

**EXPANSION JOINT SPECIFICATIONS - ONFLEX**

Expansion Portion shall be EPDM with the following properties:

Hardness	ASTM D-2240	60-70 points.
Peel Strength	ASTM D-1290	2000 psi minimum.
Elongation at break	D-1112	200% minimum.
Low temperature	D-1112	no cracks at -60°F.
Weather resistance	D-1171	no cracks
Ozone cracking	D-1149	no cracks
Water resistance	D-1171	no cracks
Compression set (22hr. @150°F)	D-397 B	35% max. volume swell
NA. Line call out	D2A480, 1 1/4, 1 1/4	tolerance +1/32\"/>

Aluminum Portion:  
Aluminum shall conform to 6061-T-6.

**SEALANT SPECIFICATIONS**

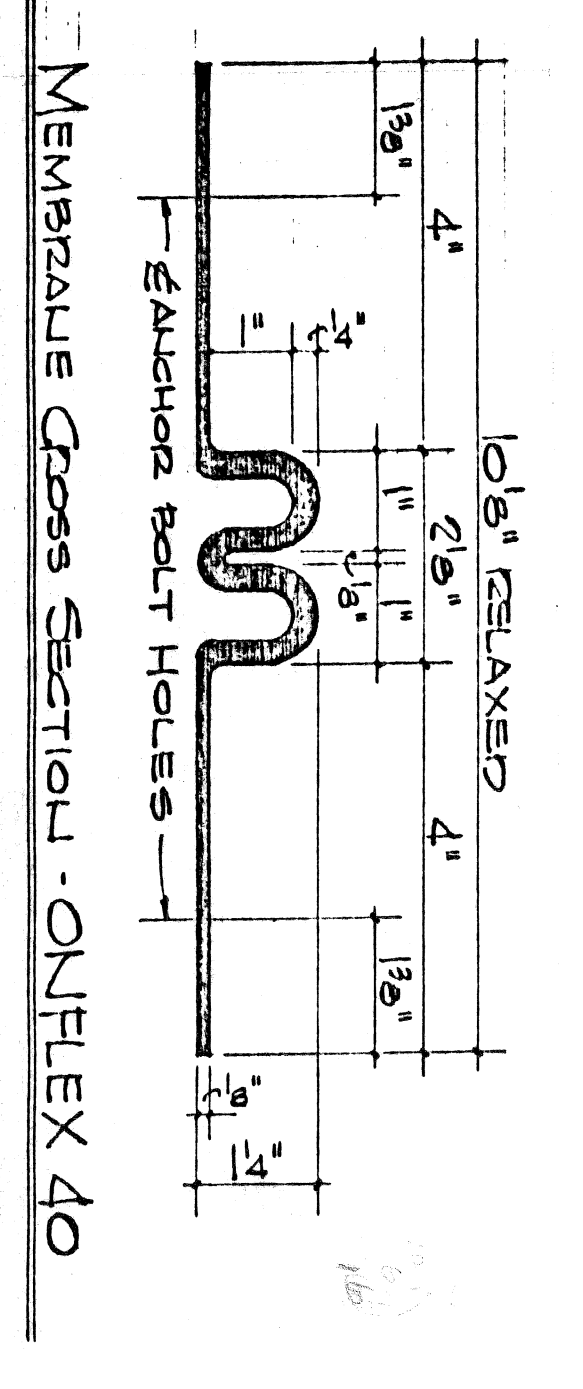
min.	25	max.	35
kg/hr.	max.	28	lb. min.
1	year	min.	non-toxic

**ANCHORAGE SPECIFICATIONS**

Anchorage material shall be stainless steel.

**INSTALLATION INSTRUCTIONS**

- Membrane shall be shop fabricated for exact length from these shop drawings after approval. Anchor bolt location and concrete blockout dimensions shall be as shown on this sheet.
- Required length of membrane for the expansion joint shall be on the jobsite along with anchors, sealant, and hold down panels.
- Start at low side of expansion joint on bridge.
- Spread sealant across entire bottom of notch.
- Wipe top and bottom flat side of membrane with solvent.
- Place membrane over anchor bolts.
- Spread sealant over top surface of flat portion of membrane and up side wall.
- Spread solvent.
- Place hold down panels over membrane and secure with nuts, flat and lock washers.



**BILL OF MATERIALS**

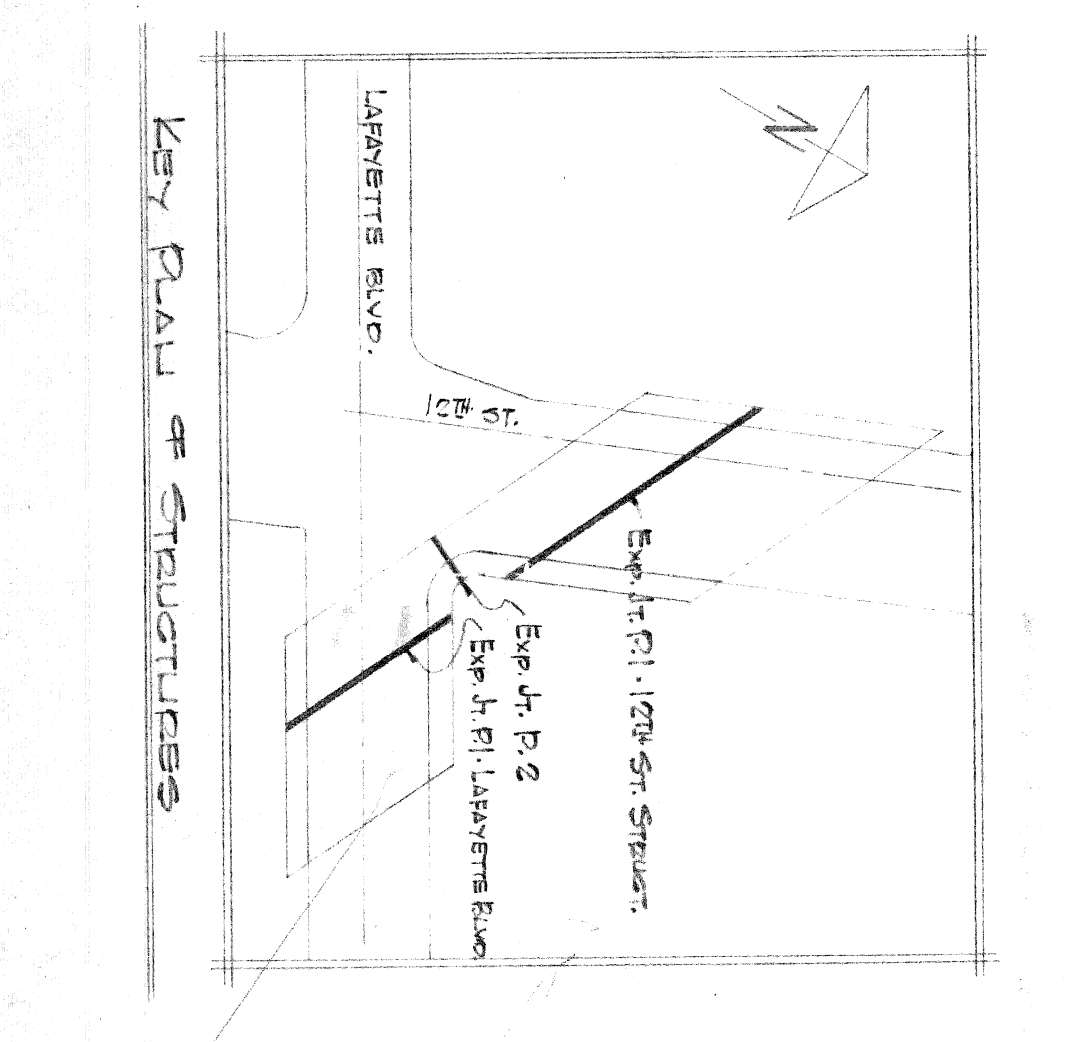
MEMBRANE	DESCRIPTION	QUANTITY	SEE
MEMBRANE A	(ONFLEX 40)	1	SEE DETAIL
MEMBRANE B		1	SEE DETAIL
MEMBRANE C		1	SEE DETAIL
MEMBRANE D		1	SEE DETAIL

ITEM	DESCRIPTION	QUANTITY	UNIT
00	HEX HEAD BOLTS	2	EA
00	HEX HEAD NUTS	2	EA
00	FLAT & LOCK WASHERS	2	EA
00	CONCRETE INSERTS	2	EA

CITY OF DENVER  
JITX ENGINEERING DEPARTMENT  
**NOT APPROVED**  
Please Rebuild With Changes Made  
As Indicated in Red  
Date: 5/27/2013  
Scale: As Shown  
Sheet: 11 of 12

**STRUCTURAL RUBBER FABRICATORS COMPANY**  
1000 W. 10th Ave., Suite 100  
Denver, CO 80202  
Tel: 303.733.2960  
Fax: 303.733.2960  
www.rubberfabricators.com

DATE: 2/28/02  
DRAWN BY: [Signature]  
APPROVED BY: [Signature]  
REVISIONS: [Table]



**GENERAL COMMENTS:**

- SUBMIT DETAILS CUTS OR
- REPAIR ABOUT THE SOFT CHANNELS
- SEALANT FOR FACE OF GUMMERS

WITH RESPECT TO THESE SHEET DIMENSIONS

ALUM IN RECONSTRUCTION? MEMBRANE OVER 1/2\"/>

QUESTIONS -

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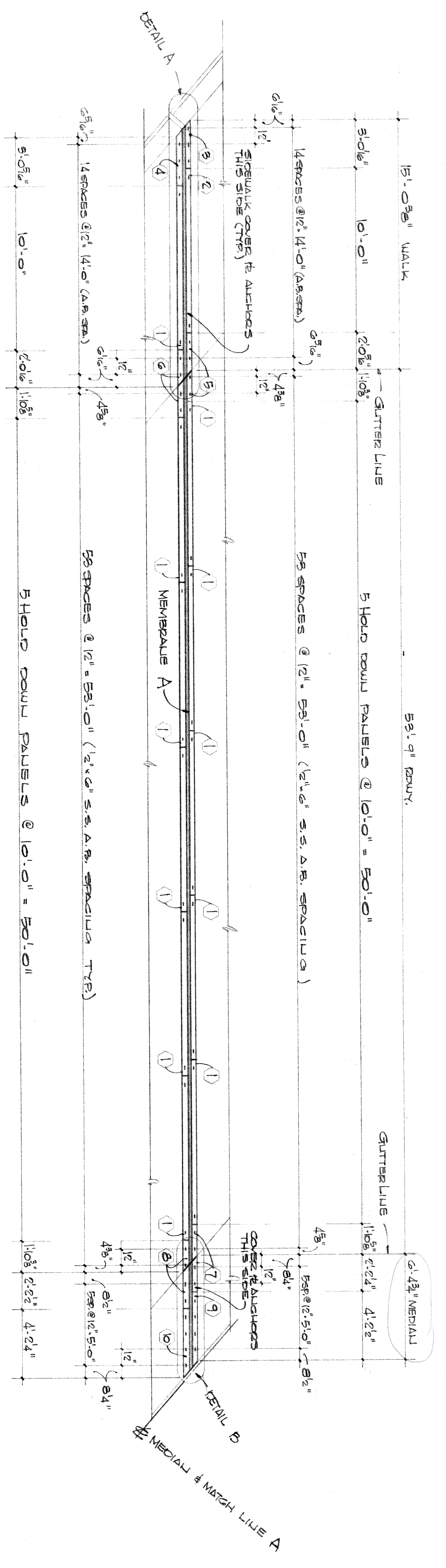
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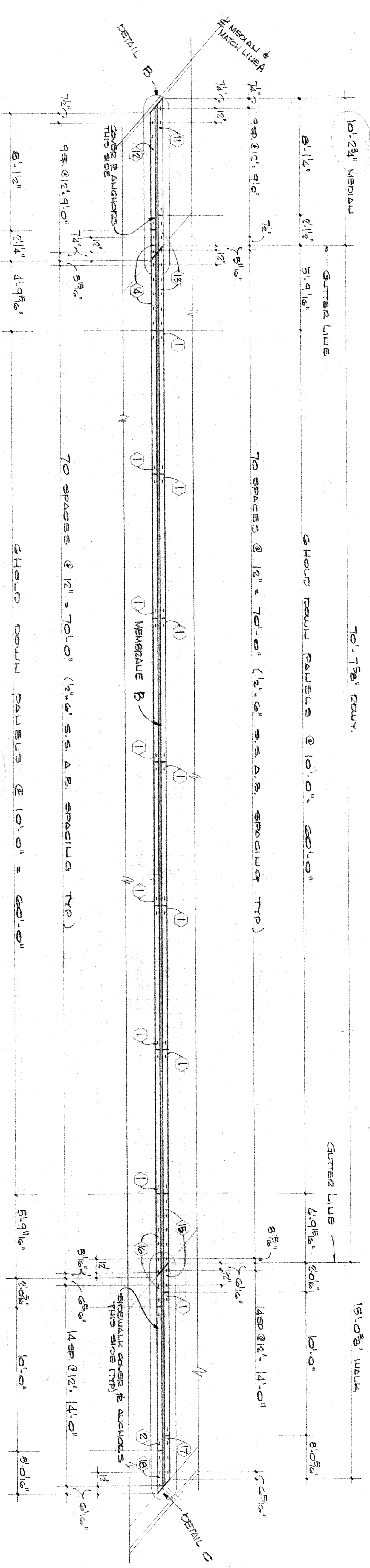
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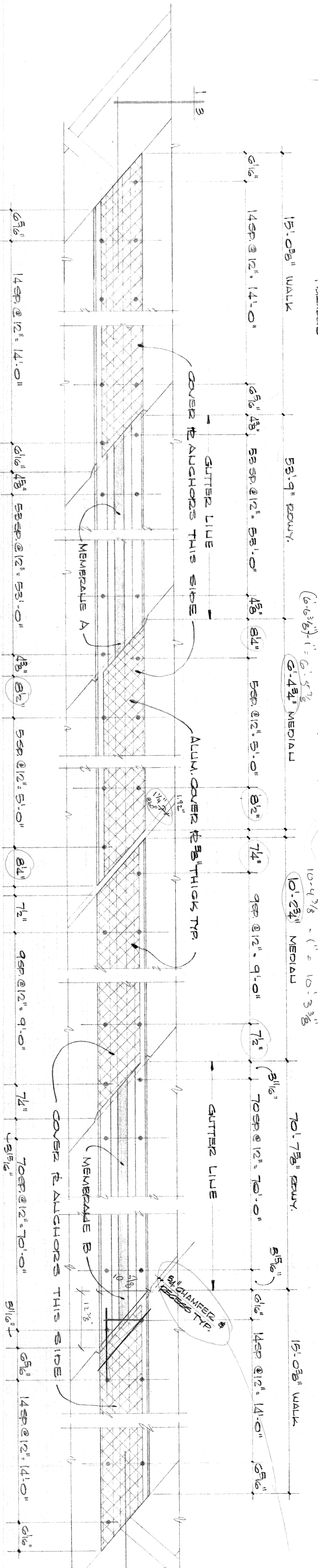




QUELEX Model 40 LAYOUT AT PIER 1 - EAST HALF (STAGE I) 12<sup>TH</sup> STREET STRUCTURES  
 1 SPACES  
 1 LOCATION



QUELEX Model 40 LAYOUT AT PIER 1 - WEST HALF (STAGE II) 12<sup>TH</sup> STREET STRUCTURES  
 1 SPACES  
 1 LOCATION



DETAIL A

DETAIL B

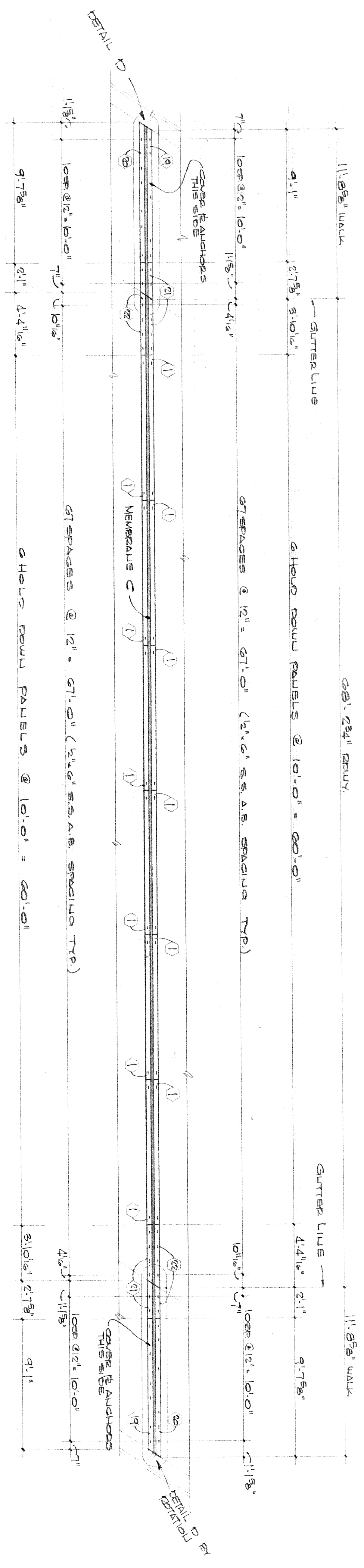
DETAIL C

RECESS NOT PER. AND THIS JOB, MEMBRANE APPEARS TO BE DETAIL D WITHOUT RECESS & PIPES WITH THE RECESS, & THEREBY WAY IS OK BUT BE CONSID. TOGETHER!

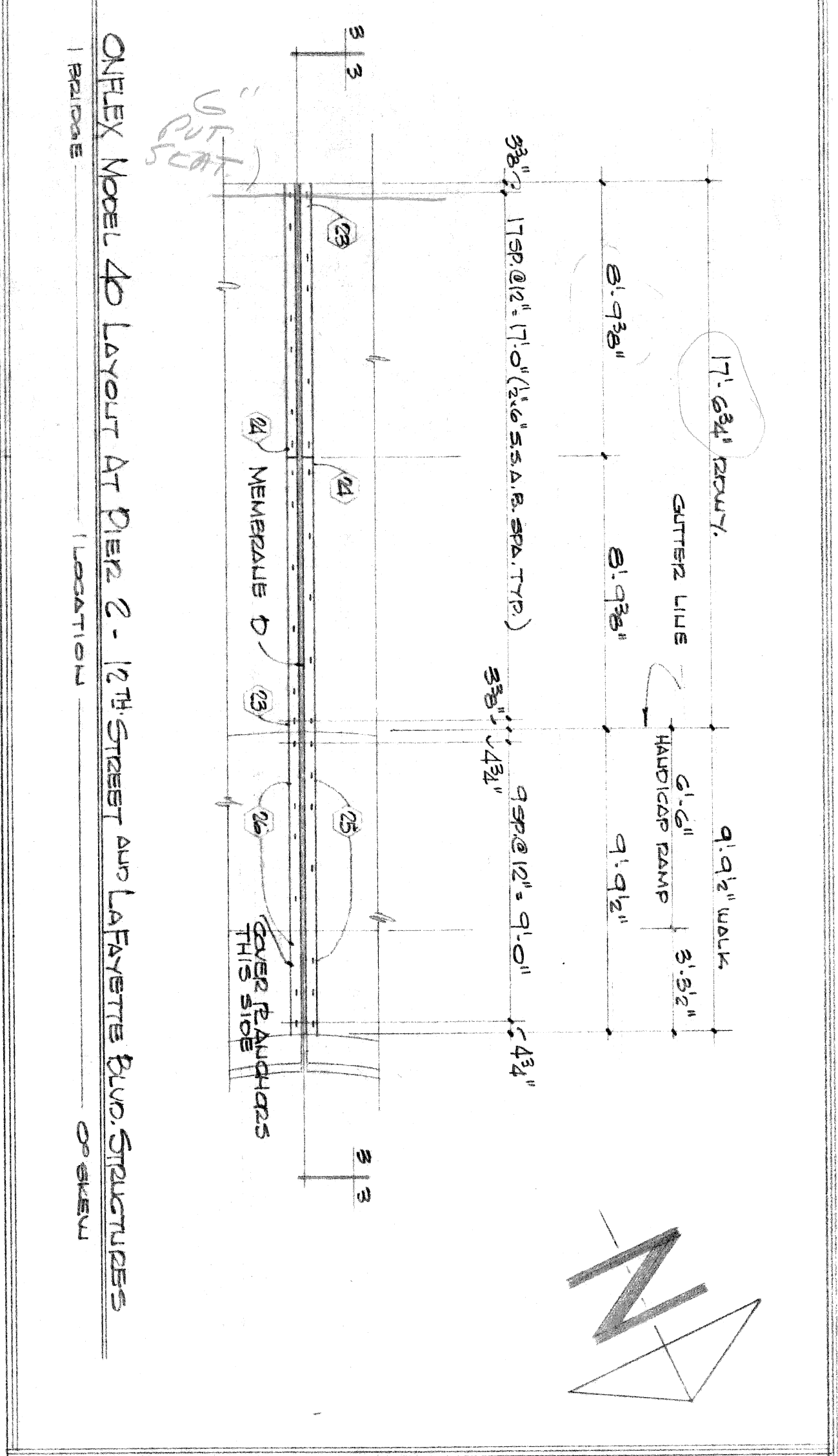
CITY OF DETROIT  
 CITY ENGINEERING DEPARTMENT  
**NOT APPROVED**  
 Please Resubmit With Changes Made  
 As Indicated in Red  
 Date: 11-15-92  
 Contract No. 1118

STRUCTURAL PRODUCTS COMPANY PO BOX 2059 TULLOCH, ILLINOIS		APPROVED BY: DRAWN BY: PA REVISION
DATE: 11/15/92	SHEET NO: 1128	DRAWING NUMBER: M-82-4
MICHAEL DEPARTMENT OF TRANSPORTATION MAYNIE COUNTY		PROJECT NO: 82-22-58
SHEET 1128		PROJECT NO: 82-22-58

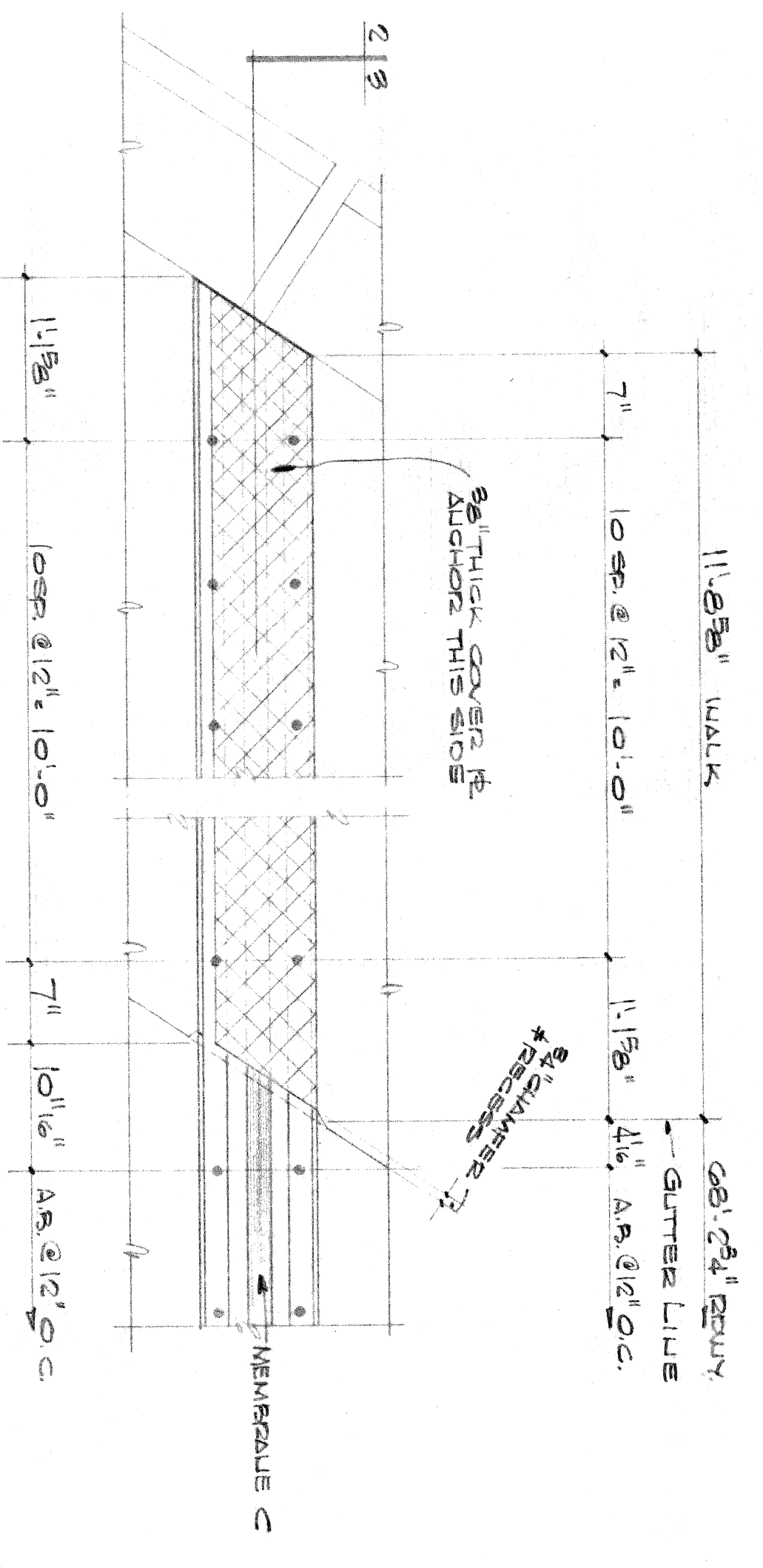




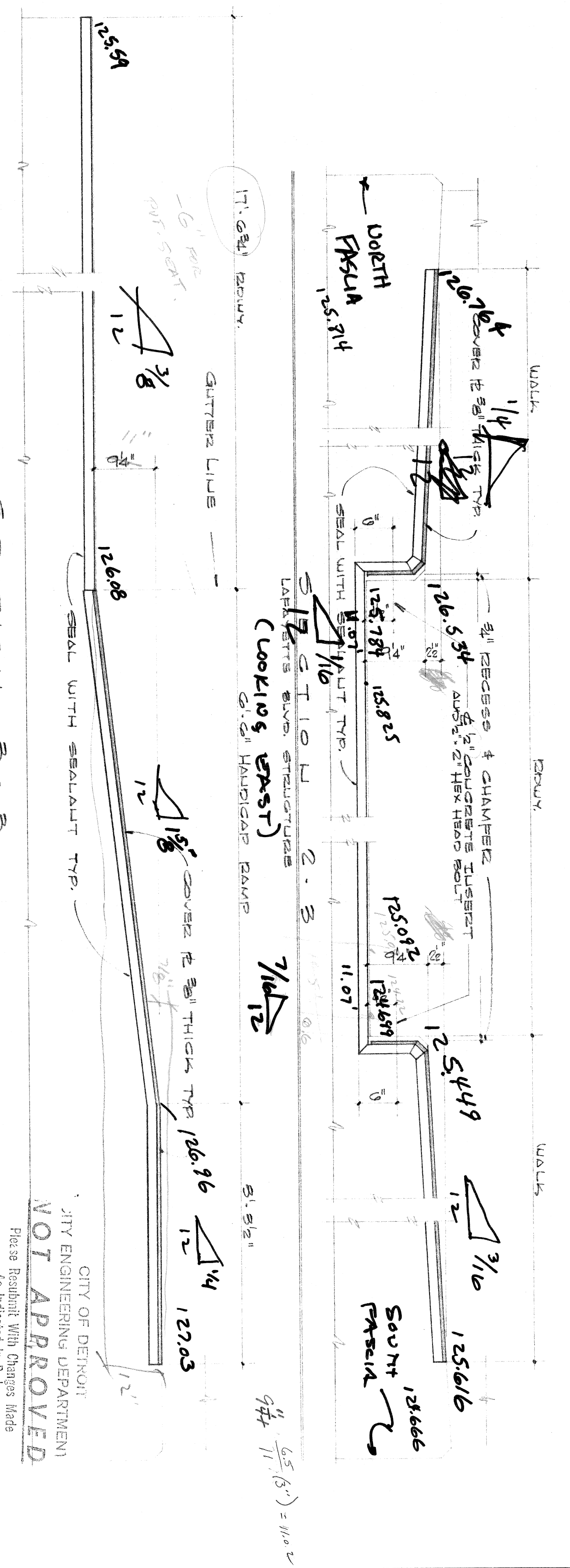
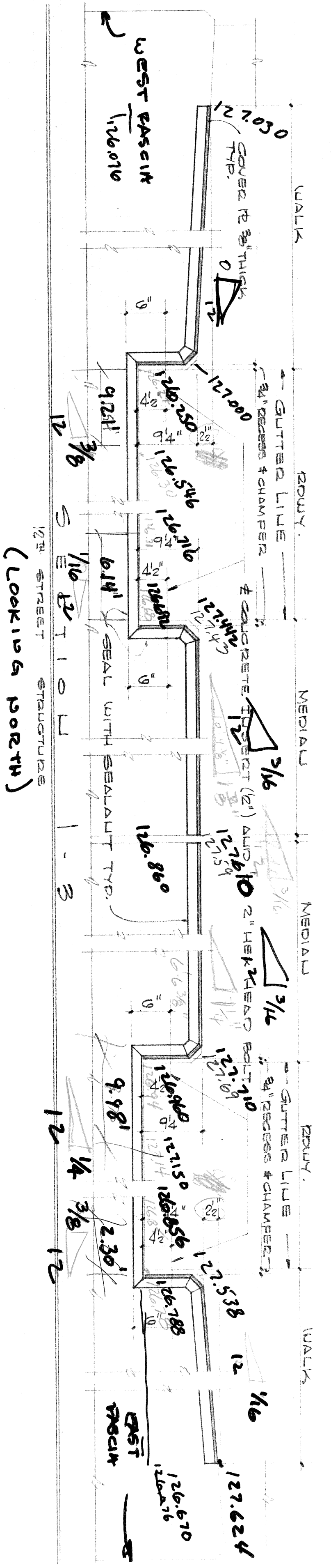
ONELEX MODEL 40 LAYOUT AT PIER 1 - LAFAYETTE BLVD. STRUCTURES



ONELEX MODEL 40 LAYOUT AT PIER 2 - 12TH STREET AND LAFAYETTE BLVD STRUCTURES



DETAIL D

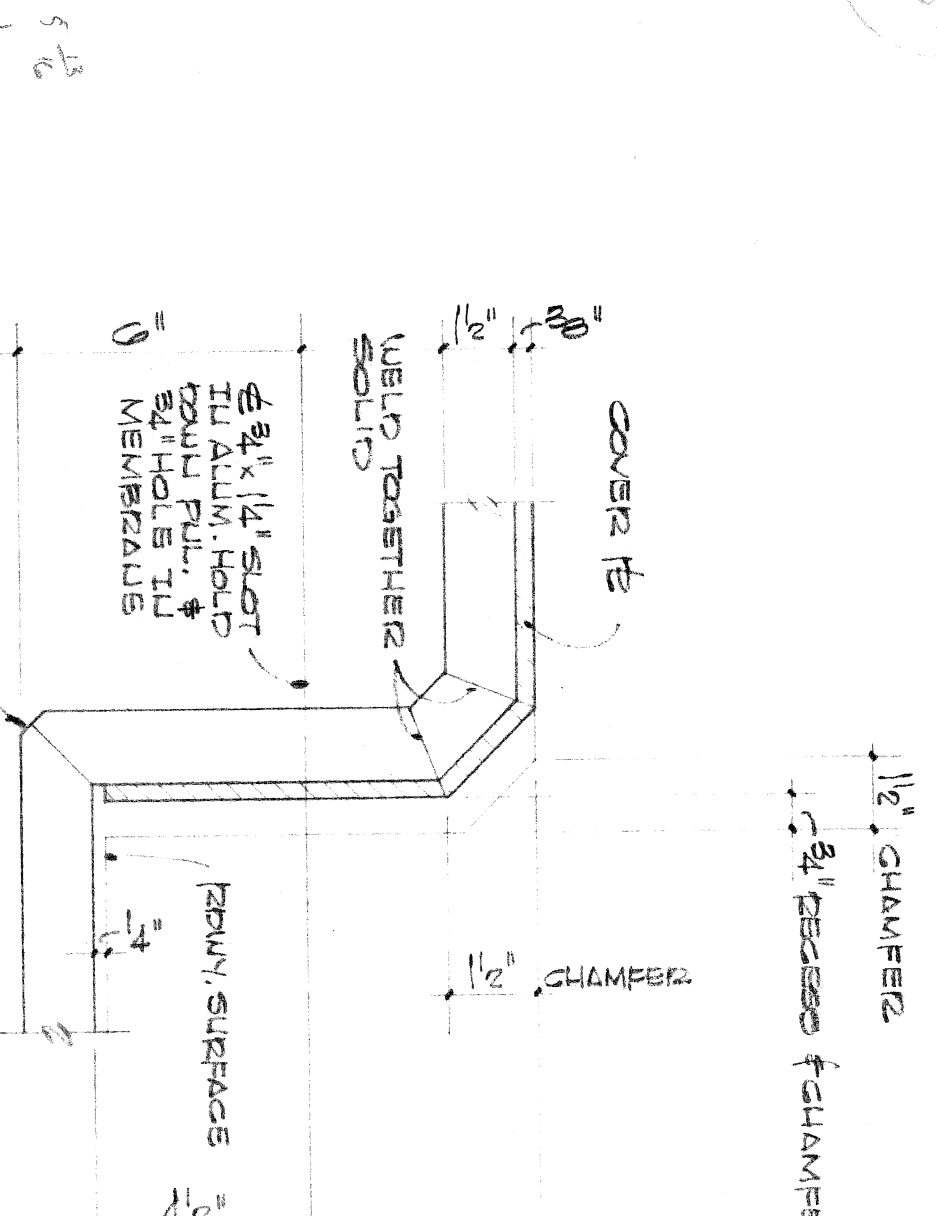
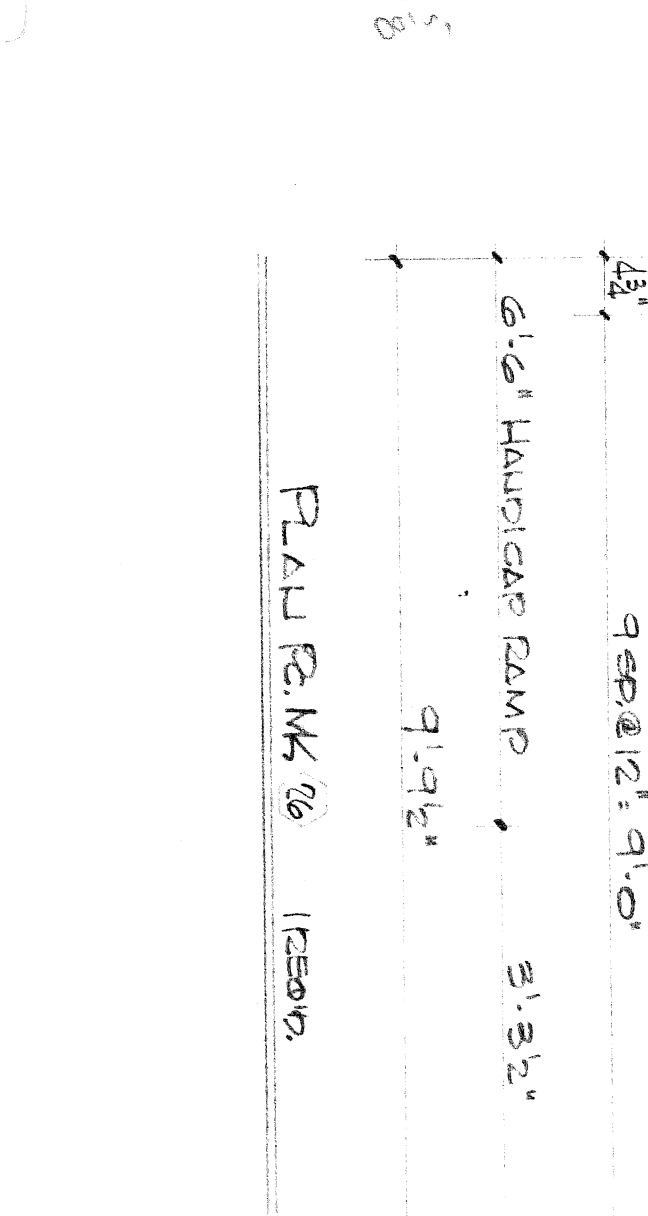
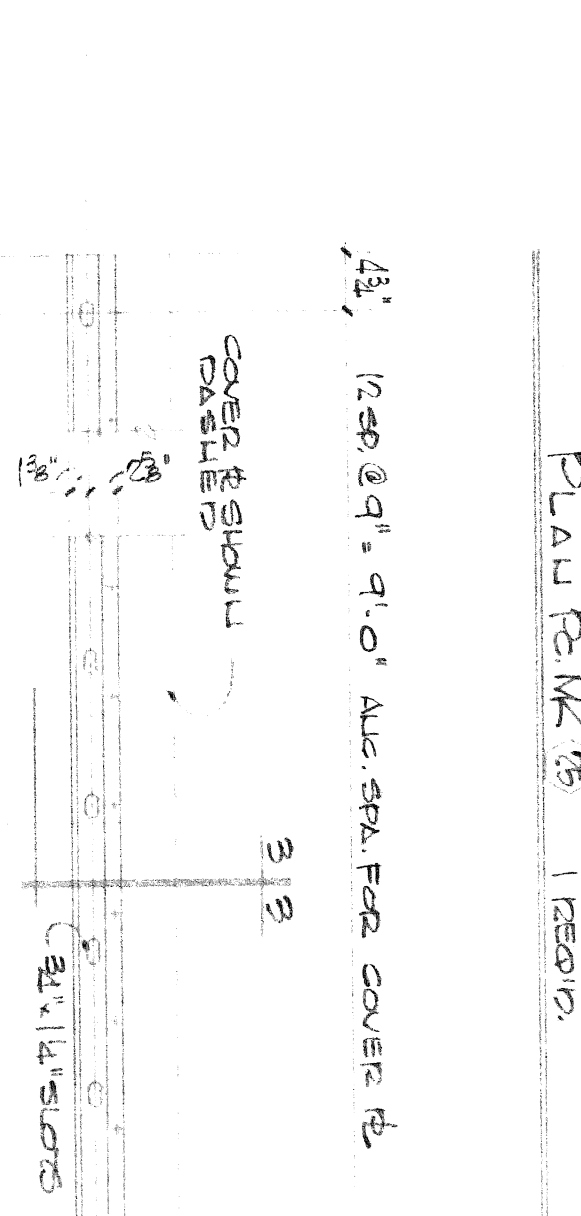
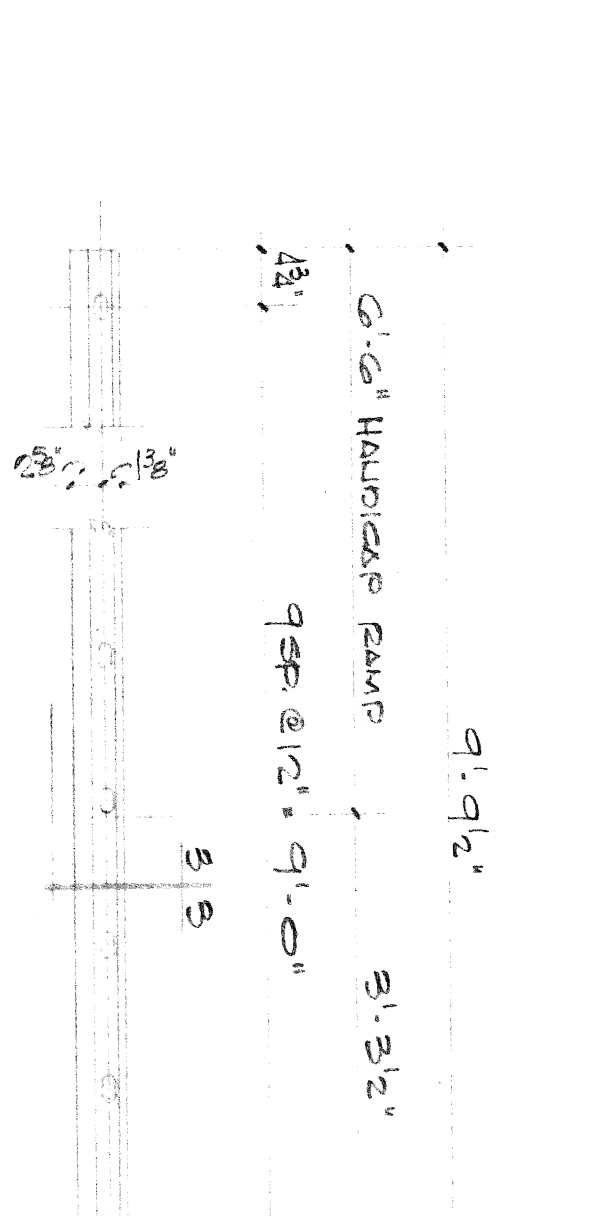
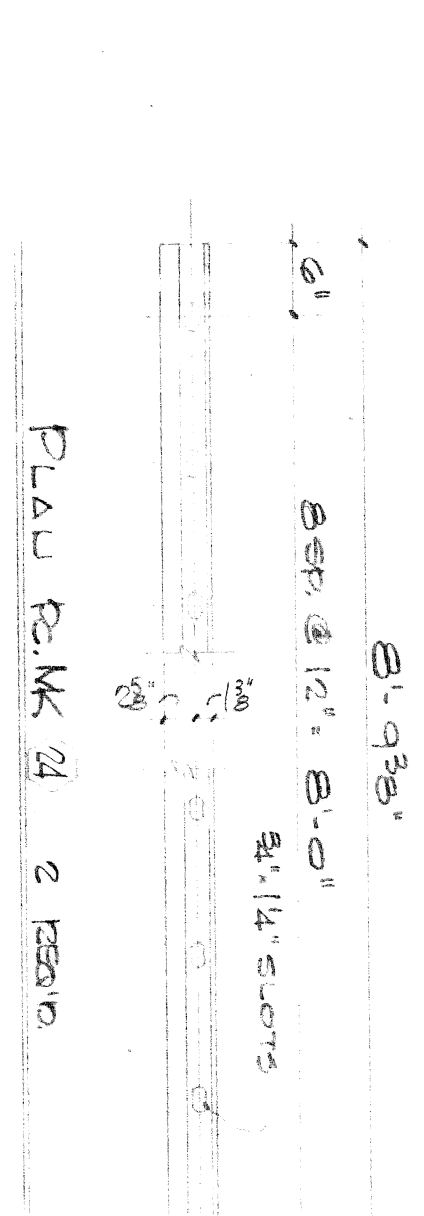
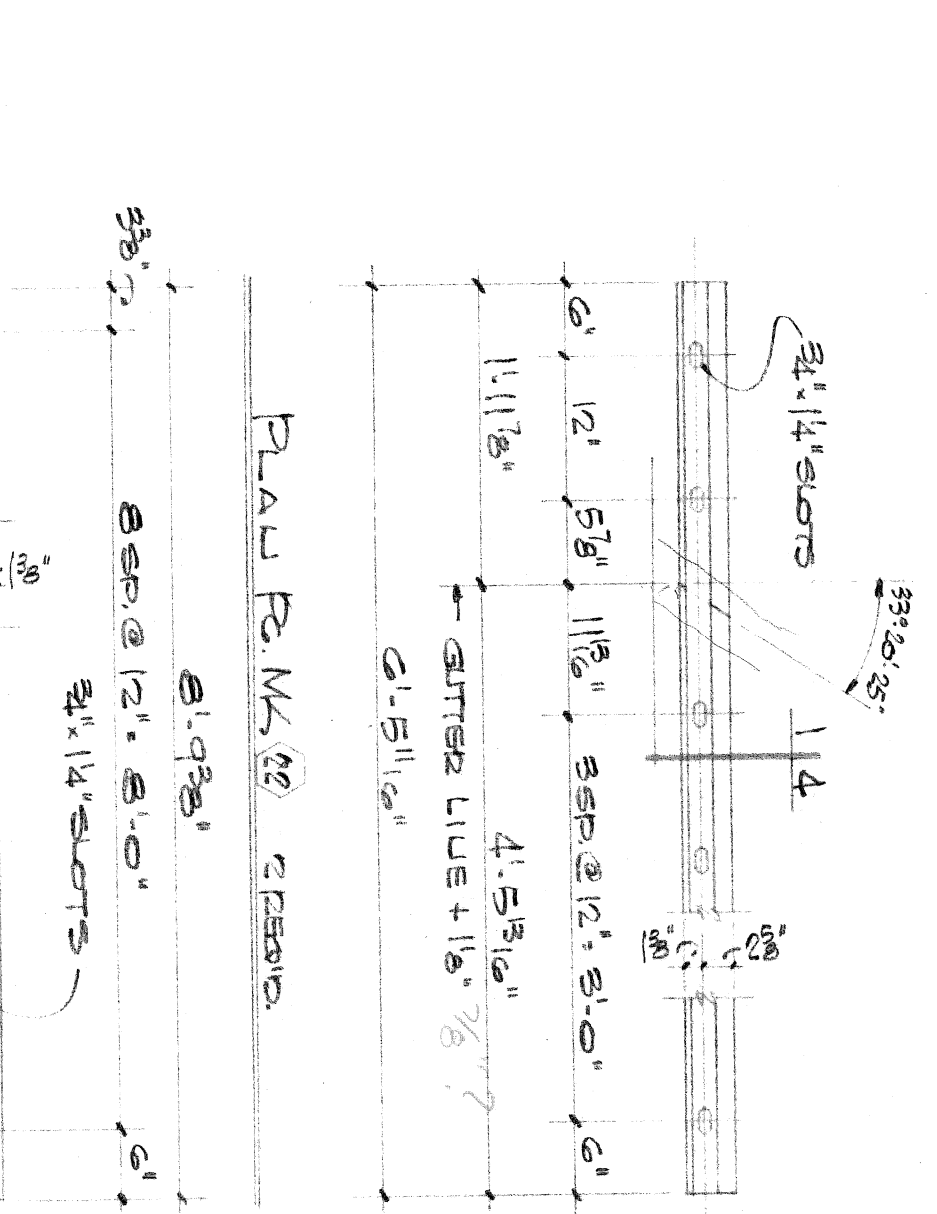
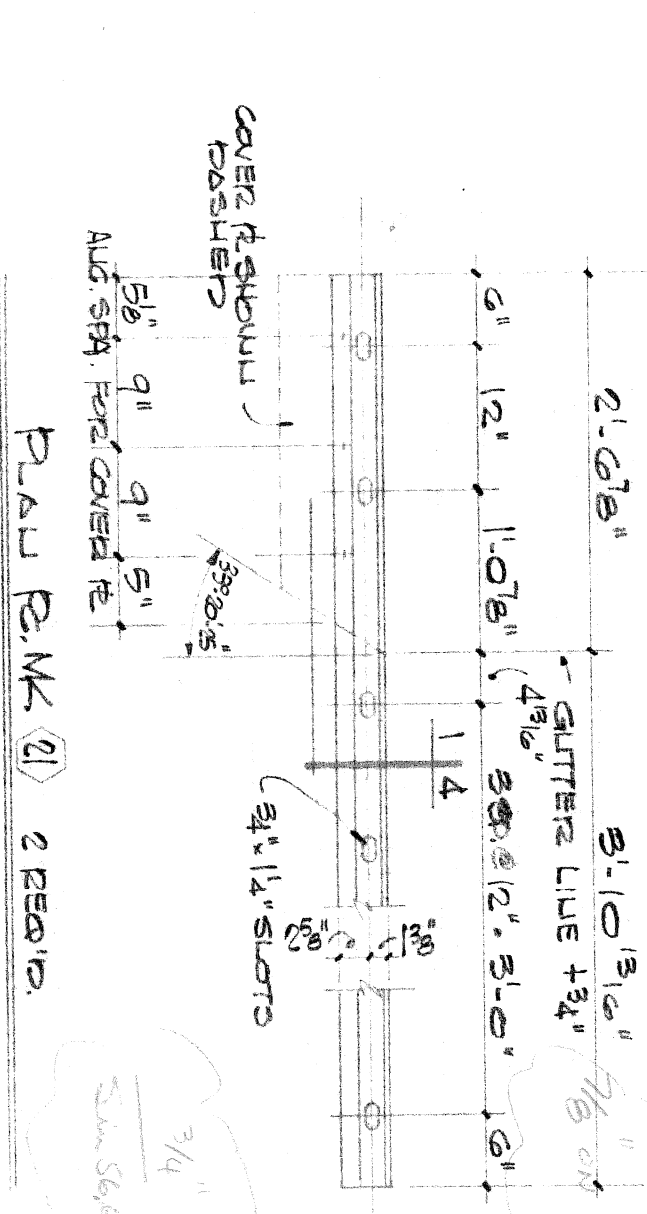
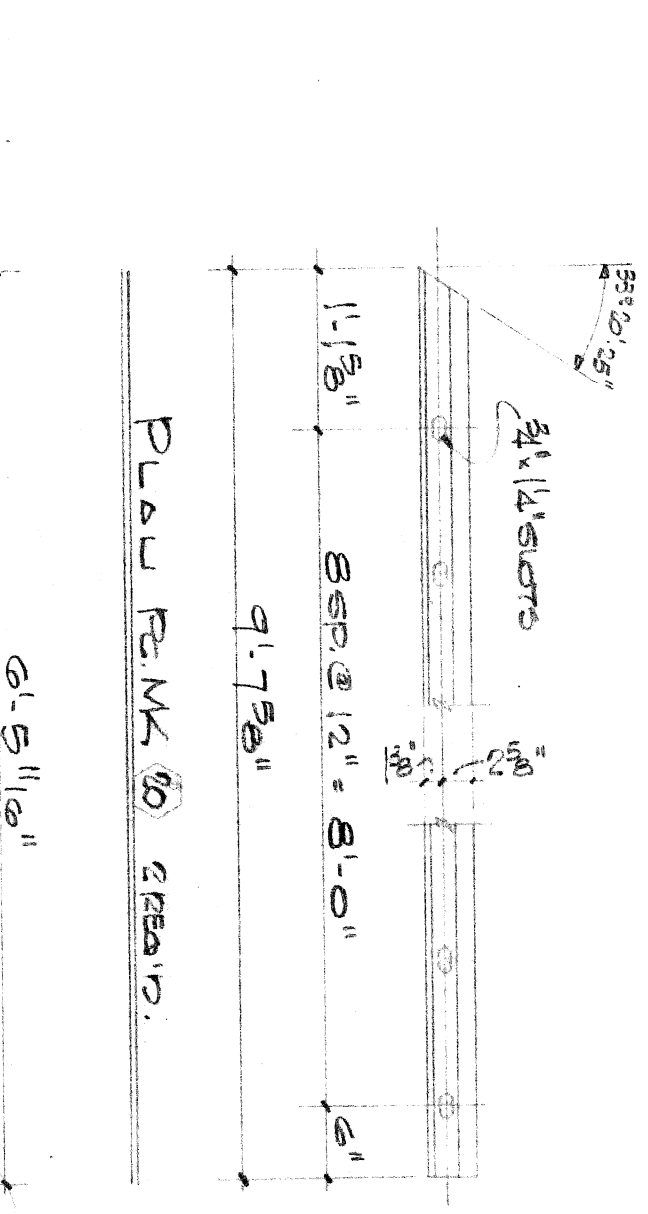
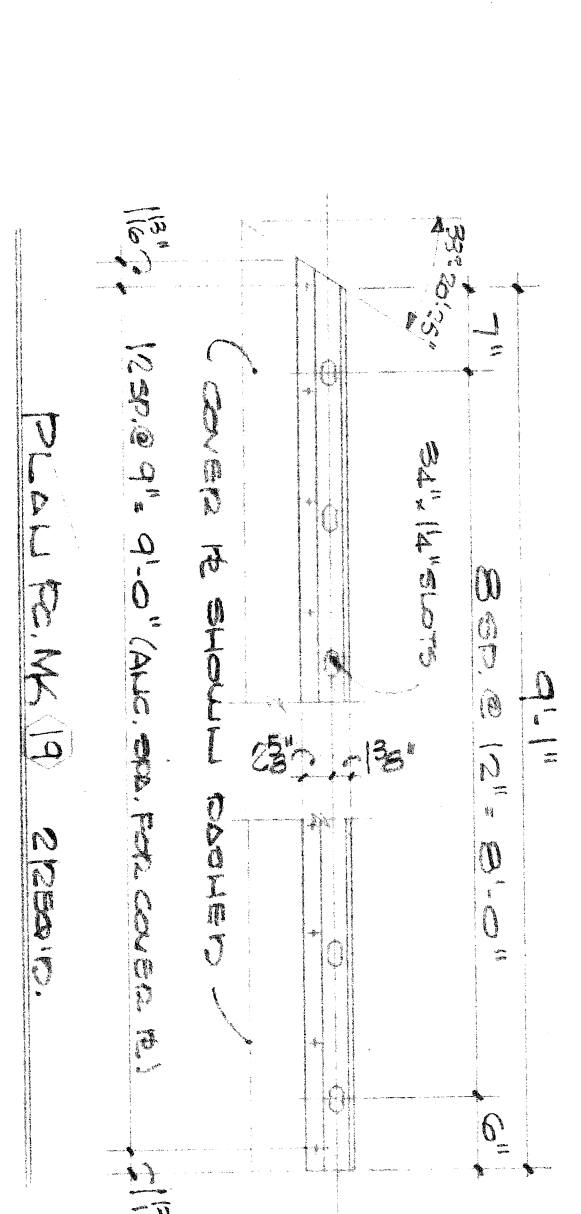
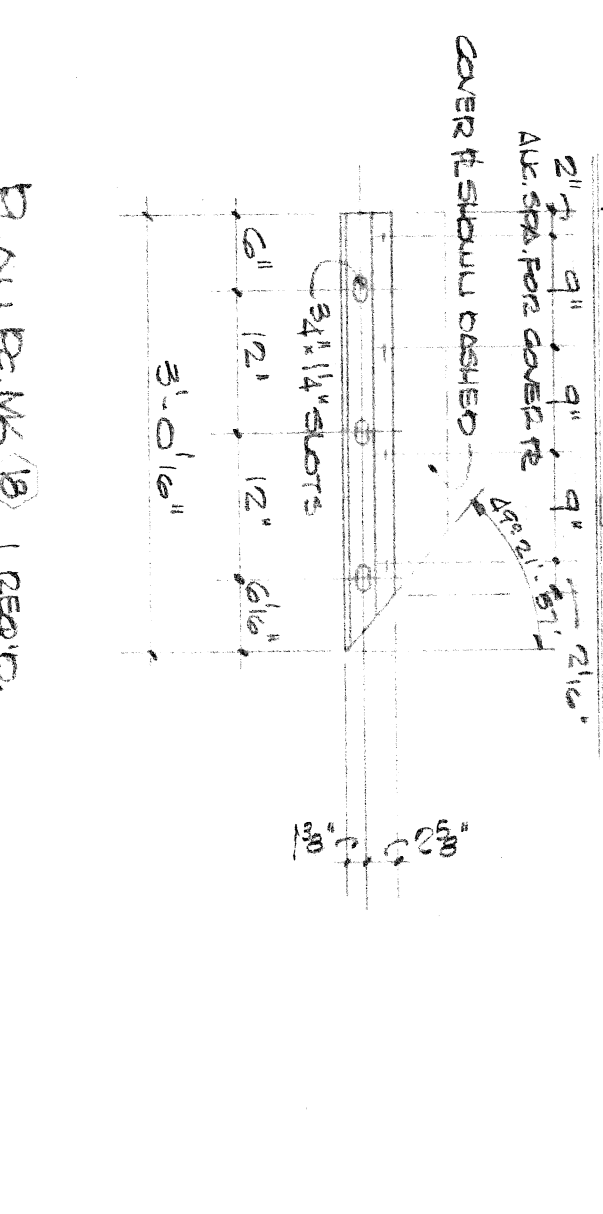
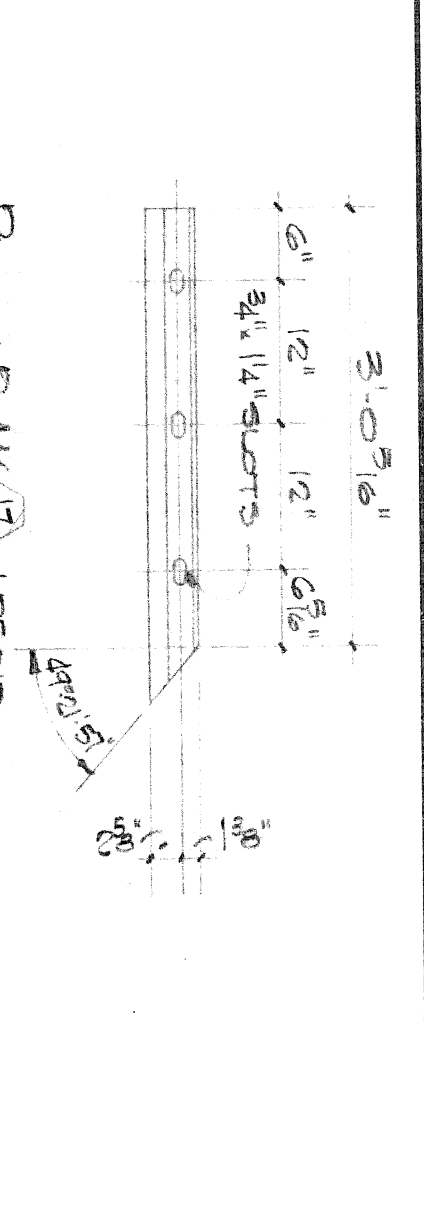
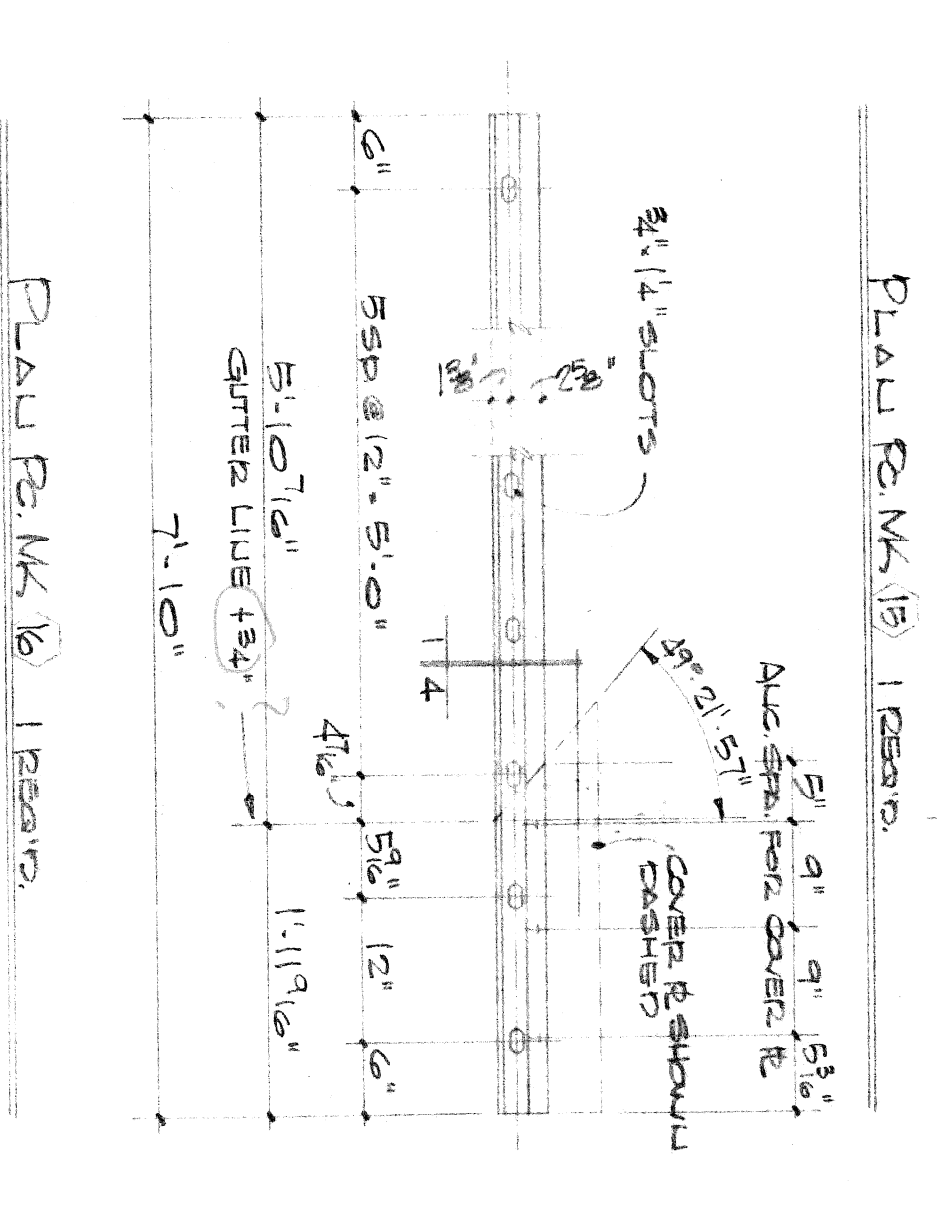
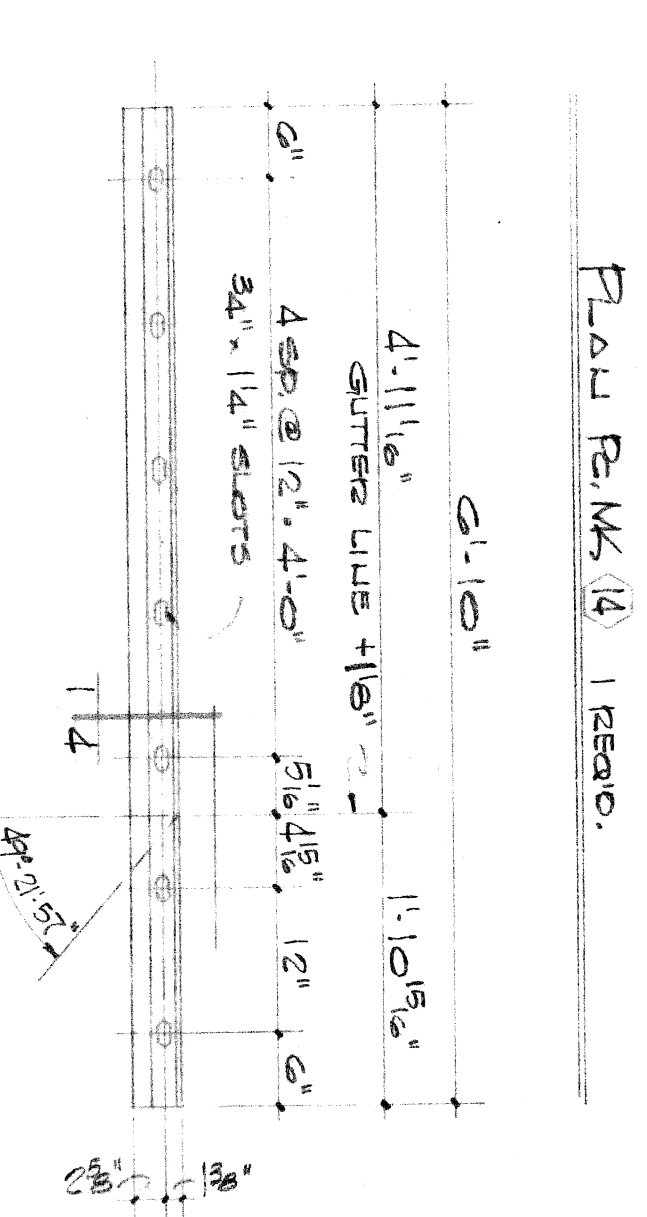
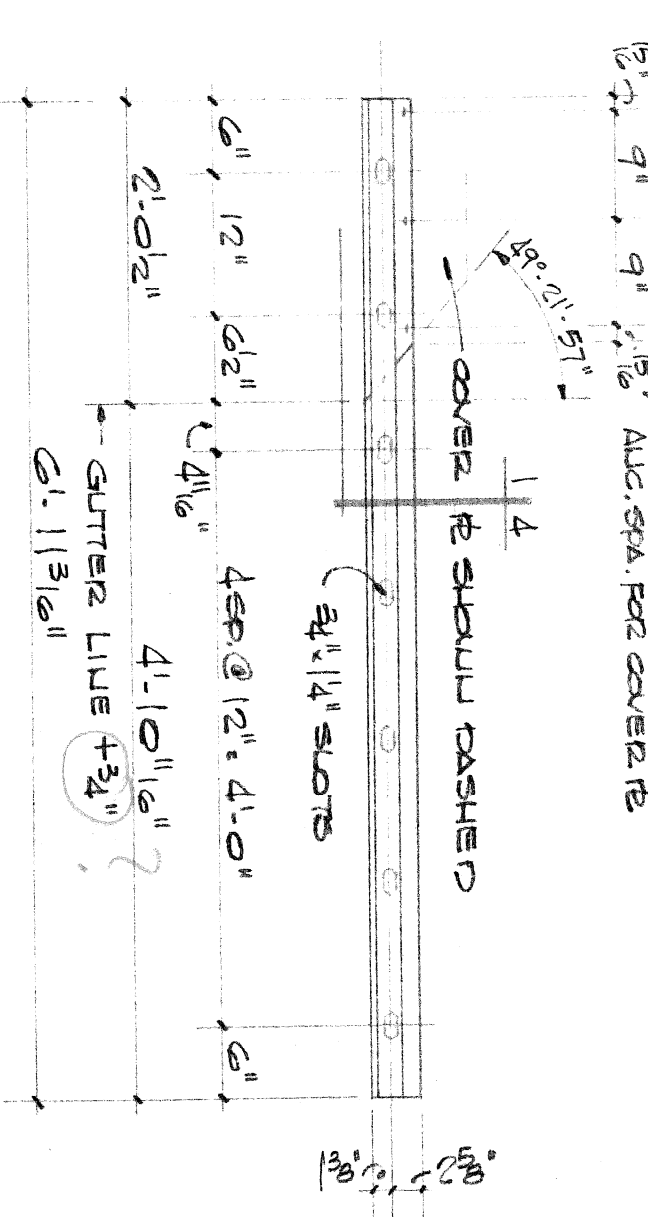
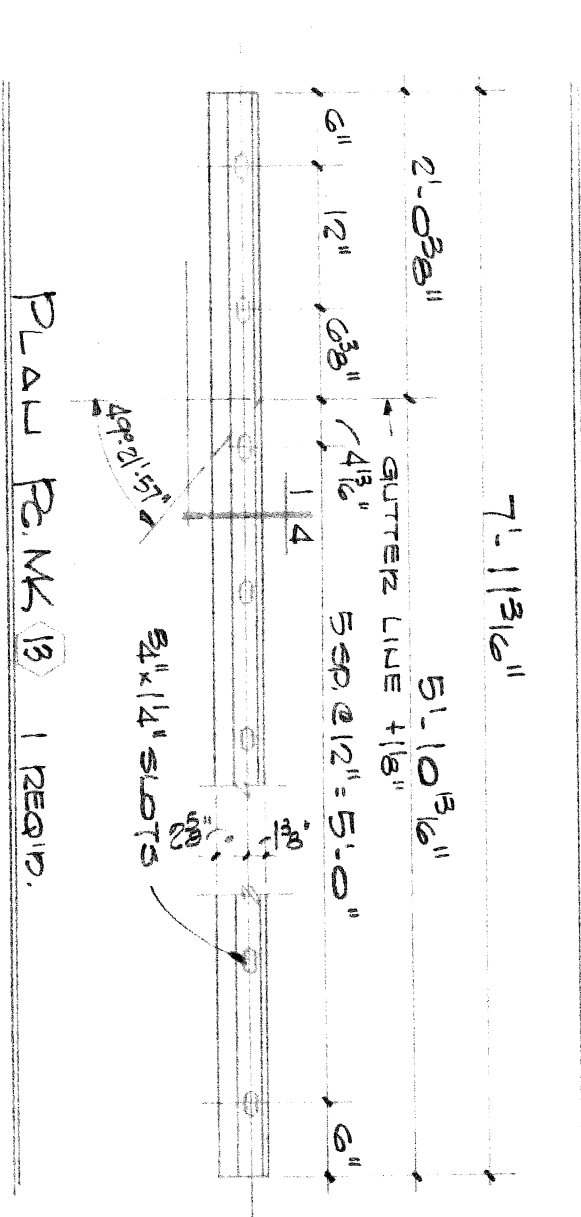
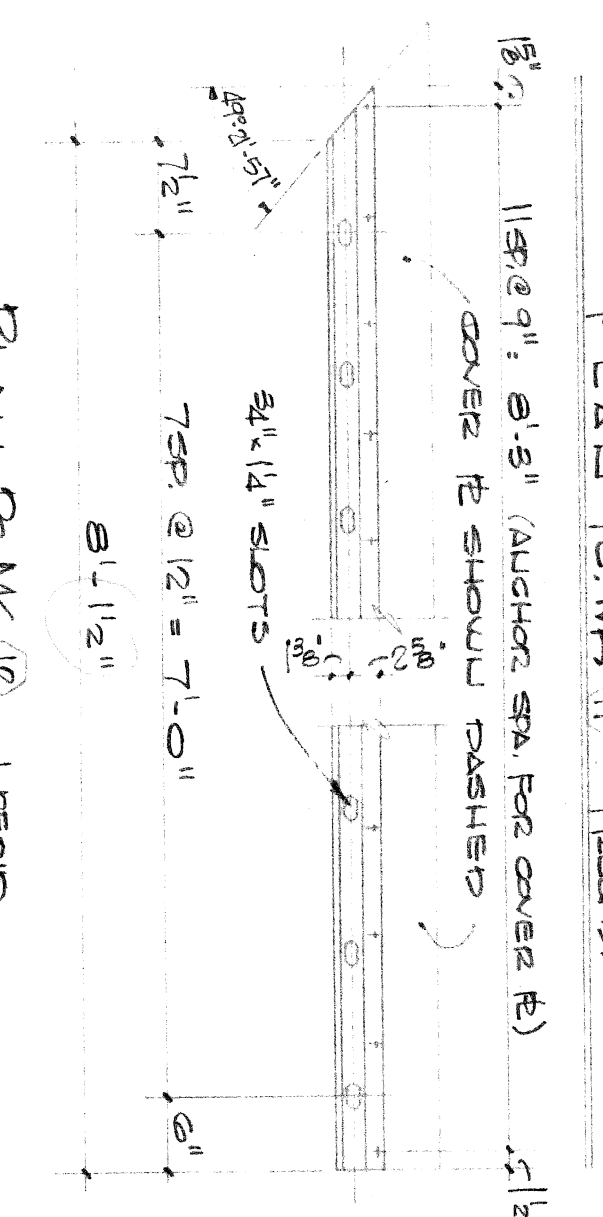
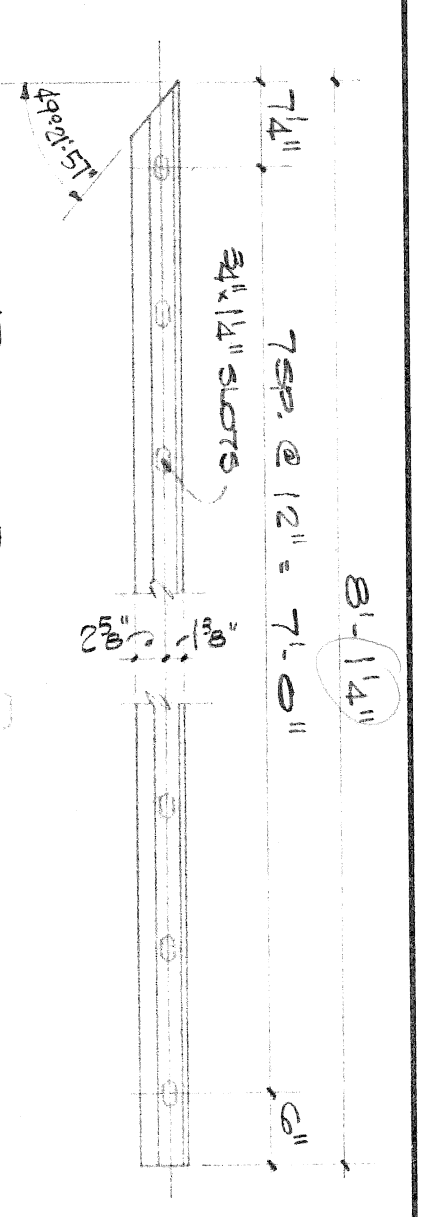
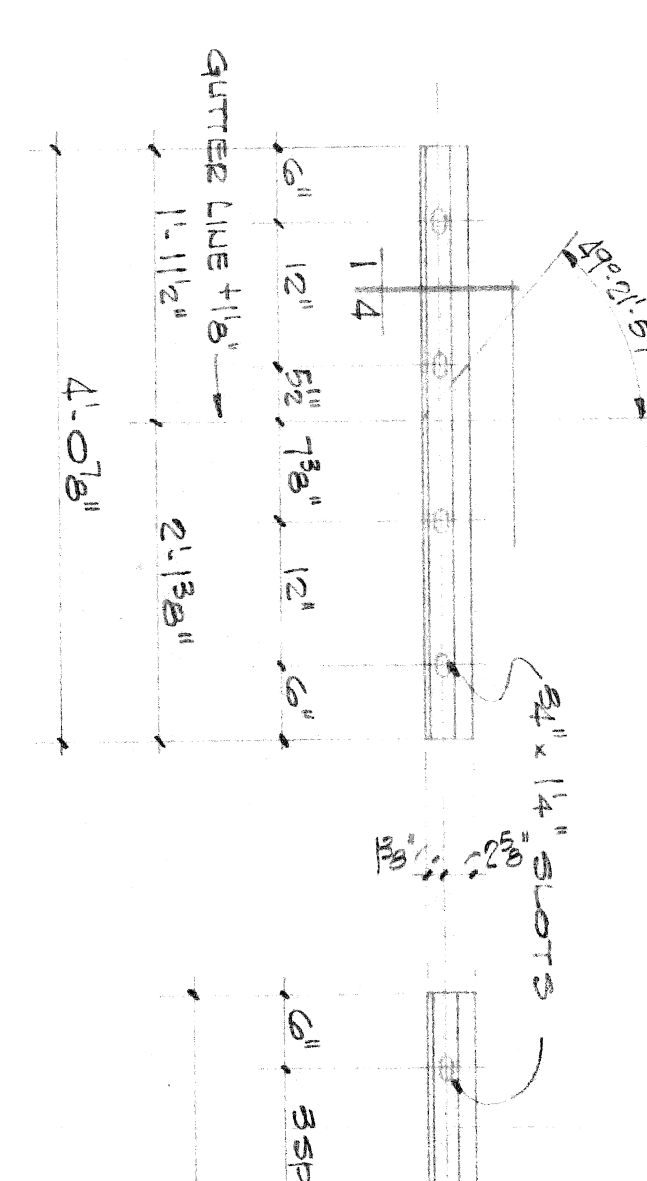
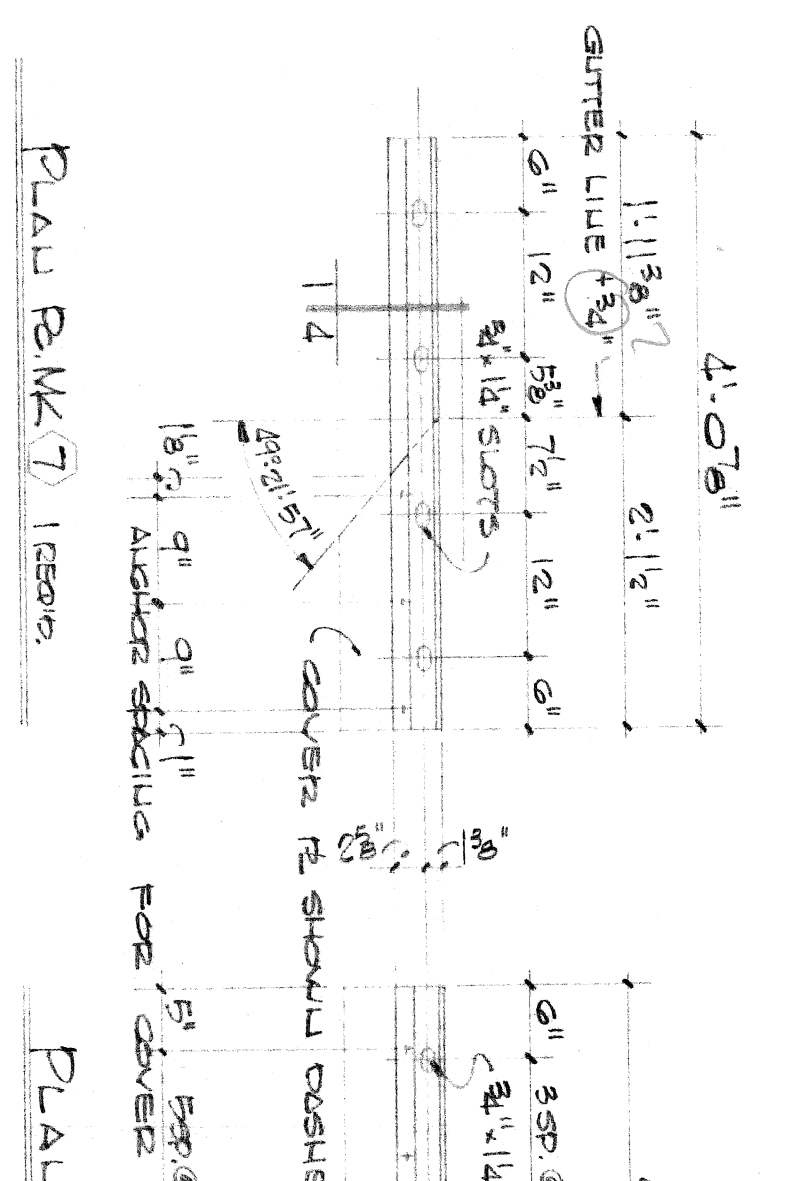
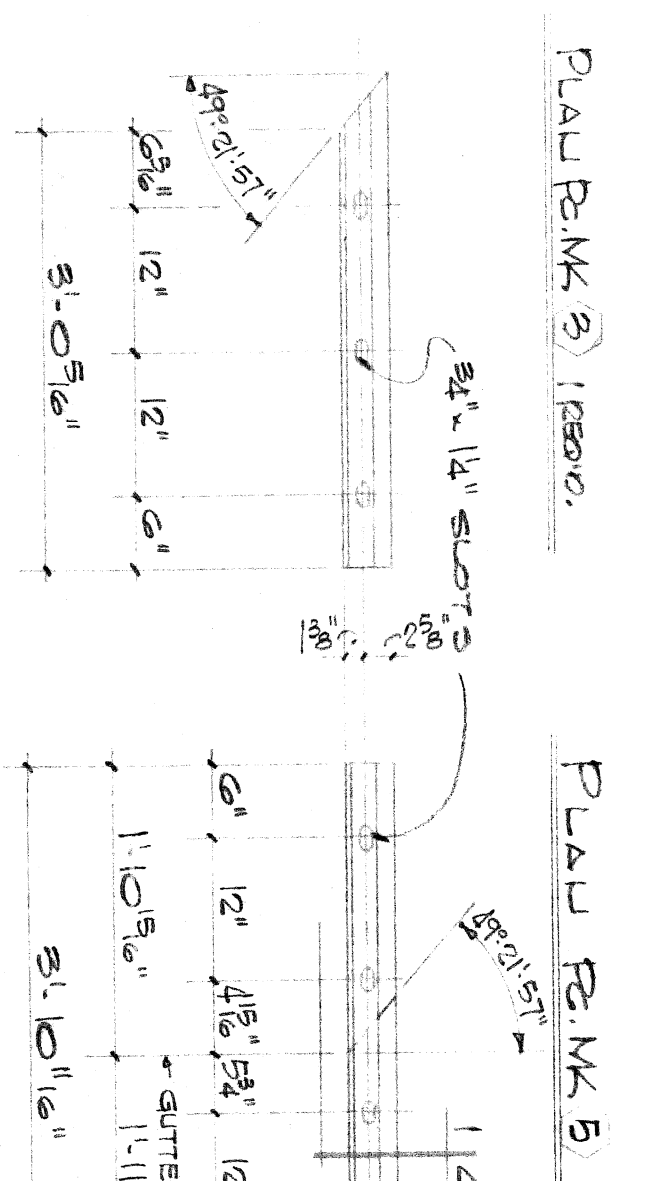
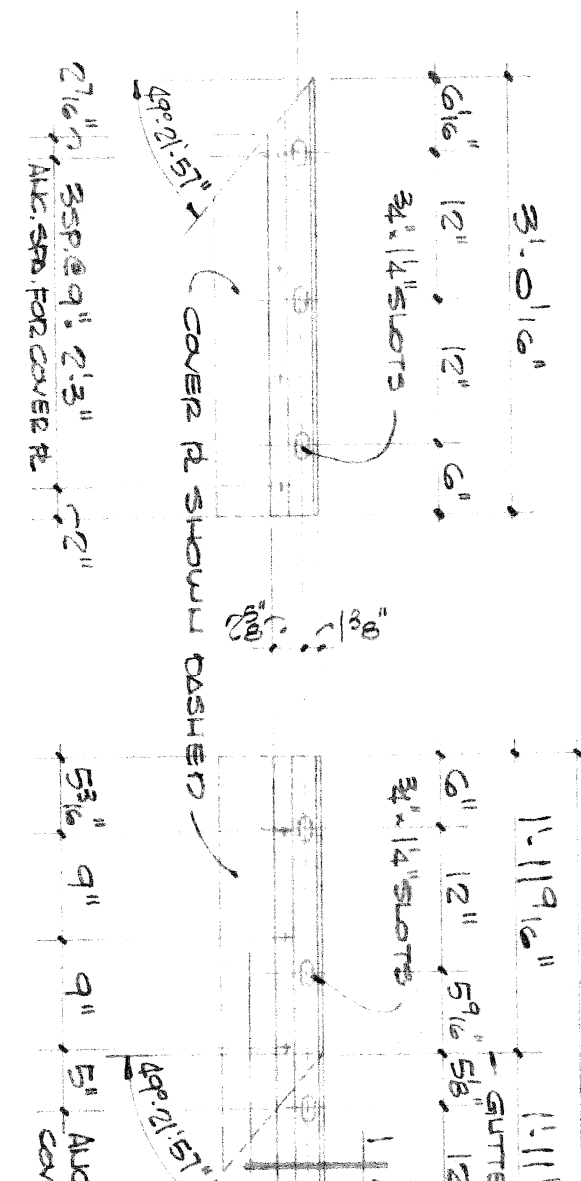
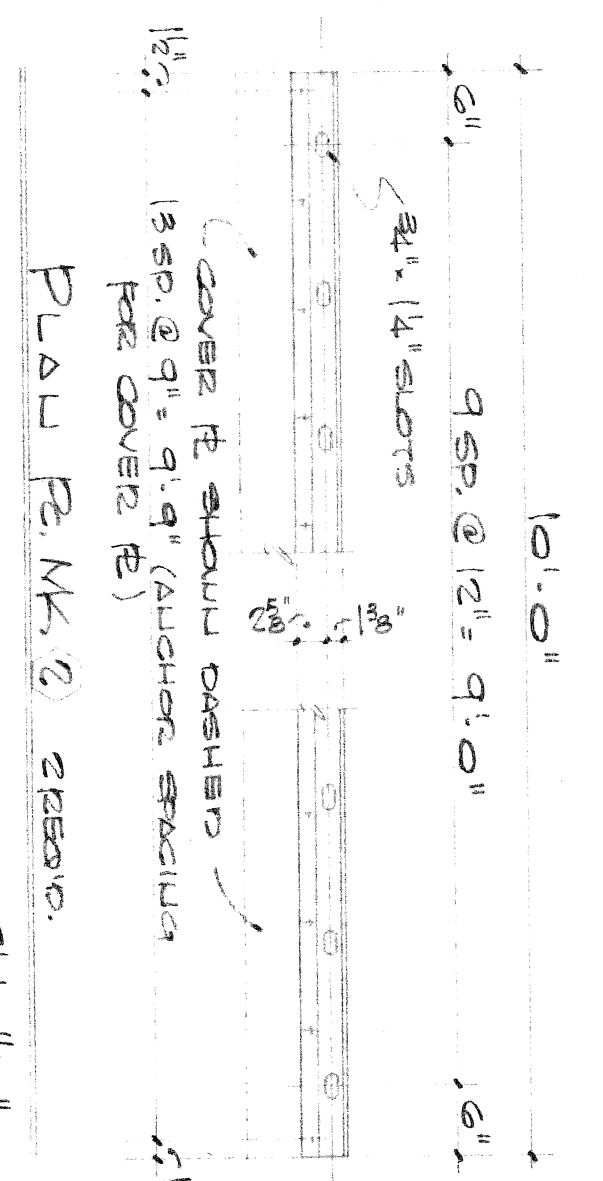
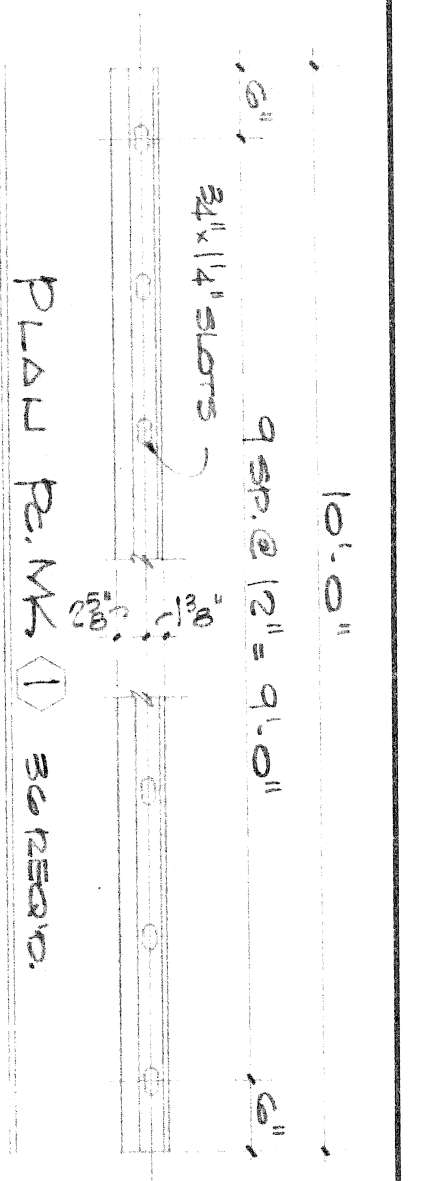


CITY OF DETROIT  
 CITY ENGINEERING DEPARTMENT  
**NOT APPROVED**  
 Please Resubmit With Changes Made  
 As Indicated In Red

DATE: 02/15/06  
 DRAWN BY: RAL  
 REVISIONS

PROJECT NO.	7126	DATE: 02/15/06
PROJECT NAME	TRANSFORMATION WALKWAY GALLERY	DRAWN BY: RAL
SCALE	AS SHOWN	REVISIONS
APPROVED BY:		
DATE: 02/15/06		
DRAWN BY: RAL		
REVISIONS		
PROJECT NO.	7126	DATE: 02/15/06
PROJECT NAME	TRANSFORMATION WALKWAY GALLERY	DRAWN BY: RAL
SCALE	AS SHOWN	REVISIONS
APPROVED BY:		
DATE: 02/15/06		
DRAWN BY: RAL		
REVISIONS		





CITY OF DETROIT  
 CIVIL ENGINEERING DEPARTMENT  
**NOT APPROVED**  
 Please Resubmit With Changes Marked  
 As Indicated in Red  
 Date: 10/11/14  
 Contract No. 10-10-15  
 3005

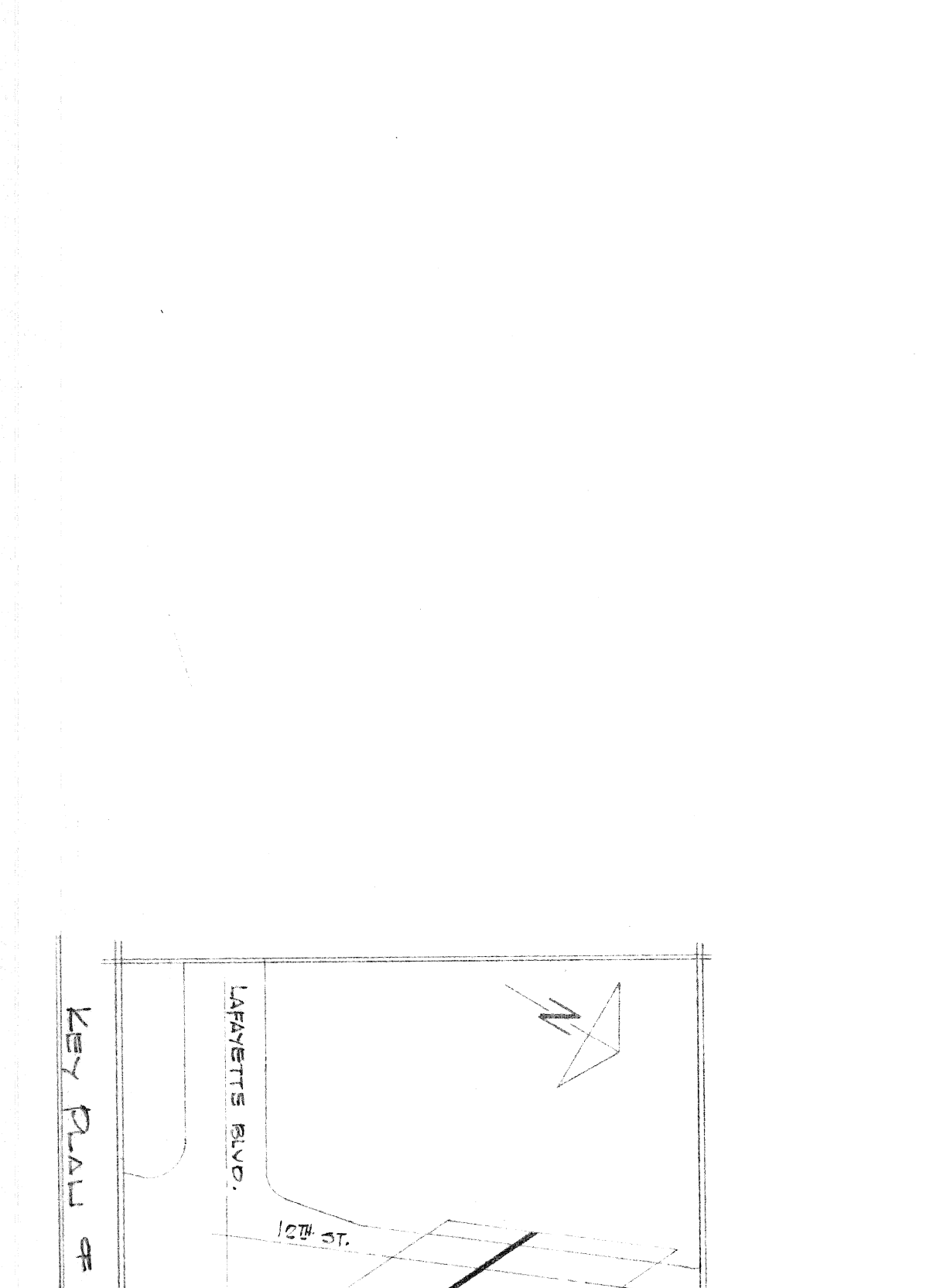
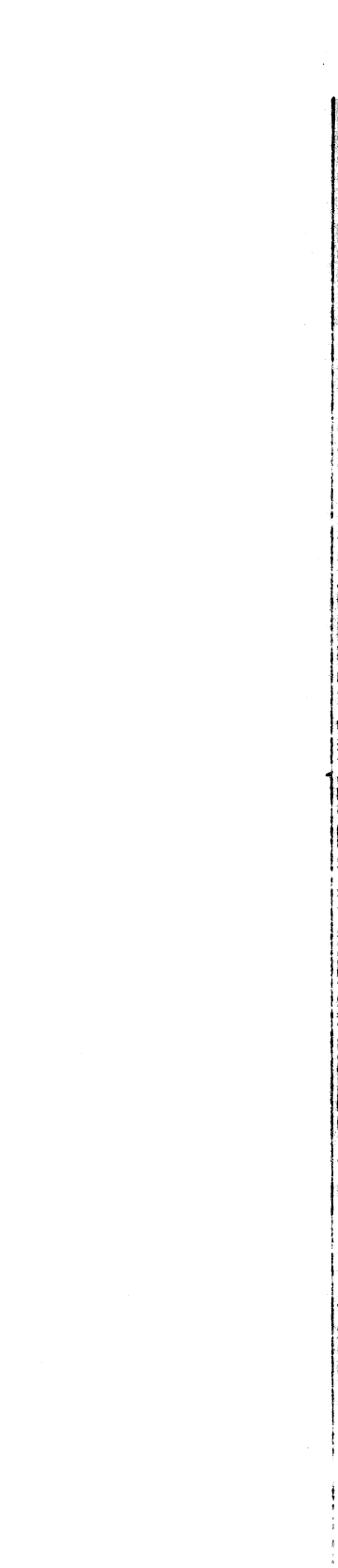
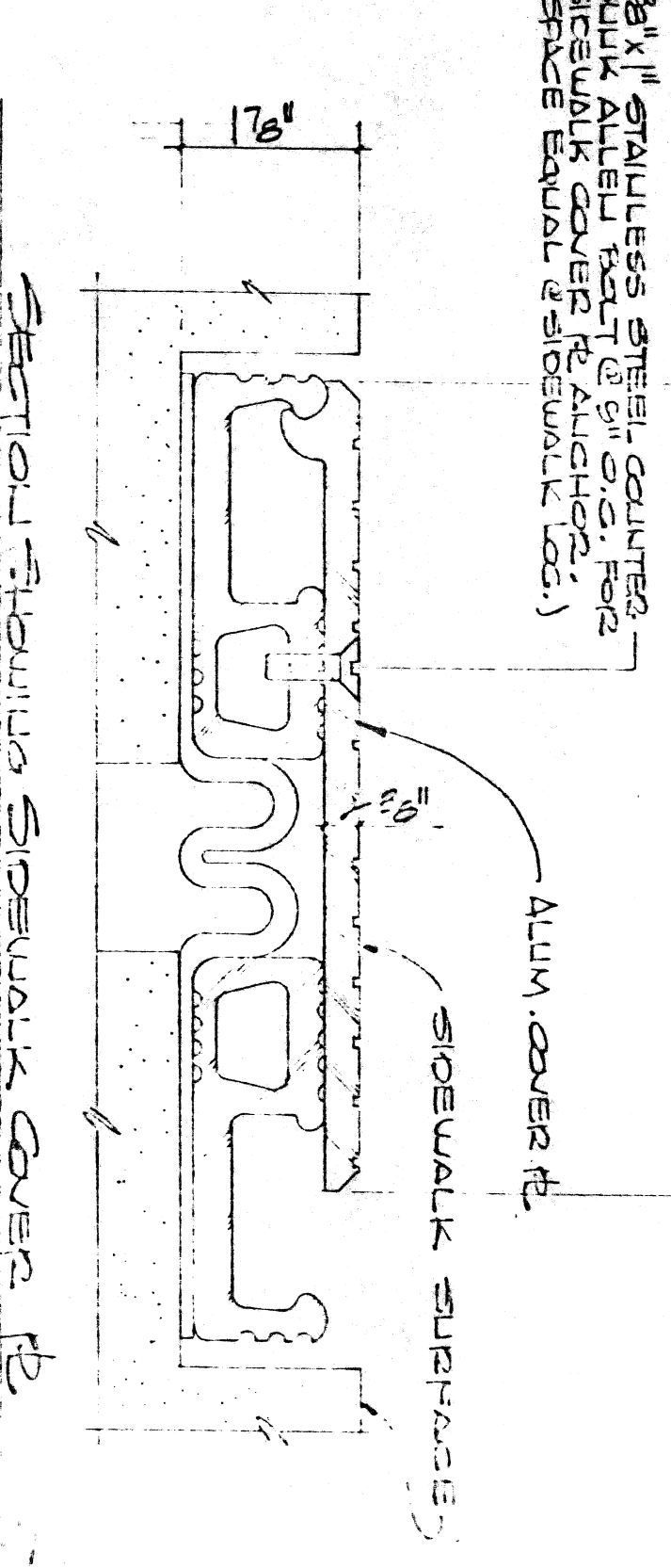
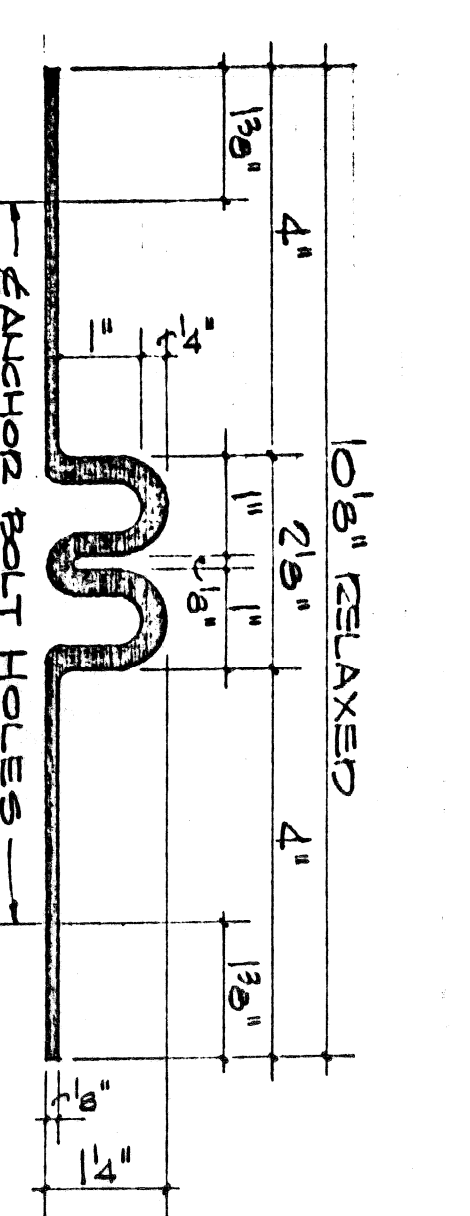
DATE: 4/15/12	APPROVED BY: [Signature]
SCALE: AS SHOWN	REVISION:
STRUCTURAL: Pfeiffer Products Company	
MECHANICAL: Pfeiffer Products Company	
ELECTRICAL: Pfeiffer Products Company	
PLUMBING: Pfeiffer Products Company	
MECHANICAL: Pfeiffer Products Company	
ELECTRICAL: Pfeiffer Products Company	
PLUMBING: Pfeiffer Products Company	
DRAWING NUMBER: M-82-4	



1. Membrane shall be shop fabricated for exact length from these shop drawings after approval. Anchor bolt location and concrete blockout dimensions shall be as shown on this sheet.
2. Required length of membrane for the expansion joint shall be on the jobsite along with anchors, sealant, and hold down panels.
3. Start at low side of expansion joint on bridge.
4. Spread sealant across entire bottom of notch.
5. Pipe top and bottom flat side of membrane with solvent.
6. Place membrane over anchor bolts.
7. Seal membrane over top surface of flat portion of membrane and up side wall of blockout.
8. Place hold down panels over membrane and secure with nuts, flat and lock washers.

- Anchor bolt shall be stainless steel.
- Anchor bolt specifications:
- Hardness: min. 27, max. 35
  - Tack free time: 48 hr. max.
  - Peak adhesion: 28 lb. min.
  - Flexibility in can: 1 year min.
  - Non-toxic
- Anchor bolt specifications:
- ASTM A-307
  - Grade 50
  - Min. 27, max. 35
  - 28 lb. min.
  - 1 year min.
  - Non-toxic

- INSTALLATION INSTRUCTIONS
- Membrane shall be shop fabricated for exact length from these shop drawings after approval. Anchor bolt location and concrete blockout dimensions shall be as shown on this sheet.
  - Required length of membrane for the expansion joint shall be on the jobsite along with anchors, sealant, and hold down panels.
  - Start at low side of expansion joint on bridge.
  - Spread sealant across entire bottom of notch.
  - Pipe top and bottom flat side of membrane with solvent.
  - Place membrane over anchor bolts.
  - Seal membrane over top surface of flat portion of membrane and up side wall of blockout.
  - Place hold down panels over membrane and secure with nuts, flat and lock washers.



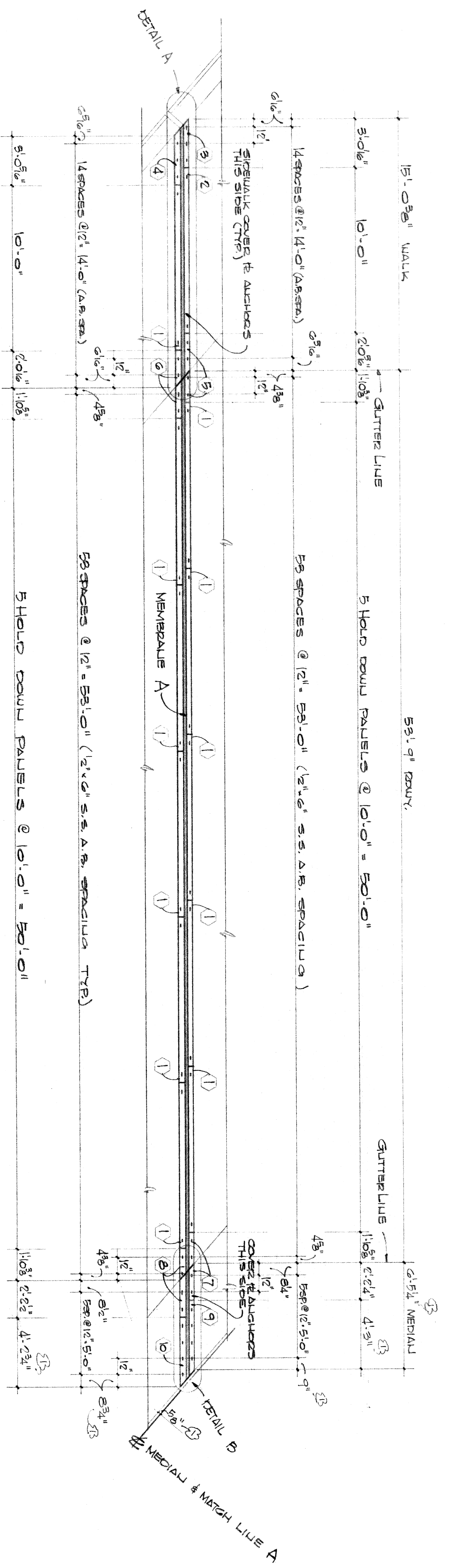
DESCRIPTION	QUANTITY	SIZE
MEMBRANE A (40' x 5' x 40')	1	40' x 5' x 40'
HEX HEAD BOLTS	578	1/2" x 6"
HEX HEAD NUTS	578	1/2" x 6"
FLAT & LOCK WASHERS	578	1/2" x 6"
CONCRETE INSERTS	12	12"
ALUMINUM COVER	1	10' x 10'
STAINLESS STEEL	1	10' x 10'

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT  
**APPROVED**  
FOR COMPLIANCE WITH CONTRACT NO. 0111010  
THIS APPROVAL SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY COVERED BY THE CONTRACT  
DATE: APR 22 1982 BY: [Signature]

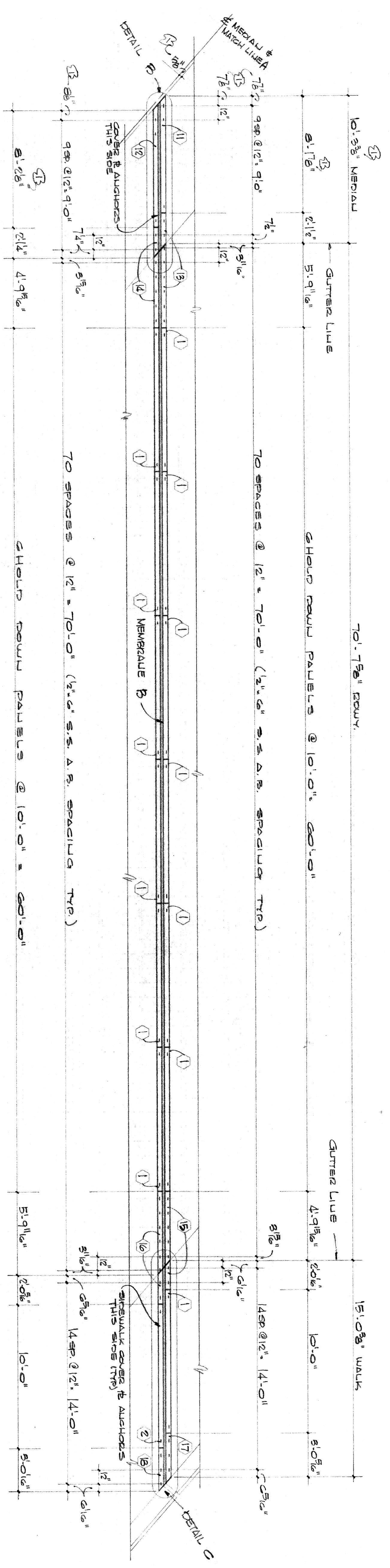


MEMBRANES ARE TO BE CUT AND VULCANIZED TOGETHER TO CONFORM TO CURVE RISE SCHEDULE LAYBACK.

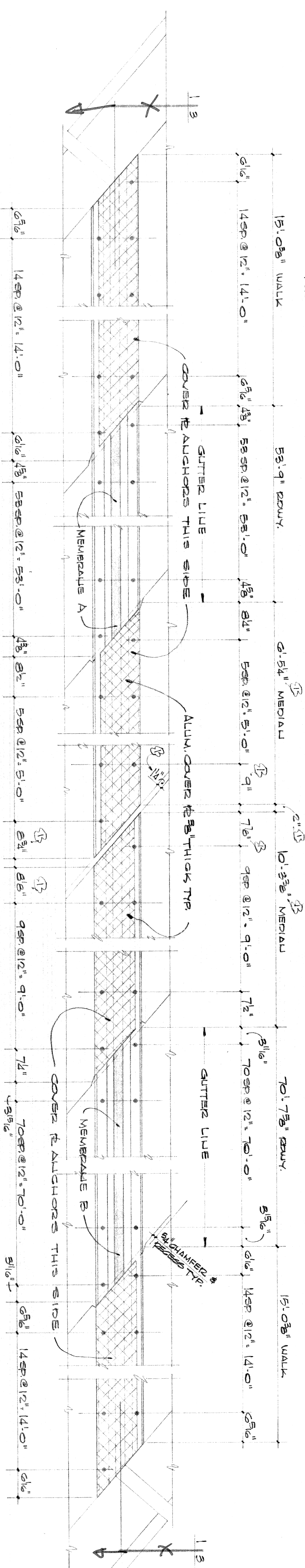




ONIFLEX MODEL 40 LAYOUT AT PIER 1 - EAST HALF (STAGE I) 12<sup>TH</sup> STREET STRUCTURE  
 49° 21' 57" skew



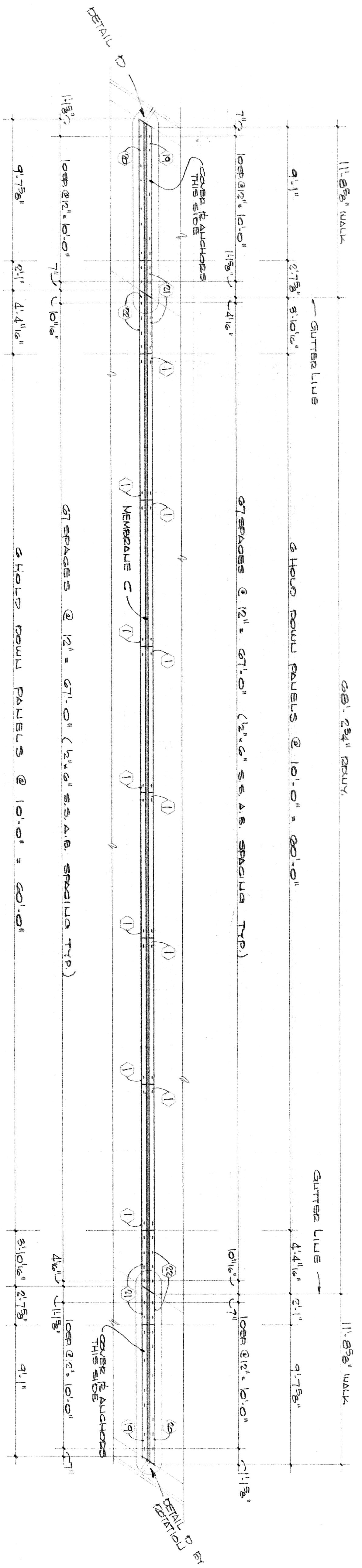
ONIFLEX MODEL 40 LAYOUT AT PIER 1 - WEST HALF (STAGE II) 12<sup>TH</sup> STREET STRUCTURE  
 49° 21' 57" skew



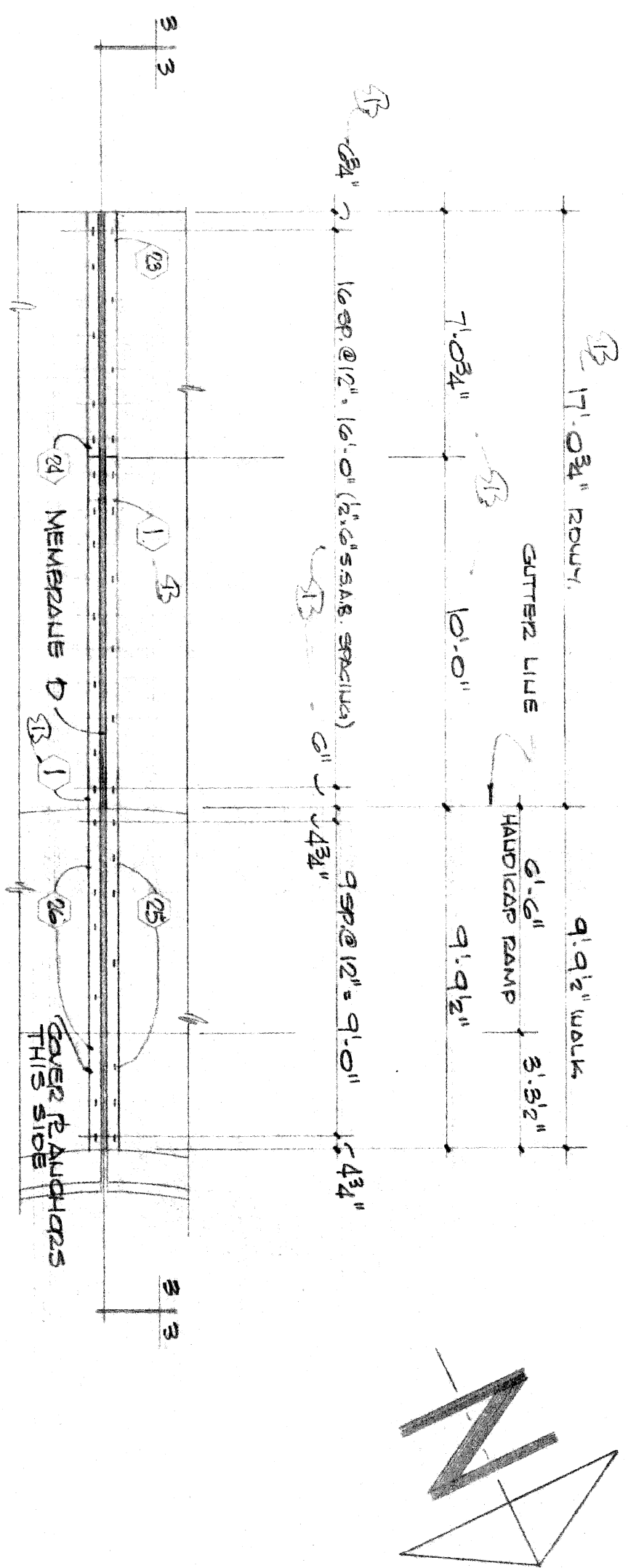
CITY OF DETROIT  
 CITY ENGINEERING DEPARTMENT  
**APPROVED**  
 FOR COMPLIANCE WITH CONTRACT NO. 11404  
 HIS APPROVAL SHALL NOT RELIEVE THE CONTRACTOR  
 OF ANY RESPONSIBILITY COVERED BY THE CONTRACT  
 DATE: APR 22 1992  
 BY: [Signature]

Structural Bureau Products Company 10000 E. 15th Street Livonia, MI 48150		APPROVED BY: [Signature]	REVIEWED BY: [Signature]
DATE: 2/19/92		DRAWN BY: [Signature]	
Michigan Department of Transportation LANSING OFFICE MICHIGAN COUNTY			
SHEET 2 OF 4		DRAWING NUMBER: 11404-2-4	

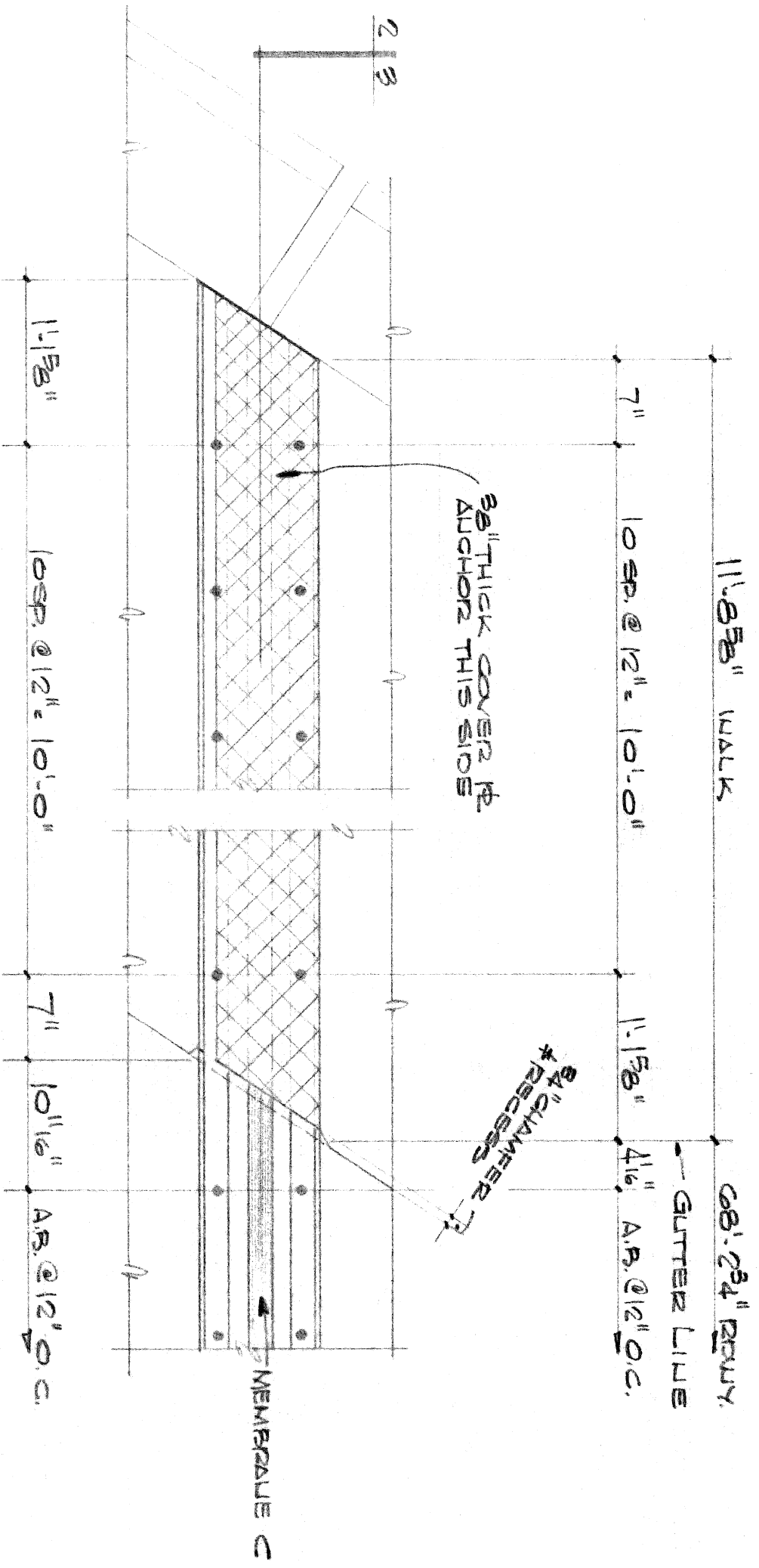




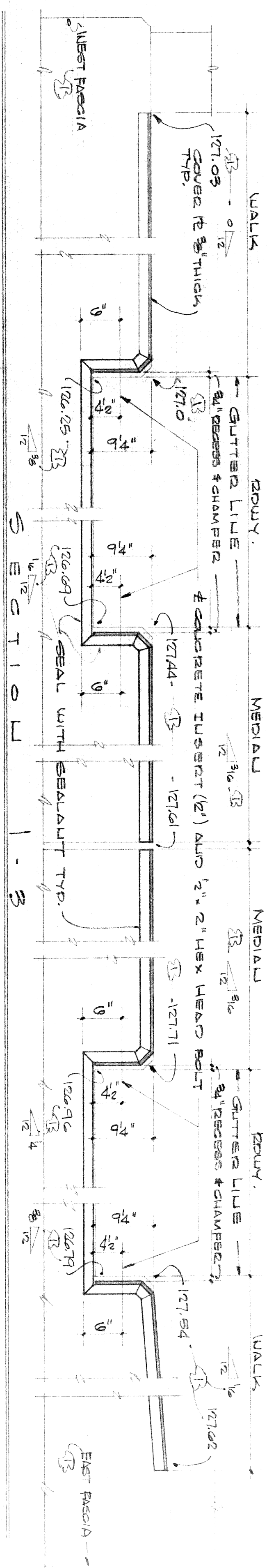
ONIFLEX MODEL 40 LAYOUT AT PIER 1 - LAFAYETTE BLVD. STRUCTURES



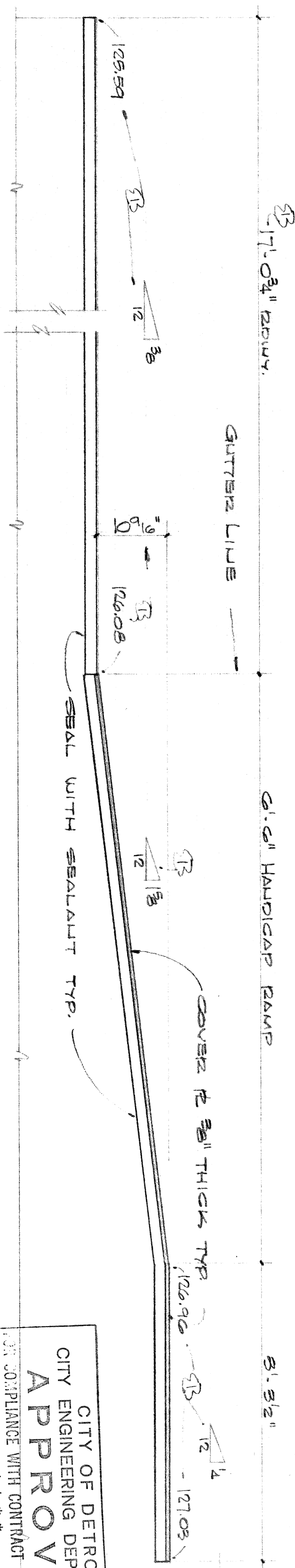
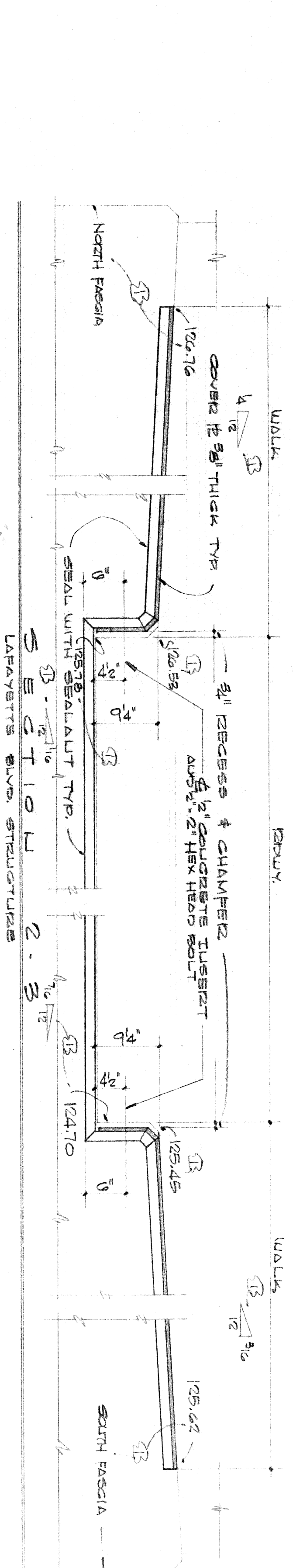
ONIFLEX MODEL 40 LAYOUT AT PIER 2 - 12TH STREET AND LAFAYETTE BLVD. STRUCTURES



DETAIL D



NOTE: ELEVATIONS ARE TOP OF SLAB AND SECTIONS DRAWING SECTIONS



CITY OF DETROIT  
 CITY ENGINEERING DEPARTMENT  
**APPROVED**  
 IN COMPLIANCE WITH CONTRACT NO. 21104  
 THIS APPROVAL SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY COVERED BY THE CONTRACT  
 DATE APR 2 2 1982

DATE: 01/28/82	APPROVED BY: RW
SCALE: AS SHOWN	DRAWN BY: RW
STRUCTURAL PRODUCTS COMPANY PO BOX 2459 TROY, MI 48063	
MICHIGAN DEPARTMENT OF TRANSPORTATION DELOITTE WAYNE COUNTY	
SHEET NO. 1	DRAWING NUMBER: M1824