DATE: MARCH 1987
DRAWN: KEJ
CHECKED: JEN
SEAWAY ENGINEERING CO. #6190

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
John E. Harvala
Date March 1987 Reg. No. 4998

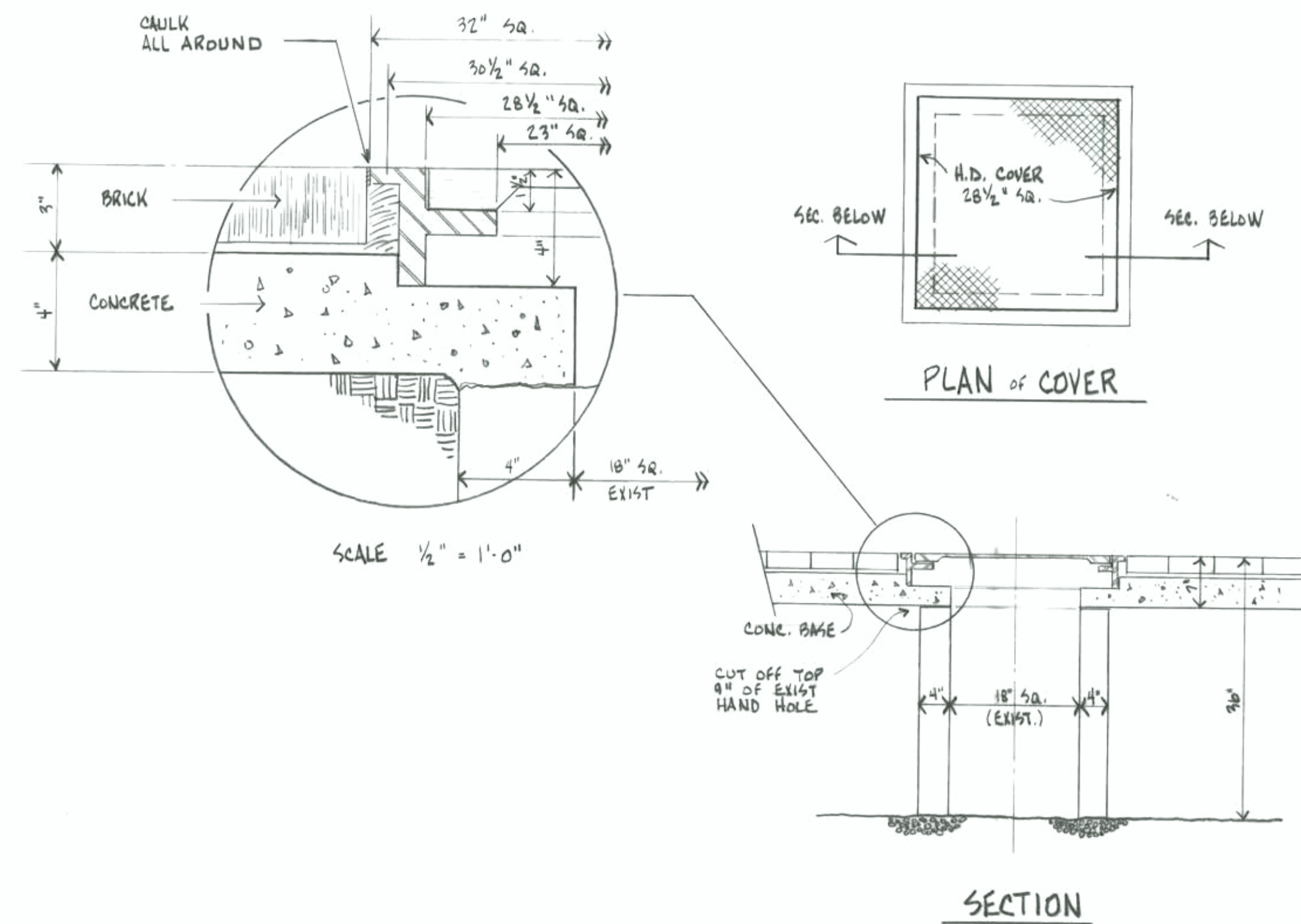
CITY OF DULUTH PROJECT NO. 8155RS86



LARSEN, HARVALA
& BERQUIST, INC.

Engineers and Architects

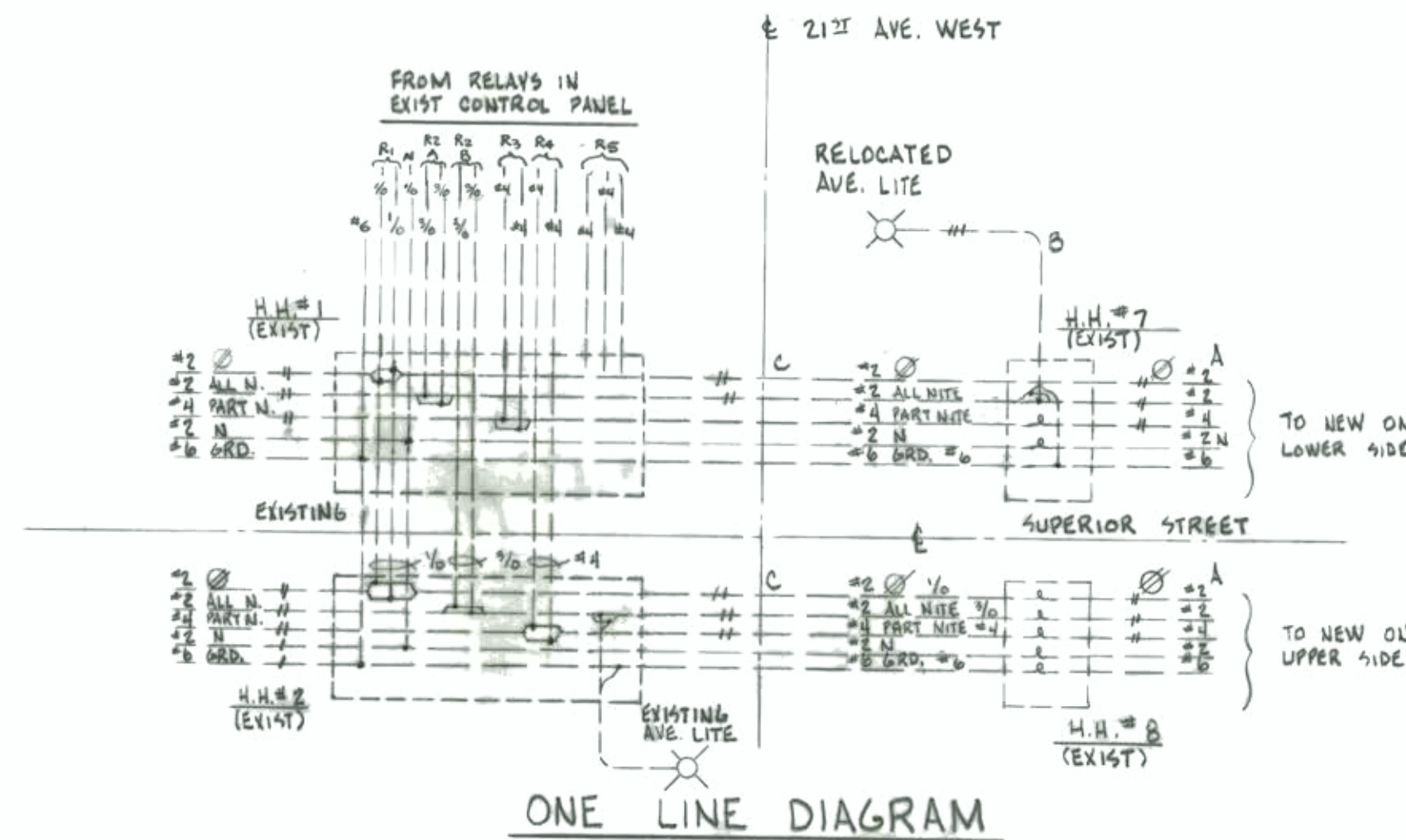
322 W. Michigan Street
Duluth, MN 55802
(218) 727-8446



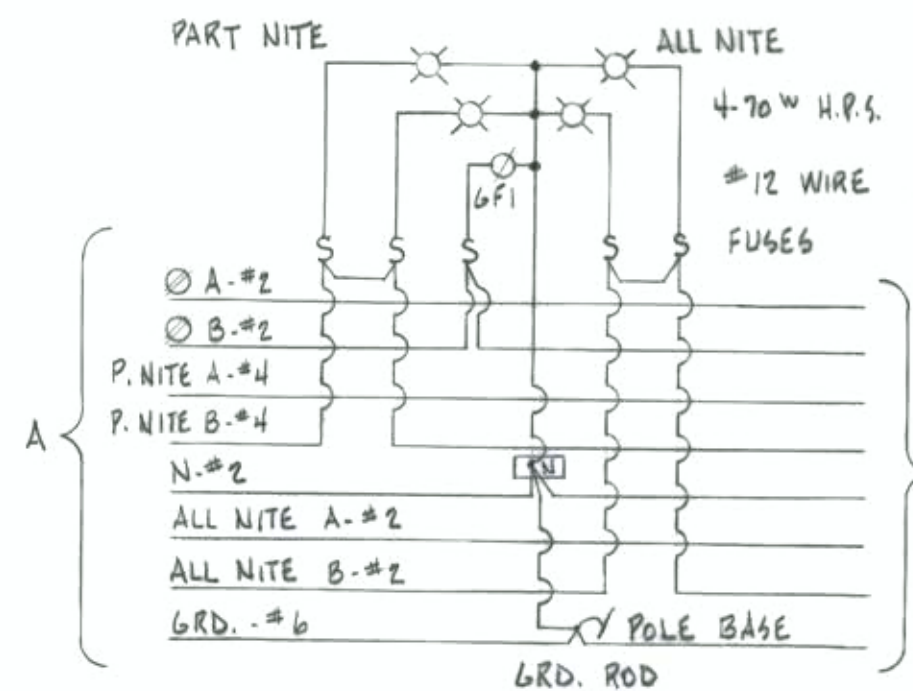
EXIST HAND HOLE IN BRICK AREAS
SCALE 1/4" = 1'-0"

RELAYS IN
EXISTING
CONTROL PANEL

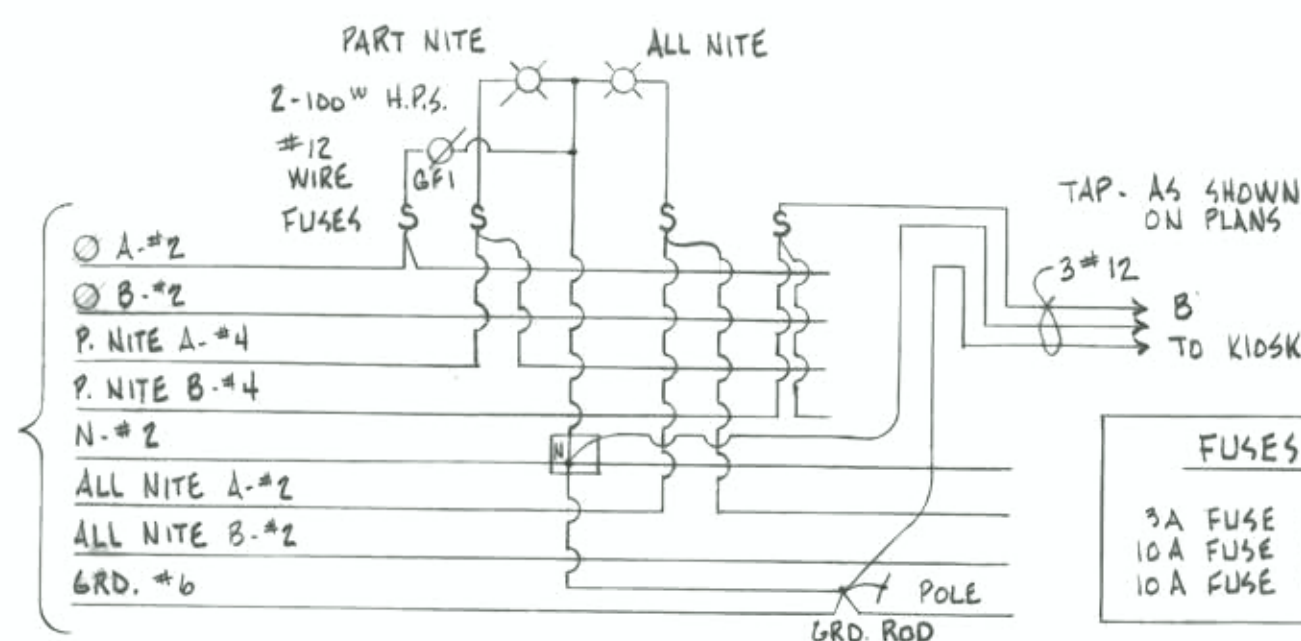
- R1 RELAY - 5-1/2
- R2 RELAY - ALL NITE LOWER - 2-3/4
- R3 RELAY - ALL NITE UPPER - 2-3/4
- R4 RELAY - PART NITE - LOWER - 3-1/4
- R5 RELAY - PART NITE - UPPER - 3-1/4
- R6 RELAY - NOT USED - 3-1/4



ONE LINE DIAGRAM



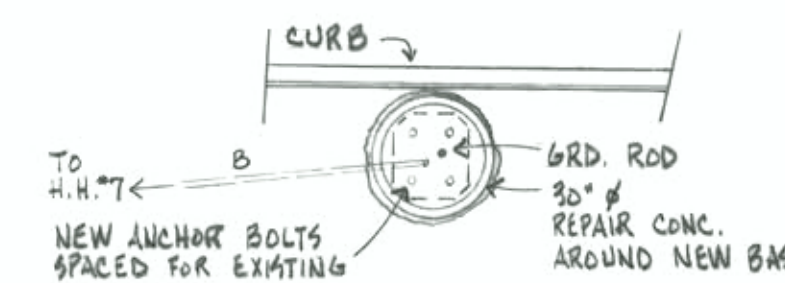
TYPE II



TYPE I

TYPICAL WIRING DIAGRAMS @ TYPE I & II POLES

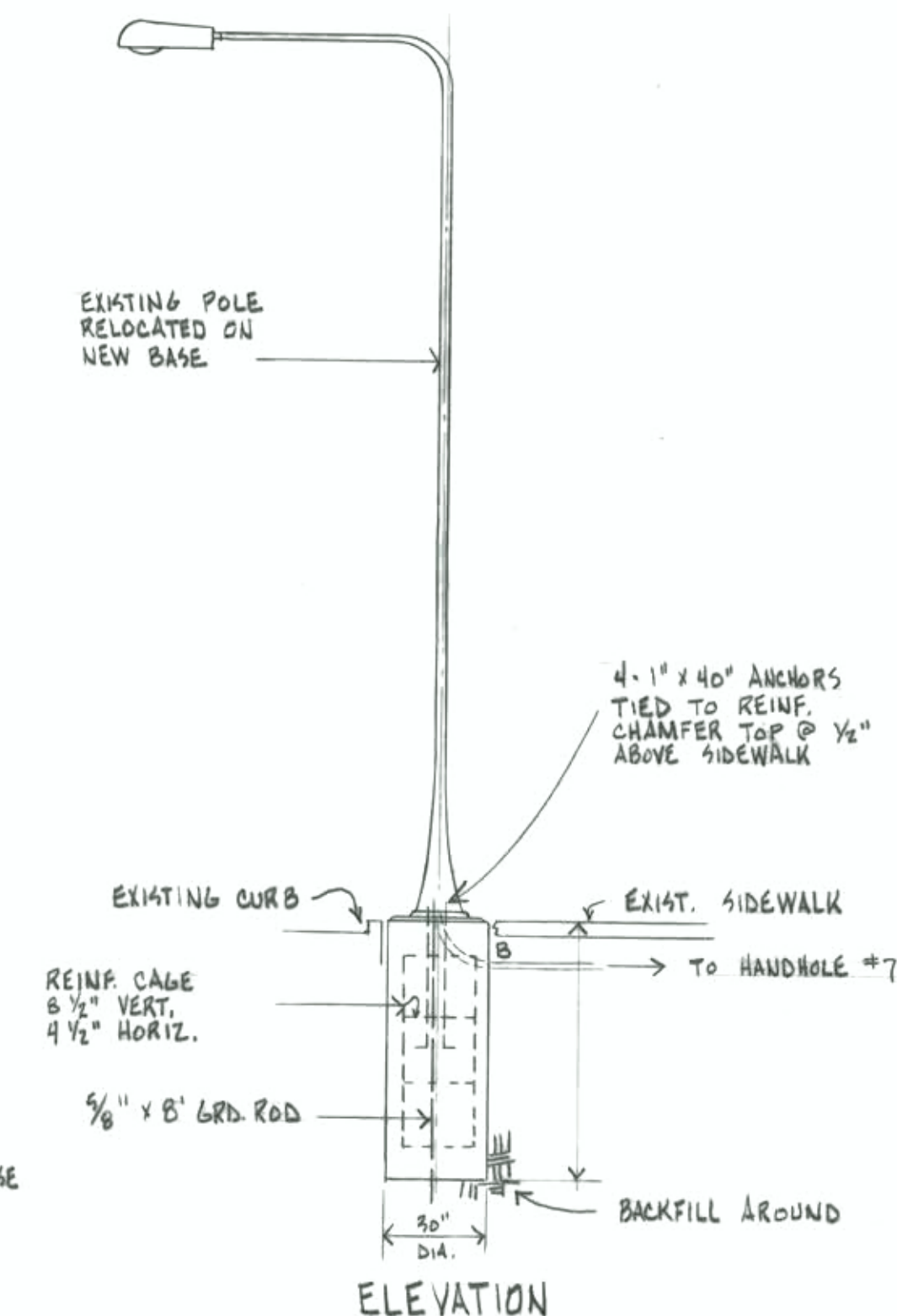
- FUSES
- 3A FUSE FOR SINGLE LAMP
 - 10A FUSE FOR RECEPTACLE
 - 10A FUSE FOR KIOSK



PLAN

RELOCATED STREET LIGHT

SCALE 1/4" = 1'-0"



ELEVATION

AS BUILT

TITLE
ELECTRICAL DETAILS
WEST END BUSINESS DISTRICT
STREETSCAPE RENOVATION
21st AVE. WEST TO 22nd AVE. WEST

PROJECT NUMBER: 86144

DATE: MARCH 1987

DRAWN: KEJ

CHECKED: JEN

SEAWAY ENGINEERING Co. # 8690

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
John E. Norland
Date: Mar. 1987 Reg. No. 4998

E 2 of 2

CITY OF DULUTH PROJECT NO. 8155RS86