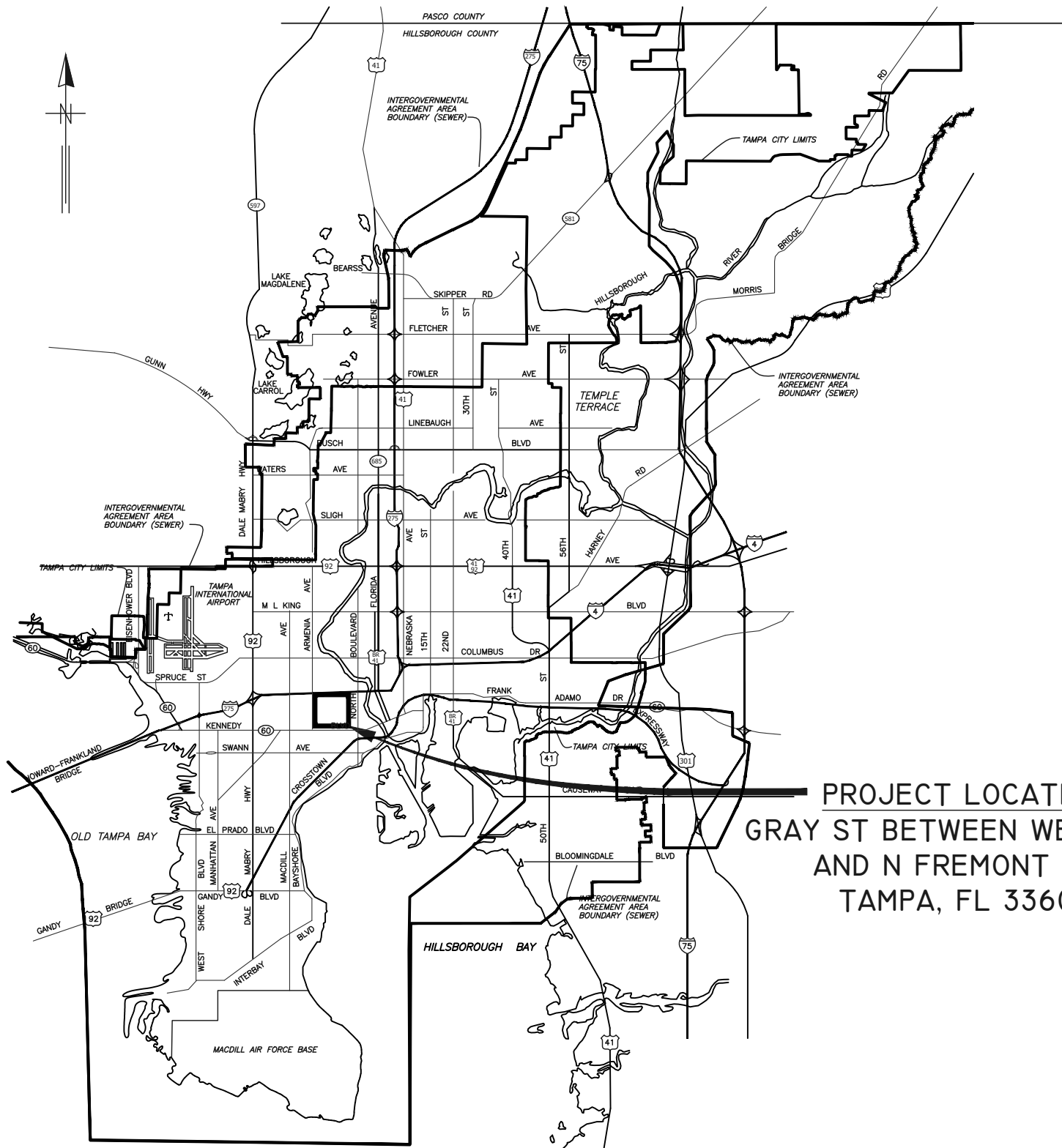
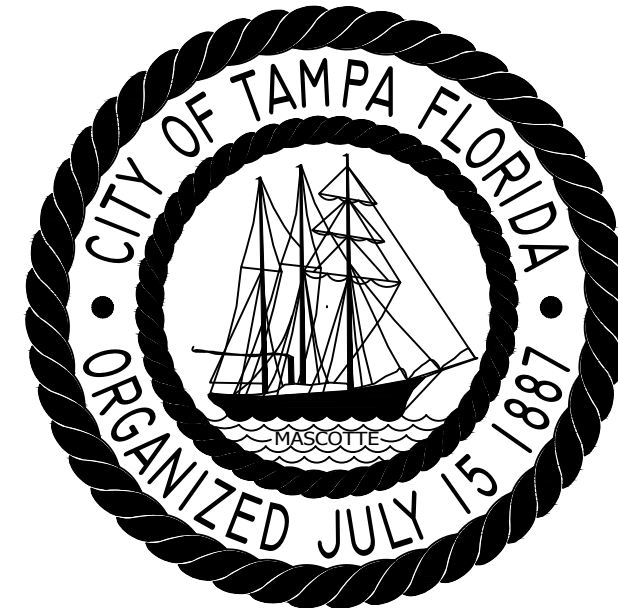


LOCATION MAP



**PROJECT LOCATION**  
 GRAY ST BETWEEN WESTLAND  
 AND N FREMONT AVE  
 TAMPA, FL 33606

# CITY of TAMPA



## WASTEWATER DEPARTMENT ENGINEERING DIVISION

### PLANS FOR LEMON-GRAY TRUNK SEWER REHABILITATION BY CIPP

CONTRACT No. 21-C-000020

**NOTE:**  
 ATTENTION IS DIRECTED TO THE FACT THAT  
 THESE PLANS MAY HAVE BEEN REDUCED IN  
 SIZE BY REPRODUCTION. THIS MUST BE  
 CONSIDERED WHEN OBTAINING SCALED DATA.

No.	DATE	REVISIONS
1		
2		
3		

JACINTO CARLOS FERRAS, P.E. #49454  
 DESIGN DIVISION HEAD  
 WASTEWATER DEPARTMENT

DES: CB  
 DRN: KLT  
 CKD: ----  
 DATE: Apr-2021

**CITY of TAMPA**  
 WASTEWATER DEPARTMENT

LEMON-GRAY TRUNK SEWER  
 REHABILITATION BY CIPP  
 COVER SHEET

SHEET

1

GENERAL NOTES

1. THE SCOPE OF THIS PROJECT SHALL CONSIST OF REHABILITATION OF 21" AND 24" DIA WASTEWATER PIPELINE BY INSTALLATION OF CURED IN PLACE PIPE LINER AND ALL APPURTENANCE ASSOCIATED WITH COMPLETION OF THE PROJECT.
2. ELEVATION INFORMATION SHOWN ON THESE PLANS IS REFERENCED TO N.G.V.D. 1929 UNLESS OTHERWISE STATED AND ARE BASED ON RECORD DRAWINGS.
3. SHEETS 9-12 ARE THE EXISTING AS-BUILTS OF THE SEWER PIPE TO BE REHABILITATED.
4. DURING THE MOT, CONTRACTOR MUST MAINTAIN ACCESS TO ALL DRIVEWAYS FOR THE DURATION OF THE PROJECT.
5. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR OBTAINING THE NECESSARY ROAD CLOSURE AND RIGHT-OF-WAY PERMITS FROM THE APPROPRIATE GOVERNMENT AGENCIES HAVING JURISDICTION OVER THE SPECIFIC ROADWAYS. A CITY OF TAMPA RIGHT OF WAY ACCELA PERMIT SHALL BE SUBMITTED FOR EACH ROADWAY AT THE FOLLOWING WEBSITE [HTTP://ACA.TAMPAGOV.NET/](http://aca.tampagov.net/)
6. IN ORDER TO OBTAIN ROADWAY CLOSURE OR RIGHT-OF WAY PERMITS, AT MINIMUM, THE CONTRACTOR MUST SUBMIT DETAILED MAINTENANCE OF TRAFFIC (MOT) PLANS ALONG WITH APPLICATIONS TO THE APPROPRIATE AGENCY. THE MOT(S) SHALL CONFORM TO APPLICABLE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) INDEX DRAWINGS (MOST CURRENT EDITION). THE GOVERNING AGENCIES MAY REQUIRE ADDITIONAL INFORMATION AND DICTATE SPECIFIC WORK TIMES DURING NON-PEAK TRAFFIC HOURS. REFER TO SPECIFIC PROVISIONS FOR SPECIFIC TRAFFIC CONTROL REQUIREMENTS.
7. CONTINUOUS SEWER SERVICE MUST BE MAINTAINED AT ALL TIMES. WORK DURING LOW FLOW PERIODS OR NIGHT WORK MAY BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PRIVATE AND CITY PUMPING STATIONS AND SEWER SERVICE VIA VACUUM TRUCKS. CONTRACTOR IS RESPONSIBLE FOR DEWATERING, COLLECTING AND DISPOSING OF ALL WATER AND SLUDGE FROM EXISTING FACILITIES AS NECESSARY TO MAINTAIN SERVICE. COST FOR THIS WORK SHALL BE INCLUDED IN THE VARIOUS CONTRACT ITEMS AND NO ADDITIONAL PAYMENT WILL BE MADE.
8. BYPASS PUMPS SHALL BE CAPABLE OF DELIVERING 1200 GPM FOR THE 21" AND 24". THE BYPASS PUMPS SHALL BE OF THE SELF PRIMING QUIET FLOW TYPE PUMP. BYPASS PUMP NOISE SHALL STRICTLY COMPLY TO ALL LOCAL REGULATIONS AND ORDINANCES COVERING NOISE CONTROL. THIS MAY REQUIRE CONSTRUCTING SOUND ATTENUATING ENCLOSURE AROUND PUMPS. BYPASS METHOD SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER.
9. THE CONTRACTOR SHALL PROVIDE AN MOT AND BYPASS PLAN TO MAINTAIN UNINTERRUPTED TRAFFIC IN ARMENIA AND HOWARD AVE. THE CONTRACTOR SHALL INSTALL A TEMPORARY FUSED 8" HDPE (DR-17) BYPASS PIPE THROUGH THE EXISTING 3'x5' BOX STORM CULVERT. REFER TO A SCHEMATIC OF A POSSIBLE TEMPORARY BYPASS PLAN SHOWN ON SHEET 8. THE CONTRACTOR SHALL SUBMIT THE BYPASS PLAN AND MOT FOR APPROVAL.
10. BYPASS PUMPING ACROSS NORTH BLVD SHALL UTILIZE THE EXISTING 10" HDPE PIPING AND CONNECT TO THE FLANGE CONNECTIONS ON THE EAST AND WEST SIDE OF NORTH BLVD. THE CONTRACTOR SHALL SUBMIT THE BYPASS PLAN FOR APPROVAL
11. THE PROPOSED LINER THICKNESS FOR THE 21" DIA. SEWER SHALL BE 10.5 MM THICKNESS AND THE 24" DIA. SEWER SHALL BE 12.0 MM THICKNESS.
12. CONTRACTOR SHALL RESTORE ALL LANDSCAPING, SODDING, SPRINKLER SYSTEM PIPING AND PAVEMENT THAT MAY HAVE BEEN DAMAGED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER.
13. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH WASTEWATER PERSONNEL AND PUMPING STATION OPERATIONS.
14. OSHA STANDARD EQUIPMENT SUCH AS SAFETY HARNESSSES, GAS MONITORS, LOWER EXPLOSIVE LIMIT (LEL) DETECTORS, BREATHING APPARATUS, ETC. SHALL BE UTILIZED WHERE THE WORK DICTATES THEIR USE.
15. THIS PROJECT INCLUDES REHABILITATION OF MANHOLES BY APPLICATION OF A STRUCTURAL COATING SYSTEM AND ALL APPURTENANCES ASSOCIATED WITH THE PROJECT.
16. DURING THE MANHOLE'S INTERIOR CLEANING OPERATION, THE CONTRACTOR MUST PROVIDE A MEANS OF CAPTURING AND DISPOSING OF THE REMOVED DEBRIS. THIS METHOD SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.
17. ALL EXPOSED STEEL REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ANY DETERIORATION/RUST AND COATED WITH THE PROPOSED COATING SYSTEM.
18. THE ONLY EXCAVATION NECESSARY FOR THIS PROJECT IS FOR THE REMOVAL AND REPLACEMENT OF THE MANHOLE FRAME AND COVERS AND ANY EXCAVATION NECESSARY TO INSTALL THE TEMPORARY BYPASS PIPING THROUGH THE STORMWATER STRUCTURES. FOR THESE CASES, THE CONTRACTOR IS REQUIRED TO CALL SUNSHINE AT 1-800-432-4770 TO DETERMINE UTILITY LOCATIONS PRIOR TO EXCAVATION.

INDEX	
SHT. NO.	DESCRIPTION
1	COVER SHEET
2	NOTE AND INDEX
3	LEMON-GRAY TRUNK OVERALL PROJECT LOCATION
4	AREA MAP - LEMON-GRAY TRUNK
5	AREA MAP - LEMON-GRAY TRUNK
6	MANHOLE REHABILITATION DETAIL
7	MANHOLE DETAIL
8	ARMENIA AND HOWARD TEMPORARY BYPASS PLAN
9-12	WASTEWATER RECORD DRAWINGS FOR REFERENCE **

\*\* RECORD DRAWINGS ARE BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT INTENDED TO SHOW ADDITIONAL WORK FOR THIS CONTRACT. THE CITY DOES NOT GUARANTEE THE ACCURACY OF THE RECORD DRAWINGS.

PROPOSED MANHOLE COATING SYSTEM THICKNESS	
Location	Coating System
Manhole Barrel	250 MILS (MIN)
Manhole Benches	250 MILS (MIN)

\\sewer\sewer\Share\WasteWater\Projects\Lemon - Gray Trunk Sewer Rehabilitation by CIPP Lining\Drafting\DWG\Lemon-Gray Trunk Rehab CIPP Lining.dwg

JACINTO CARLOS FERRAS, P.E. #49454  
DESIGN DIVISION HEAD  
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
1		
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3		

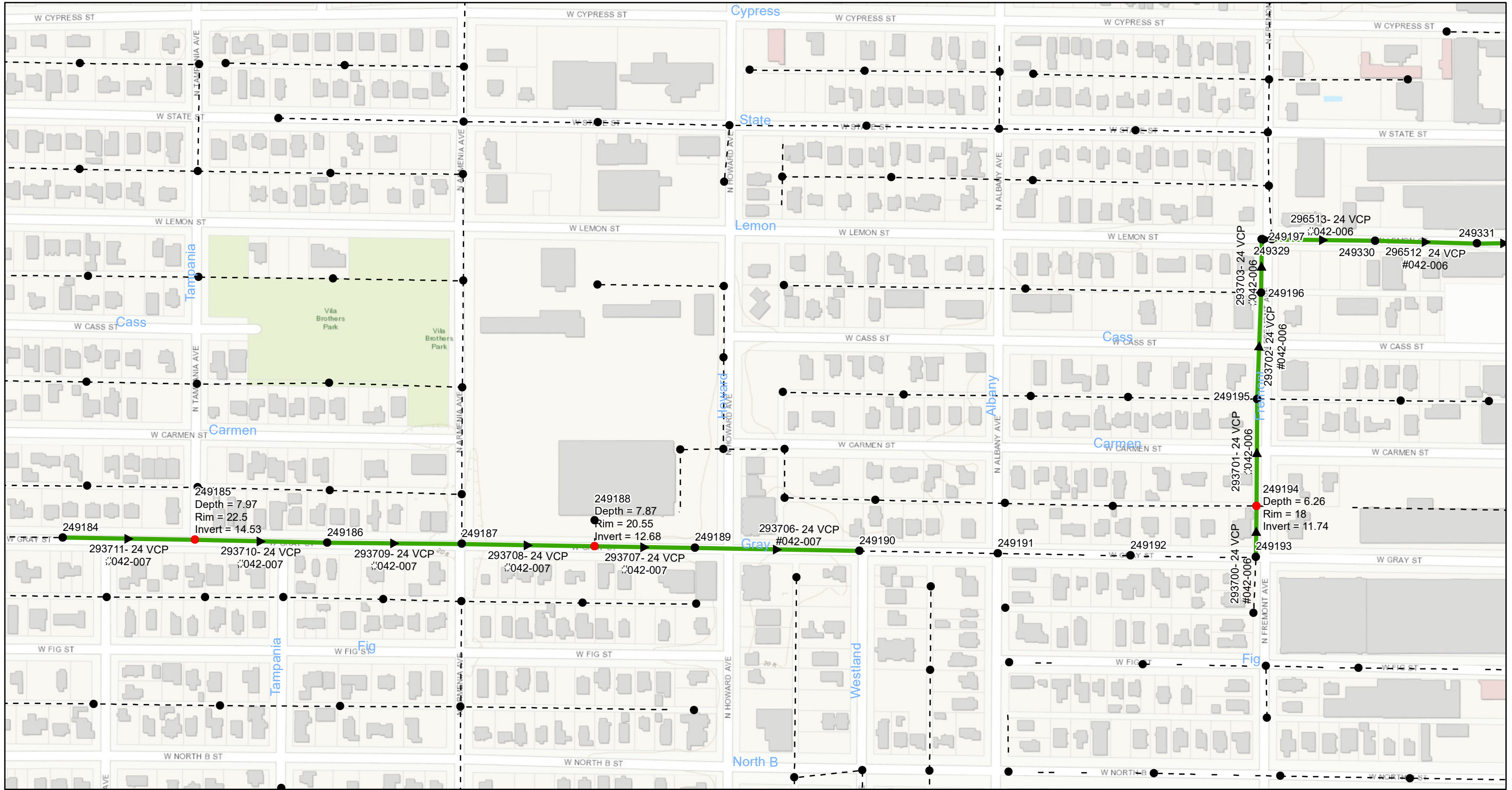
DES: CB  
DRN: KLT  
CKD: ----  
DATE: Apr-2021

**CITY of TAMPA**  
**WASTEWATER DEPARTMENT**

LEMON-GRAY TRUNK SEWER  
REHABILITATION BY CIPP  
NOTES & INDEX

SHEET  
**2**





0 0.0375 0.075 0.15 Miles

# Lemon-Gray Trunk Sewer Rehabilitation by CIPP Lining

City of Tampa Wastewater Department

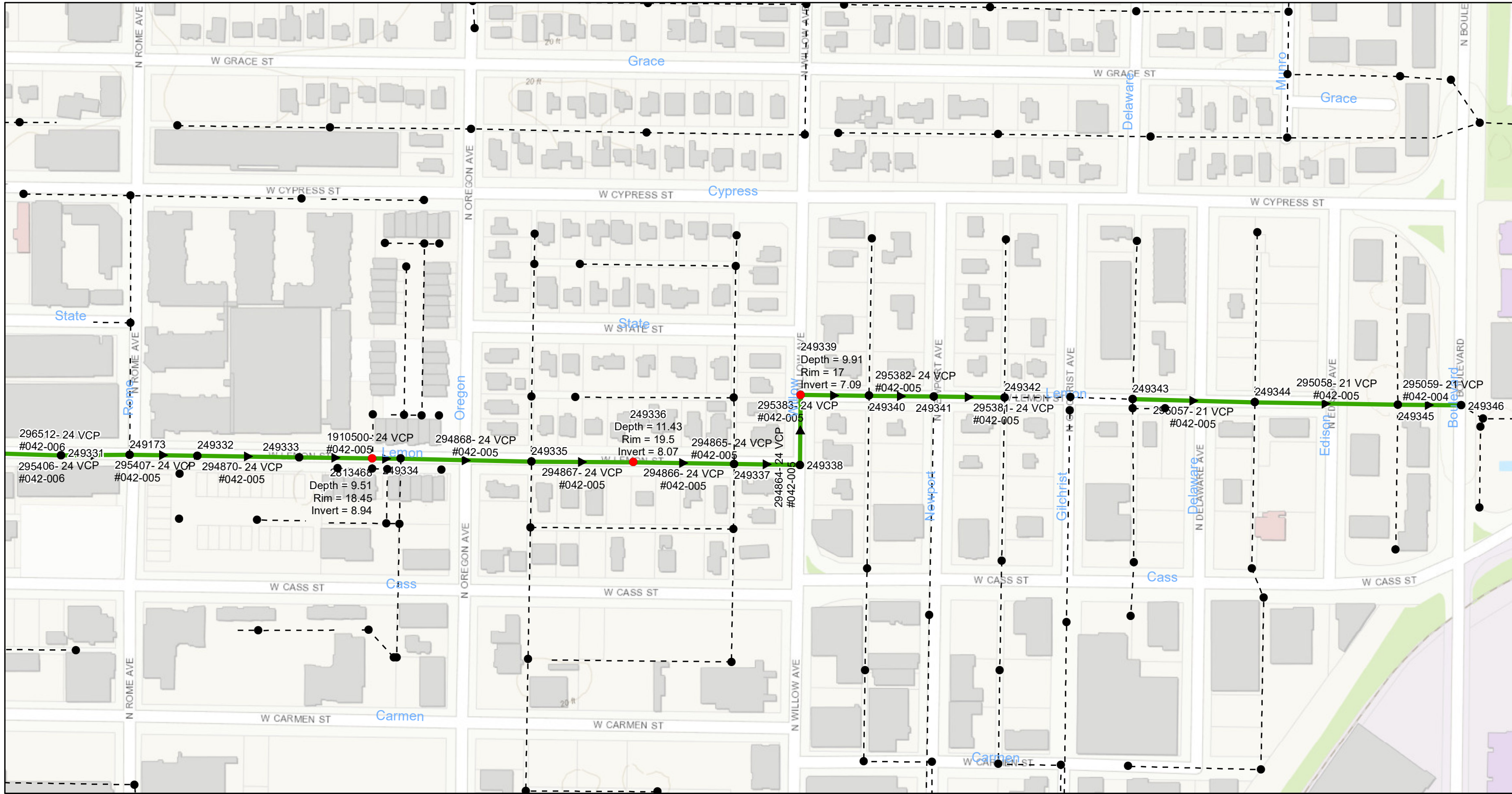
## Legend

- Proposed Manhole Rehabilitation
- Ex Manhole (no rehabilitation required)
- ➔ Proposed Lining Area
- - - - - Ex Wastewater (no rehabilitation required)



Sheet No.  
**4**





0 0.03 0.06 0.12 Miles

# Lemon-Gray Trunk Sewer Rehabilitation by CIPP Lining

City of Tampa Wastewater Department

## Legend

- Proposed Manhole Rehabilitation
- Ex Manhole (no rehabilitation required)
- ➔ Proposed Lining Area
- - - - - Ex Wastewater (no rehabilitation required)

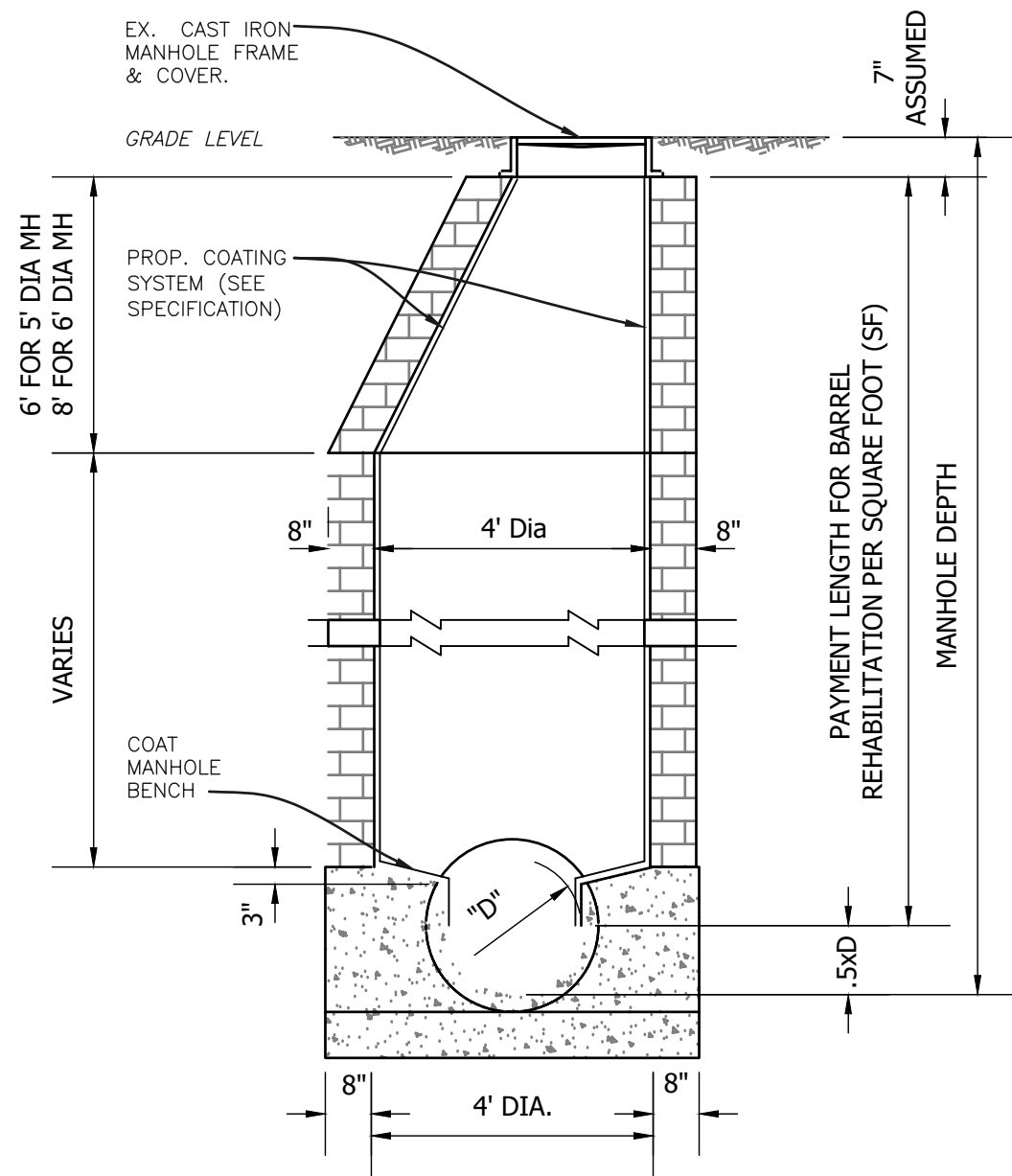


Sheet No.  
**5**



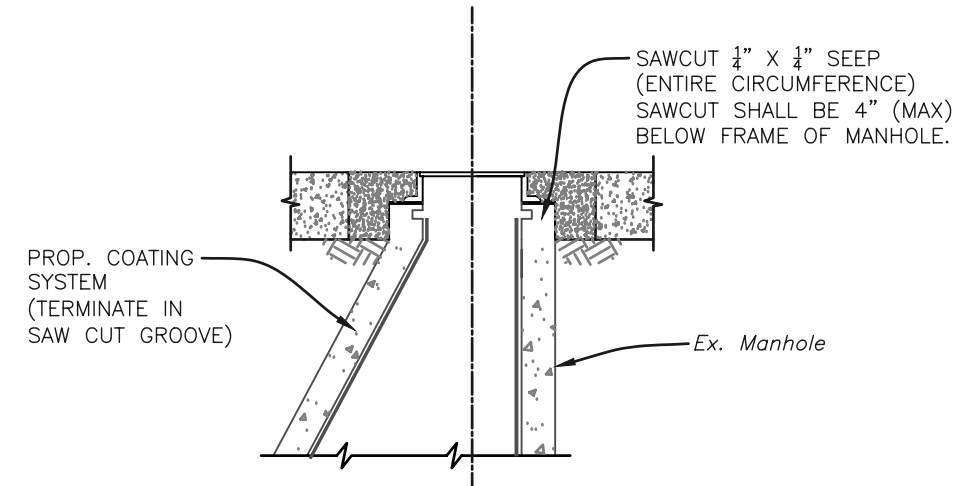
NOTES

1. REMOVE ALL DOWNS AND LOSERS BRICKS FROM THE TOP OF THE MANHOLE.
2. INSTALL A MINIMUM 1" THICK CLASS "D" CONCRETE OVER EXISTING MANHOLE. ALLOW CONCRETE TO CURE (MIN. 24 HRS. UNLESS OTHERWISE APPROVED BY THE ENGINEER).
3. OVERLAY MANHOLES WITH PROPOSED COATING SYSTEM.
4. PROVIDE 6" COATING THICKNESS TRANSITION. PAYMENT - THIS ITEM IS INCLUDED IN THE MANHOLE RESTORATION.



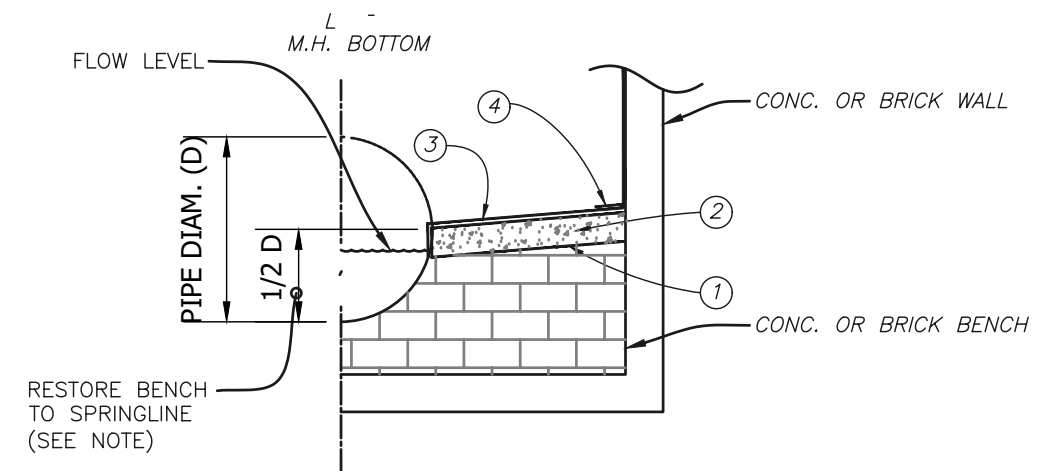
BRICK OR CONCRETE MANHOLE (TYPICAL)

SCALE: N.T.S.



COATING TERMINATION DETAIL

SCALE: N.T.S.



TYPICAL MANHOLE BENCH RESTORATION DETAIL

SCALE: N.T.S.

No.	DATE	REVISIONS
1		
2		
3		

JACINTO CARLOS FERRAS, P.E. #49454  
DESIGN DIVISION HEAD  
WASTEWATER DEPARTMENT

DES: CB  
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CKD: ----  
DATE: Apr-2021

CITY of TAMPA  
WASTEWATER DEPARTMENT

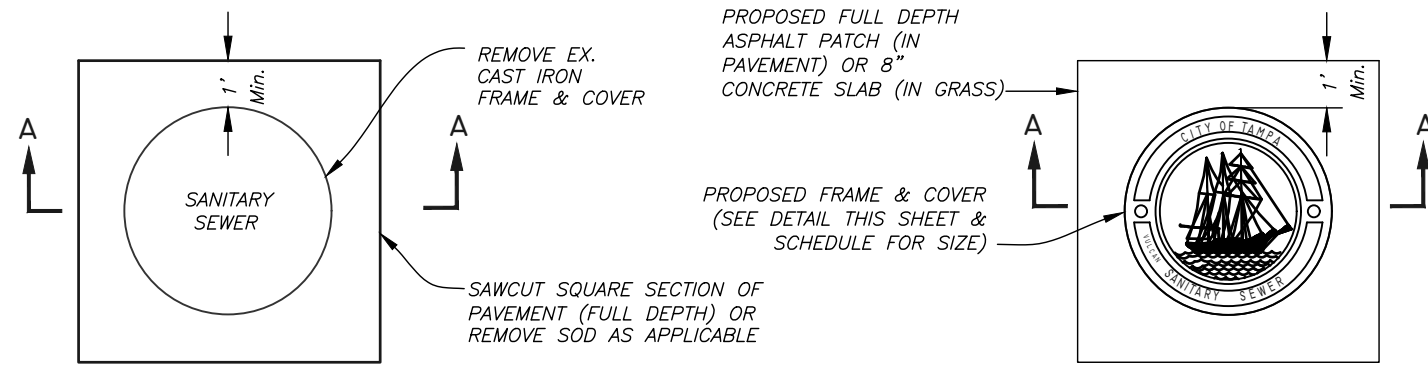
LEMON-GRAY TRUNK SEWER  
REHABILITATION BY CIPP  
MANHOLE REHABILITATION DETAIL

SHEET

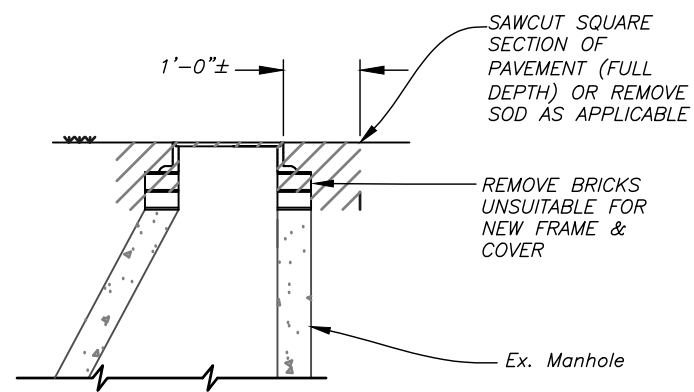
6

**NOTES**

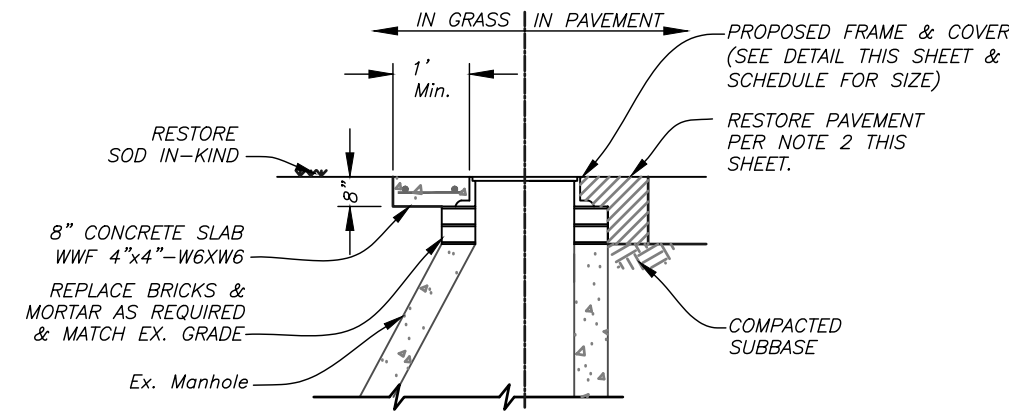
- FOR MANHOLE COVER SIZES AND WHETHER THE COVERS ARE LOCATED IN GRASS OR PAVEMENT, WILL BE PROVIDED ON EACH INDIVIDUAL WORK ORDER ISSUED UNDER THIS CONTRACT.
- PAVEMENT RESTORATION SHALL CONSIST OF 8" PERMANENT BASE (CRUSHED CONCRETE OR CRUSHED LIMEROCK BASE) AND PERMANENT ASPHALT SUPERPAVE PAVEMENT, UNLESS OTHERWISE NOTED. IF LOCATED IN D.O.T. ROW, AN ADDITIONAL 1 1/2" SUPER PAVE ASPHALT IS REQUIRED.



**PLAN**

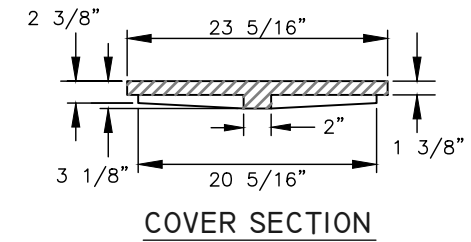


**SECTION A-A  
REMOVAL DETAIL**

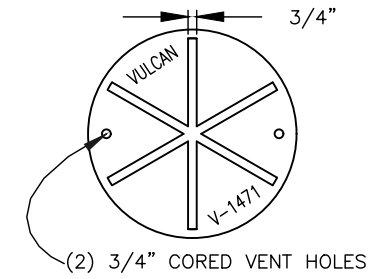


**SECTION B-B  
REPLACEMENT  
DETAIL**

**SMALL COVER DETAIL**



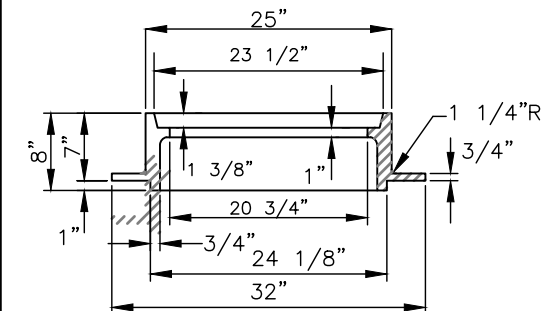
**COVER SECTION**



**COVER BACK**



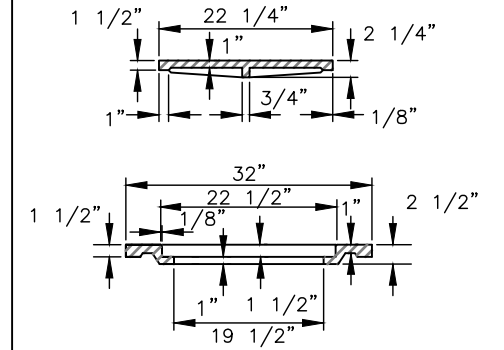
**COVER FACE**



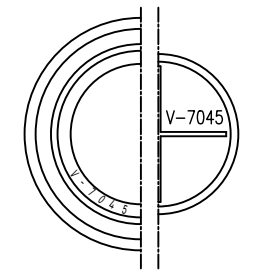
**FRAME SECTION**

FOR MH'S OF SEWERS 24" OR LESS IN DIAMETER:  
VULCAN FOUNDRY NO. V-1471,  
U.S. FOUNDRY NO. 575-AT, OR EQUAL

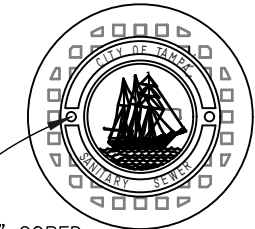
**LARGE COVER DETAIL**



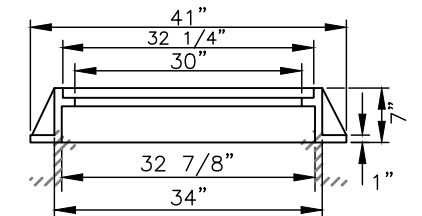
**INNER & OUTER COVER SECTIONS**



**COVER BACKS**



**COVER FACES**



**FRAME SECTION**

FOR MH'S OF SEWERS 27" OR GREATER IN DIAMETER:  
VULCAN FOUNDRY NO. V-7045,  
U.S. FOUNDRY NO. 230-AB-M, OR EQUAL

**HEAVY DUTY CAST IRON MANHOLE FRAME & COVER DETAILS**

\\server\sewer\share\water\water\Projects\Lemon - Gray Trunk Sewer Rehabilitation by CIPP\Lining\DWG\Lemon-Gray-Trunk-Rehab-CIPP\_Lining.dwg

No.	DATE	REVISIONS
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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	DES: CB DRN: KLT CKD: ---- DATE: Apr-2021
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**CITY of TAMPA**  
WASTEWATER DEPARTMENT

LEMON-GRAY TRUNK SEWER  
REHABILITATION BY CIPP  
MANHOLE DETAIL

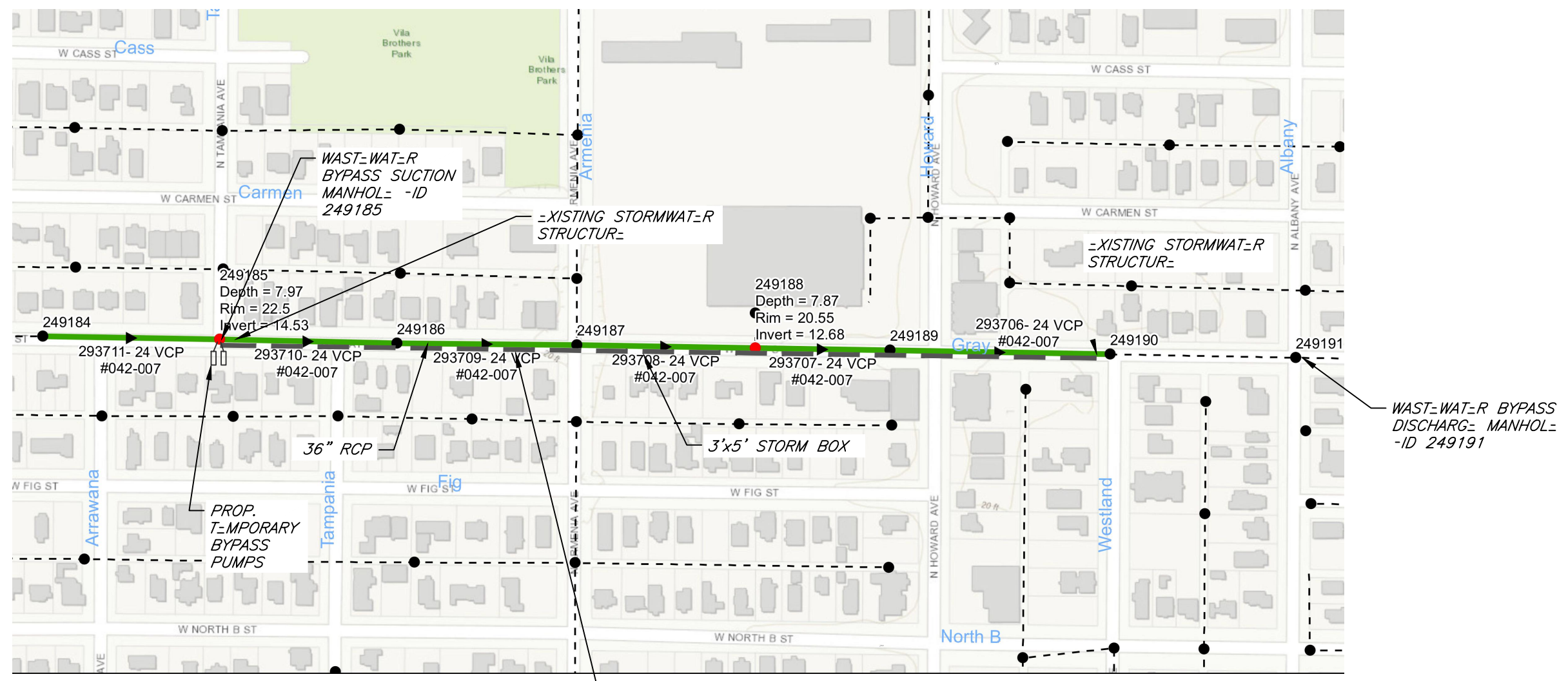
SHEET  
7

G=GENERAL NOTES (THE TEMPORARY BYPASS PUMPING SCHEMATIC SHOWN BELOW IS - \ THE CIPP LINING BETWEEN MANHOLS 249186 AND 249190.)

1. BYPASS PUMPS SHALL BE CAPABLE OF LIFTING 1200 GPM - \ THE 21" AND 24". THE BYPASS PUMPS SHALL BE OF THE SELF-IMMING QUIET TYPE PUMP. BYPASS PUMP NOISE SHALL STRICTLY COMPLY TO ALL LOCAL REGULATIONS AND ORDINANCES COVERING NOISE CONTROL. THIS MAY REQUIRE CONSTRUCTING SOUND ATTENUATING ENCLOSURE AROUND PUMPS. BYPASS METHOD SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER (REFER TO SPECIFICATIONS).
2. THE CONTRACTOR SHALL SUBMIT - \ APPROVAL AN MOT AND BYPASS PLAN TO MAINTAIN UNINTERRUPTED TRAFFIC IN ARMENIA AND HOWARD AVENUE. THE CONTRACTOR SHALL INSTALL A TEMPORARY 8" HDP (DR-17) BYPASS PIPE THROUGH THE EXISTING 3'x5' BOX STORM CULVERT. THE BYPASS PIPING SHALL BE PRESSURED TESTED TO 50 PSI (- \ 2 HR DURATION) AFTER THE PIPE IS INSTALLED AND BEFORE THE BYPASS SYSTEM IS PLACED INTO OPERATION. AFTER CIPP LINING IS COMPLETED, THE BYPASS PIPING SHALL BE REMOVED AND REMOVED FROM THE STORMWATER BOX. NO WASTEWATER SHALL ENTER THE STORMWATER SYSTEM.
3. ANY MODIFICATIONS TO THE EXISTING STORM BOX OR STORM STRUCTURES TO FACILITATE THE BYPASS PIPE INSTALLATION AND REMOVAL SHALL BE RESTORED AS APPROVED BY THE CITY. THE CONTRACTOR SHALL SUBMIT RESTORATION AND REPAIR PLANS - \ APPROVAL.
4. PAVEMENT RESTORATION SHALL MATCH EXISTING PAVEMENT OR 8" CRUSHED CONCRETE BASE AND 2" - \ T SURFACE ASPHALT SP 9.5, WHICH EVER IS GREATER.
5. ALL COST ASSOCIATED WITH THE BYPASS PIPE INSTALLATION AND REMOVAL - \OM INSIDE THE STORMWATER BOX, INCLUDING ALL ASSOCIATED RESTORATION, SHALL BE PAID UNDER THE APPROPRIATE CONTRACT LINE ITEM - \ BYPASSING ACROSS HOWARD AND ARMENIA AVENUE.

**LEGEND**

- PROPOSED 24" CIPP REHABILITATION OF WASTEWATER PIPELINE
- EX WASTEWATER PIPELINE (NO REHABILITATION REQUIRED)
- EX STORMWATER BOX OR RCP PIPE AND STRUCTURES. (PROP. TEMPORARY BYPASS PIPING THROUGH EX. STORM)



TEMPORARY 8" HDP (DR-17) BYPASS PIPE THROUGH EXISTING STORMWATER. THE STORMWATER PIPE BETWEEN ARMENIA AND WESTLAND IS AN EXISTING 3'x5' BOX. THE STORMWATER PIPE BETWEEN ARMENIA AND TAMPANIA AVENUE IS AN EXISTING 36" RCP. (APPROX. 1,600' LENGTH - \ PASS PIPING REQUIRED BETWEEN TAMPANIA AVENUE AND WESTLAND AVENUE.)

**BYPASS PLAN SCHEMATIC FOR CIPP LINING THROUGH ARMENIA AND HOWARD AVE**

N.T.S.

JACINTO CARLOS FERRAS, P.E. #49454  
DESIGN DIVISION HEAD  
WASTEWATER DEPARTMENT

No.	DATE	REVISIONS
1		
2		
3		

DES: CB  
DRN: KLT  
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DATE: Apr-2021

**CITY of TAMPA**  
WASTEWATER DEPARTMENT

LEMON-GRAY TRUNK SEWER  
REHABILITATION BY CIPP  
BYPASS PLAN SHEET

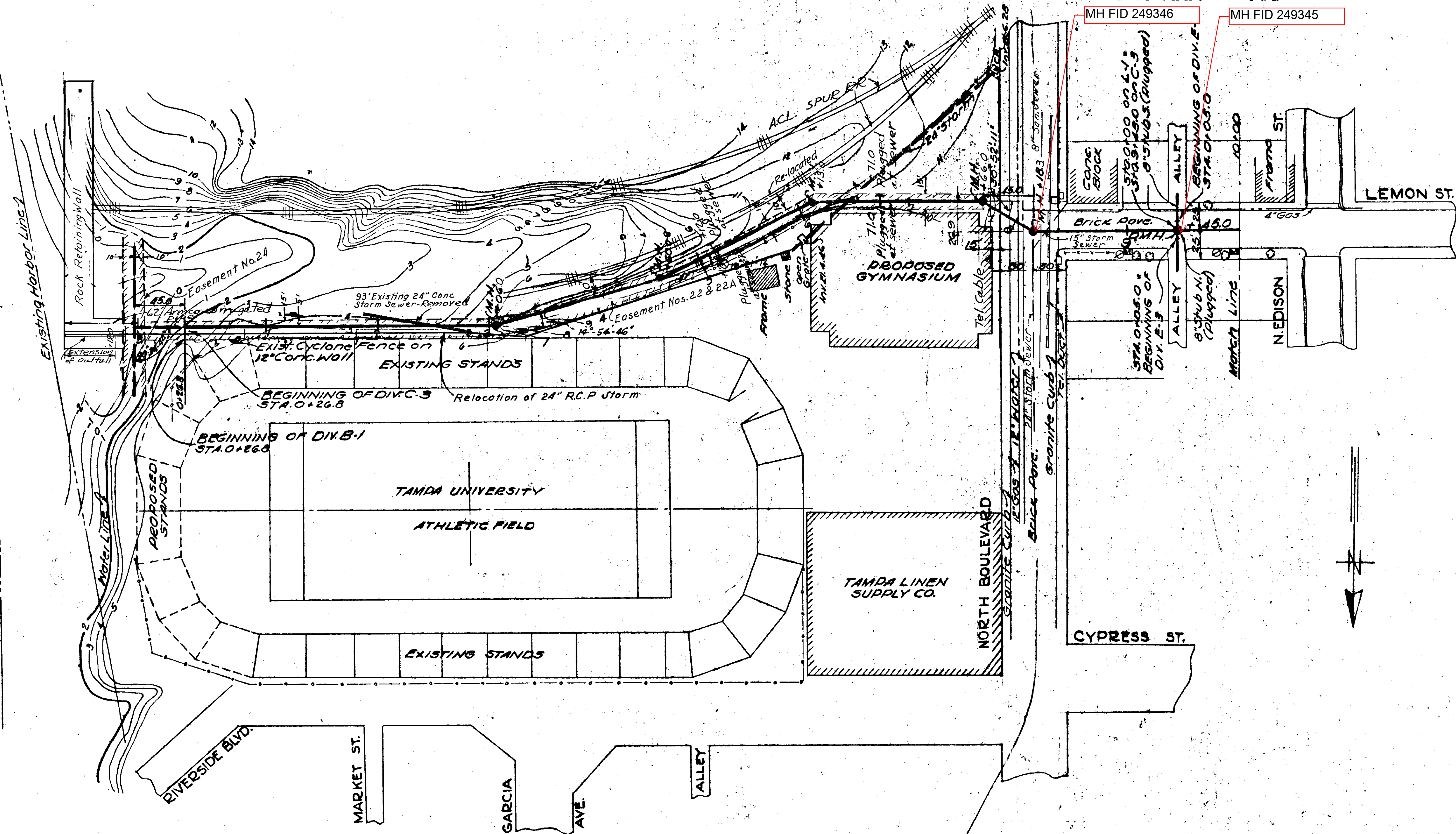


Note:  
Sta. 40+73.3 on West River  
Interceptor = Sta. 0+18.2 on  
Lemon & Gray Sts. Trunk Sewer

HILLSBOROUGH

RIVER

Proposed Harbor Line 1

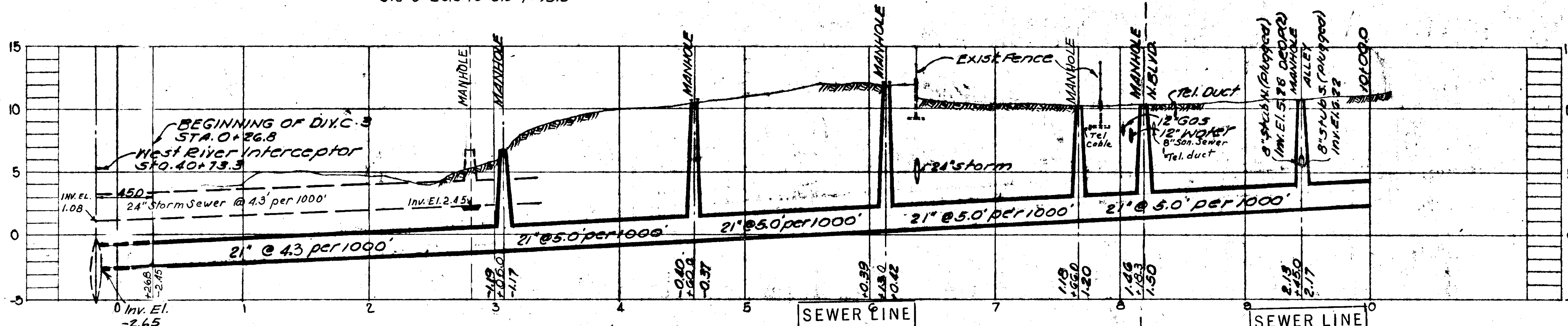


PLAN

Unpaved  
Sta. 0+26.8 to Sta. 7+93.8

Vitrified Brick Pavement  
Sta. 7+93.8 to Sta. 8+42.3

Asphaltic Conc. Pavement  
Sta. 8+42.3 to Sta. 10+00.0



PROFILE

Crushed Rock Stabilizer  
Sta. 0+25.0 to Sta. 1+25.0  
& Sta. 1+50.0 to Sta. 2+05.0  
0.2 Cu. Yds Per Lin. Ft.

Crushed Rock Stabilizer  
Sta. 2+05.0 to Sta. 10+00  
0.1 Cu. Yds Per Lin. Ft.

SEWER LINE LOCATION	
SEC. MAP No.	LINE No.
1-12	53

SEWER LINE LOCATION	
SEC. MAP No.	LINE No.
1-11	33

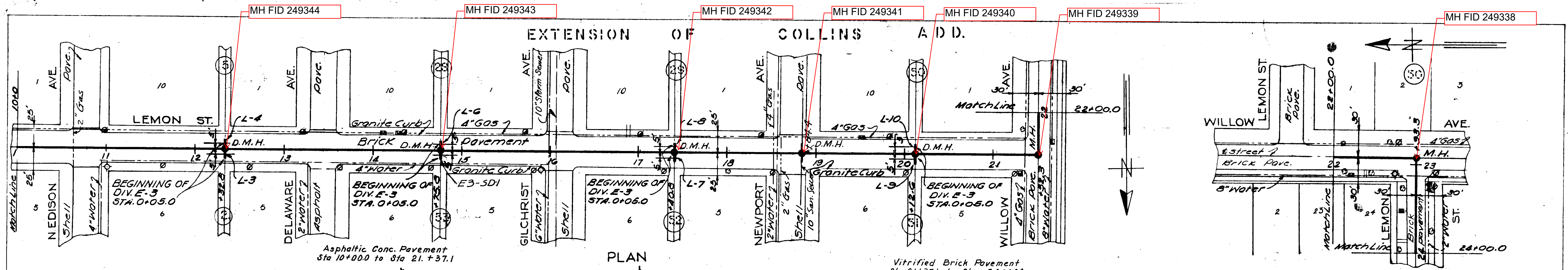
AS-BUILT PLAN

Revised to show actual conditions according  
to construction records as of Aug. 13, 1951  
(E.L.E. 12-20-51)

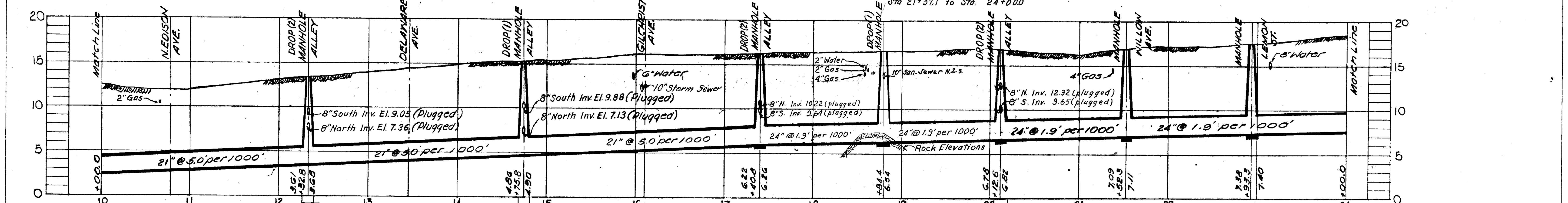
GREELEY AND HANSEN  
ENGINEERS  
CHICAGO, ILL.

CITY OF TAMPA, FLORIDA,  
SEWAGE DISPOSAL SYSTEM.  
DIVISION C3.  
LEMON-GRAY STREETS TRUNK SEWER.  
STA. 0+26.8 TO STA. 10+00

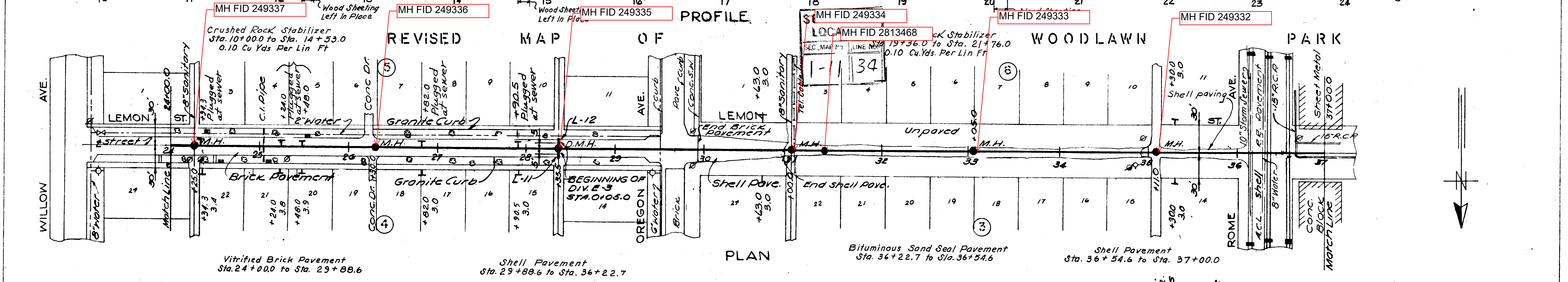
DES. REH DR: REH CKD: WNS DATE: JUNE 18 49	SCALE 1" = 50' 0 50 100	SHEET <b>C33</b> OF 9
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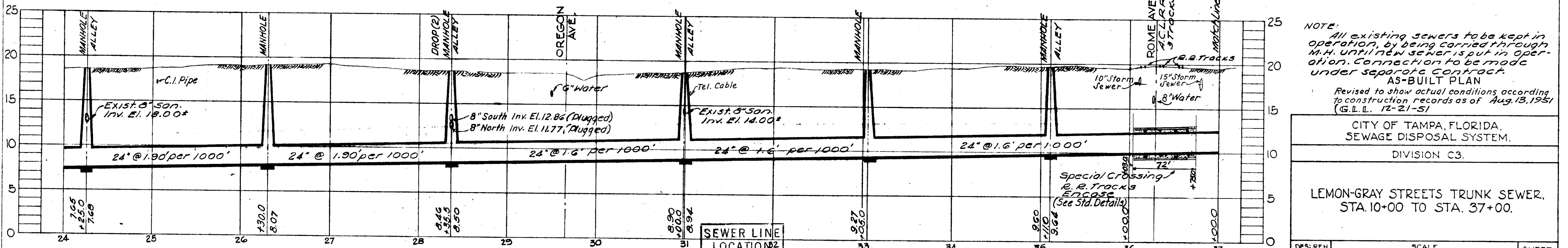
PLAN



PROFILE



PLAN



PROFILE

NOTE:  
All existing sewers to be kept in operation, by being carried through M.H. until new sewer is put in operation. Connection to be made under separate contract.  
AS-BUILT PLAN  
Revised to show actual conditions according to construction records as of Aug. 13, 1951 (G.L.L. 12-21-51)

CITY OF TAMPA, FLORIDA,  
SEWAGE DISPOSAL SYSTEM.  
DIVISION C3.  
LEMON-GRAY STREETS TRUNK SEWER,  
STA. 10+00 TO STA. 37+00.

GREELEY AND HANSEN  
ENGINEERS  
CHICAGO, ILL.

Crushed Rock Stabilizer  
Sta. 24+26.0 to Sta. 24+98.0 & Sta. 26+34.0 to Sta. 26+54.0 & Sta. 33+04.0 to Sta. 34+24.0  
Sta. 35+44.0 to Sta. 35+92.0 & Sta. 36+88.0 to Sta. 37+00.0  
0.10 Cu. Yds. Per Cu. Ft.

SEC. MAP No.	LINE No.
1-11-34	2

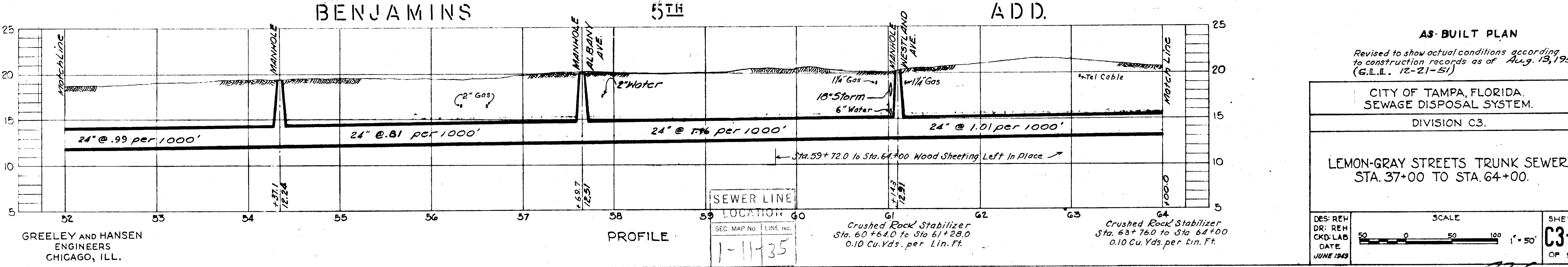
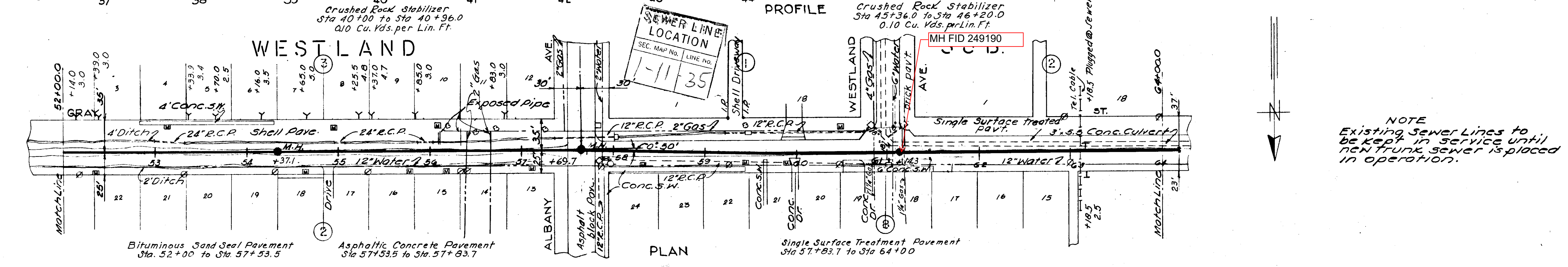
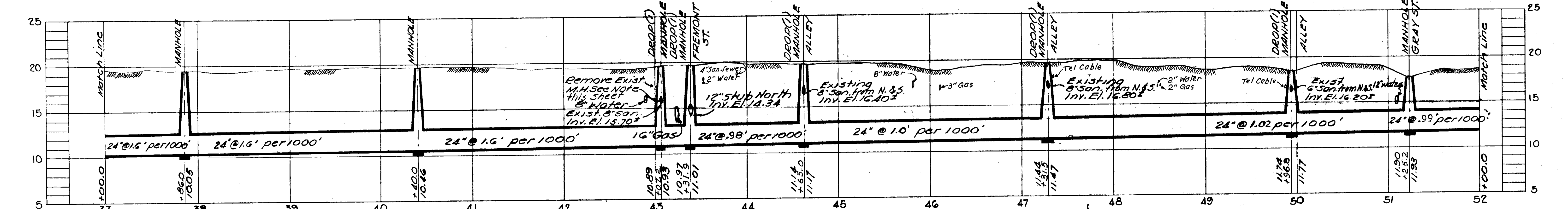
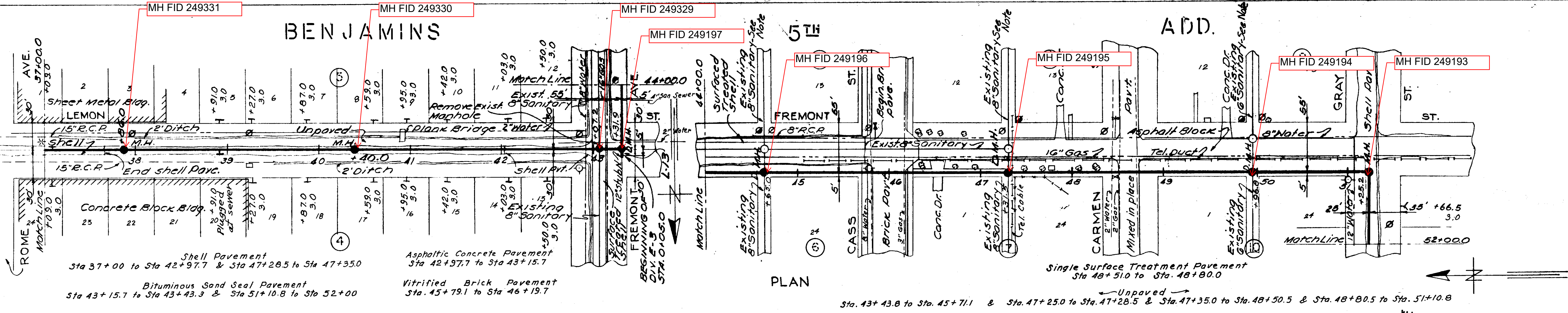
Crushed Rock Stabilizer  
Sta. 35+92.0 to Sta. 36+88.0  
0.20 Cu. Yds. Per Lin. Ft.

DES: REH  
DR: REH  
CKD: LAB  
DATE  
JUNE 1949

SCALE  
1" = 50'

SHEET  
C3-4  
OF 9

42-5



NOTE  
Existing Sewer Lines to be kept in service until new trunk sewer is placed in operation.

**AS-BUILT PLAN**  
Revised to show actual conditions according to construction records as of Aug. 13, 1951 (G.L.L. 12-21-51)

CITY OF TAMPA, FLORIDA.  
SEWAGE DISPOSAL SYSTEM.  
DIVISION C3.

LEMON-GRAY STREETS TRUNK SEWER.  
STA. 37+00 TO STA. 64+00.

DES: REH  
DR: REH  
CKD: LAB  
DATE: JUNE 1949

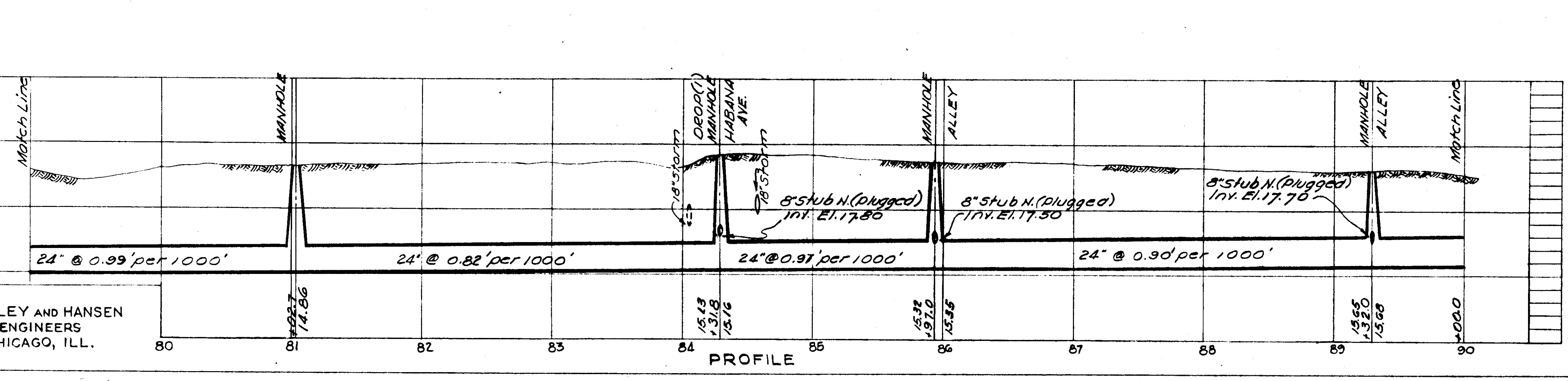
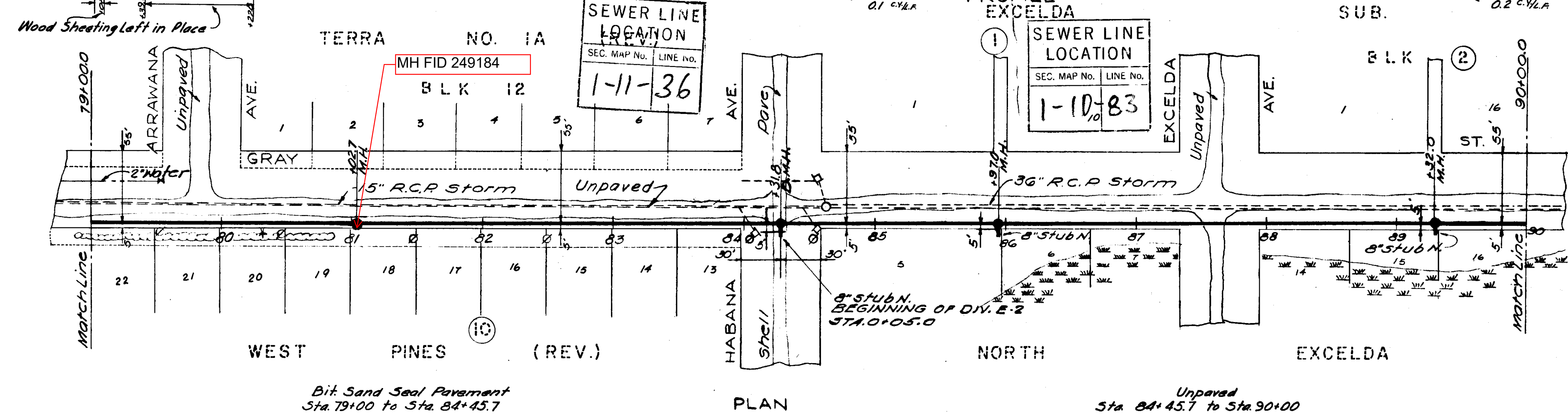
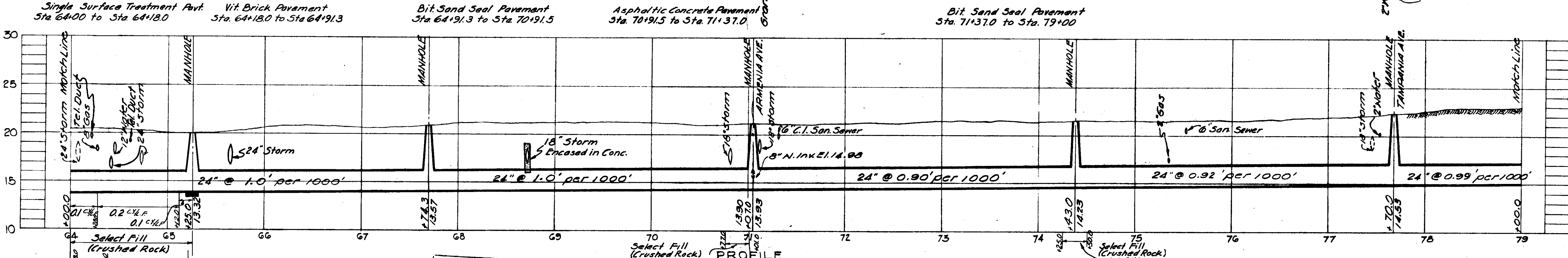
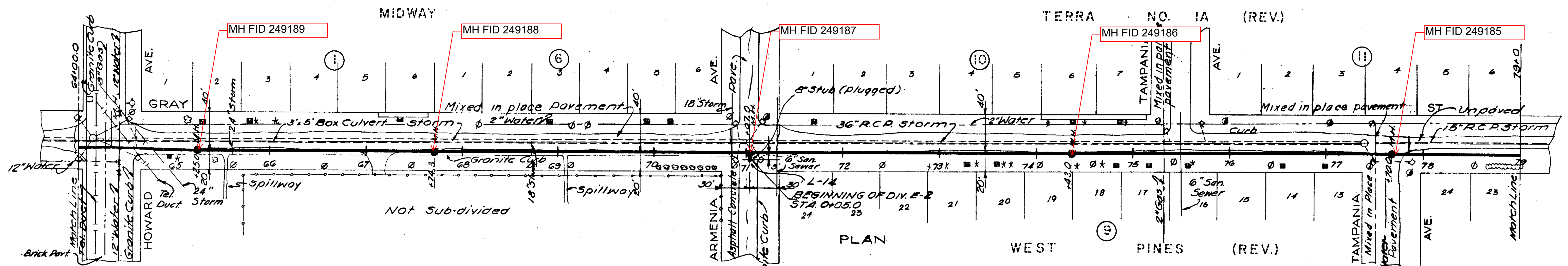
SCALE  
0 50 100 1" = 50'

SHEET **C3-5**  
OF 9

GREELEY AND HANSEN  
ENGINEERS  
CHICAGO, ILL.

SEWER LINE  
LOCATION  
SEC. MAP No. 1-11-35  
LINE No.

12-6



SEWER LINE LOCATION	
SEC. MAP No.	LINE No.
1-10	83

~AS-BUILT PLAN~  
 Revised to show actual conditions according to construction records as of Aug. 13, 1951 (W.A.S. 12-26-51)

CITY OF TAMPA, FLORIDA.  
 SEWAGE DISPOSAL SYSTEM.

DIVISION C3.

LEMON-GRAY STREETS TRUNK SEWER,  
 STA. 64+00 TO STA. 90+00.

DES: REH DR: REH CKD: LAB DATE JUNE 1949	SCALE 1" = 50'	SHEET <b>C3-6</b> OF 9
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GREELEY AND HANSEN  
 ENGINEERS  
 CHICAGO, ILL.