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 **REGISTER AS A “PLANHOLDER”**  
TO BE LISTED ON THE WEBPAGE,  
TO BE FOUND BY POTENTIAL  
SUB-CONTRACTORS,  
AND TO BE OFFICIALLY NOTIFIED OF  
ADDENDA.

FOR ASSISTANCE OR  
TO REGISTER CONTACT:

MAILTO:[BERNICE.WHEELER@TAMPA.GOV.NET](mailto:BERNICE.WHEELER@TAMPA.GOV.NET)  
BERNICE WHEELER, (813)274-8456, FAX 274-8080  
CONTRACT ADMINISTRATION DEPARTMENT  
306 E. JACKSON ST. #280A4N  
TAMPA, FL 33602

B061-056

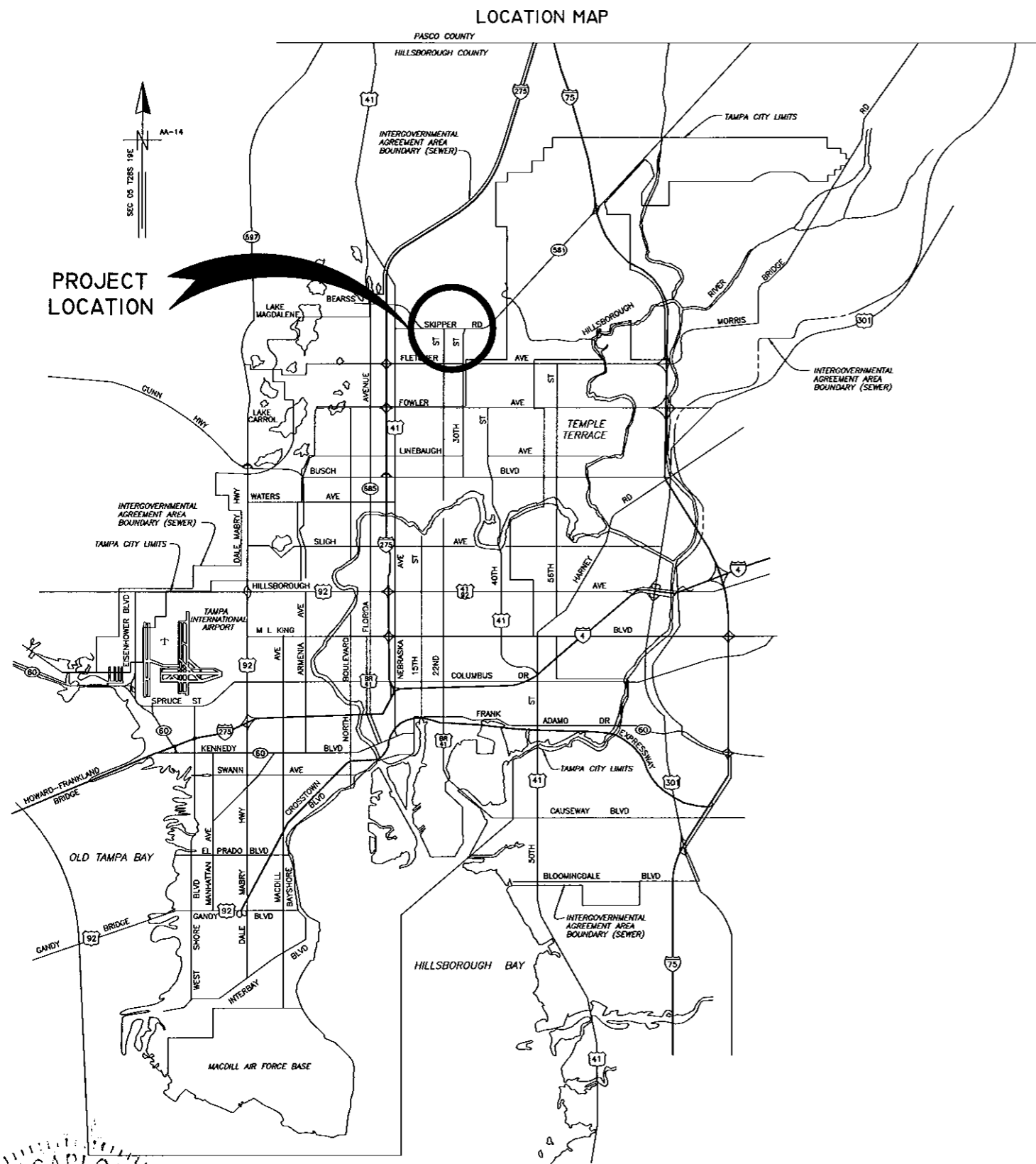
# CITY of TAMPA



## WASTEWATER DEPARTMENT

### PLANS FOR BRUCE B. DOWNS RELIEF FORCE MAIN

CONTRACT NO. 8-C-00007



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JACINTO CARLOS FERRAS  
LICEN. # 149454  
DESIGN DIVISION HEAD  
WASTEWATER DEPARTMENT  
ENGINEER

No.	DATE	REVISIONS
3		
2		
1		

DES: JF  
DRN: RS  
CKD: JF  
DATE: 4/25/08

CITY of TAMPA  
WASTEWATER DEPARTMENT

BRUCE B. DOWNS RELIEF FORCE MAIN  
• COVER SHEET •

W.O. 4009  
SHEET  
1  
OF 19

**LEGEND**

<u>EX SEWERS</u>	UP to 36" & SMALLER	36" & LARGER
EX FORCE MAIN		
EX SAN SEWER & MANHOLES		
EX STORM SEWER & MANHOLES		
<u>PROP SEWERS</u>		
PROP FORCE MAIN		
PROP SANITARY SEWER & MANHOLES		

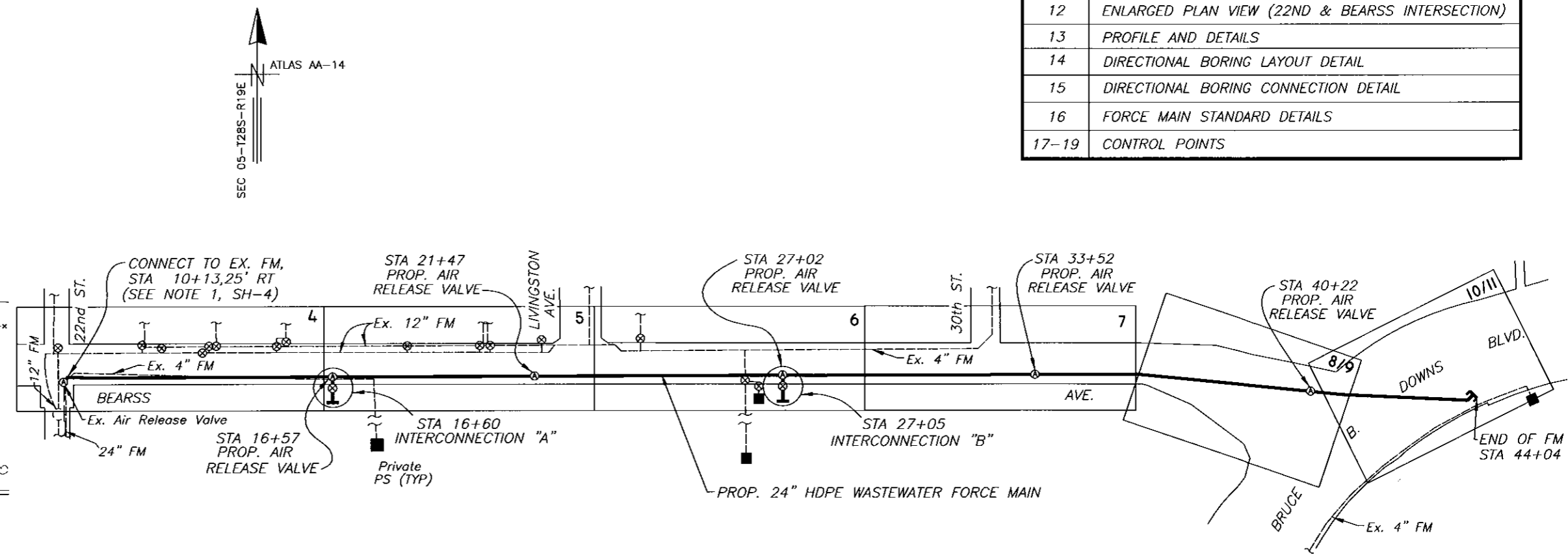
OTHER FEATURES

RIGHT of WAY LINE	
EDGE of PAVEMENT	
WATER LINE	
GAS LINE	
ELECTRICAL CABLE or DUCT	
TELEPHONE CABLE or DUCT	
TV CABLE	
AIR RELEASE VALVE	
VALVE	
HYDRANT	
CATCH BASIN, GRATE	
POWER POLE	
TELEPHONE POLE	
GUY POLE	
GUY WIRE	
VALVE VAULT	
WATER METER	
ELECTRICAL MANHOLE or VAULT	
TELEPHONE MANHOLE or VAULT	
TRAFFIC BOX or VAULT	
BUILDING LIMIT	
PROPERTY OWNERSHIP	
FENCE	
CONIFER	
PALM	
OAK	
OTHER	
SHRUB	
HEDGE	
RAILROAD TRACKS	
IRON PIPE	
CONCRETE MONUMENT	
OPEN DITCHES	
EXISTING WYE	
PROPOSED WYE	
CLEAN OUT	

**ABBREVIATIONS**

TP	TOP of PIPE	DIP	DUCTILE IRON PIPE
iE or INV EL	INVERT ELEVATION	CIP	CAST IRON PIPE
R/W	RIGHT of WAY	RCP	REINFORCED CONCRETE PIPE
MH or MH	MANHOLE	CP	CONCRETE PIPE
PVCP	POLYVINYL CHLORIDE PIPE	AL	APPROXIMATE LOCATION
VCP	VITRIFIED CLAY PIPE	BM	BENCH MARK
ADS	ADVANCED DRAINAGE SYSTEM	PI	POINT of INTERSECTION
Vvh	VERIFIED VERTICAL AND HORIZONTAL LOCATION	RMJ	RESTRAINED MECHANICAL JOINT
HDPE	HIGH DENSITY POLYETHYLENE PIPE	FOC	FIBER OPTIC CABLE
FDOT	FLORIDA DEPT. OF TRANSPORTATION	BT	BURIED TELEPHONE
MOT	MAINTENANCE OF TRAFFIC	FM	FORCE MAIN
DR	DIAMETER RATIO	WW	WASTEWATER

INDEX	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	LEGEND, LOCATION MAP, INDEX
3	GENERAL NOTES AND VACUUM EXCAVATION DATA
4-11	PLAN/PROFILE SHEETS
12	ENLARGED PLAN VIEW (22ND & BEARSS INTERSECTION)
13	PROFILE AND DETAILS
14	DIRECTIONAL BORING LAYOUT DETAIL
15	DIRECTIONAL BORING CONNECTION DETAIL
16	FORCE MAIN STANDARD DETAILS
17-19	CONTROL POINTS



**PROJECT MAP**  
N.T.S.

No.	DATE	REVISIONS
3		
2		
1		

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

DES: JF  
DRN: RS  
CKD: JF  
DATE: 4/25/08

**CITY of TAMPA**  
WASTEWATER DEPARTMENT

**BRUCE B. DOWNS RELIEF FORCE MAIN**  
• LEGEND •

W.O. 4009  
SHEET  
**2**  
OF 19

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GENERAL NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES WERE PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES (CALL SUNSHINE) AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION.
2. THE MINIMUM CLEARANCE BETWEEN THE PROPOSED FORCE MAIN AND ALL CROSSING UTILITIES SHALL BE 12-INCHES UNLESS OTHERWISE NOTED.
3. THE PROPOSED FORCE MAIN SHALL BE INSTALLED ACCORDING TO THE STATIONS, OFFSETS AND INVERT ELEVATIONS PROVIDED WITH NO INTERMEDIATE HIGH OR LOW POINTS BETWEEN THE SPECIFIED INVERT ELEVATIONS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. THE DIRECT BURY PORTIONS OF THE PROJECT SHALL UTILIZE 24-INCH AWWA C-905 (DR-25) GREEN PVC OR 24-INCH HDPE AWWA C-906 (DR-11) PIPE UNLESS OTHERWISE NOTED ON THE PLANS. ALL 4-INCH PVC FORCE MAINS SHALL BE AWWA C-900 (DR-18) WITH PVC FITTINGS.
5. DIRECTIONAL BORES SHALL UTILIZE 24-INCH HDPE AWWA C-906 (DR-11) PIPE WITH A MINIMUM OF 2 IMPREGNATED, LONGITUDINAL GREEN STRIPES. HDPE JOINTS SHALL BE BUTT FUSED.
6. PIPE BENDS SHALL BE DIP WITH PROTECTO 401 EPOXY LINING, C-905 PVC (DR-25) OR C-906 HDPE (DR-11).
7. ALL FORCE MAIN VALVES, FITTINGS AND BENDS SHALL HAVE RESTRAINED MECHANICAL JOINTS UNLESS THE JOINTS ARE BUTT FUSED HDPE. RESTRAINING DEVICES SHALL BE "MEGA-LUG" AS MANUFACTURED BY EBAA IRON OR APPROVED EQUAL. THE COST OF THE RESTRAINING DEVICES SHALL BE INCLUDED IN THE UNIT COSTS OF THE PIPE AND BENDS.
8. CONNECTIONS BETWEEN HDPE AND PVC OR DIP SHALL BE IN ACCORDANCE WITH THE HDPE TRANSITION DETAIL. COST OF THE TRANSITIONS, WHERE APPLICABLE, SHALL BE INCLUDED IN THE UNIT COSTS OF THE PIPE AND BENDS.
9. ALL PROPOSED FORCE MAIN PIPE SHALL HAVE 2 LOCATING WIRES IN ACCORDANCE WITH THE PIPE LOCATING WIRE DETAIL. THE WIRES SHALL BE RAISED AND TERMINATED AT ALL AIR RELEASE VALVES AS SHOWN ON THE AIR RELEASE VALVE DETAIL.
10. CONTRACTOR SHALL REPLACE ALL REMOVED OR DAMAGED IRRIGATION PIPES, VALVES AND COMPONENTS TO PRE-EXISTING CONDITION OR BETTER.
11. THE CONTRACTOR SHALL FURNISH THE CITY A CONTINUOUS COLOR VIDEOTAPE RECORDING OF PRE-CONSTRUCTION CONDITIONS OF ALL SURFACE FEATURES WITHIN THE CONSTRUCTION'S ZONE OF INFLUENCE, SIMULTANEOUSLY PRODUCED AUDIO COMMENTARY AND ELECTRONIC DISPLAY OF TIME AND DATE.
12. PAVEMENT RESTORATION OF BEARSS AVENUE SHALL CONSIST OF 9-INCH THICK SUPERPAVE BASE COURSE AND 2-INCH THICK SUPERPAVE ASPHALT SURFACE. SUPERPAVE SP-12 BASE COURSE AND ASPHALT SURFACE SHALL BE INSTALLED IN STRICT ACCORDANCE TO THE APPROPRIATE FDOT SPECIFICATIONS. AFTER ALL ROAD PATCHES ASSOCIATED WITH THIS PROJECT ARE COMPLETE, CONTRACTOR SHALL MILL AND OVERLAY 1-INCH TYPE FC-5 ASPHALT FOR THE LIMITS SHOWN ON THESE PLANS.
13. BACKFILL AND SUBGRADE SHALL BE INSTALLED IN 12-INCH LIFTS AND COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180-57.
14. TEST LAB, INC HAS PERFORMED 4 SOIL BORINGS FOR THIS PROJECT. THE GEOTECHNICAL REPORT DATED SEPTEMBER 25, 2007 IS PROVIDED AS A SUPPLEMENT TO THE CONTRACT DOCUMENTS.
15. GEORGE F. YOUNG, INC. HAS PERFORMED VACUUM EXPLORATIONS TO VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF VARIOUS UTILITIES THROUGHOUT THIS PROJECT. A SUMMARY TABLE IS PROVIDED ON THIS SHEET AND THE VVH LOCATIONS ARE SHOWN ON THE PLAN/PROFILE SHEETS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY ROAD CLOSURE AND RIGHT-OF-WAY PERMITS FROM HILLSBOROUGH COUNTY. PERMIT APPLICATIONS ALONG WITH A DETAILED MAINTENANCE OF TRAFFIC (MOT) PLAN WILL HAVE TO BE SUBMITTED TO AMOS CASTILLO (274-6500) FOR EACH AFFECTED ROADWAY. THE MOT(S) SHALL CONFORM TO APPLICABLE FDOT INDEX DRAWING (MOST CURRENT EDITION).
17. CONTRACTOR SHALL PROVIDE PEDESTRIAN DETOURS AND SIGNAGE FOR SECTIONS WHERE THE SIDEWALKS ARE TO BE CLOSED IN ACCORDANCE WITH HILLSBOROUGH COUNTY'S ACCOMODATION GUIDE, LATEST EDITION. THE DETOURS AND SIGNAGE SHALL BE REFLECTED ON THE MOT PLANS. CONTRACTOR SHALL MINIMIZE THE LENGTH OF SIDEWALKS CLOSED AT ANY GIVEN TIME. ONLY THE SECTION OF SIDEWALK THAT CONTAINS THE PIPE TO BE DIRECTIONAL BORED NEXT SHALL BE CLOSED.
18. CONTRACTOR'S WORK HOURS WILL BE RESTRICTED BETWEEN 9 AM - 4 PM AND 9 PM - 6 AM ON WEEKDAYS AND 7 AM - 7 PM ON WEEKENDS. A POLICE OFFICER SHALL PROVIDED DURING ALL TRAFFIC CONTROL OPERATIONS.
19. AIR RELEASE BOXES SHALL BE INSTALLED IN GRASSED AREAS AND NOT IN PAVMENT OR SIDEWALKS. FINAL LOCATIONS OF BOXES WILL BE DETERMINED IN THE FIELD.

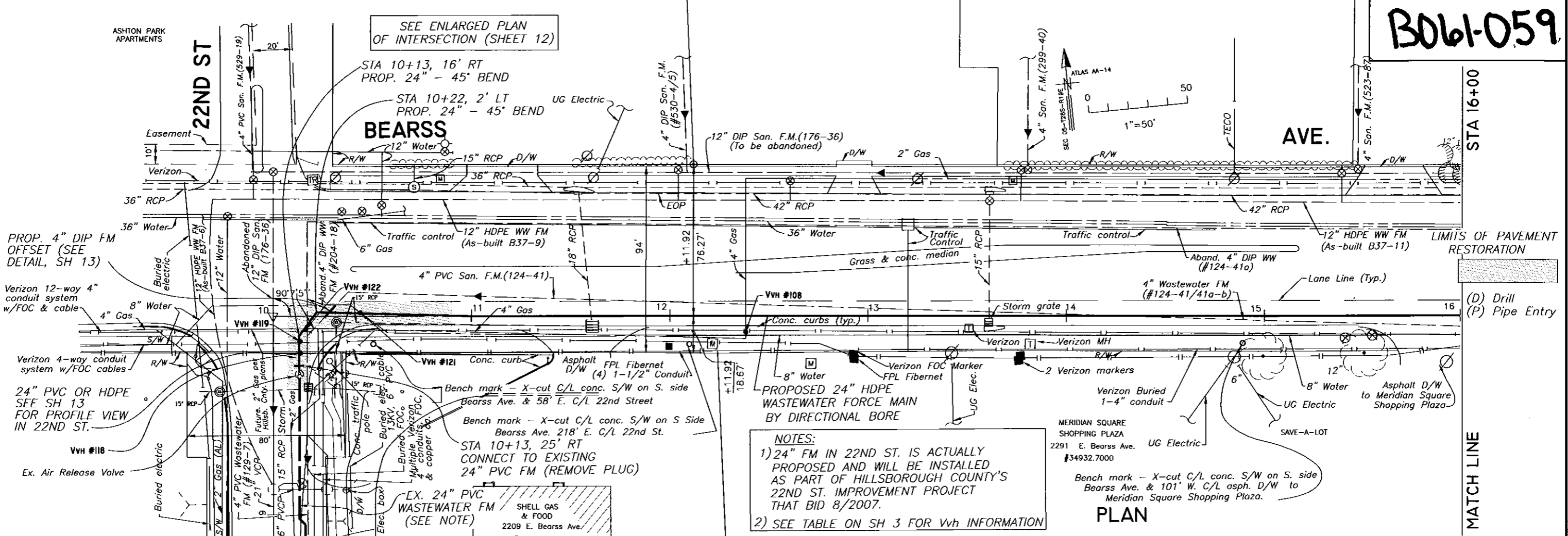
VACUUM EXCAVATION DATA				
Vvh #	Station & Offset	Utility	Top El.	Sheet No.
118	10+14, 18' RT	4" PVC FOC	37.20	4
119	10+14, 13' RT	4" PVC BT	39.82	4
122	10+16, 7' RT	4" Gas	35.71	4
121	10+44, 2' LT	8" DIP WM	42.94	4
108	12+38, 8' RT	4" Steel Gas	42.93	4
7	16+16, 6' RT	4" FM	43.76	5
109	17+59 6' RT	4" PVC BT	44.20	5
111	26+53, 7' RT	4" CIP FM	42.07	6
112	26+66, 12' RT	4" PVC FM	42.25	6
117	29+42, 8' RT	4" PVC BT	41.70	7
113	33+49, 11' LT	4" PVC BT	40.11	7
107	34+15, 9' RT	FOC	41.74	7
114	36+24, 10' RT	4" PVC BT	42.13	8/9
115	36+24, 7' RT	4" PVC BT	42.87	8/9
116	36+80, 20' RT	4" PVC BT	42.53	8/9
106	38+25, 6' RT	4" PVC WM	45.12	8/9
105	40+79, 5' RT	6" Steel Gas	41.99	10/11
104	41+30, 2' RT	2" PVC Traffic Signal	46.35	10/11
103	42+96, 114' LT	36" WM	35.00	10/11
101	44+02, 11' RT	54" WM	32.90	10/11
102	44+20, 9' RT	36" WM	33.71	10/11
201	45+17, 10' RT	54" RCP WM	35.01	10/11

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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JF DRN: RS CKD: JF DATE: 4/25/08	<b>CITY of TAMPA</b> WASTEWATER DEPARTMENT	<b>BRUCE B. DOWNS RELIEF FORCE MAIN</b> • GENERAL NOTES •	W.O. 4009 SHEET <b>3</b> OF 19
	3						
	2						
	1						

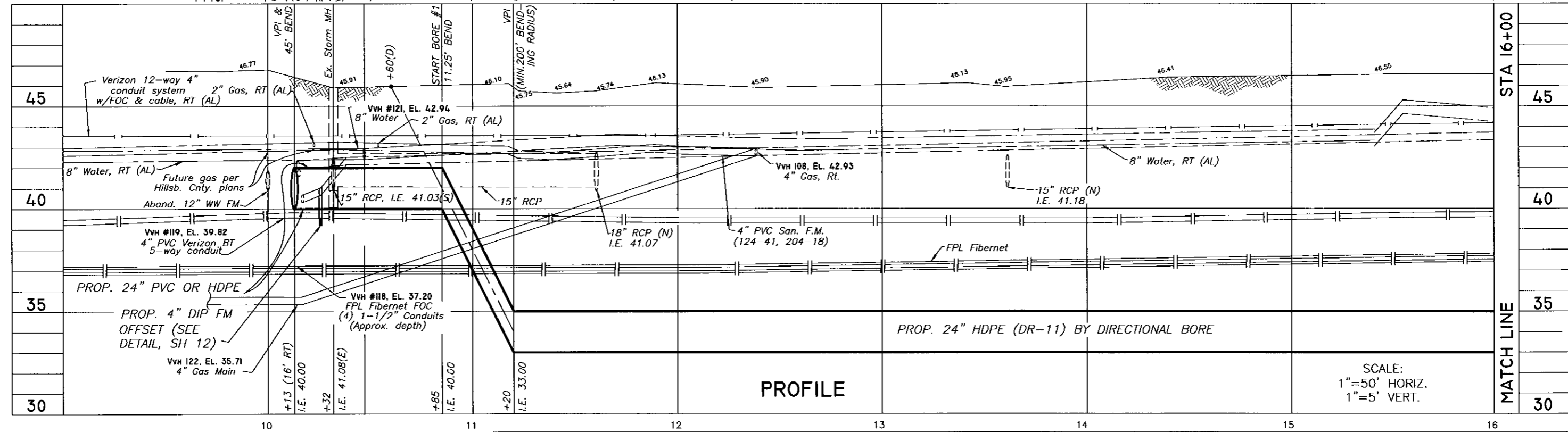
ASHTON PARK APARTMENTS

SEE ENLARGED PLAN OF INTERSECTION (SHEET 12)



**NOTES:**  
 1) 24" FM IN 22ND ST. IS ACTUALLY PROPOSED AND WILL BE INSTALLED AS PART OF HILLSBOROUGH COUNTY'S 22ND ST. IMPROVEMENT PROJECT THAT BID 8/2007.  
 2) SEE TABLE ON SH 3 FOR Vvh INFORMATION

PLAN



PROFILE

SCALE:  
 1"=50' HORIZ.  
 1"=5' VERT.

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

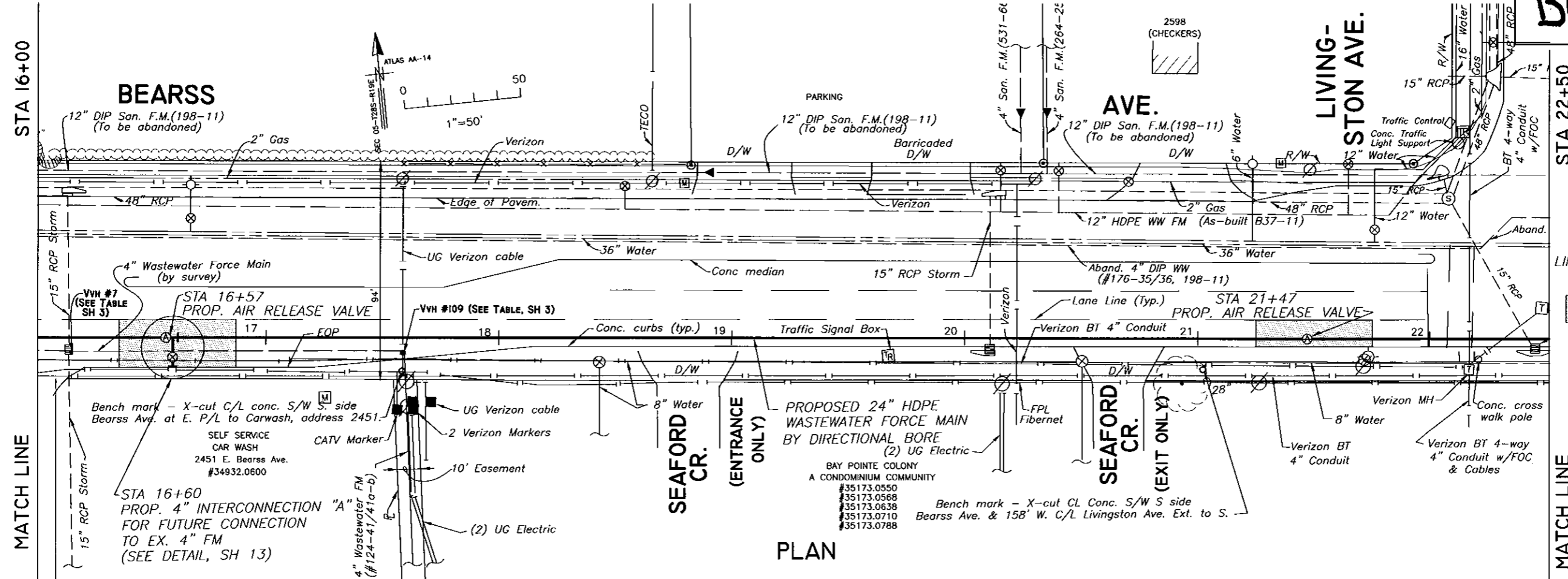
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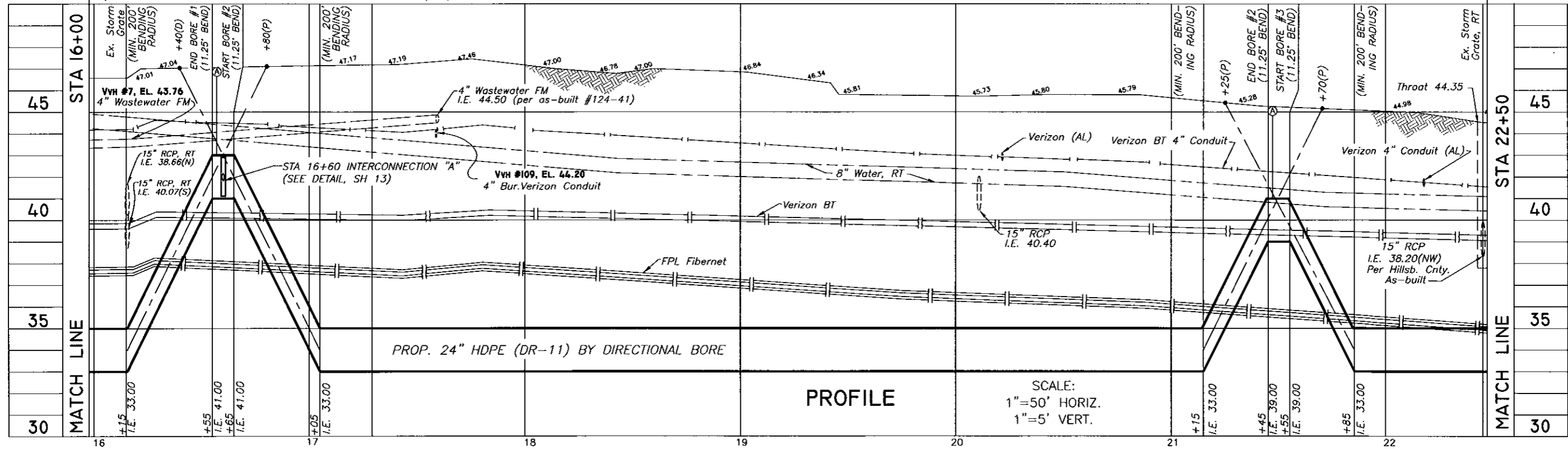
**CITY of TAMPA**  
 WASTEWATER DEPARTMENT

**BRUCE B. DOWNS RELIEF FORCE MAIN**  
 • PLAN/PROFILE •

W.O. 4009  
 SHEET  
**4**  
 OF 19



PLAN



PROFILE

No.	DATE	REVISIONS
3		
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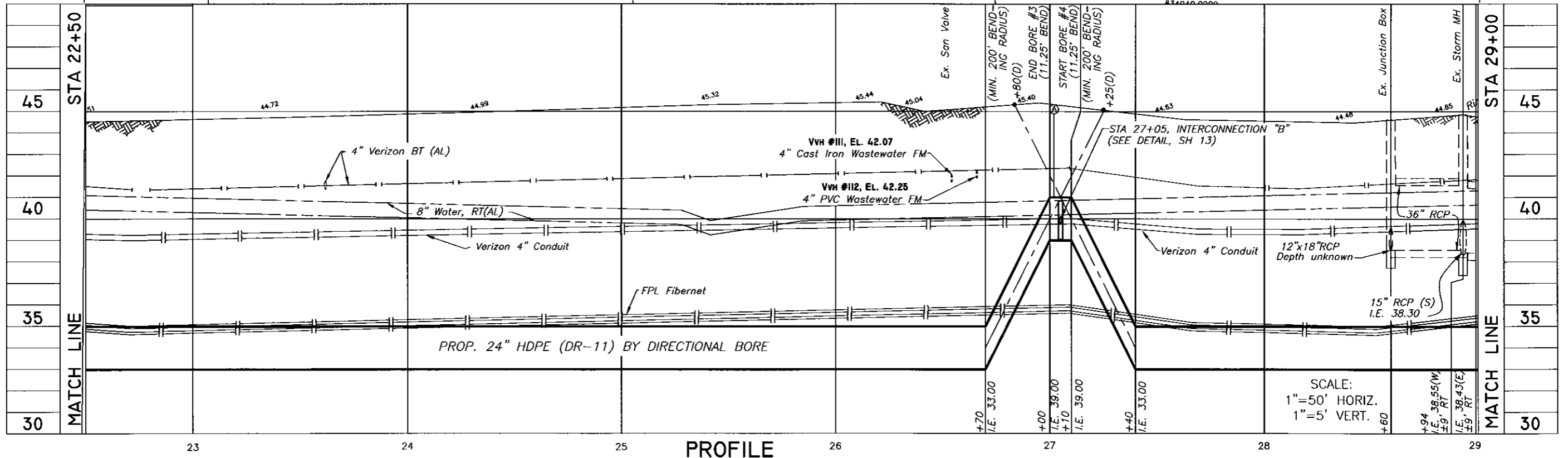
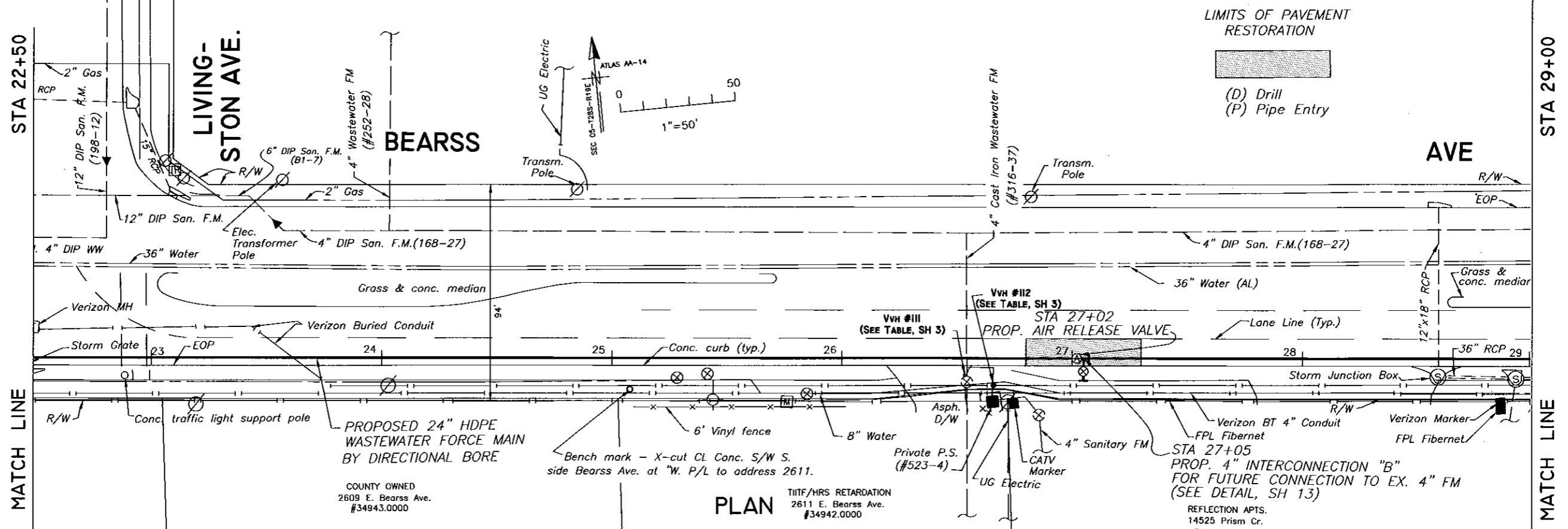
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 CKD: JF  
 DATE: 4/25/08

CITY of TAMPA  
 WASTEWATER DEPARTMENT

BRUCE B. DOWNS RELIEF FORCE MAIN  
 • PLAN/PROFILE •

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

W.O. 4009  
 SHEET  
**5**  
 OF 19



No.	DATE	REVISIONS
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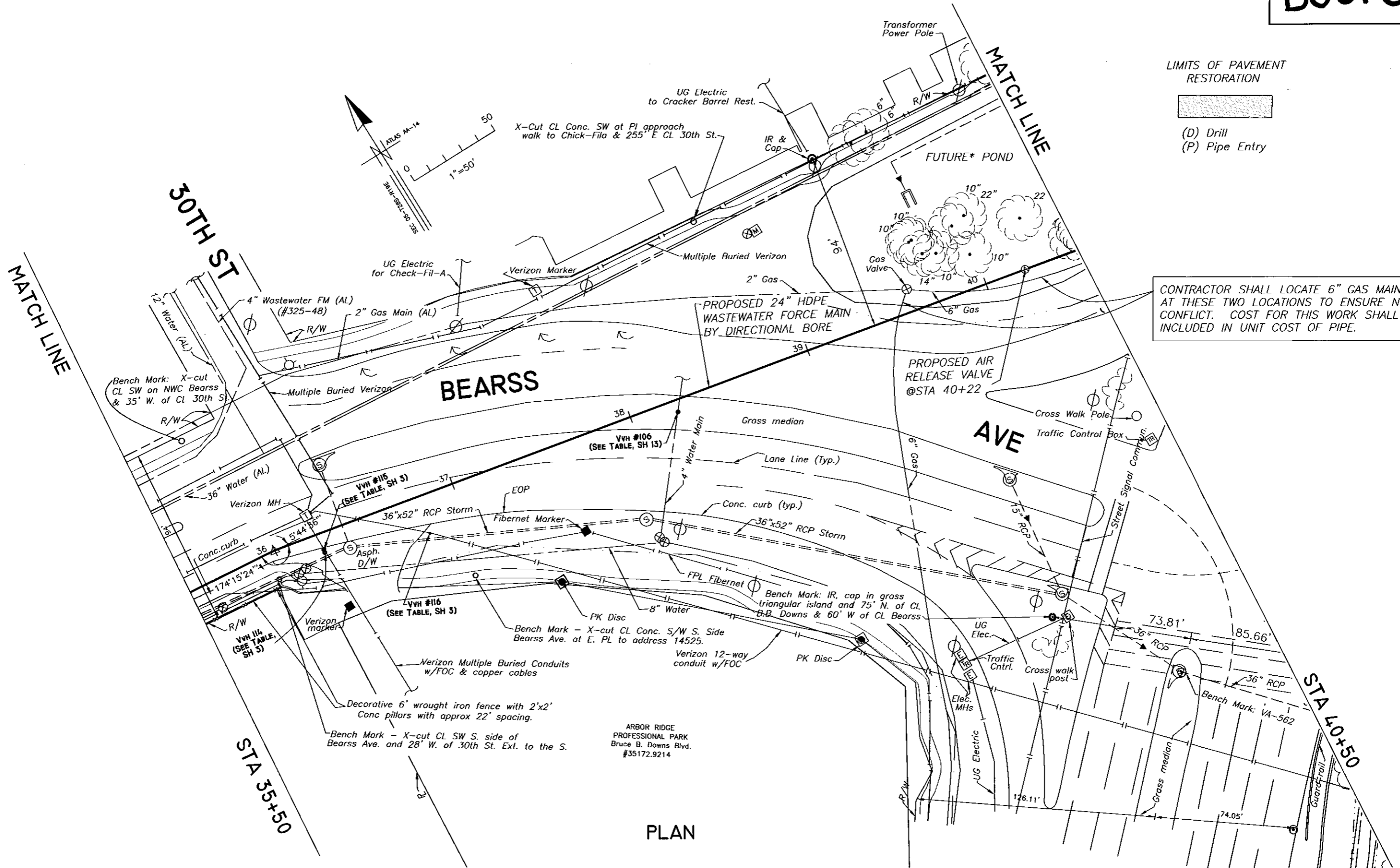
**CITY of TAMPA**  
 WASTEWATER DEPARTMENT

**BRUCE B. DOWNS RELIEF FORCE MAIN**  
 • PLAN/PROFILE •

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

W.O. 4009  
 SHEET  
**6**  
 OF 19





PLAN

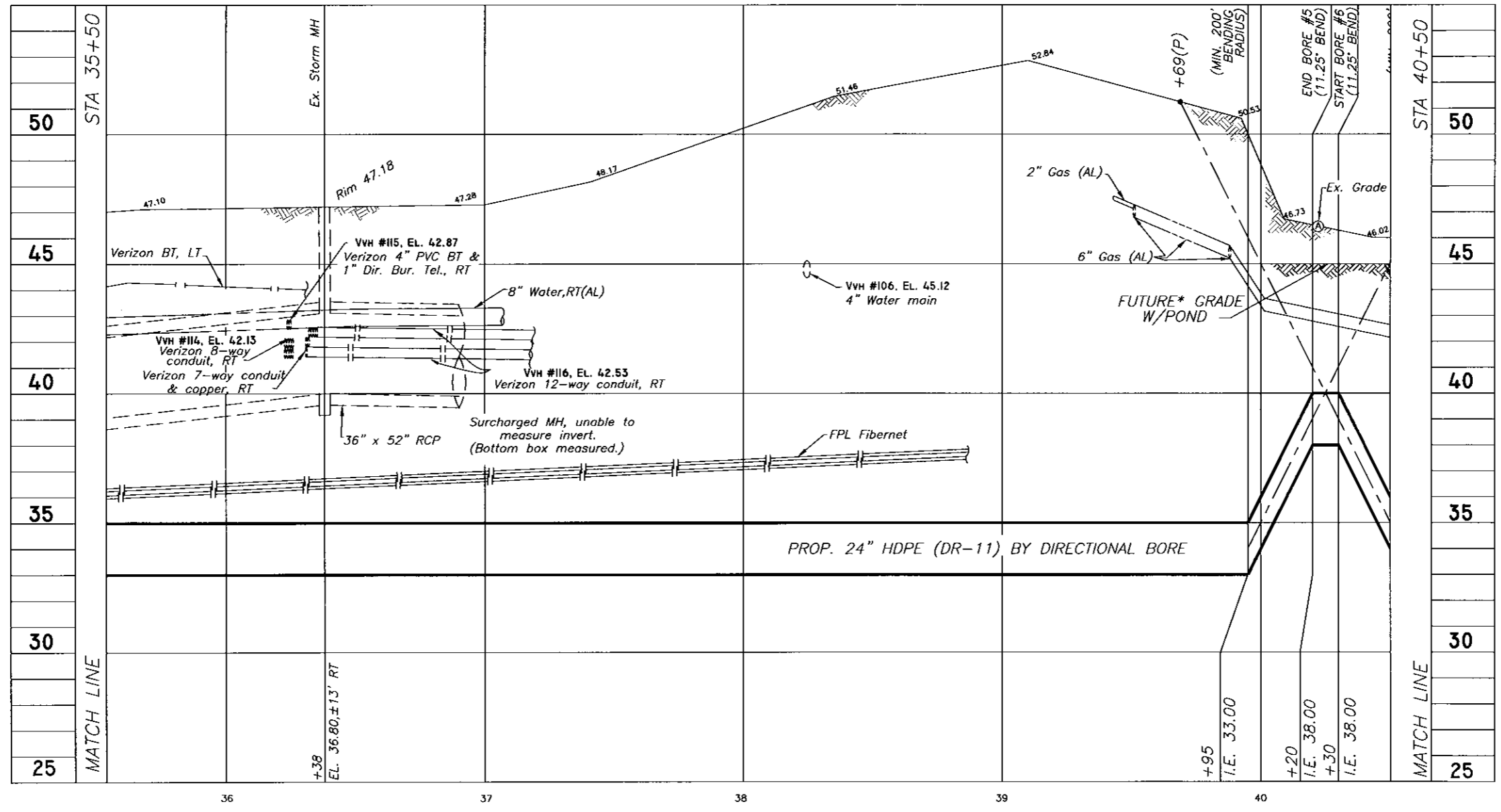
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DES: JF  
DRN: RS  
CKD: JF  
DATE: 4/25/08

CITY of TAMPA  
WASTEWATER DEPARTMENT

BRUCE B. DOWNS RELIEF FORCE MAIN  
• PLAN/PROFILE •

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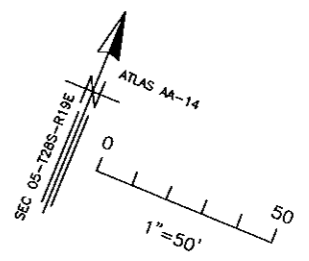
PROFILE

SCALE:  
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 1"=5' VERT.

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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JF DRN: RS CKD: JF DATE: 4/25/08	CITY of TAMPA WASTEWATER DEPARTMENT	BRUCE B. DOWNS RELIEF FORCE MAIN • PLAN/PROFILE •	W.O. 4009
	3						SHEET
	2						9
	1						OF 19

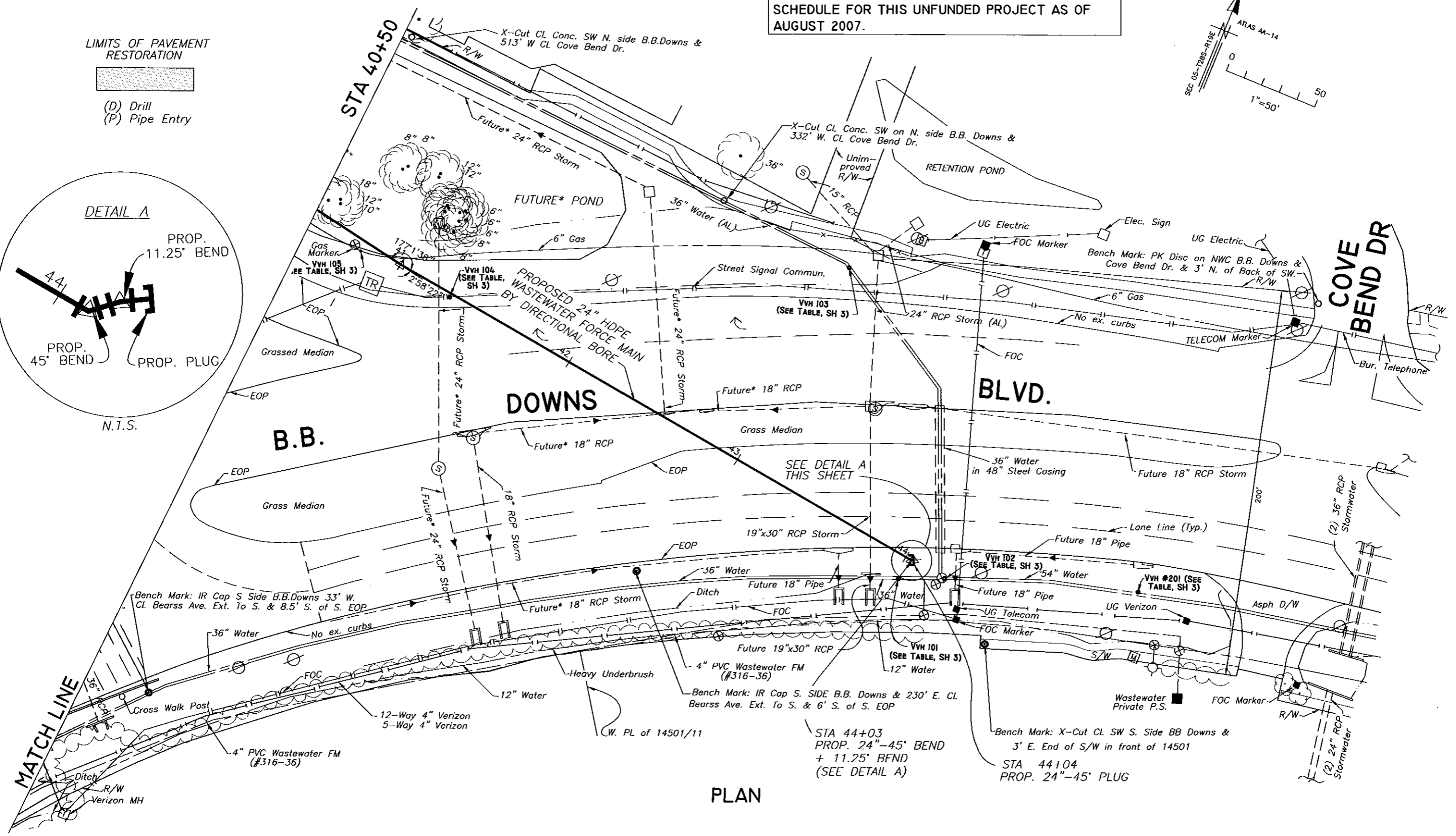
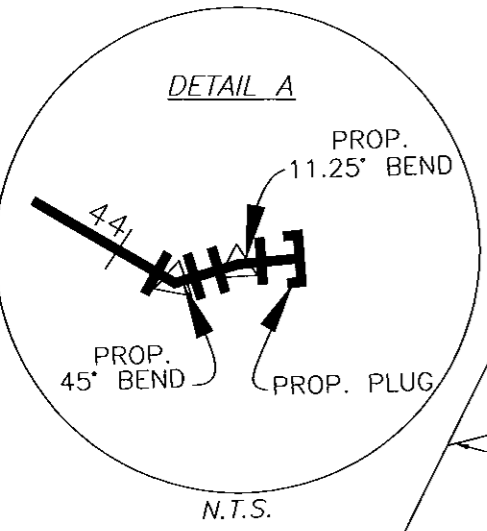
\*FUTURE POND AND STORM PIPES ARE SHOWN  
 BASED ON PARSONS BRINCKERHOFF QUADE &  
 DOUGLAS, INC.'S 90% PLANS OF HILLSBOROUGH  
 COUNTY'S BRUCE B. DOWNS WIDENING PROJECT,  
 SEGMENT A. BASED ON THE COUNTY, THERE IS NO  
 SCHEDULE FOR THIS UNFUNDED PROJECT AS OF  
 AUGUST 2007.



LIMITS OF PAVEMENT RESTORATION



(D) Drill  
 (P) Pipe Entry



PLAN

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

No.	DATE	REVISIONS
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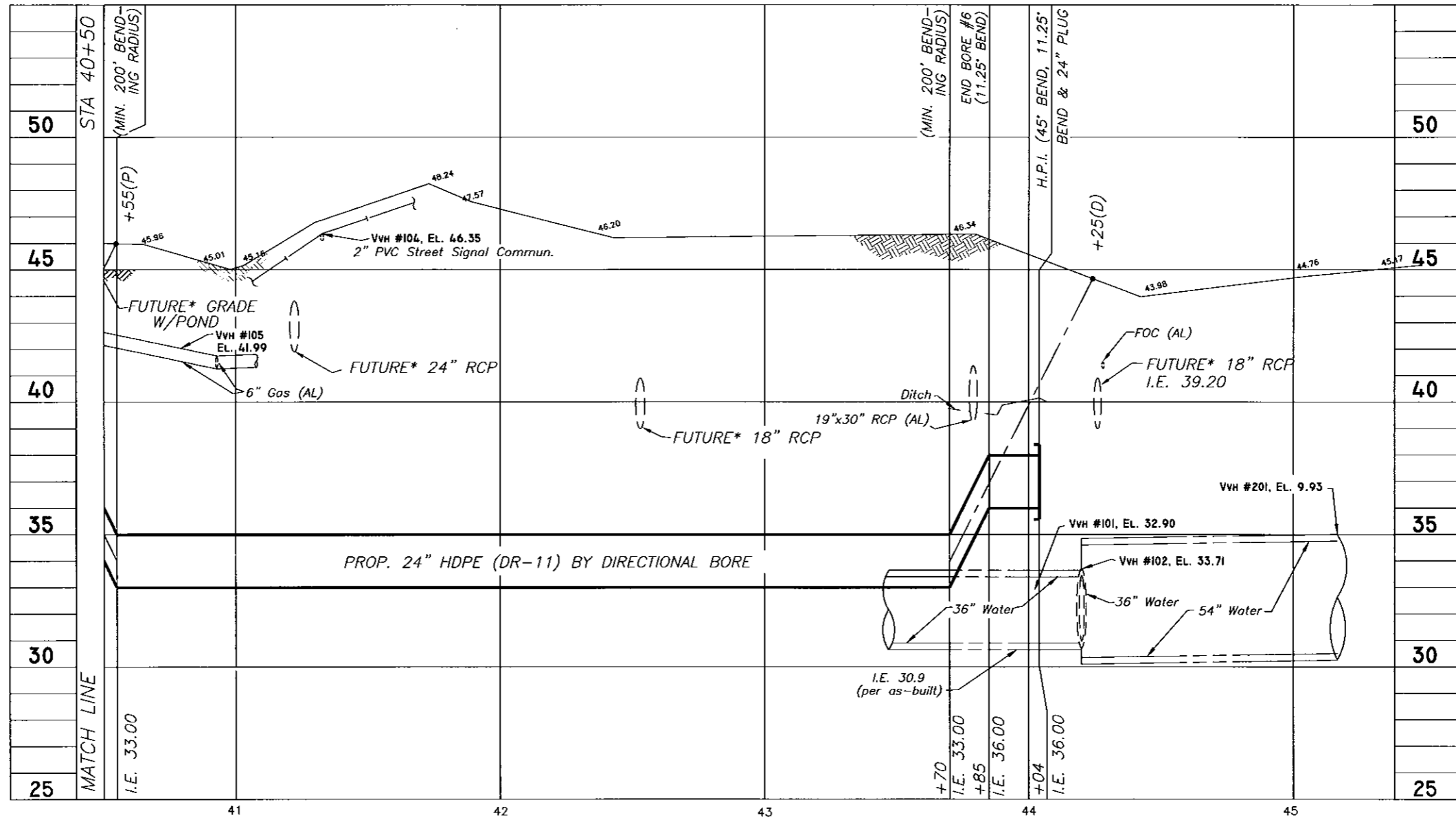
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CITY of TAMPA  
 WASTEWATER DEPARTMENT

BRUCE B. DOWNS RELIEF FORCE MAIN  
 • PLAN/PROFILE •

W.O. 4009  
 SHEET  
 10  
 OF 19

C:\Program Files\Autodesk\Map 3D 2007\DWG\PIPEV07 - Bruce B. Downs - Bearss\DWG\4009-100%-BEARSS-FM-1.DWG, 4/23/2008 11:59:13 AM, 1:1



PROFILE

SCALE:  
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1"=5' VERT.

No.	DATE	REVISIONS
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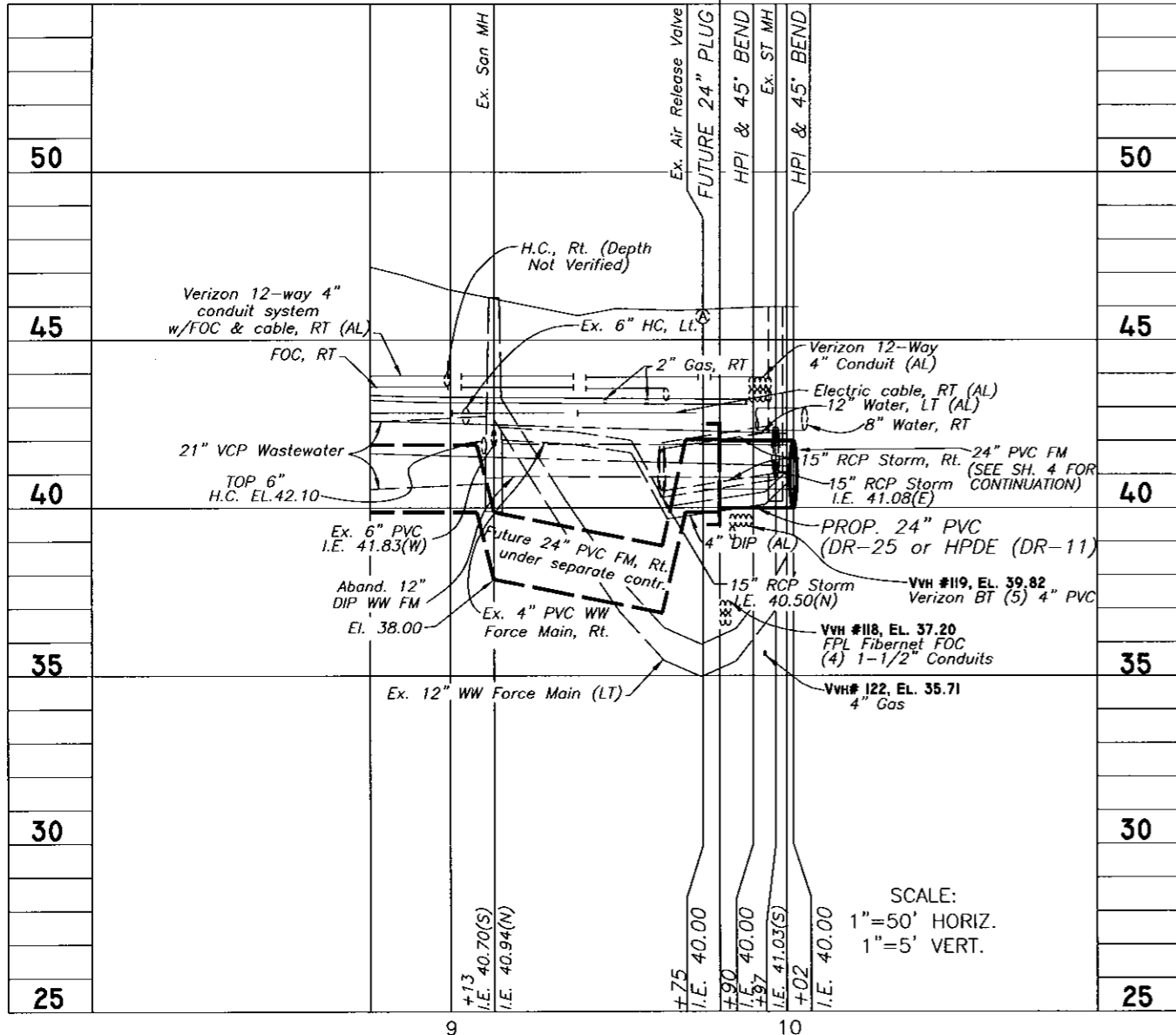
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CKD: JF  
DATE: 4/23/08

CITY of TAMPA  
WASTEWATER DEPARTMENT

BRUCE B. DOWNS RELIEF FORCE MAIN  
• PLAN/PROFILE •



NOTE:  
24" FM IN 22ND ST. IS ACTUALLY PROPOSED AND WILL BE INSTALLED AS PART OF HILLSBOROUGH COUNTY'S 22ND ST. IMPROVEMENT PROJECT THAT BID 8/2007.

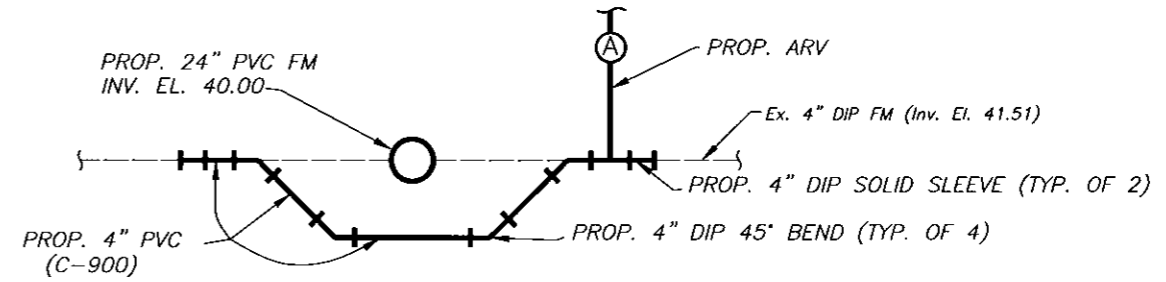


PROFILE

STATION EQUATIONS:

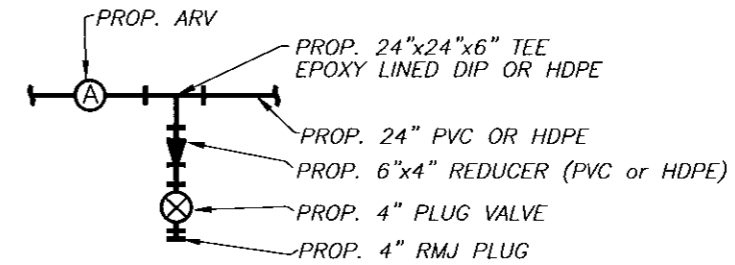
9+90 (22ND ST.) = 10+13(16' RT) BEARSS AVE.  
10+02 (22ND ST.) = 10+22(2' LT) BEARSS AVE.

SCALE:  
1"=50' HORIZ.  
1"=5' VERT.



SECTION VIEW  
4" OFFSET DETAIL @STA 10+23(2' LT)

N.T.S.



PLAN VIEW

NOTE: ALL JOINTS SHALL BE RESTRAINED OR BUTT FUSED

INTERCONNECTION 'A' (STA 16+60) & 'B' (STA 27+05) DETAIL

N.T.S.

NOTE: INTERCONNECTIONS "A" AND "B" ARE PROVIDED TO CONNECT EX. 4" FORCE MAINS IN OR CROSSING BEARSS AVE. THESE CONNECTIONS WILL BE MADE IN THE FUTURE AFTER THE NEW TAMPA FLOW IS DIVERTED INTO THE 24" FM.

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

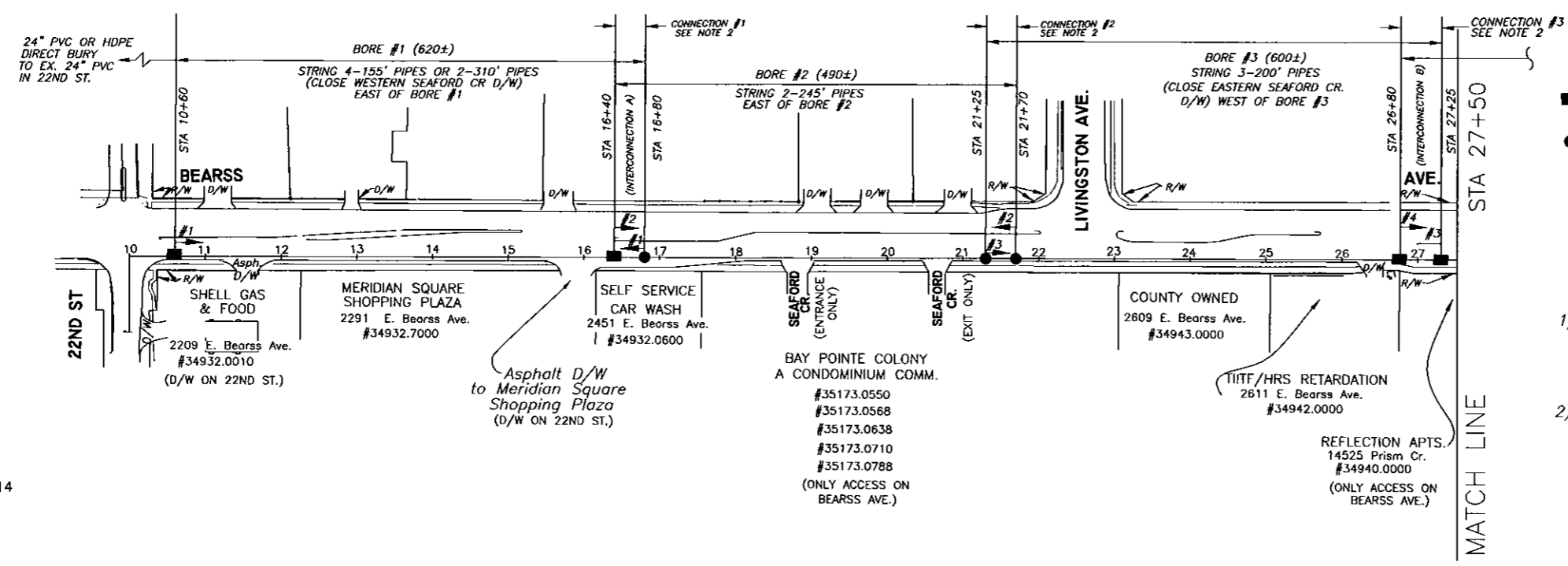
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CITY of TAMPA  
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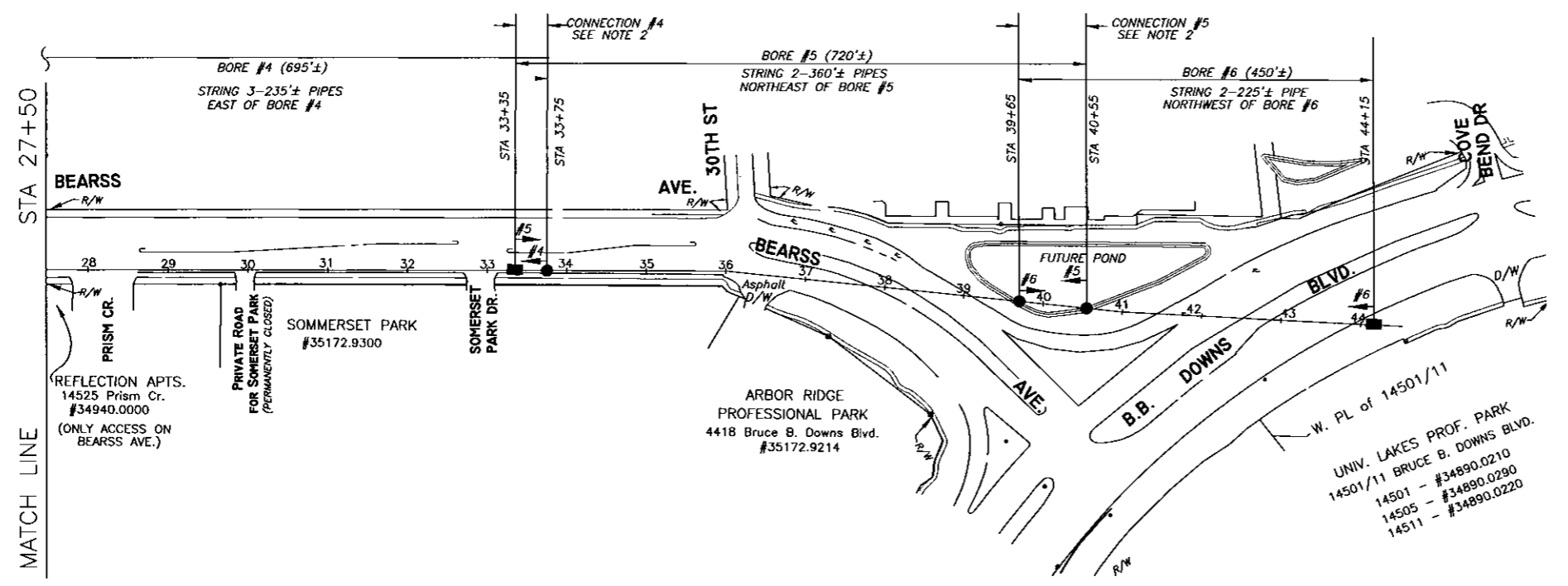
BRUCE B. DOWNS RELIEF FORCE MAIN  
• PROFILE AND DETAILS •

W.O. 4009  
SHEET  
13  
OF 19

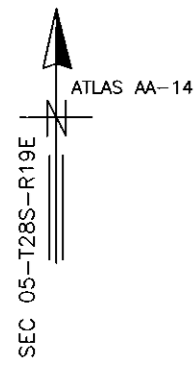


- LEGEND**
- APPROX. LOCATION OF DRILLING EQUIPMENT AT GRADE
  - APPROX. PIPE ENTRY LOCATION AT GRADE FOR PULL BACK

- NOTES**
- 1) CONTRACTOR MAY SUBMIT ALTERNATE DIRECTIONAL BORING LAYOUT FOR APPROVAL, HOWEVER, ALTERNATE PLAN SHALL NOT CLOSE ANY ADDITIONAL DRIVEWAYS AS ALLOWED ON THIS PLAN AND SHALL INCORPORATE INTERCONNECTIONS "A" AND "B"
  - 2) REFER TO SHEET 15 FOR CONNECTION DETAILS BETWEEN BORES.



SCALE: 1"=200

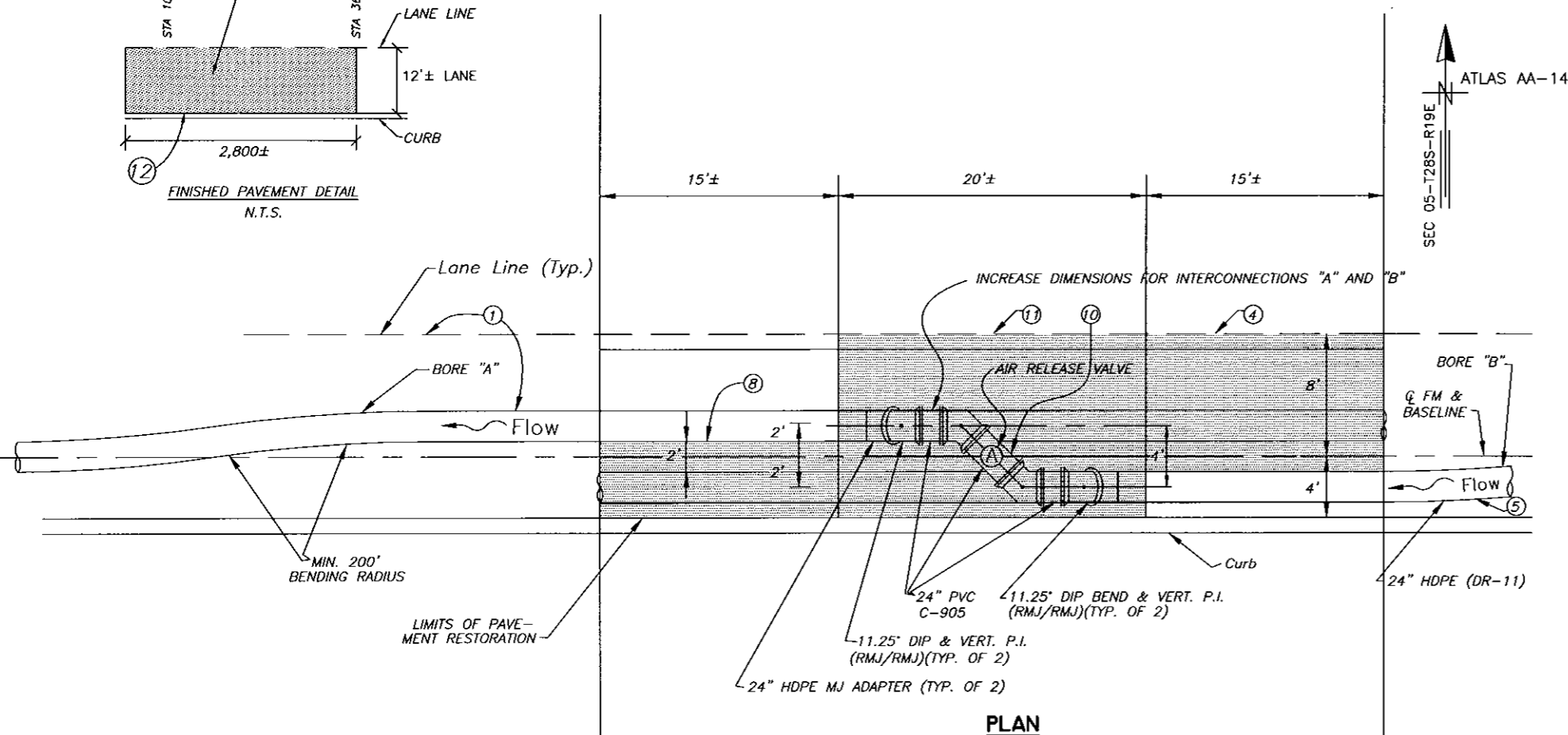
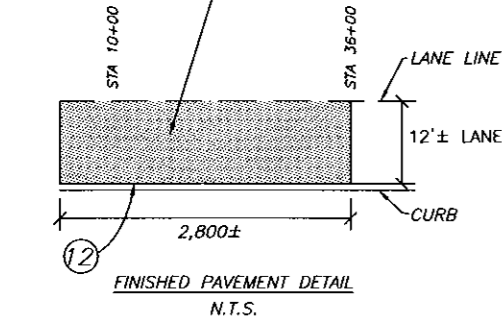


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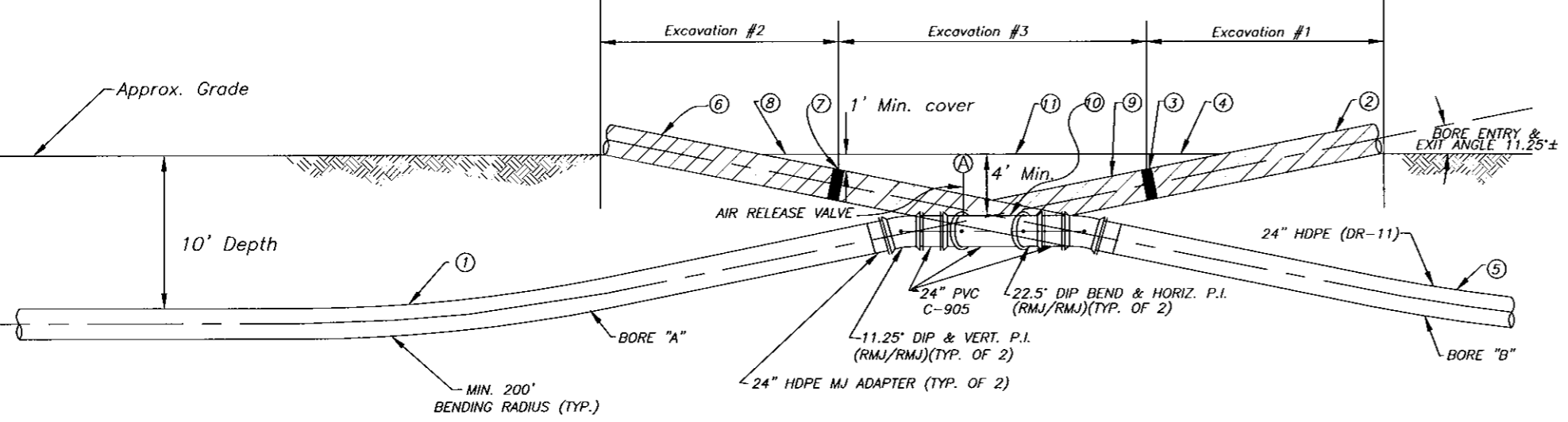
JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JF	CITY of TAMPA WASTEWATER DEPARTMENT	BRUCE B. DOWNS RELIEF FORCE MAIN • DIRECTIONAL BORING LAYOUT DETAIL •	W.O. 4009
	3			DRN: RS			SHEET
	2			CKD: JF			14
	1			DATE: 4/25/08			OF 19

AFTER ALL PAVEMENT PATCHES/ RESTORATIONS ARE COMPLETE, MILL 1" ASPHALT AND OVERLAY WITH 1" FC-5 ASPHALT

BEGIN 200' WEST OF STA 10+00



PLAN



PROFILE

SCALE: 1"=10'

SEQUENCE OF CONNECTING ADJACENT DIRECTIONAL BORES

1. PERFORM BORE "A"
2. CUT AND REMOVE PIPE WITHIN EXCAVATION #1 LIMITS
3. INSTALL WATERTIGHT PLUG OR BULKHEAD ON REMAINING PIPE (MIN. 1' COVER)
4. BACKFILL AND PAVE AREA (SEE NOTE A) TO RESTORE TRAFFIC
5. PERFORM BORE "B"
6. CUT AND REMOVE PIPE WITHIN EXCAVATION #2 LIMITS
7. INSTALL WATERTIGHT PLUG OR BULKHEAD ON REMAINING PIPE (MIN. 1' COVER)
8. BACKFILL AND PAVE AREA (SEE NOTE A) TO RESTORE TRAFFIC
9. CUT AND REMOVE PIPE WITHIN EXCAVATION #3 NOT TO BE UTILIZED IN FINAL CONNECTION
10. INSTALL PIPE AND FITTINGS AS SHOWN TO CONNECT 2 HDPE PIPES
11. BACKFILL AND PAVE AREA (SEE NOTE A) TO RESTORE TRAFFIC
12. MILL AND OVERLAY WITH 1" FC-5 ASPHALT FOR ENTIRE RESTORED AREA (SEE FINISHED PAVEMENT DETAIL)

NOTE A - CONTRACTOR MAY TEMPORARILY UTILIZE STEEL PLATES. STEEL PLATES WILL BE PERMITTED FOR A MAXIMUM OF 24 HOURS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

NOTE B - PAVEMENT RESTORATION REQUIREMENTS OF BEARSS AVENUE SHALL CONSIST OF 9-INCH THICK SUPERPAVE BASE COURSE AND 2-INCH THICK SUPERPAVE ASPHALT SURFACE. SUPERPAVE SP-12 BASE COURSE AND ASPHALT SURFACE SHALL BE INSTALLED IN STRICT ACCORDANCE TO THE APPROPRIATE FDOT SPECIFICATIONS. AFTER ALL ROAD PATCHES ASSOCIATED WITH THIS PROJECT ARE COMPLETE, CONTRACTOR SHALL MILL AND OVERLAY 1-INCH TYPE FC-5 ASPHALT FOR THE LIMITS SHOWN ON THESE PLANS.

NOTE C - THE INTERIOR OF ALL DUCTILE IRON BENDS SHALL BE EPOXY LINED (PROTECTO 401 OR APPROVED EQUAL). ALL JOINTS SHALL BE RESTRAINED WITH MEGALUGS OR APPROVED EQUAL. CONTRACTOR MAY SUBSTITUTE HDPE PIPE AND FITTINGS FOR CONNECTING PIPE.

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

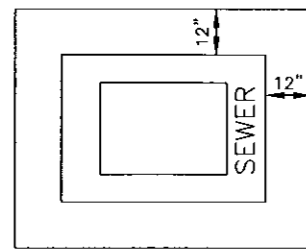
No.	DATE	REVISIONS
3		
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DES: JF  
DRN: RS  
CKD: JF  
DATE: 4/25/08

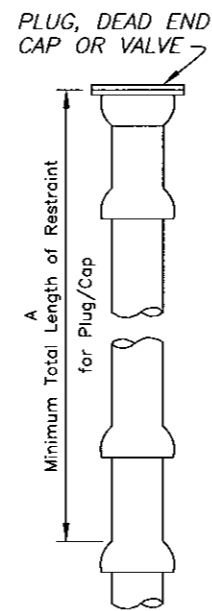
CITY of TAMPA  
WASTEWATER DEPARTMENT

BRUCE B. DOWNS RELIEF FORCE MAIN  
• DIRECTIONAL BORING CONNECTION DETAIL •

W.O. 4009  
SHEET  
15  
OF 19

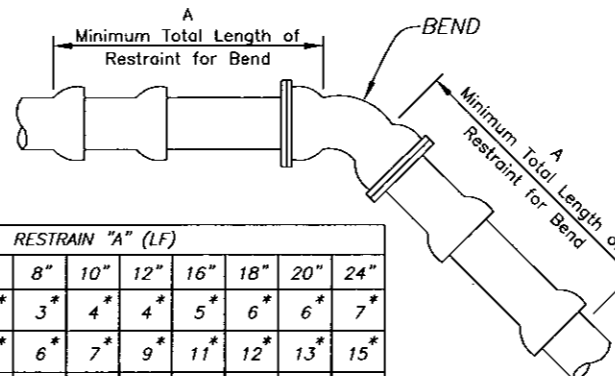


PLAN VIEW



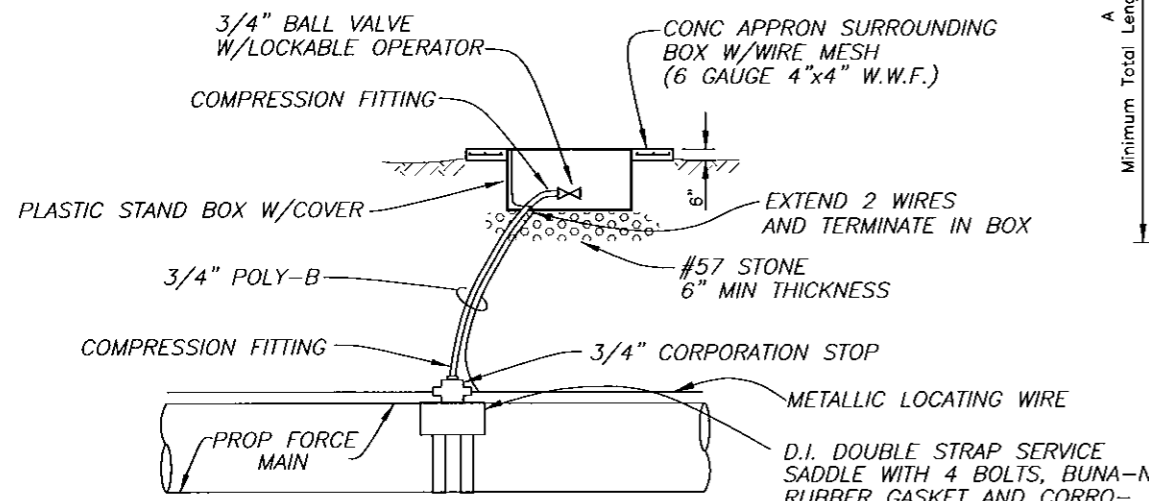
RESTRAIN "A" (LF)									
FITTING	4"	6"	8"	10"	12"	16"	18"	20"	24"
11-1/4'	2*	2*	3*	4*	4*	5*	6*	6*	7*
22-1/2'	3*	5*	6*	7*	9*	11*	12*	13*	15*
45°	7*	10*	13*	15*	18*	23	25	27	31
90°	17*	24	31	37	43	55	60	65	75
PLUG/CAP	38	53	69	83	96	126	139	153	178

A=MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED  
 \* MINIMUM ONE PIPE JOINT UPSTREAM AND DOWNSTREAM OF EACH FITTING SHALL BE RESTRAINED



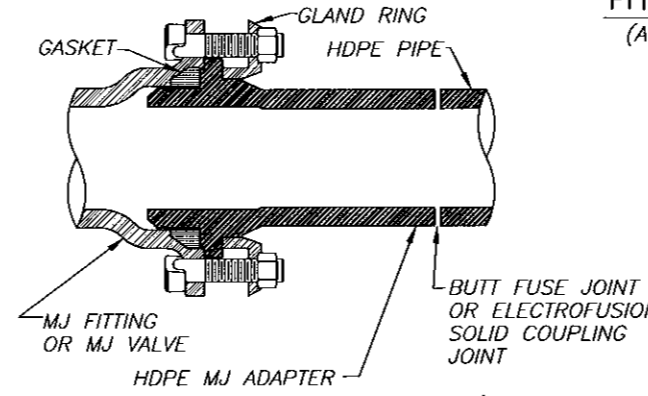
NOTES:

- This table is based on:
  - Maximum test pressure of 100 psi
  - Laying condition Class "C"
  - Poor soil conditions
  - Horizontal bends only (see note 2)
  - Using PVC
- Restrained lengths for vertical bends and tees are to be determined on a case by case basis, and specified on the design plans.
- Restraining devices for PVC pipe shall be by Megalug or equal, meeting UNI-B-13.
- Any additional fittings within the restrained section shall be restrained accordingly.



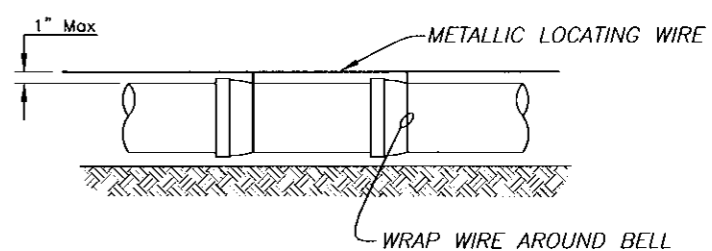
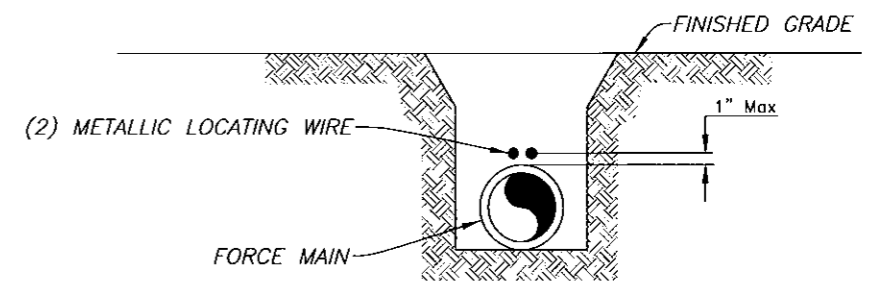
AIR RELEASE VALVE DETAIL

Not To Scale



HDPE TRANSITION DETAIL

Not To Scale  
 NOTE: SCHEMATIC SHOWN FOR STANDARD MJ FITTING AND PLUG VALVES.

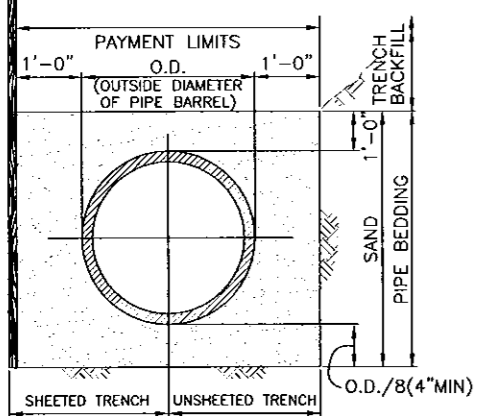


NOTES:

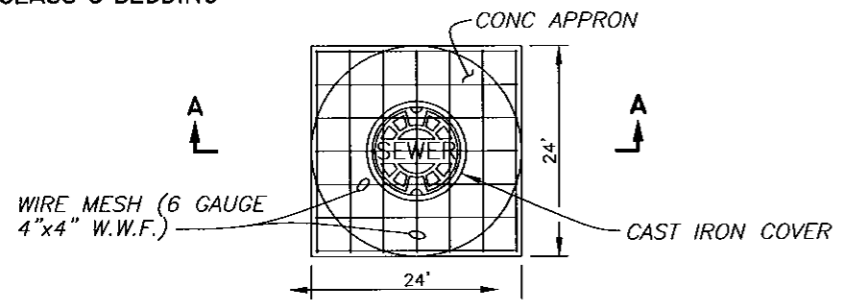
- Pipe shall require 2 insulated metallic locating wire (14 gauge copper) capable of detection by a cable locator and shall be buried directly above the centerline of the pipe.
- Locating wire shall terminate at the top of each valve box and air release valve and be capable of extending 12" above top of box in such a manner so as not to interfere with valve operation.
- Use duct tape as necessary to hold wire directly on the top of the pipe.

PIPE LOCATING WIRE DETAIL

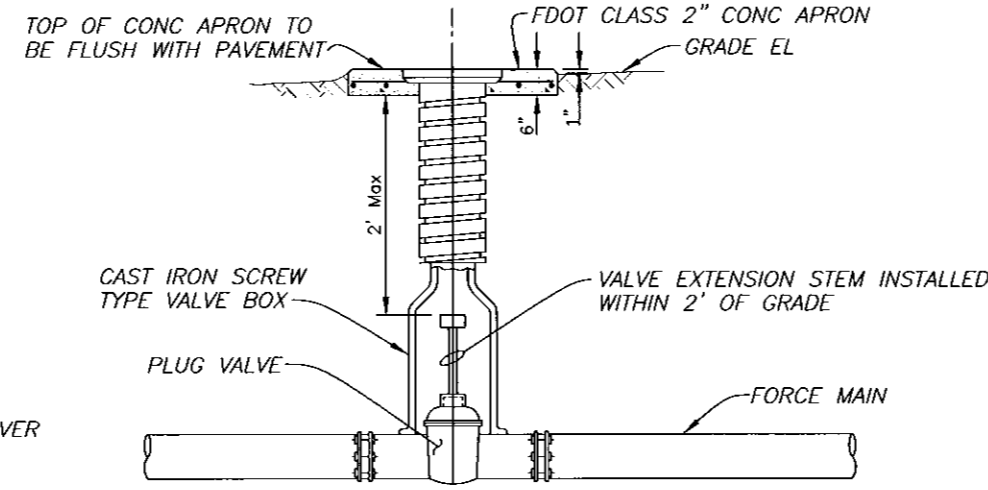
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CLASS C BEDDING



PLAN



VALVE BOX DETAIL

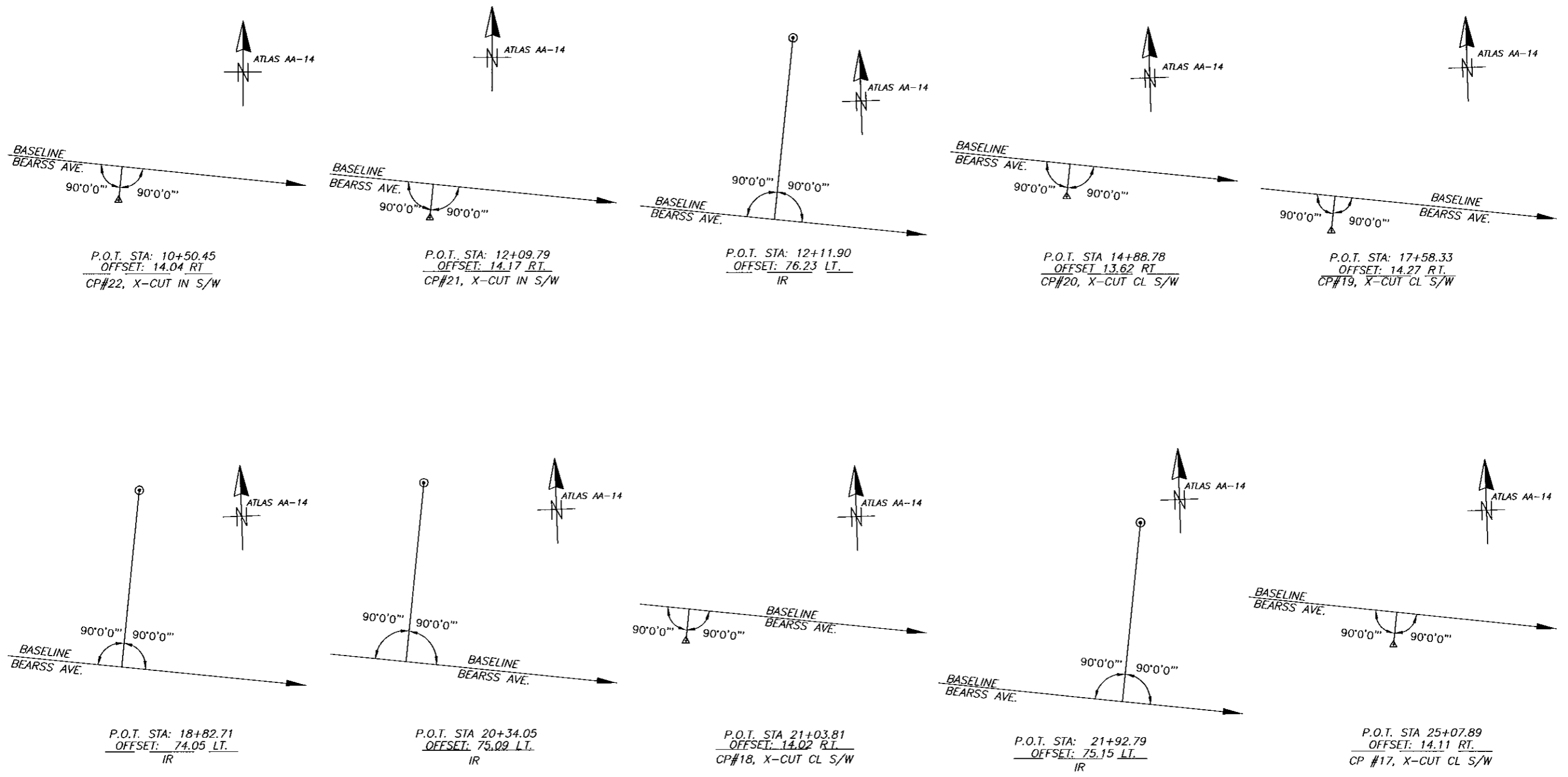
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SECTION A-A

No.	DATE	REVISIONS
3		
2		
1		

DES: JF  
 DRN: RS  
 CKD: JF  
 DATE: 4/25/08

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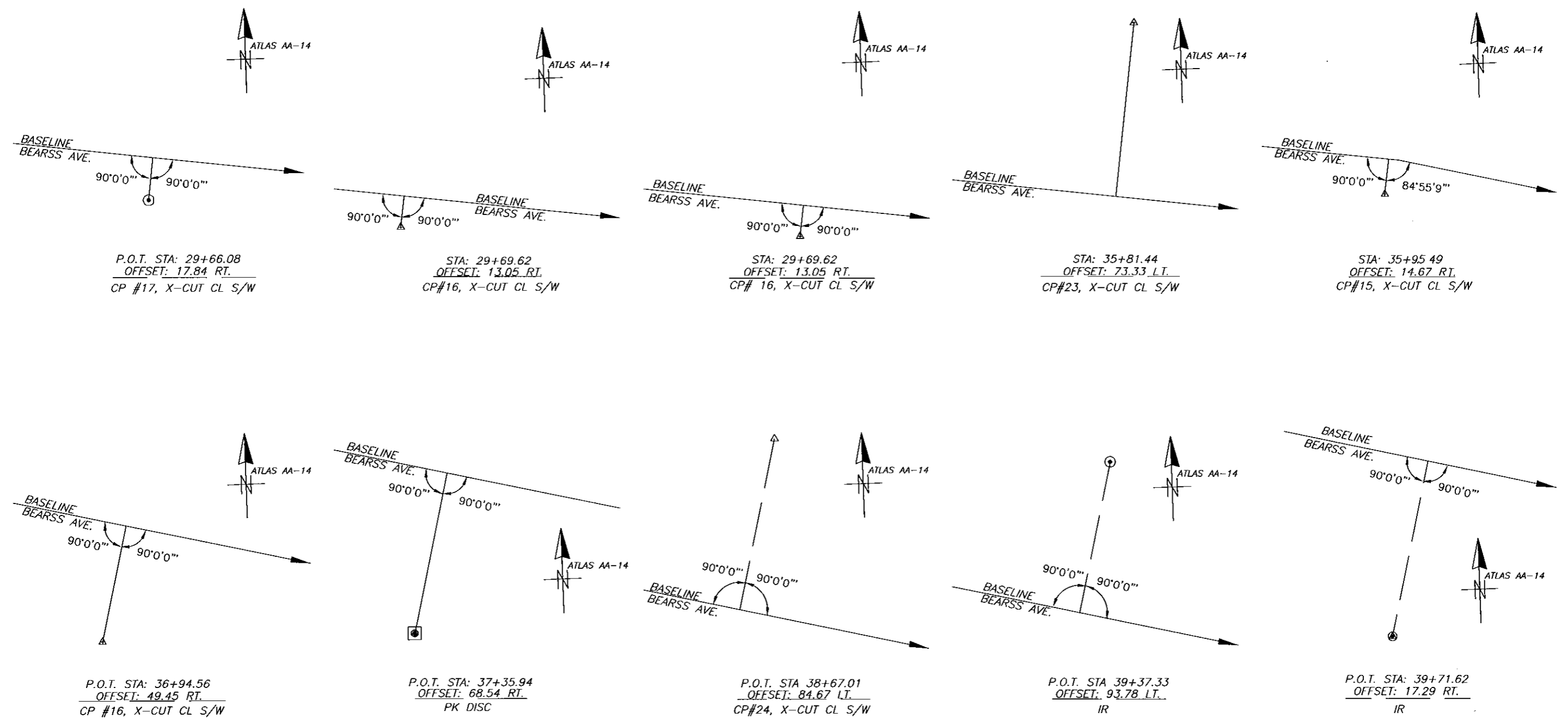


N.T.S.

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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JF DRN: RS CKD: JF DATE: 4/25/08	<b>CITY of TAMPA</b> WASTEWATER DEPARTMENT	BRUCE B. DOWNS RELIEF FORCE MAIN • CONTROL POINTS •	W.O. 4009
	3						SHEET
	2						17
	1						OF 19

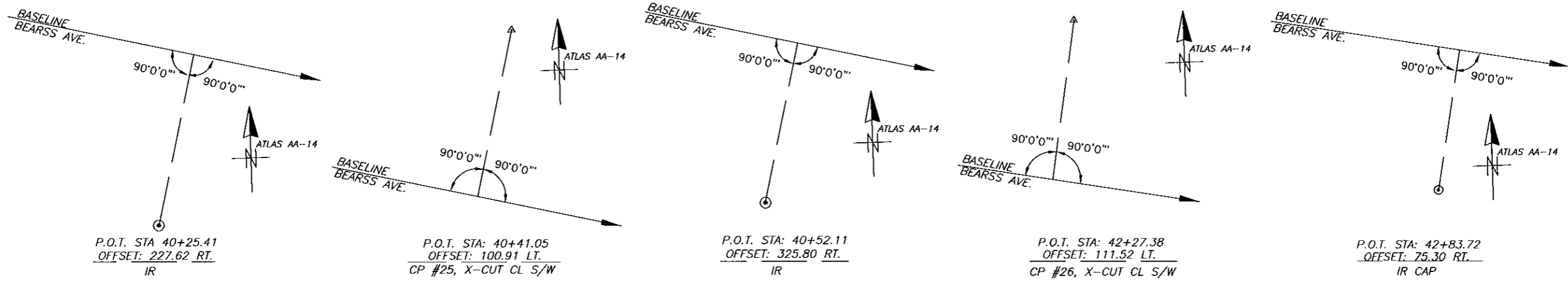
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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: JF	CITY of TAMPA WASTEWATER DEPARTMENT	BRUCE B. DOWNS RELIEF FORCE MAIN • CONTROL POINTS •	W.O. 4009
	3			DRN: RS			SHEET
	2			CKD: JF			18
	1			DATE: 4/25/08			OF 19

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	3						SHEET
	2						19
	1						OF 19