

Plotted By: Moring, Morissa Sheet: Sct: PUMP STATION A-16 DESIGN CRITERIA PACKAGE Layout: 0 Cover Sheet September 28, 2021 04:12:17pm K:\1\1\civil\043 jobs\043184401 scna 12412-000-0000CVR.dwg

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CITY OF FORT LAUDERDALE

PROJECT #12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 SE CORNER OF SE 11TH STREET & SE 3RD AVENUE  
 FORT LAUDERDALE, FLORIDA

PREPARED BY:



8201 PETERS ROAD, SUITE 2200, PLANTATION, FL 33324  
 PHONE: 954-535-5100 FAX: 954-739-2247  
 WWW.KIMLEY-HORN.COM CA 00000696

FLOOD ZONE: AH  
 BASE FLOOD ELEVATION (BFE): 6.0' NAVD 1988

ATTENTION, THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION.  
 THIS MUST BE TAKEN INTO ACCOUNT WHEN OBTAINING SCALED DATA.



LOCATION SKETCH

PROJECT #12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE

SE CORNER OF SE 11TH STREET & SE 3RD AVENUE



CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

FORT LAUDERDALE CITY COMMISSION

- |                   |                             |
|-------------------|-----------------------------|
| DEAN J. TRANTALIS | MAYOR                       |
| HEATHER MORAITIS  | COMMISSIONER - DISTRICT I   |
| STEVEN GLASSMAN   | COMMISSIONER - DISTRICT II  |
| ROBERT McKINZIE   | COMMISSIONER - DISTRICT III |
| BEN SORENSEN      | COMMISSIONER - DISTRICT IV  |

PROJECT MANAGER	JOB TITLE	PHONE NO.
JORGE HOLGUIN	PROJECT MANAGER	(954)828-5675
GARY R. RATAY	ENGINEER OF RECORD	(954)535-5112
NATHANIEL HAMMOND	ELECTRICAL ENGINEER	(404)769-6636

DATE: 03/10/21

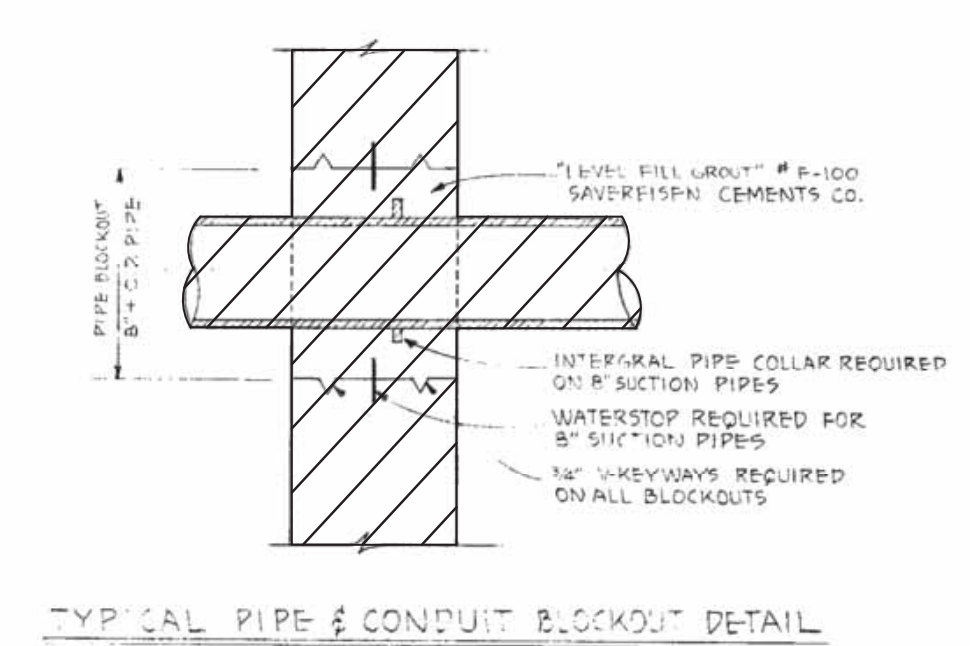
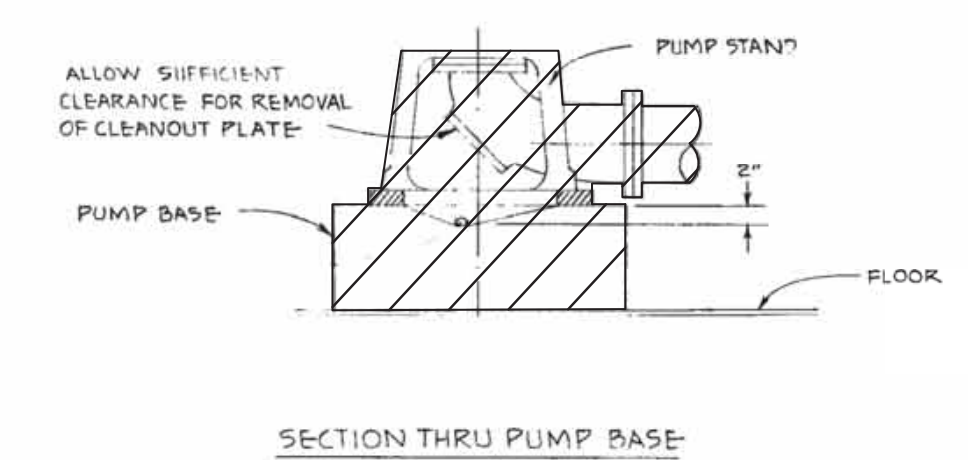
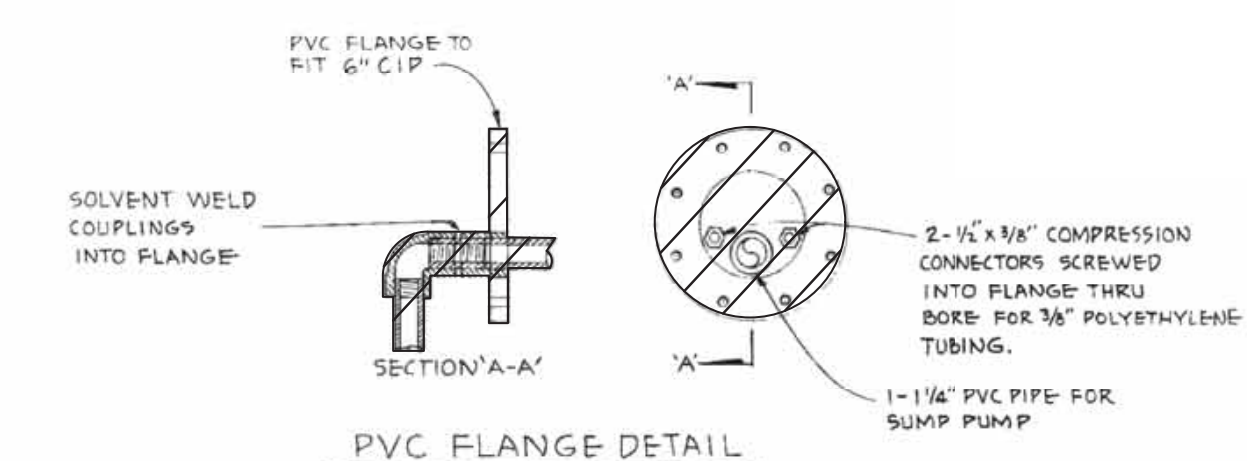
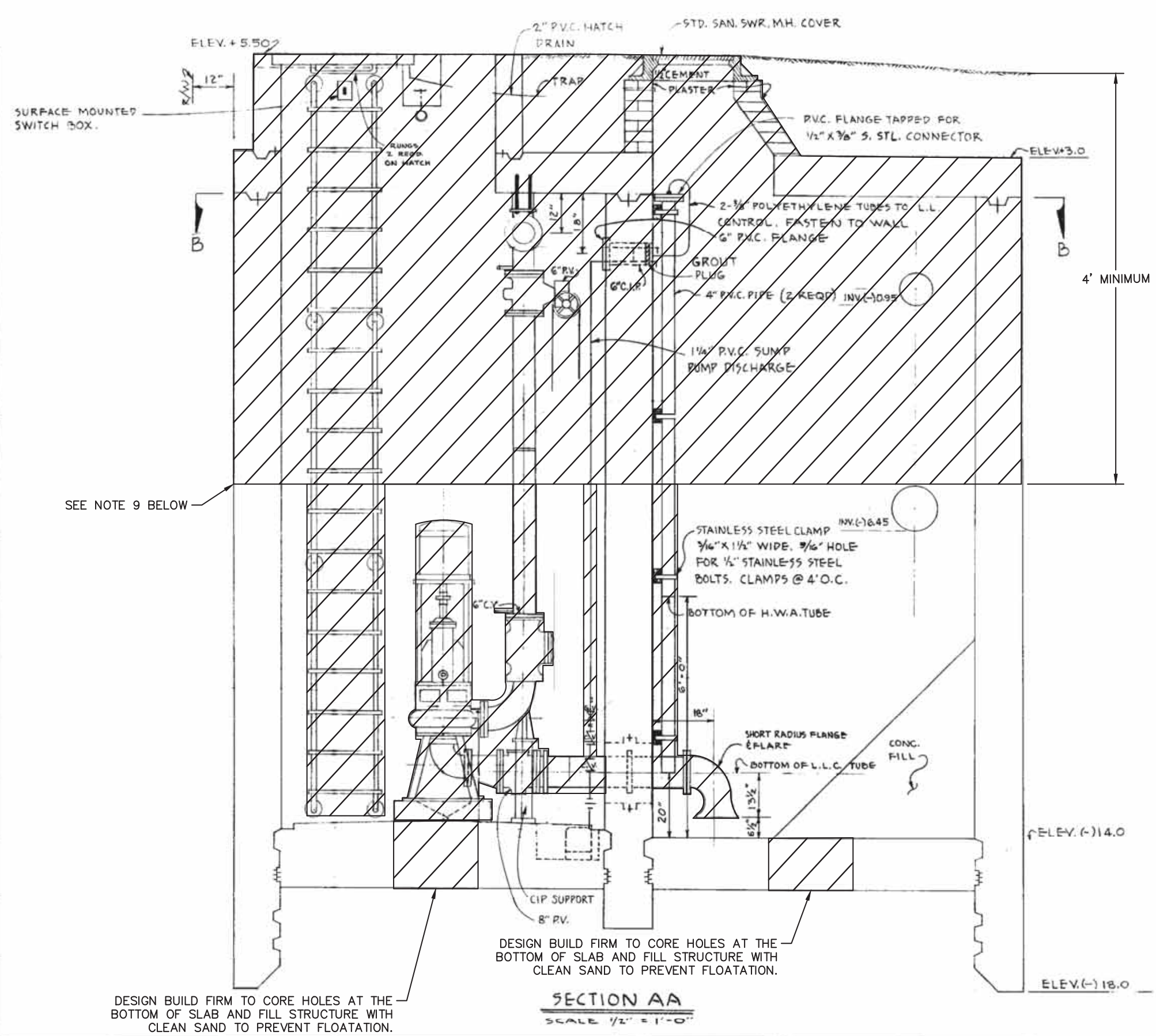
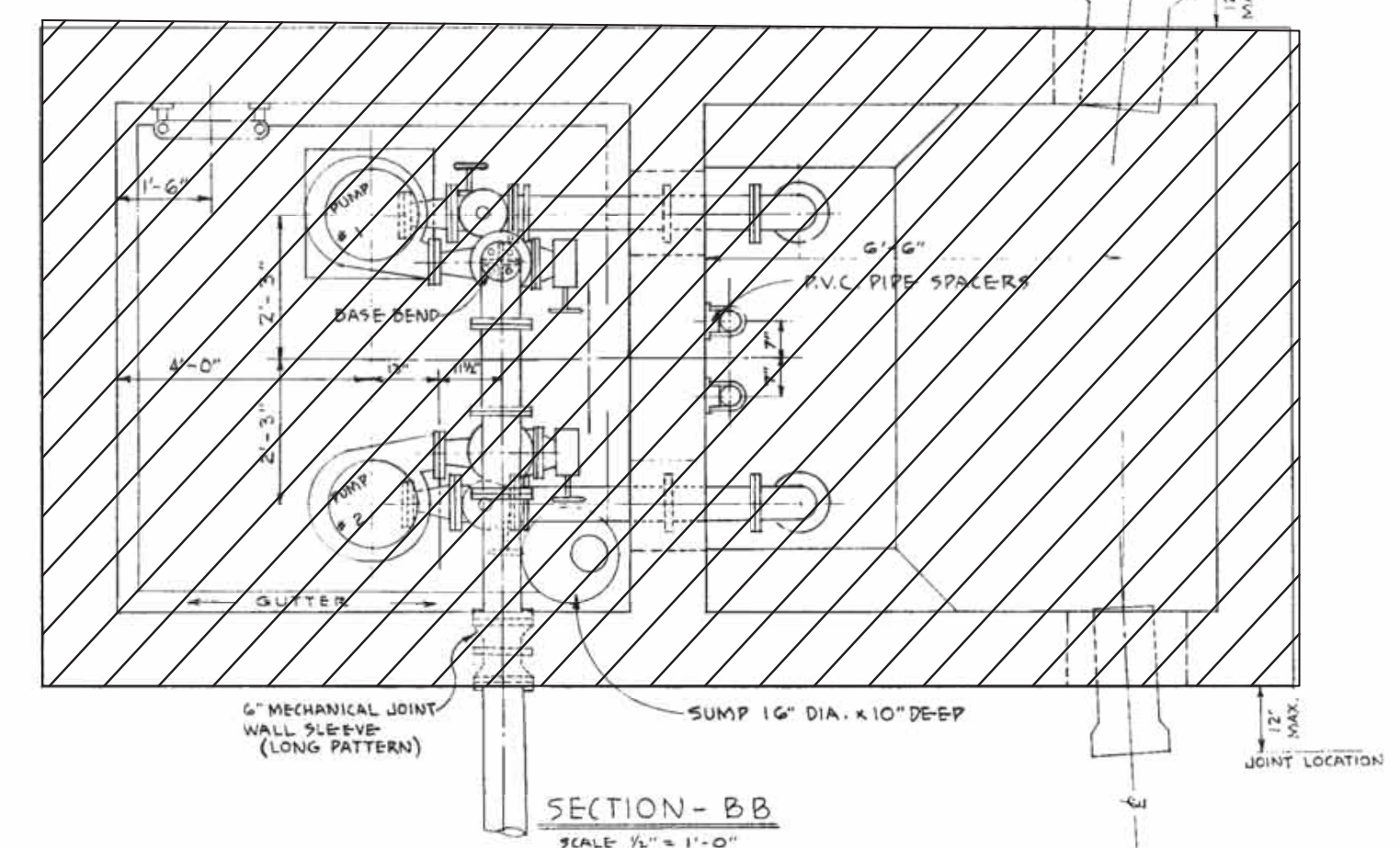
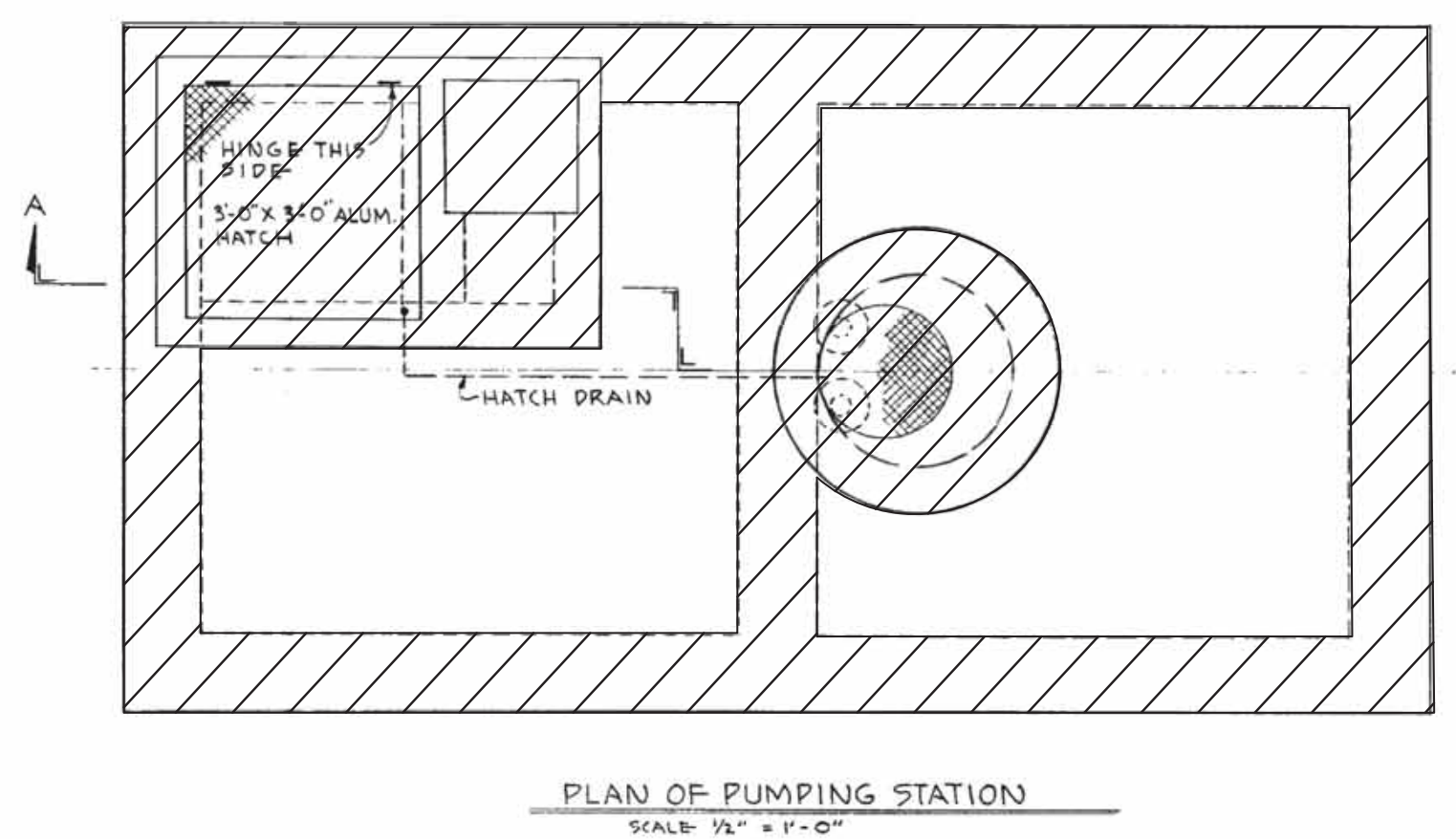
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DRAWING FILE No.: 4-142-31

DESIGN CRITERIA PACKAGE



EXISTING PUMP STATION A-16 TO BE DEMOLISHED



**GENERAL NOTES**

- ELEVATIONS REFER TO M.S.L. + 0.00 (USCGS)
- ALL PVC PIPE SHALL BE SCHEDULE 80 TYPE II WITH SOLVENT WELDED OR SCREWED JOINTS.
- CONCRETE SHALL BE CLASS 'A' WITH AIR ENTRAINMENT.
- ALL BRACKETS SHALL BE OF NON-FERROUS METAL OR PLASTIC WITH TYPE 316 STAINLESS STEEL FASTENERS.

**LEGEND**

X - GATE VALVE (UNLESS SPECIFIED OTHERWISE)  
 Z - SWING CHECK VALVE  
 U - UNION  
 PV - PLUG VALVE  
 CV - CHECK VALVE

CITY OF FORT LAUDERDALE, FLORIDA PROJECT 3129 SEWAGE PUMPING STATION A-16 MECHANICAL	
V/AS DRAWN BY	17 DEC 09 DATE
CHECKED BY	A/S NOTED SCALE
OFFICE OF CITY ENGINEER	
2 OF 4 SHEET	
FILE NO. 4-65-32	

(PUMP STA. A-16 TO SERVE IMP 1344)

NO.	DATE	BY	CHK.	REMARKS

**LEGEND:**

TO BE DECOMMISSIONED/DEMOLISHED

**NOTES:**

- THIS PREVIOUS DESIGN PLAN IS INCLUDED FOR INFORMATIONAL PURPOSES. ALL EQUIPMENT IS NOT INSTALLED EXACTLY AS SHOWN. PLANS NOT TO SCALE.
- ELEVATIONS PROVIDED ON THIS PREVIOUS DESIGN PLAN ARE ASSUMED TO REFERENCE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
- FLOOD ZONE: AH.
- BASE FLOOD ELEVATION (BFE): 6.0' NAVD 1988.
- THE ITEMS DEPICTED FOR DEMOLITION ARE GENERAL ONLY. ALL ANCILLARY STRUCTURES, PIPING AND OTHER ASSOCIATED EQUIPMENT ARE TO BE INCLUDED IN THE DEMOLITION WORK.
- AFTER DEMOLITION, ALL DEBRIS IS TO BE REMOVED AND LEGALLY DISPOSED BY THE DESIGN BUILD FIRM IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- AFTER DISPOSAL OF MATERIAL, THE DESIGN BUILD FIRM SHALL RE-GRADE THE AREA TO MATCH SURROUNDING GRADE AND DRAINAGE PATTERNS. DESIGN BUILD FIRM TO OBTAIN REQUIRED FILL NEEDED TO LEVEL AREAS WHERE STRUCTURES PREVIOUSLY EXISTED.
- DESIGN BUILD FIRM SHALL BACKFILL, COMPACT AND RESTORE SURFACE CONDITIONS AT ALL AREAS OF PIPE/STRUCTURE DEMOLITION AND REMOVAL. COMPACT TO 98% ASTM D-1557, IN 12" LIFTS.
- DESIGN BUILD FIRM SHALL REMOVE ALL PIPING, VALVES, AND APPURTENANCES FROM STRUCTURES TO FIRST BEND BELOW GRADE OR MINIMUM OF 4 FEET BELOW GRADE WITHIN 50 FEET OF THE LOCATION. ALL PIPING TO BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS. DESIGN BUILD FIRM TO VERIFY WITH CITY THAT ANY SYSTEM TO BE REMOVED IS OUT OF SERVICE BEFORE DEMOLITION.



PREPARED BY:

**Kimley»Horn**

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 8201 PETERS ROAD, SUITE 2200, PLANTATION, FL 33324  
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 WWW.KIMLEY-HORN.COM REGISTRY No. 696

DESIGN CRITERIA PACKAGE

PROJECT # 12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 DEMOLITION PLAN

SHEET NO.	OF
2	31
CAD FILE: 12412-MULTI-DEMO	
DRAWING FILE NO. 4-142-31	

NO.	DATE	BY	CHK'D	DESCRIPTION

CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RATAV, P.E.  
 REG. NO: 46682  
 DATE: 9/29/2021

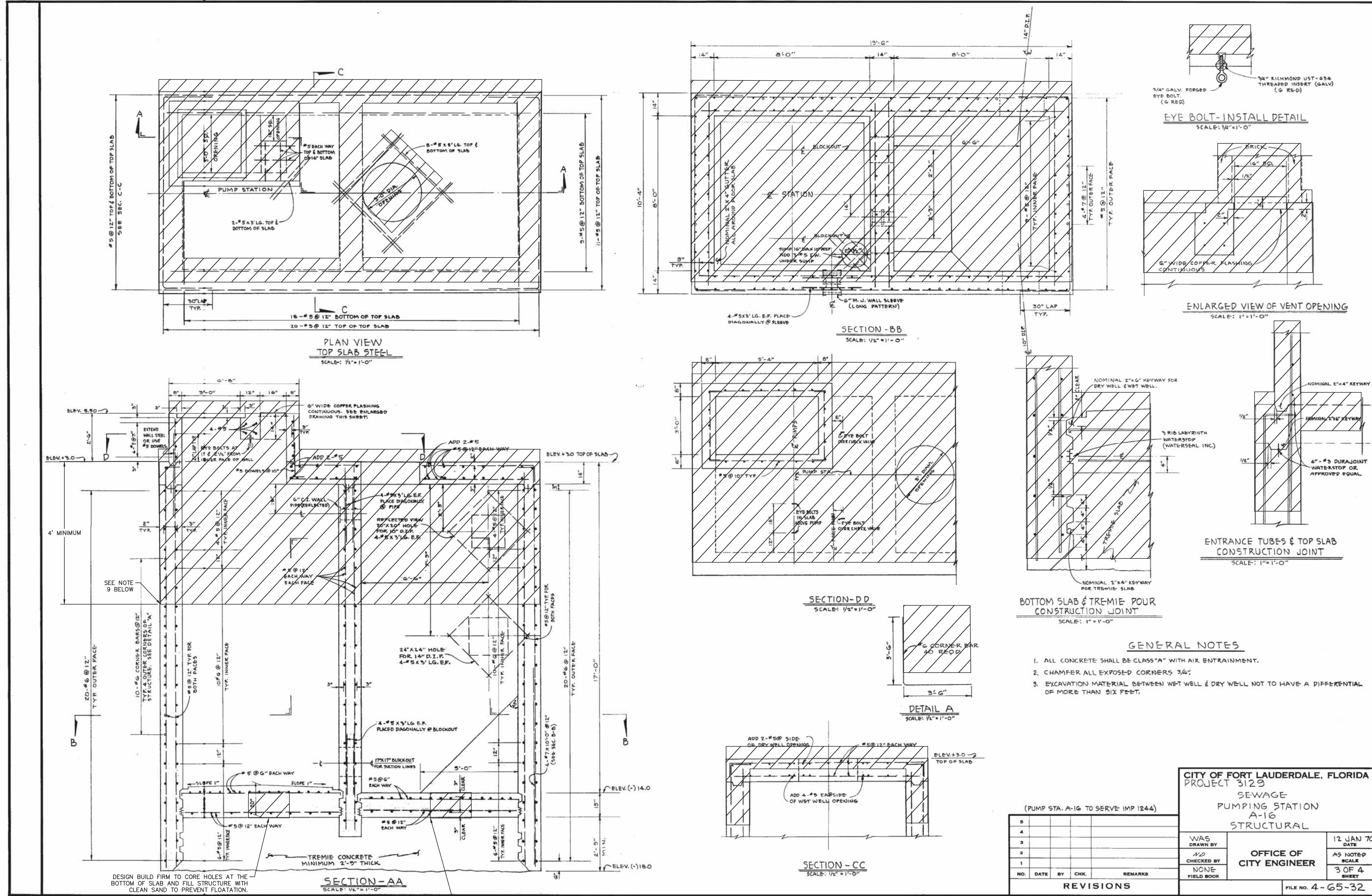
DATE: MAR 2021  
 SCALE: AS NOTED  
 FIELD BOOK:

DRAWN BY: AL  
 DESIGNED BY: GR  
 CHECKED BY: GR

TEL: (954) 856-5100  
 FAX:

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EXISTING PUMP STATION A-16 TO BE DEMOLISHED



LEGEND: TO BE DECOMMISSIONED/DEMOLISHED

- NOTES:
1. THIS PREVIOUS DESIGN PLAN IS INCLUDED FOR INFORMATIONAL PURPOSES. ALL EQUIPMENT IS NOT INSTALLED EXACTLY AS SHOWN. PLANS NOT TO SCALE.
  2. ELEVATIONS PROVIDED ON THIS PREVIOUS DESIGN PLAN ARE ASSUMED TO REFERENCE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
  3. FLOOD ZONE: AH.
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CITY OF FORT LAUDERDALE, FLORIDA  
PROJECT 3123  
SEWAGE PUMP STATION A-16  
STRUCTURAL

WAS DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
NONE FIELD BOOK

12 JAN 20  
AS NOTED  
SCALE  
3 OF 4 SHEET

FILE NO. 4-G5-32

(PUMP STA. A-16 TO SERVE IMP 1244)

NO.	DATE	BY	CHK.	REMARKS

PREPARED BY:  
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WWW.KIMLEY-HORN.COM REGISTRY No. 696

DESIGN CRITERIA PACKAGE

PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
DEMOLITION PLAN

SHEET NO. 3 OF 31

GAD FILE: 12412-MULTI-DEMO  
DRAWING FILE NO. 4-142-31

REVISIONS

NO.	DATE	BY	CHKD	DESCRIPTION

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RAY, P.E.  
REG. NO. 46682  
DATE: 9/29/2021

DESIGNED BY: SCALE: AS NOTED  
CHECKED BY: GR  
FIELD BOOK:

DATE: MAR 2021  
DRAWN BY: AL

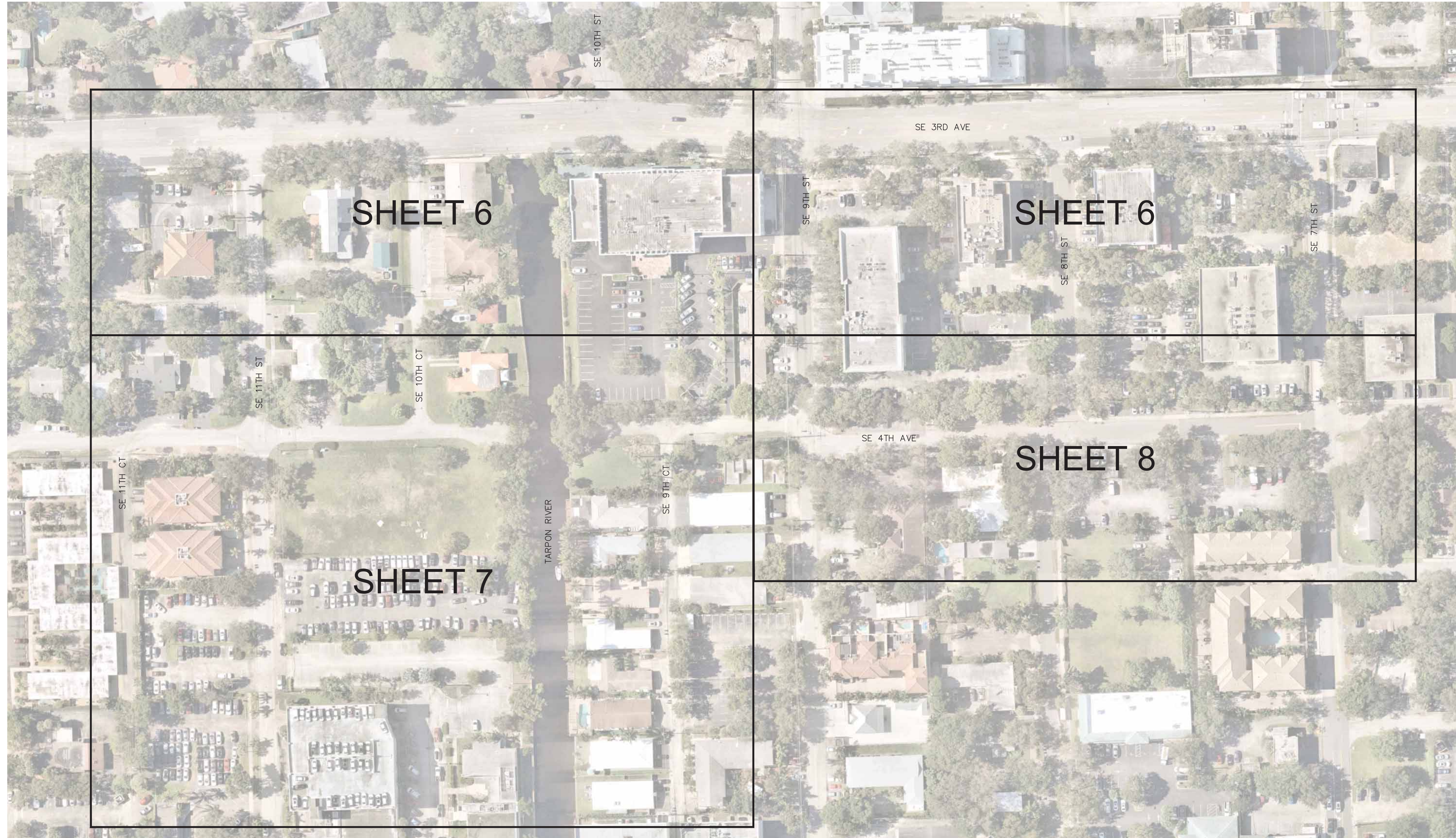
ENGINEER: GARY R. RAY, P.E.  
REG. NO. 46682  
DATE: 9/29/2021

TEL: (954) 555-5100  
FAX:





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**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 KEY MAP**

SHEET NO. OF  
**5 31**

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 DRAWING FILE NO.  
 4-142-31

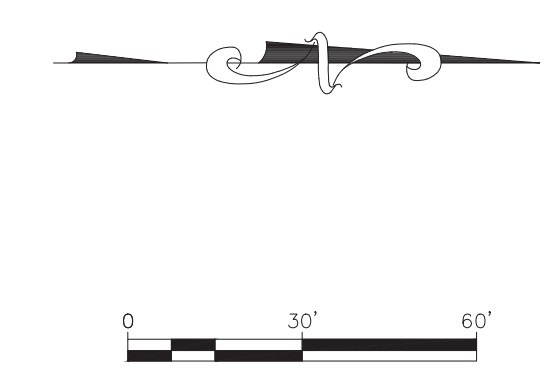
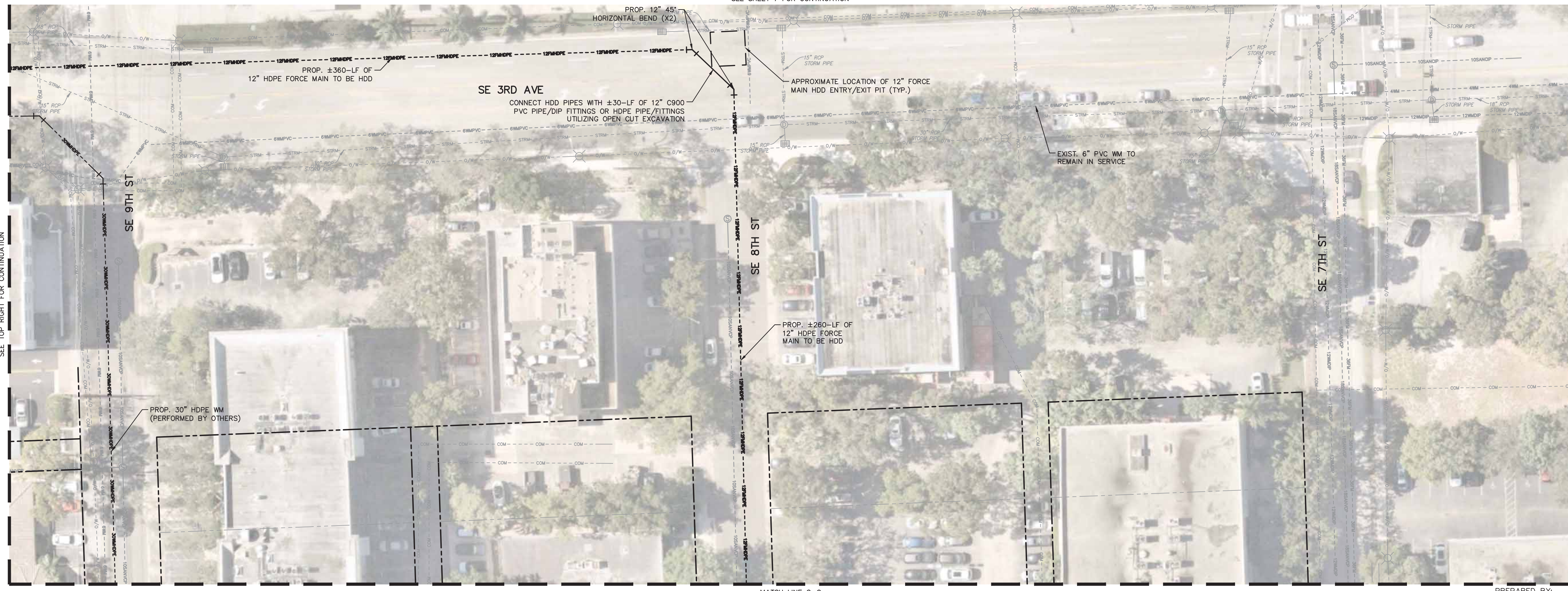
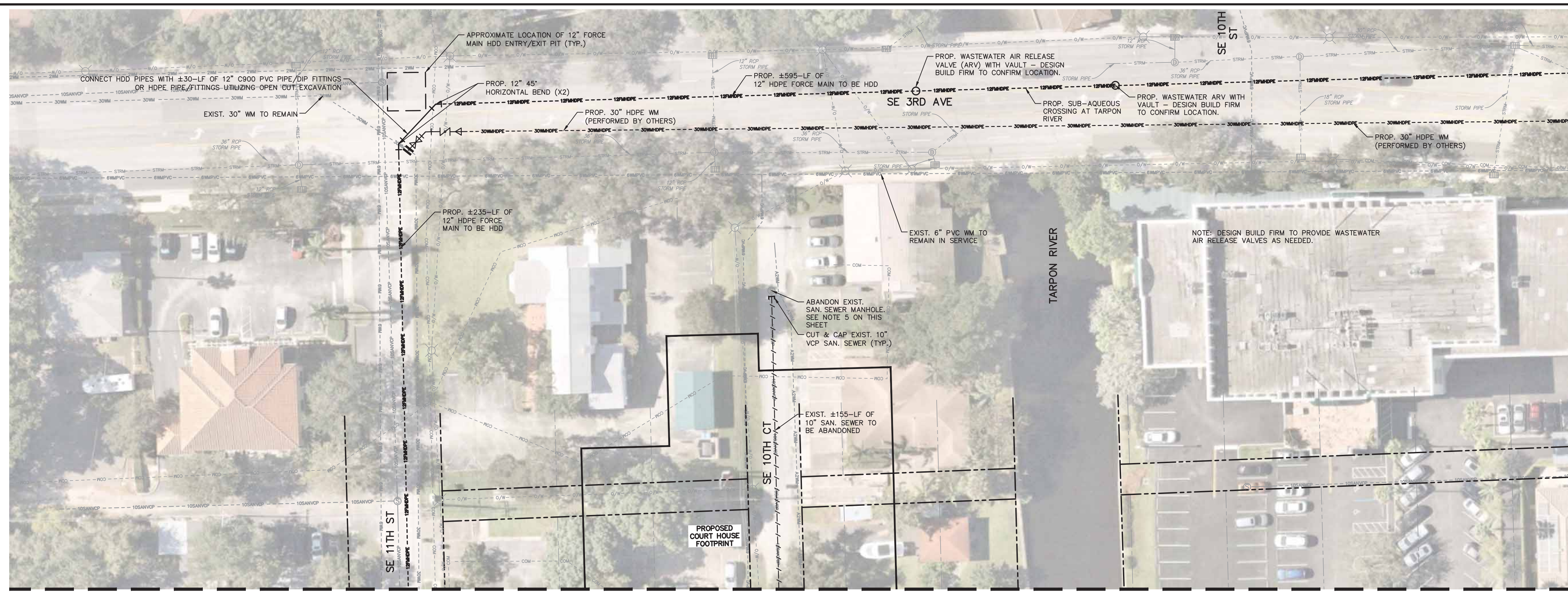
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NO.	DATE	BY (CHKD)

**CITY OF FORT LAUDERDALE**  
**PUBLIC WORKS DEPARTMENT**  
**ENGINEERING & ARCHITECTURE**  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY: AL	DATE: MAR 2021
DESIGNED BY: GR	SCALE: AS NOTED
CHECKED BY: GR	FIELD BOOK:

ENGINEER:  
 GARY R. RAY, P.E.  
 REG. No. 46682  
 DATE: 9/29/2021  
 TEL: (954) 856-5100  
 FAX:

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**LEGEND**

---	PROPERTY LINE/ROW
---	EXIST. 8" SANITARY SEWER
---	EXIST. 8" VCP SANITARY SEWER
---	EXIST. 10" VCP SANITARY SEWER
---	EXIST. 15" VCP SANITARY SEWER
---	EXIST. 18" VCP SANITARY SEWER
---	EXIST. 10" DIP SANITARY SEWER
---	ABANDONED 10" SANITARY SEWER
---	EXIST. FORCE MAIN
---	EXIST. 6" FORCE MAIN
---	EXIST. WATER MAIN
---	EXIST. 2" WATER MAIN
---	EXIST. 4" WATER MAIN
---	EXIST. 6" WATER MAIN
---	EXIST. 8" PVC WATER MAIN
---	EXIST. 12" DIP WATER MAIN
---	EXIST. 30" WATER MAIN
---	EXIST. 12" PVC WATER MAIN
---	ABANDONED 6" WATER MAIN
---	ABANDONED 2" WATER MAIN
---	ABANDONED WATER MAIN
---	EXIST. BCTD
---	EXIST. OVERHEAD WIRE
---	EXIST. COMMUNICATION LINE
---	EXIST. UNKNOWN UTILITY
---	EXIST. ABANDONED UTILITY
---	EXIST. STORMWATER PIPE
---	EXIST. STORMWATER STRUCTURE
---	PROP. 12" HDPE FORCE MAIN
⊙	EXIST. SANITARY SEWER MANHOLE
⊙	PROP. SANITARY SEWER MANHOLE
⊙	PROP. UTILITY CAP
⌒	PROP. BENDS
⌒	PROP. TAPPING SLEEVE AND VALVE
⊙	PROP. WASTEWATER ARV WITH VAULT
⊙	EXIST. PIPE TO BE ABANDONED, CUT & CAPPED, NO GROUT

ENGINEER: GARY R. RATAJ, P.E.  
 REG. NO: 46682  
 DATE: 9/29/2021

DRAWN BY: AL  
 DATE: MAR 2021  
 DESIGNED BY: GR  
 AS NOTED  
 CHECKED BY: GR  
 FIELD BOOK:

**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (PKID)	DESCRIPTION

**DESIGN CRITERIA PACKAGE**

PROJECT # 12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 CONCEPTUAL UTILITY PLAN

SHEET NO. OF  
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CAD FILE: 12412-MULTI-PLAN-ADD  
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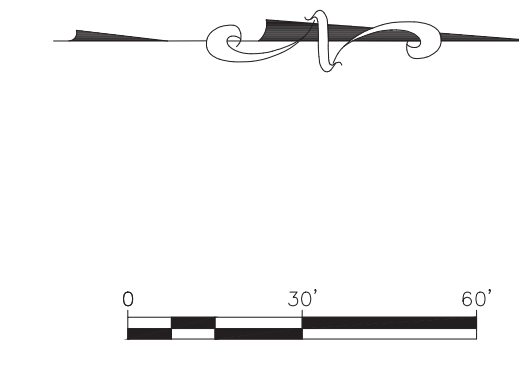
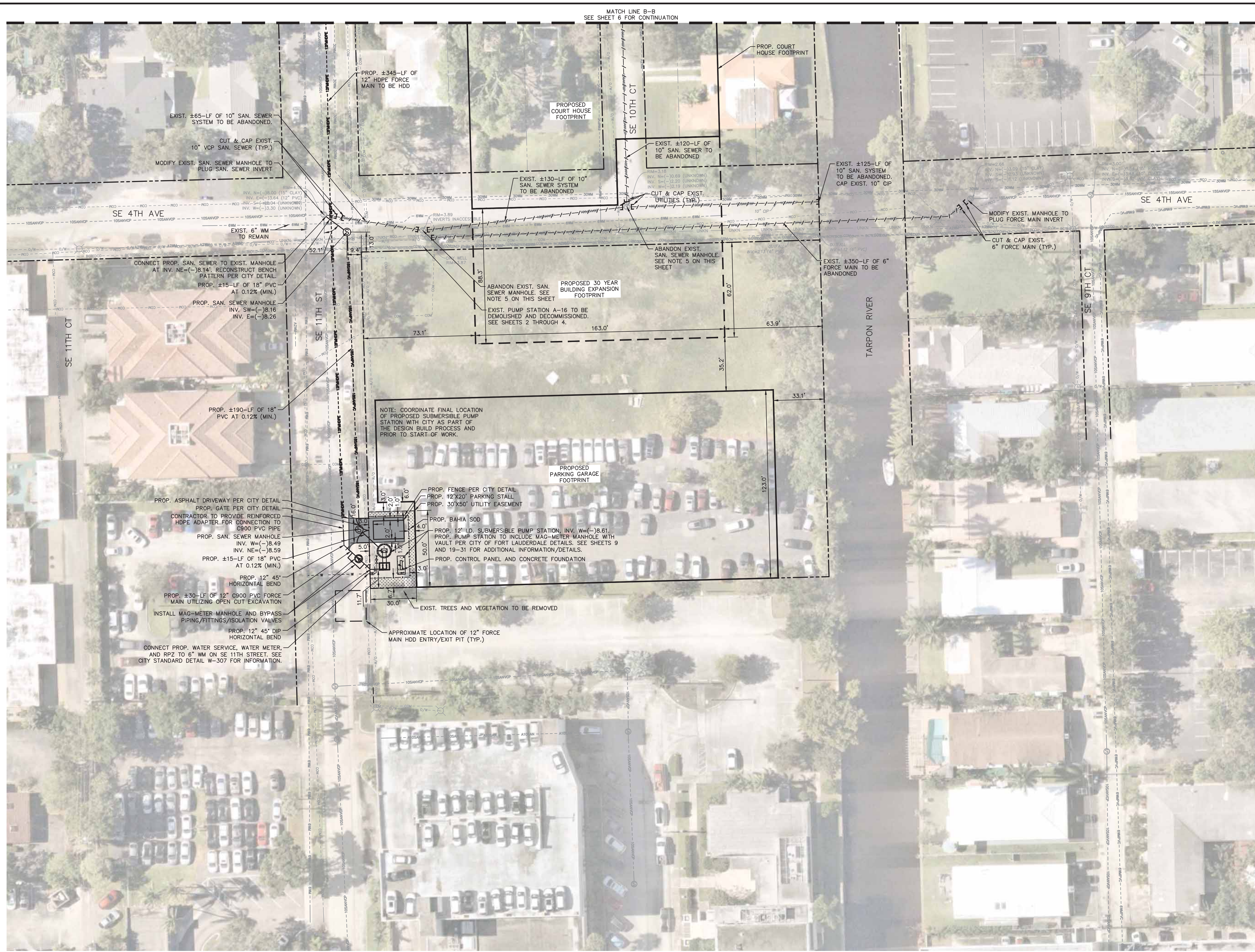
- NOTE:
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  - THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE AND OBTAINING ALL NECESSARY PERMITS.
  - FLOOD ZONE: AH
  - BASE FLOOD ELEVATION (BFE): 6.0' NAVD 1988
  - ALL SANITARY MANHOLES TO BE FILLED WITH SAND AND ABANDONED IN PLACE.

- DESIGN BUILD FIRM SHALL CONTACT CITY OPERATION STAFF ONE WEEK IN ADVANCE PRIOR TO WATER AND FORCE MAIN CONNECTIONS TO ENSURE ALL VALVES ARE WORKING. DESIGN BUILD FIRM TO ADVISE CITY OPERATION STAFF OF PROPOSED CONNECTION PROCEDURE.
- DESIGN BUILD FIRM IS RESPONSIBLE FOR TREE REMOVAL PERMITS.
- DESIGN BUILD FIRM IS RESPONSIBLE TO PROVIDE SURVEY/SKETCH AND LEGAL DRAWINGS AS NEEDED TO ASSIST THE CITY WITH OBTAINING ALL TEMPORARY AND/OR PERMANENT EASEMENTS FOR THE INSTALLATION OF ALL PUMP STATION AND UTILITY WORK NOT IN THE PUBLIC RIGHT-OF-WAY.

**Kimley»Horn**

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 PHONE: 954-535-5100 FAX: 954-739-2247  
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---	EXIST. 15" VCP SANITARY SEWER
---	EXIST. 18" VCP SANITARY SEWER
---	EXIST. 10" CP SANITARY SEWER
---	ABANDONED 10" SANITARY SEWER
---	EXIST. FORCE MAIN
---	EXIST. 6" FORCE MAIN
---	EXIST. WATER MAIN
---	EXIST. 2" WATER MAIN
---	EXIST. 4" WATER MAIN
---	EXIST. 6" WATER MAIN
---	EXIST. 8" PVC WATER MAIN
---	EXIST. 12" DIP WATER MAIN
---	EXIST. 30" WATER MAIN
---	EXIST. 12" PVC WATER MAIN
---	ABANDONED 6" WATER MAIN
---	ABANDONED 2" WATER MAIN
---	ABANDONED WATER MAIN
---	EXIST. BCED
---	EXIST. OVERHEAD WIRE
---	EXIST. COMMUNICATION LINE
---	UNKNOWN UTILITY
---	EXIST. ABANDONED UTILITY
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---	PROP. SANITARY SEWER MANHOLE
---	PROP. UTILITY CAP
---	PROP. BENDS
---	PROP. TAPPING SLEEVE AND VALVE
---	PROP. WASTEWATER ARRY WITH VAULT
---	EXIST. PIPE TO BE ABANDONED, CUT & CAPPED, NO GROUT



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**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**CONCEPTUAL UTILITY PLAN**

SHEET NO. OF  
**7 31**

CAD FILE:  
 12412-MULTI-PLAN  
 DRAWING FILE NO.  
 4-142-31

ENGINEER:  
 GARY R. RATAJ, P.E.  
 REG. NO: 46682  
 DATE: 9/29/2021

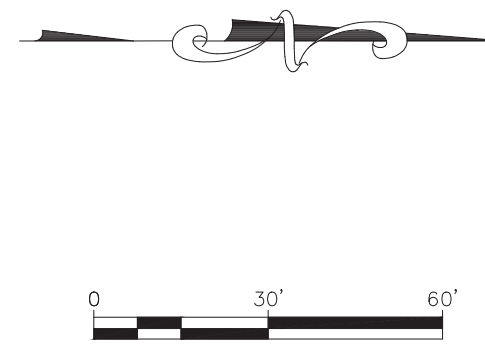
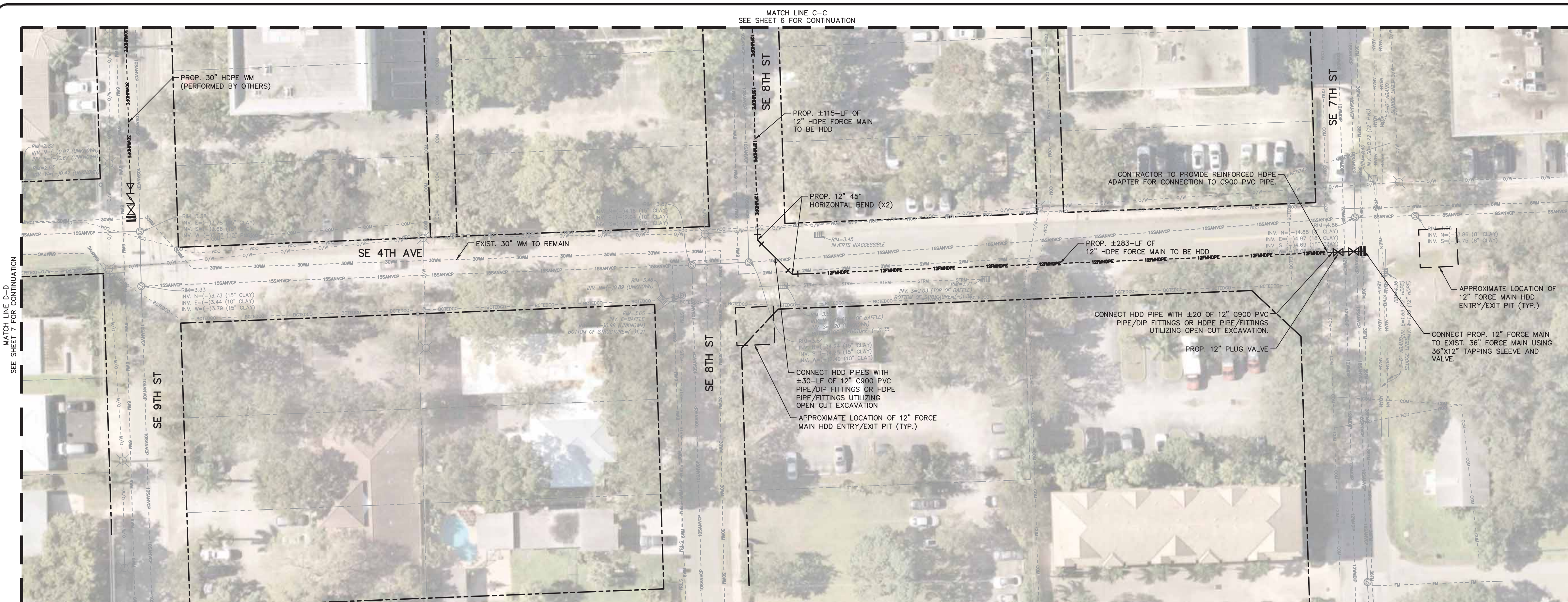
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 DESIGNED BY: SCLE: GR AS NOTED  
 CHECKED BY: GR  
 FIELD BOOK: 33301

**CITY OF FORT LAUDERDALE**  
**PUBLIC WORKS DEPARTMENT**  
**ENGINEERING & ARCHITECTURE**  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	DESCRIPTION



Plotted By: Morissa Sheet: Sct-PUMP STATION A-16 DESIGN CRITERIA PACKAGE Layout:8 CONCEPTUAL UTILITY PLAN September 28, 2021 04:13:47pm K:\VTL\civil\043 jobs\04-3184401 cno 12484-416 ps 0-16 rev location\CAD\plansheets\12412-MULTI-PLAN-add alternate.dwg  
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**LEGEND**

- SEAN --- EXIST. 8" SANITARY SEWER
- 8SANVCP --- EXIST. 8" VCP SANITARY SEWER
- 10SANVCP --- EXIST. 10" VCP SANITARY SEWER
- 15SANVCP --- EXIST. 15" VCP SANITARY SEWER
- 18SANVCP --- EXIST. 18" VCP SANITARY SEWER
- 10SANVCP --- EXIST. 10" VCP SANITARY SEWER
- A10SAN --- ABANDONED 10" SANITARY SEWER
- FM --- EXIST. FORCE MAIN
- 6FM --- EXIST. 6" FORCE MAIN
- WM --- EXIST. WATER MAIN
- 2WM --- EXIST. 2" WATER MAIN
- 4WM --- EXIST. 4" WATER MAIN
- 6WM --- EXIST. 6" WATER MAIN
- 8WMPVC --- EXIST. 8" PVC WATER MAIN
- 12WMPVC --- EXIST. 12" DIP WATER MAIN
- 30WM --- EXIST. 30" WATER MAIN
- 12WMPVC --- EXIST. 12" PVC WATER MAIN
- A6WM --- ABANDONED 6" WATER MAIN
- A2WM --- ABANDONED 2" WATER MAIN
- ABAN --- ABANDONED WATER MAIN
- BCTED --- EXIST. BCTED
- O/W --- EXIST. OVERHEAD WIRE
- COM --- EXIST. COMMUNICATION LINE
- UNKN --- EXIST. UNKNOWN UTILITY
- ABAN --- EXIST. ABANDONED UTILITY
- STW --- EXIST. STORMWATER PIPE
- STW --- EXIST. STORMWATER STRUCTURE
- 12WHDPE --- PROP. 12" HDPE FORCE MAIN
- SM --- EXIST. SANITARY SEWER MANHOLE
- PM --- PROP. SANITARY SEWER MANHOLE
- UC --- PROP. UTILITY CAP
- B --- PROP. BENDS
- T --- PROP. TAPPING SLEEVE AND VALVE
- W --- PROP. WASTEWATER ARRY WITH VAULT
- X --- EXIST. PIPE TO BE ABANDONED, CUT & CAPPED, NO GROUT

ENGINEER: GARY R. RAY, P.E.  
 REG. NO: 46682  
 DATE: 9/29/2021  
 TEL: (954) 858-5100  
 FAX:

DRAWN BY: AL  
 DATE: MAR 2021  
 DESIGNED BY: GR  
 AS NOTED  
 CHECKED BY: GR  
 FIELD BOOK:

**CITY OF FORT LAUDERDALE**  
**PUBLIC WORKS DEPARTMENT**  
**ENGINEERING & ARCHITECTURE**  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS	
NO.	DESCRIPTION

**DESIGN CRITERIA PACKAGE**  
**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**CONCEPTUAL UTILITY PLAN**

SHEET NO. **8** OF **31**  
 CAD FILE: 12412-MULTI-PLAN-ADD  
 ALTERNATE  
 DRAWING FILE NO.  
 4-142-31

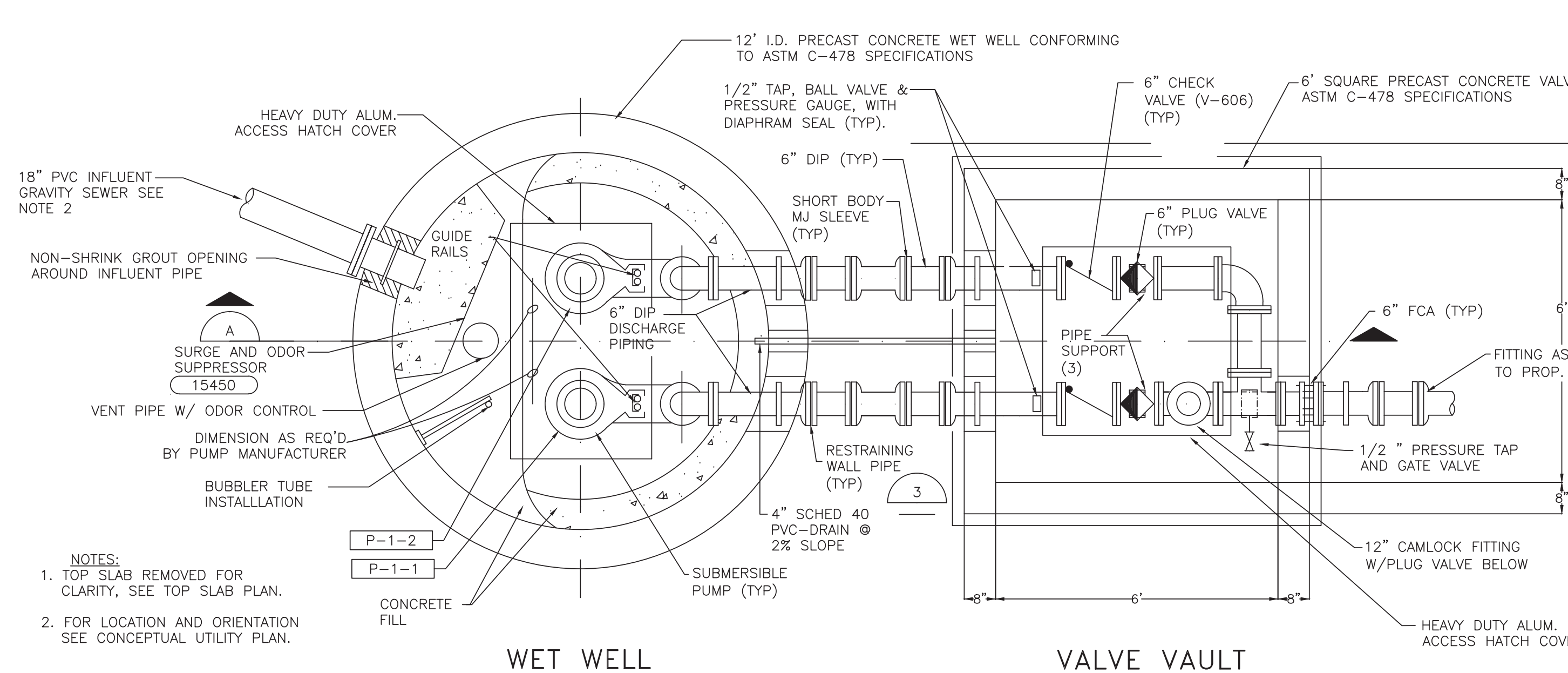


**NOTE:**  
 1. ELEVATIONS INDICATED HEREON ARE IN FEET AND DECIMALS, RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988).  
 2. THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE AND OBTAINING ALL NECESSARY PERMITS.  
 3. FLOOD ZONE: AH  
 4. BASE FLOOD ELEVATION (BFE): 6.0' NAVD 1988  
 5. ALL SANITARY MANHOLES TO BE FILLED WITH SAND AND ABANDONED IN PLACE.

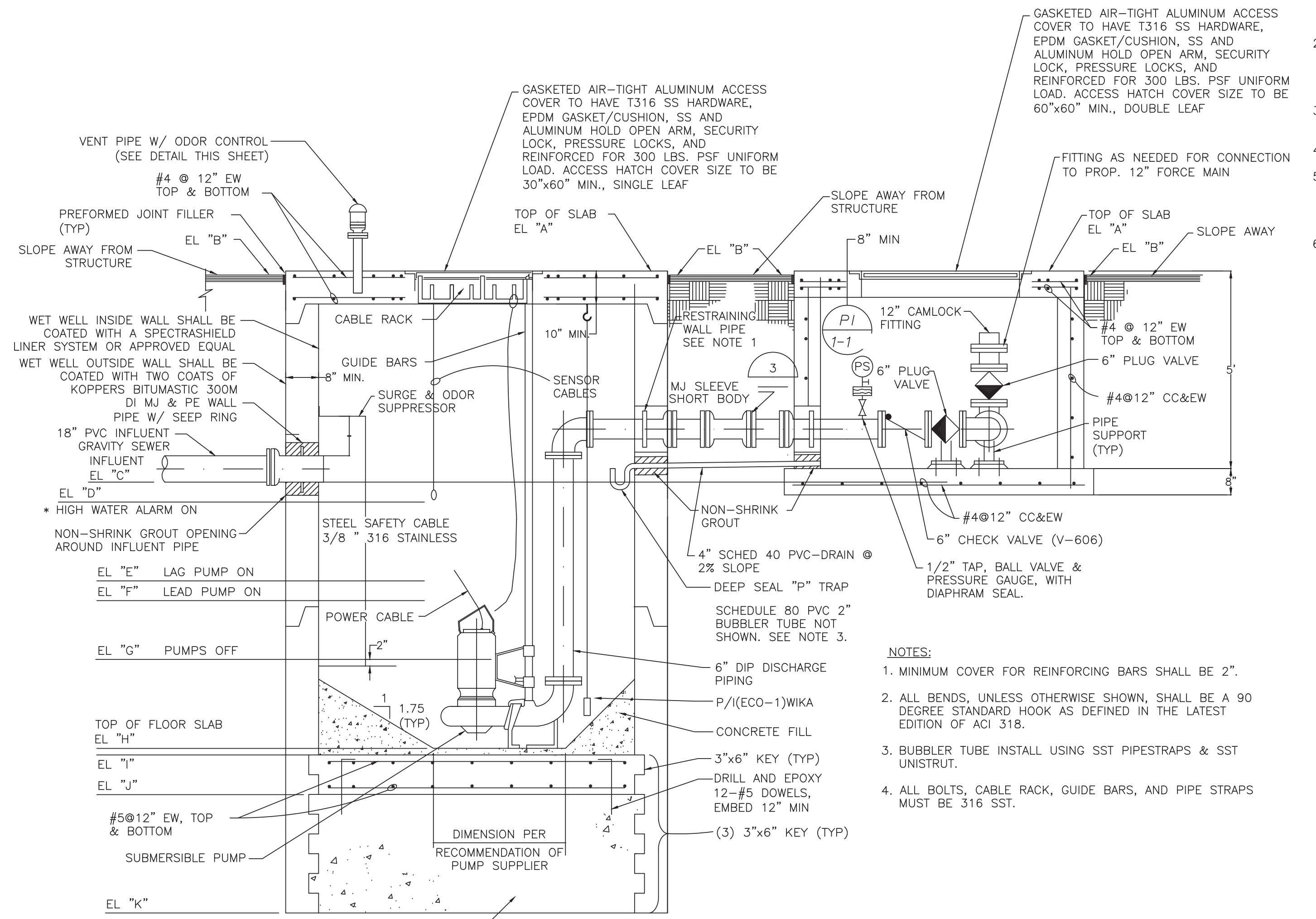
6. DESIGN BUILD FIRM SHALL CONTACT CITY OPERATION STAFF ONE WEEK IN ADVANCE PRIOR TO WATER AND FORCE MAIN CONNECTIONS TO ENSURE ALL VALVES ARE WORKING. DESIGN BUILD FIRM TO ADVISE CITY OPERATION STAFF OF PROPOSED CONNECTION PROCEDURE.  
 7. DESIGN BUILD FIRM IS RESPONSIBLE FOR TREE REMOVAL PERMITS.  
 8. DESIGN BUILD FIRM IS RESPONSIBLE TO PROVIDE SURVEY/SKETCH AND LEGAL DRAWINGS AS NEEDED TO ASSIST THE CITY WITH OBTAINING ALL TEMPORARY AND/OR PERMANENT EASEMENTS FOR THE INSTALLATION OF ALL PUMP STATION AND UTILITY WORK NOT IN THE PUBLIC RIGHT-OF-WAY.

PREPARED BY:  
**Kimley»Horn**  
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 WWW.KIMLEY-HORN.COM REGISTRY No. 696

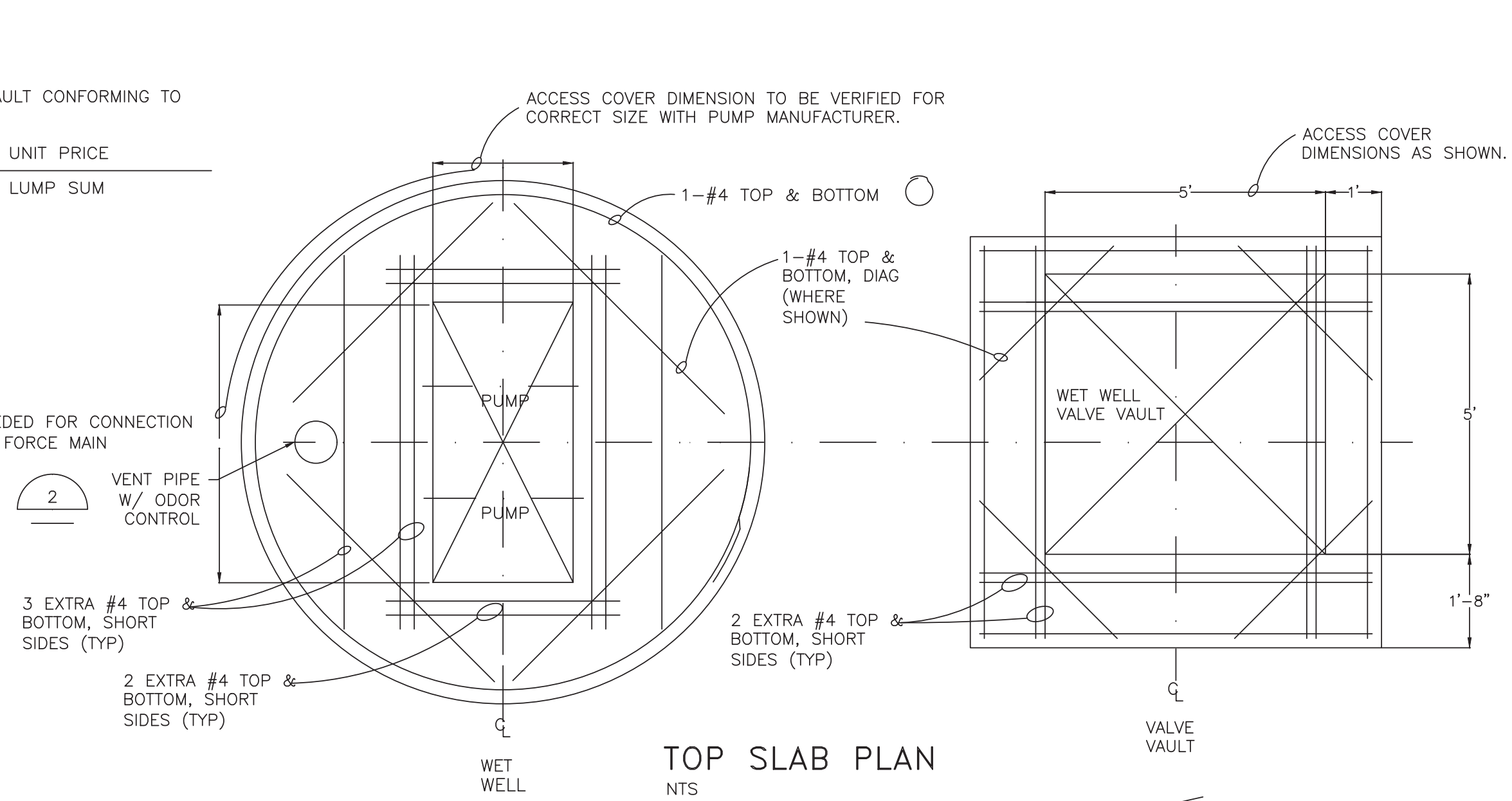
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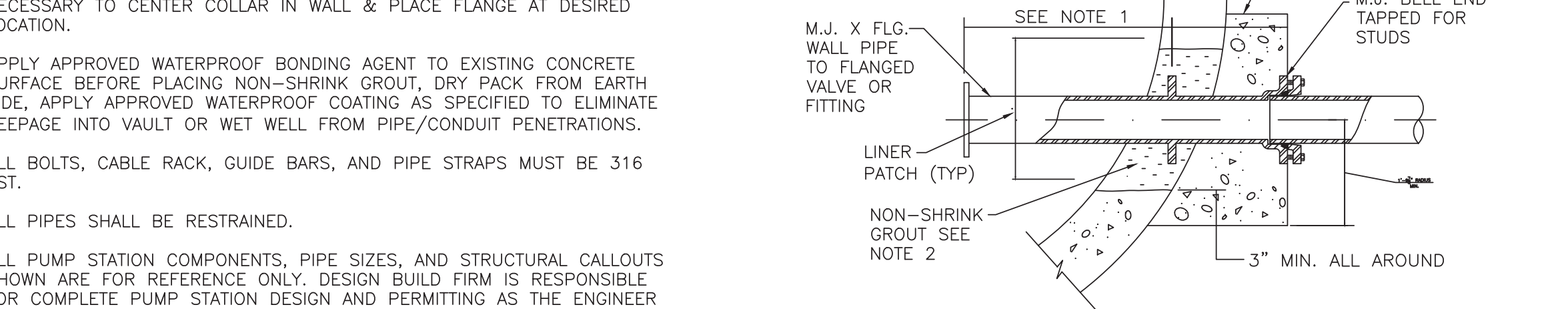
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NTS



**SECTION**  
NTS



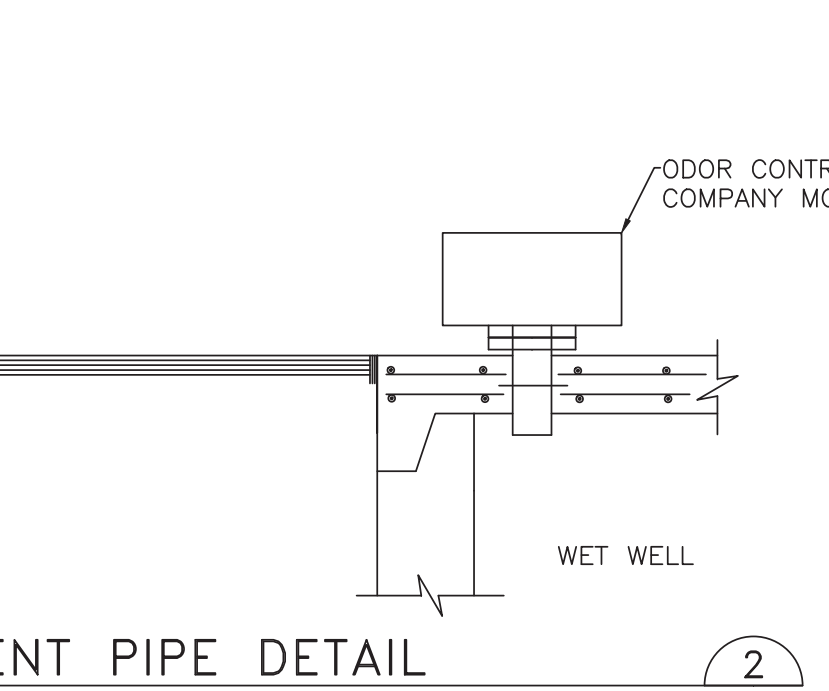
**TOP SLAB PLAN**  
NTS



**RESTRAINING WALL PIPE DETAIL**  
NTS

**SCHEDULE OF ELEVATIONS (FEET MSL)**

LETTER	LEVEL DESCRIPTION	A-16
A	TOP OF PUMP STATION & VAULT SLABS	4.20
B	FINISH GRADE ADJACENT SLAB	3.70
C	INFLUENT GRAVITY SEWER INVERT	(-)8.61
D	HIGH WATER ALARM	(-)9.60
E	LAG PUMP ON	(-)11.60
F	LEAD PUMP ON	(-)12.60
G	PUMPS OFF	(-)14.60
H	TOP OF FLOOR SLAB	(-)16.60
I	TOP OF KEY	(-)16.90
J	BOTTOM OF KEY	(-)17.90
K	BOTTOM OF TREMIE PLUG	(-)24.50
	INSIDE DIAMETER PUMP STATION	12'
	FORCE MAIN PIPING (D.I.P.)	12"
	PUMP OPERATION REQUIREMENTS	750 gpm @ 107' 45 HP



**VENT PIPE DETAIL**  
NTS

**ENGINEER:** GARY R. RAY, P.E.  
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**FAX:**

**DRAWN BY:** AL  
**DATE:** MAR 2021  
**DESIGNED BY:** SCALE: AS NOTED  
**CHECKED BY:** GR  
**FIELD BOOK:**

**CITY OF FORT LAUDERDALE**  
**PUBLIC WORKS DEPARTMENT**  
**ENGINEERING & ARCHITECTURE**  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

**REVISIONS**  
 NO. DATE BY (CHKD) DESCRIPTION

**DESIGN CRITERIA PACKAGE**  
**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**CONCEPTUAL PUMP STATION DETAILS**

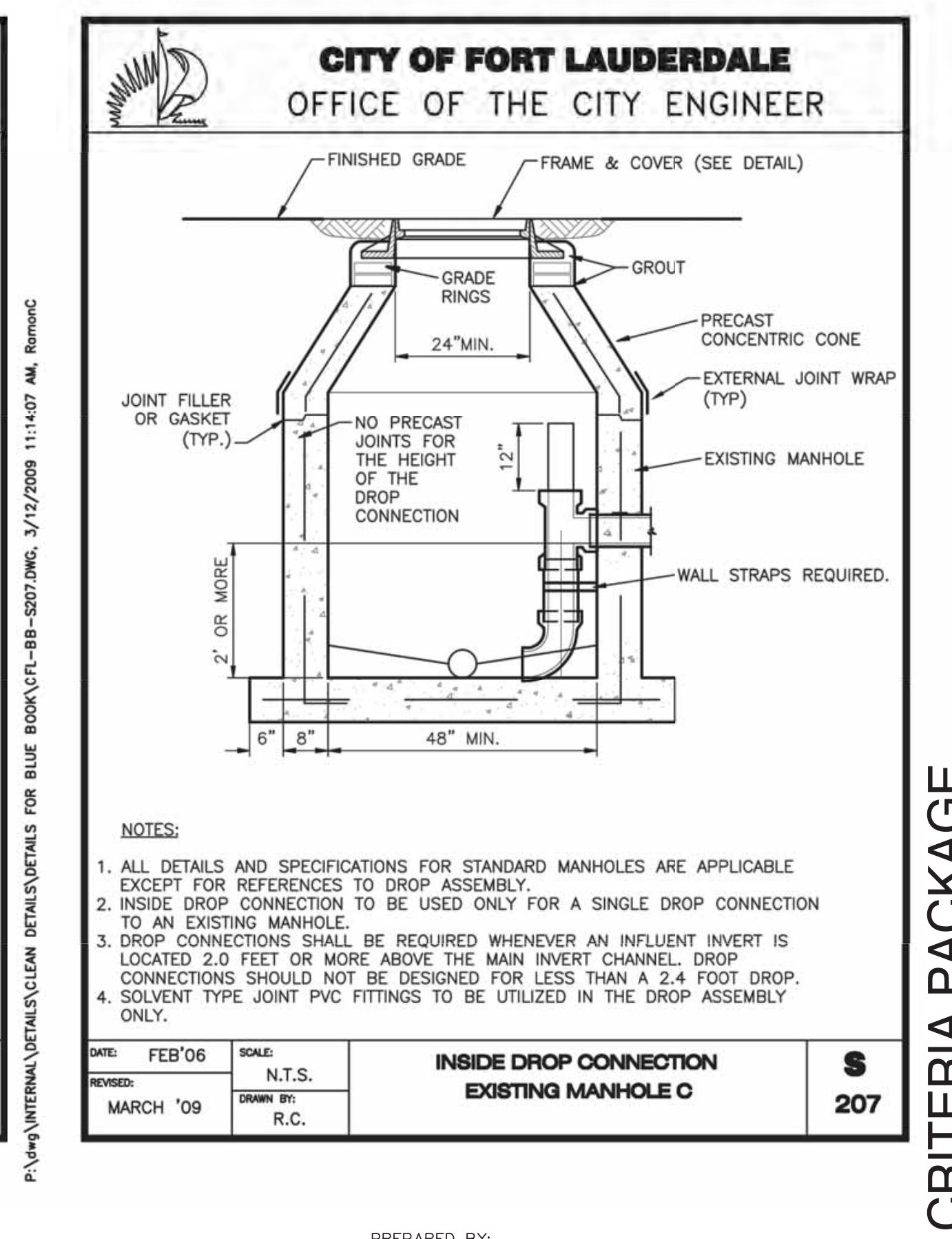
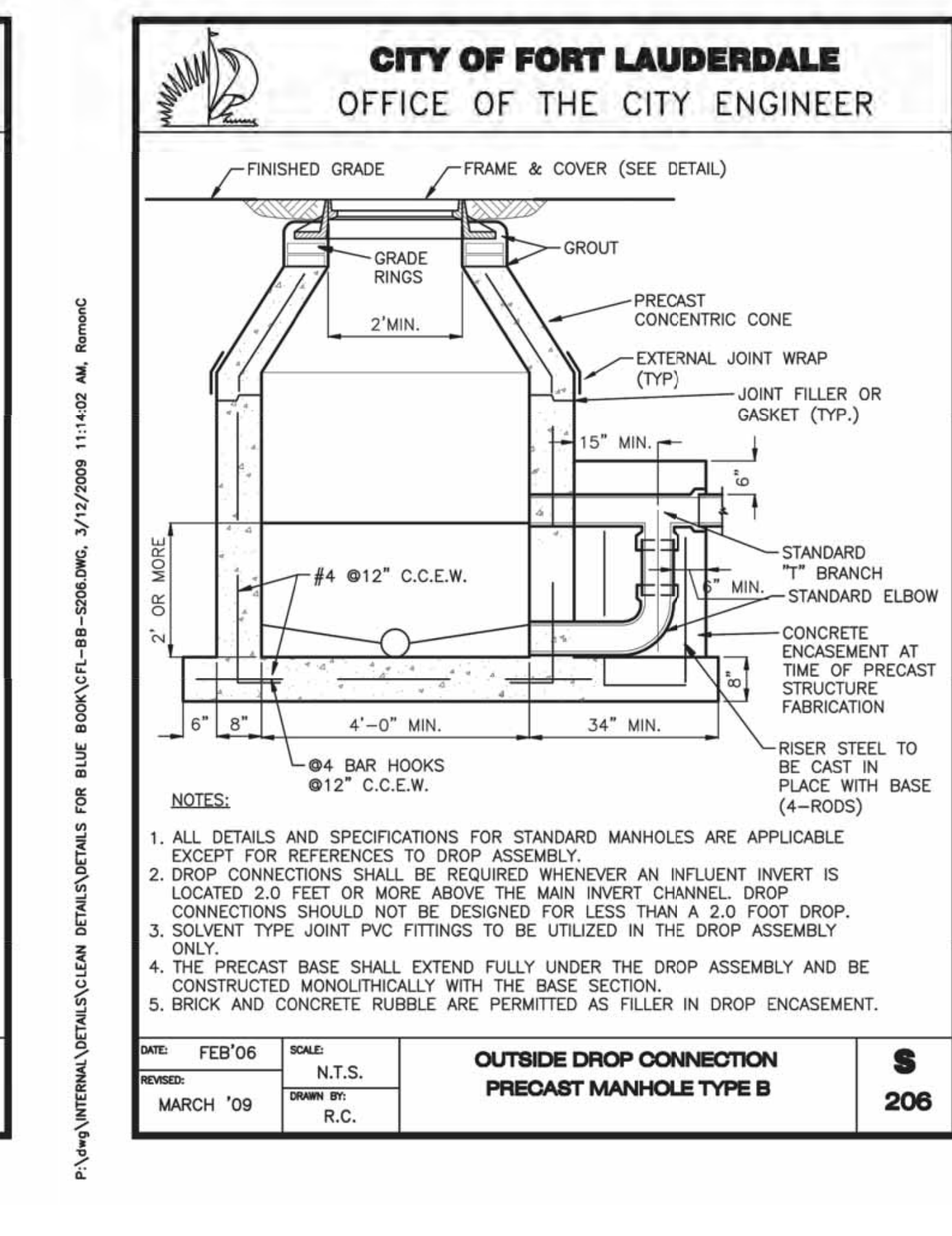
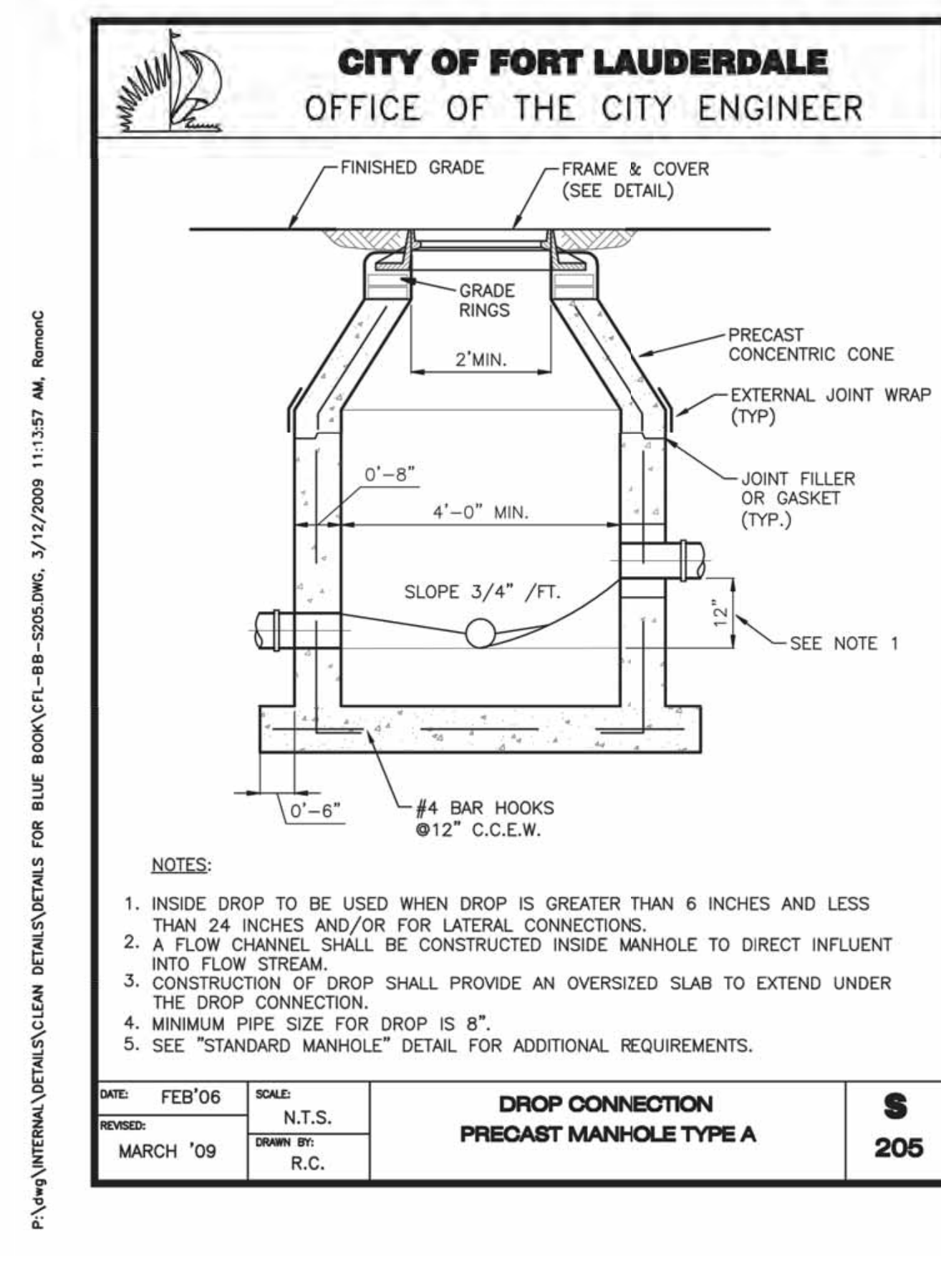
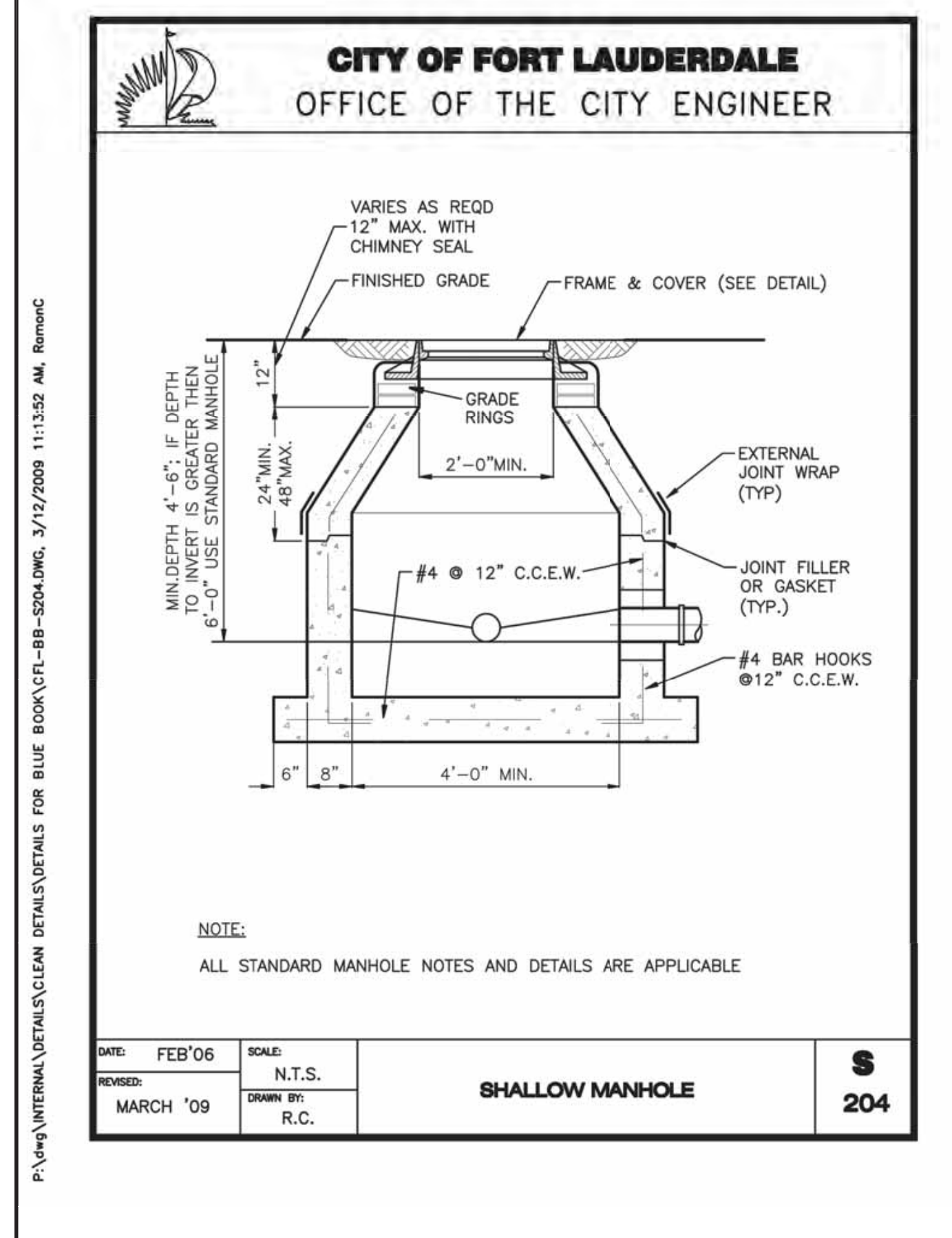
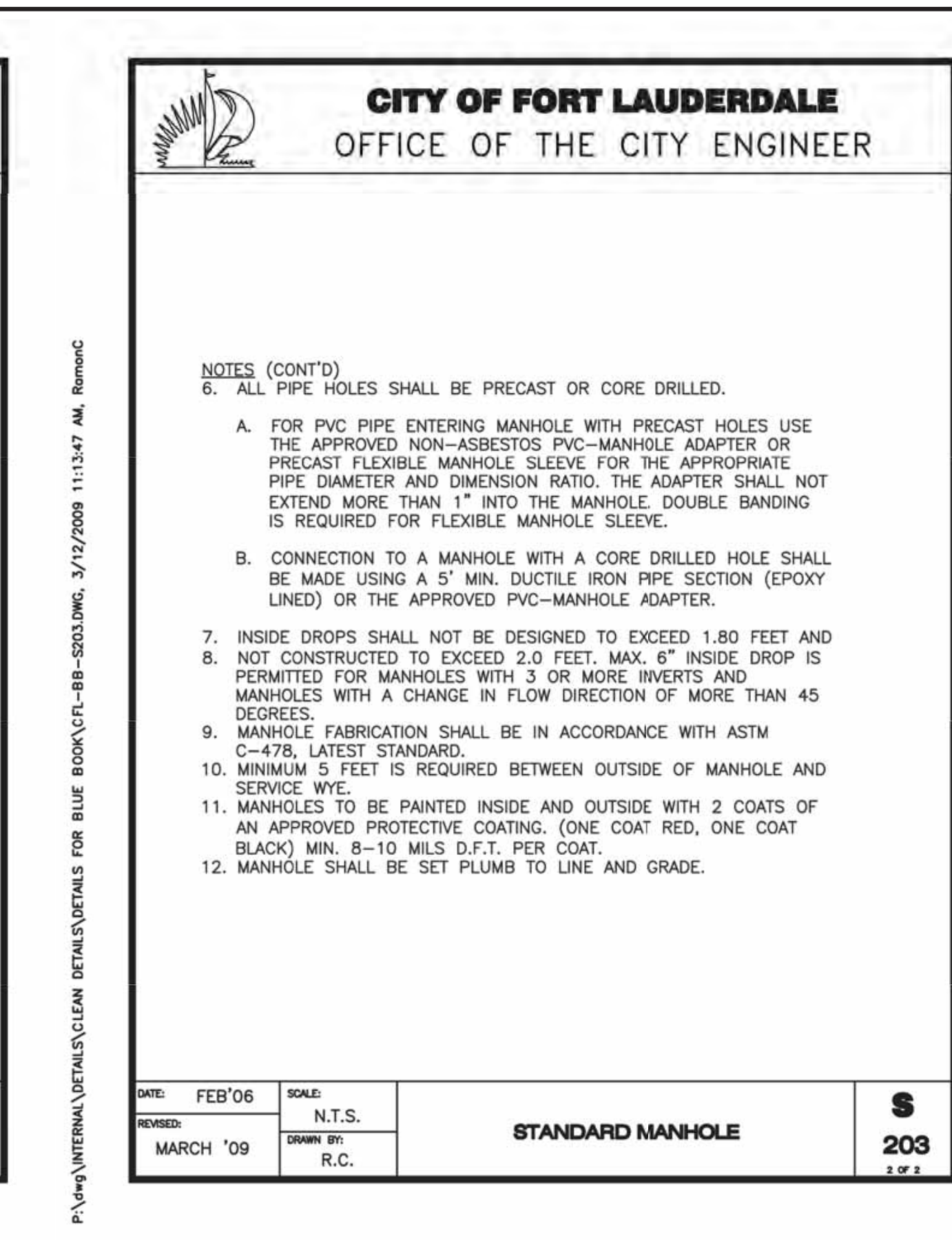
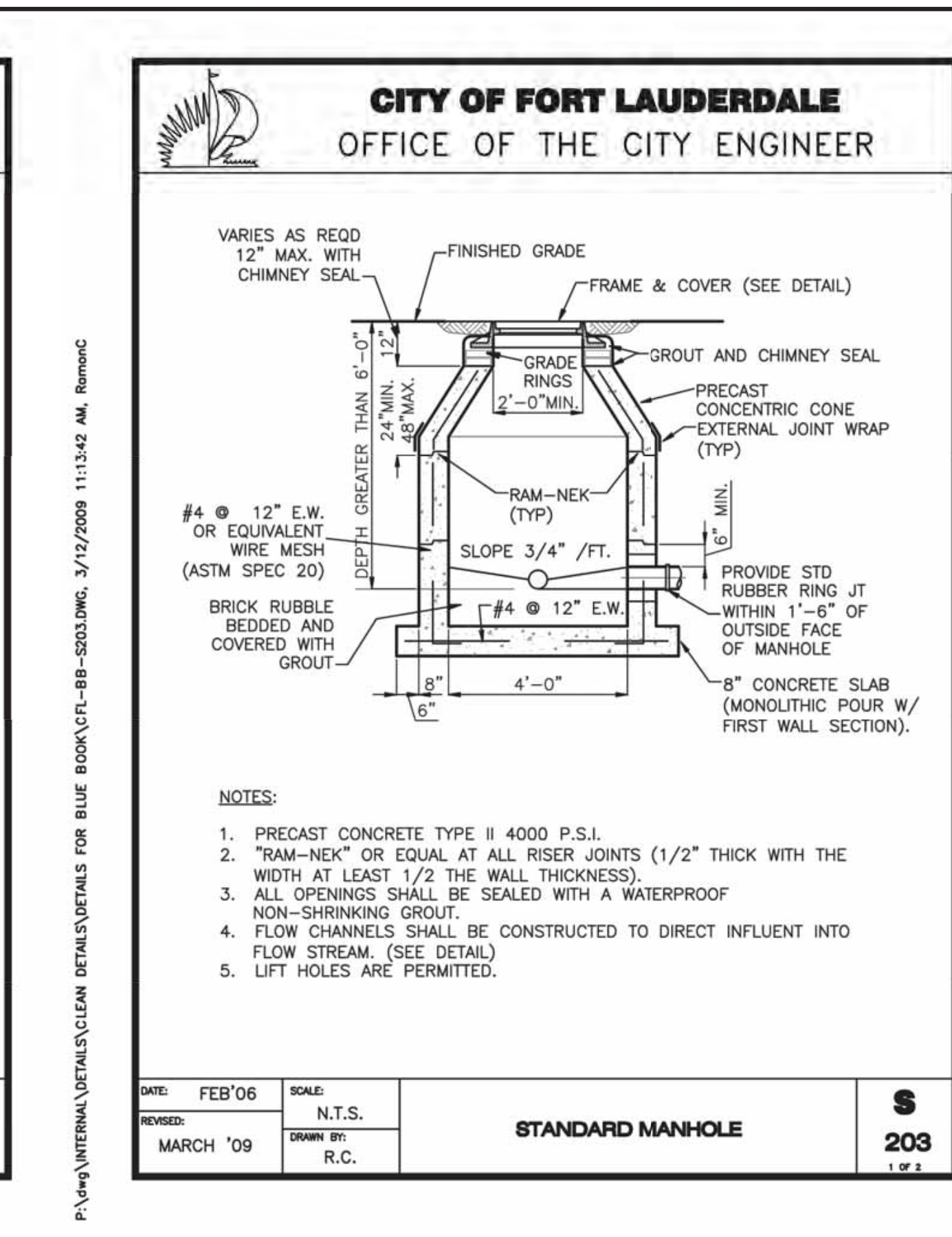
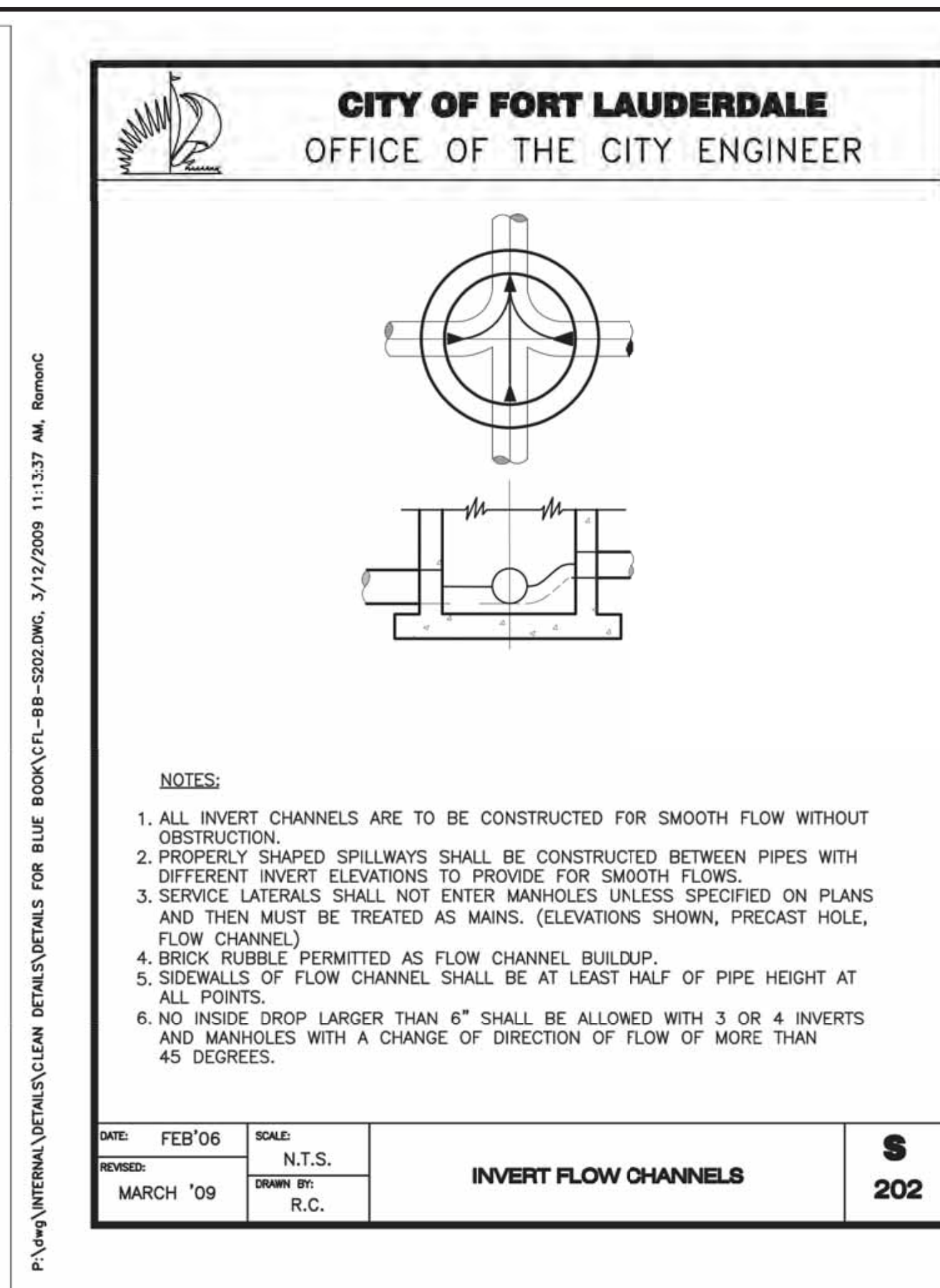
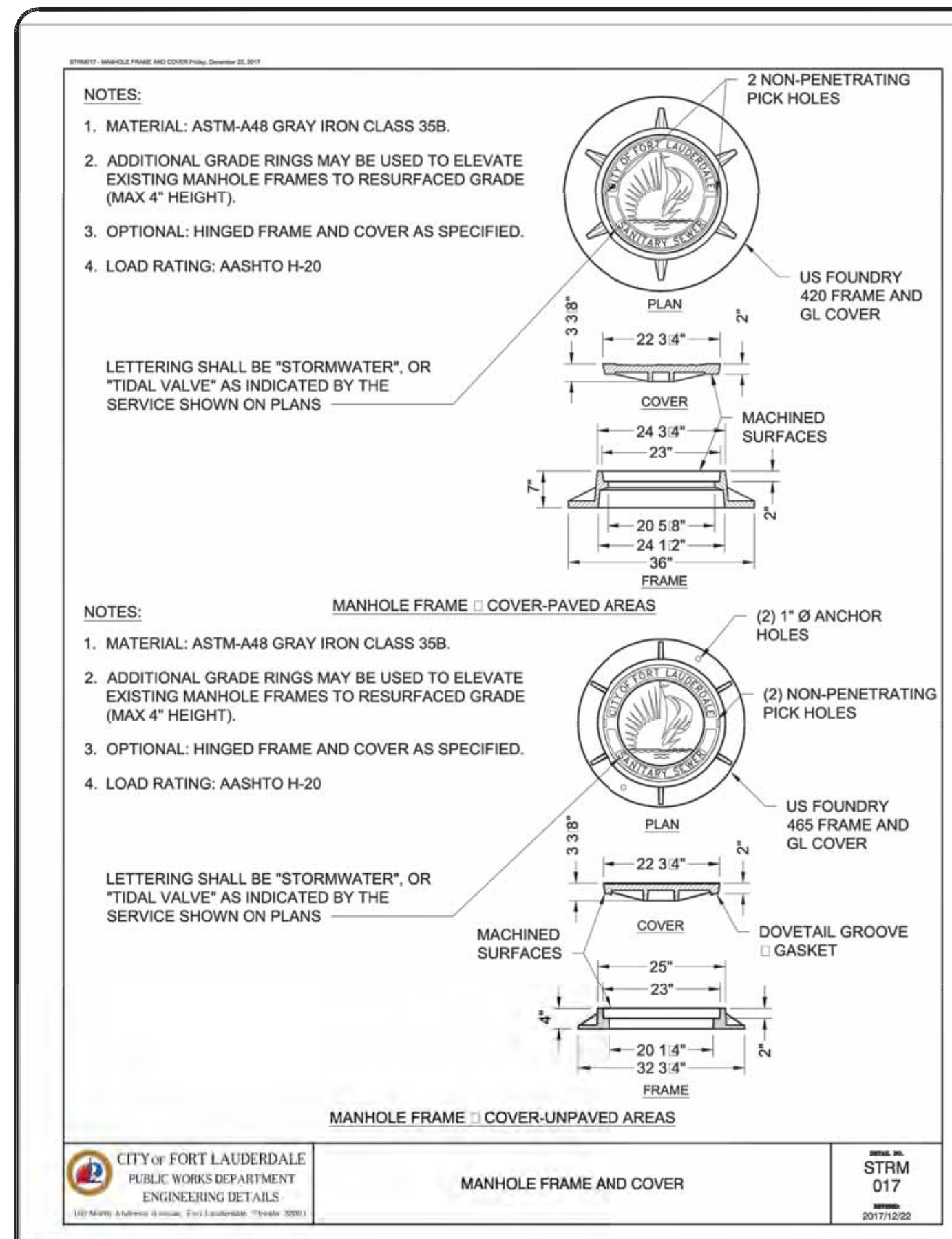
**SHEET NO. 9 OF 31**  
**CAD FILE:** 12412-MULTI-DEL  
**DRAWING FILE NO.:** 4-142-31



\* (ALARM HAS LIGHT, AUDIBLE ALARM, AND DIALER RTU TO CITY; ALARM WILL BE DEACTIVATED BY A MANUAL SWITCH)

**PREPARED BY:**  
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**CITY OF FORT LAUDERDALE**  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RAVAY, P.E.  
 REG. NO: 46682  
 DATE: 9/29/2021

DESIGNED BY: SCALE: AS NOTED  
 CHECKED BY: GR  
 FIELD BOOK: GR

DATE: MAR 2021  
 DRAWN BY: AL

REVISIONS

NO.	DATE	BY	DESCRIPTION

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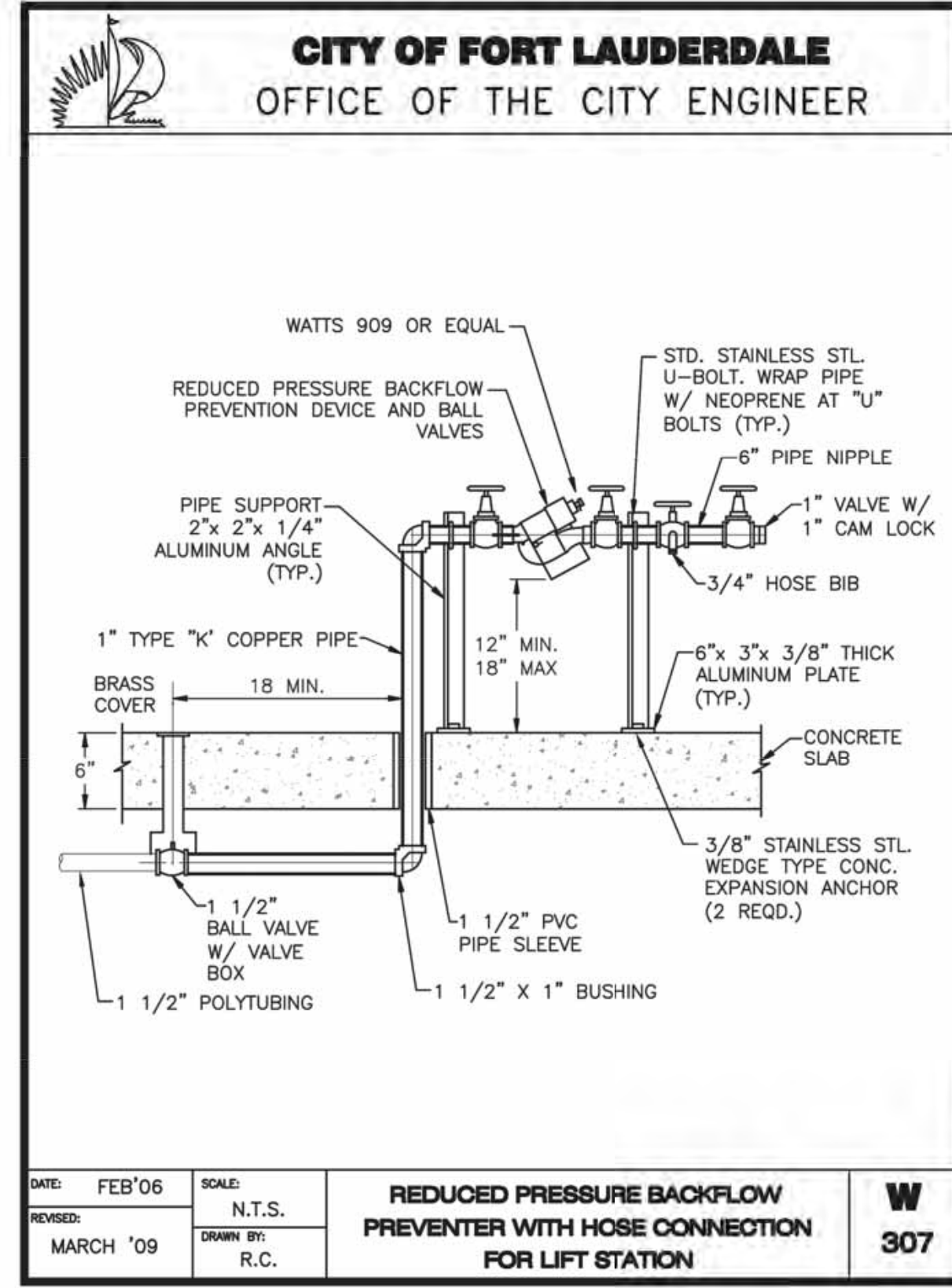
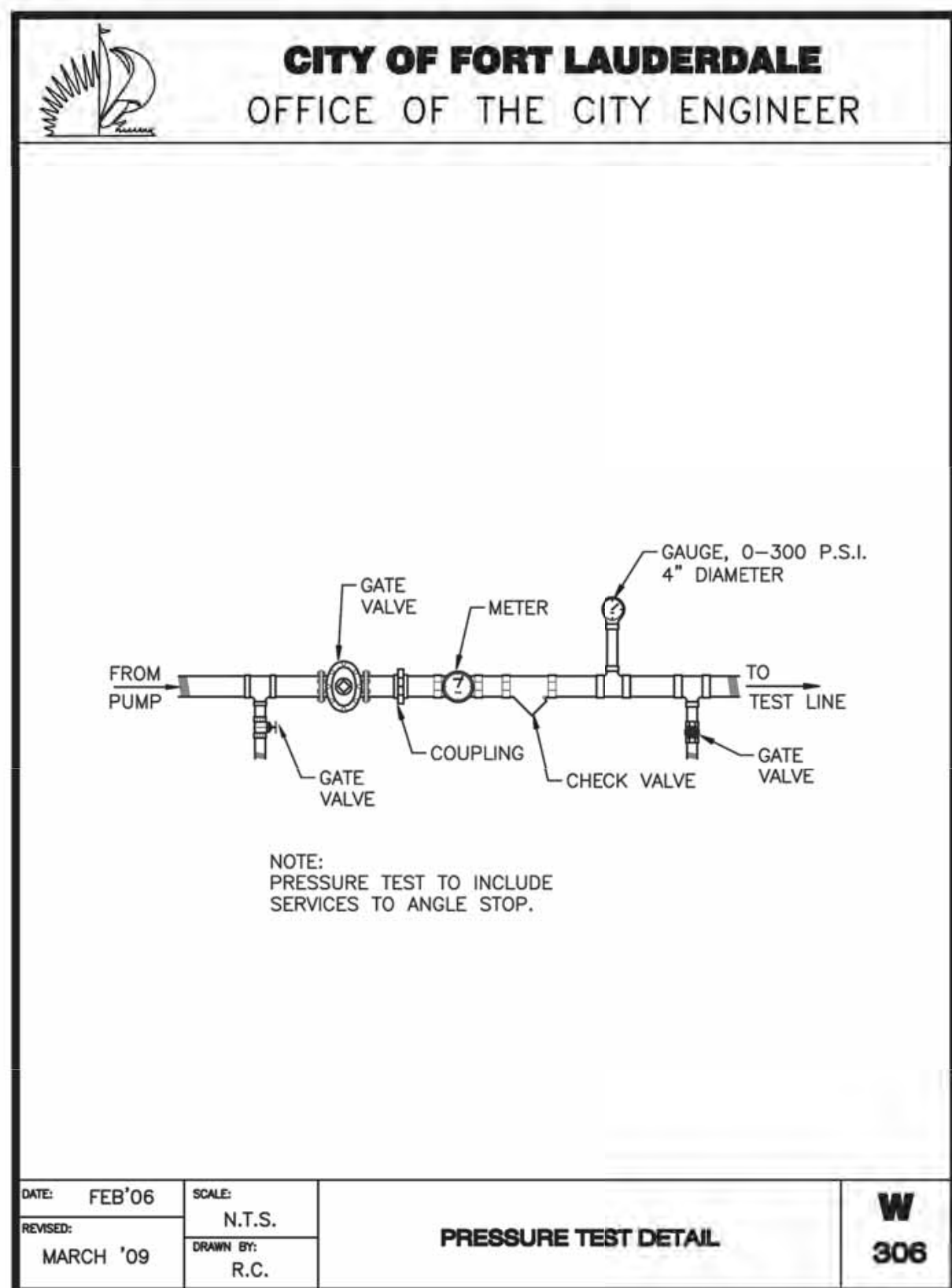
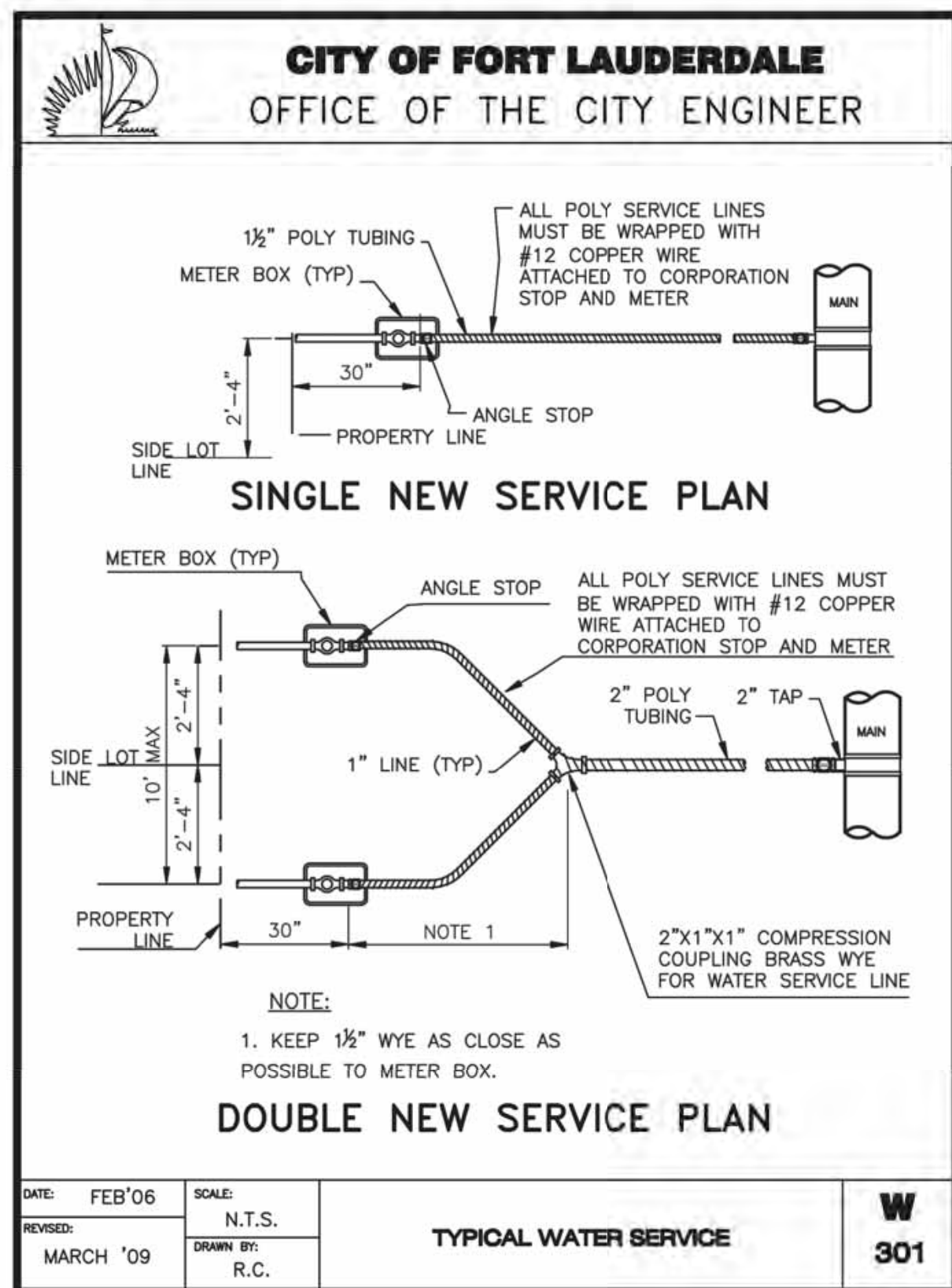
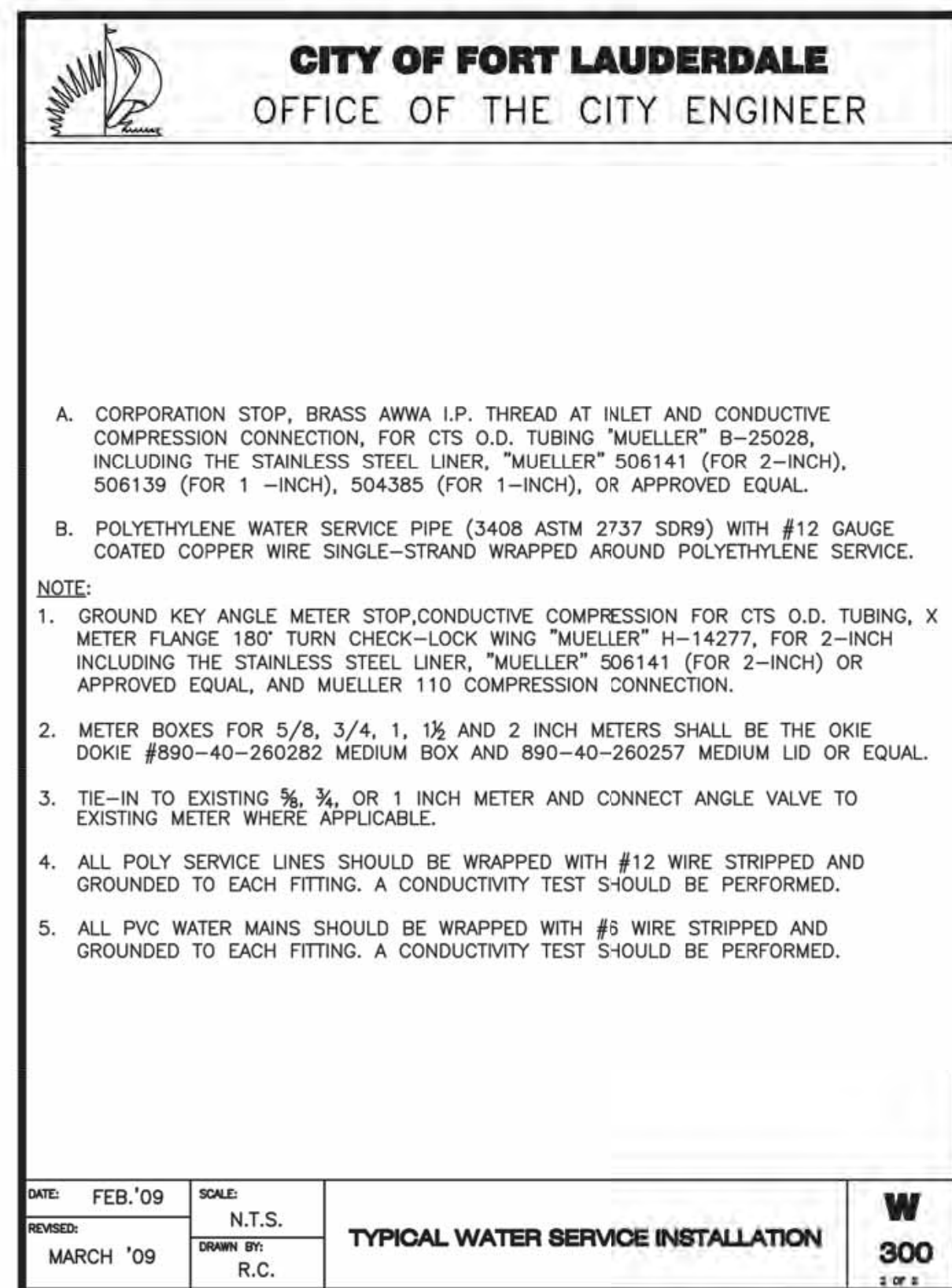
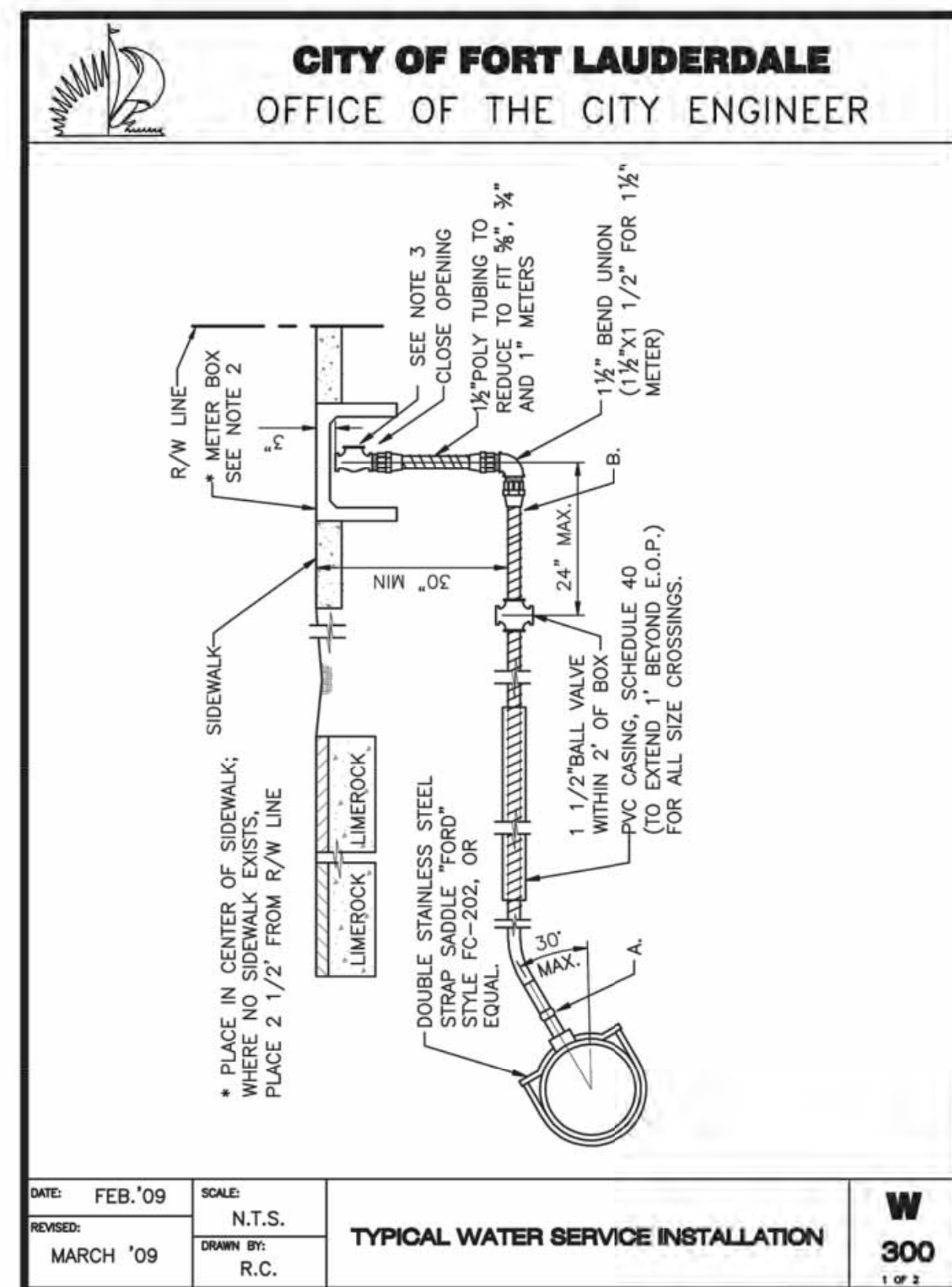
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 WASTEWATER DESIGN CRITERIA PACKAGE  
 STANDARD DETAILS

SHEET NO. OF  
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CAD FILE:  
 12412-MULTI-DET

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 CHECKED BY: GR

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 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (CHKD)	DESCRIPTION

DESIGN CRITERIA PACKAGE

PROJECT # 12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 STANDARD DETAILS

SHEET NO.	OF
11	31
CAD FILE: 12412-MULTI-DET1	
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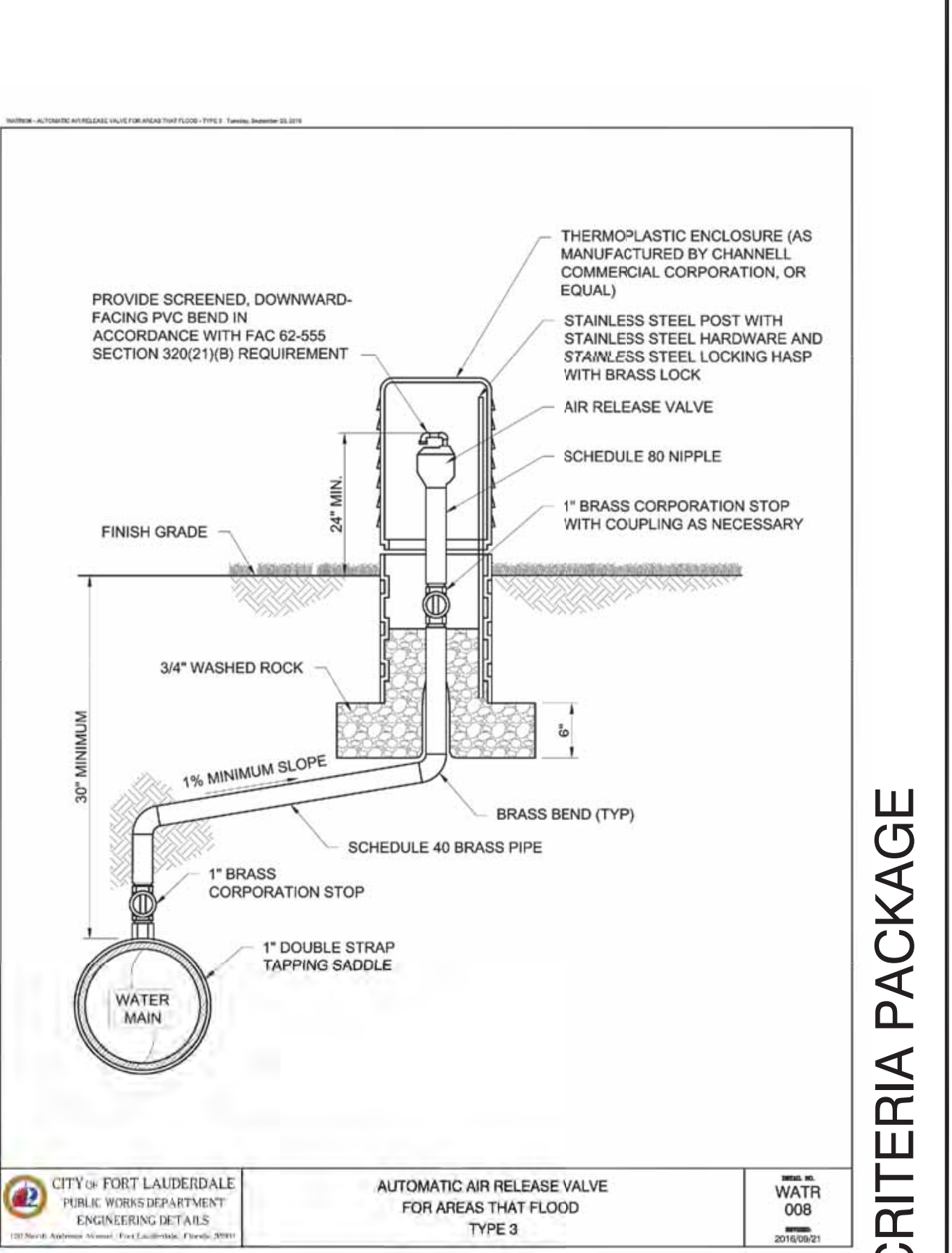
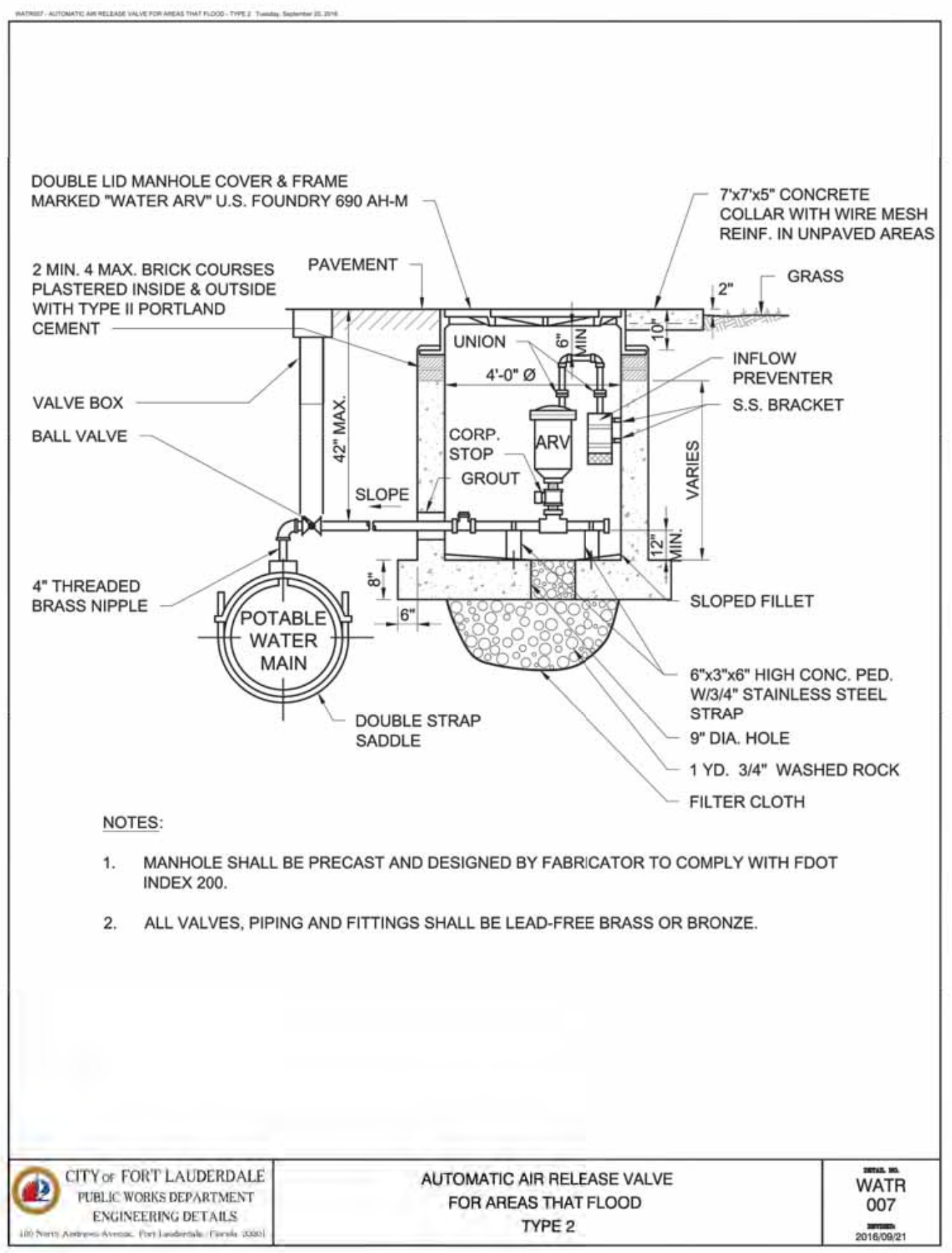
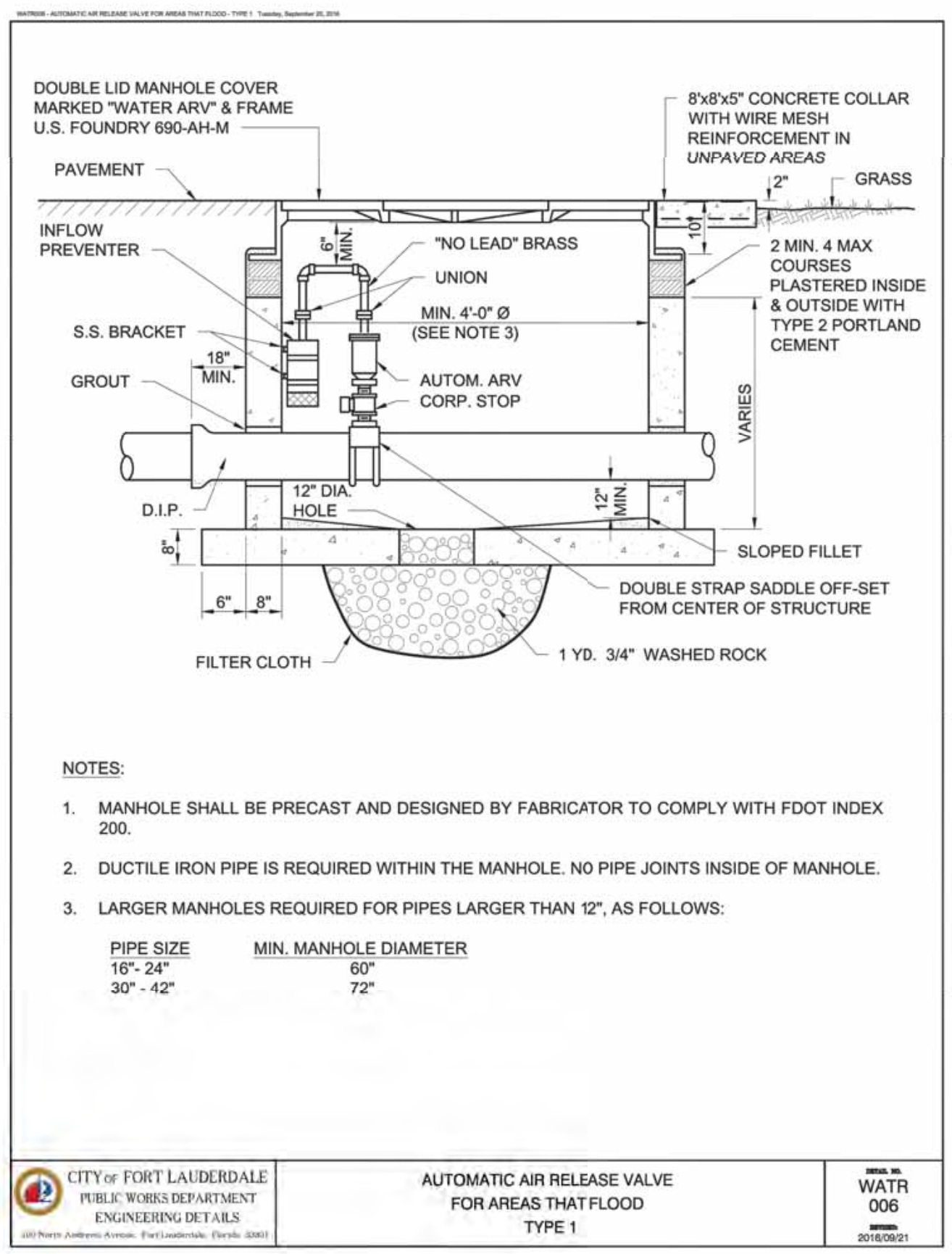
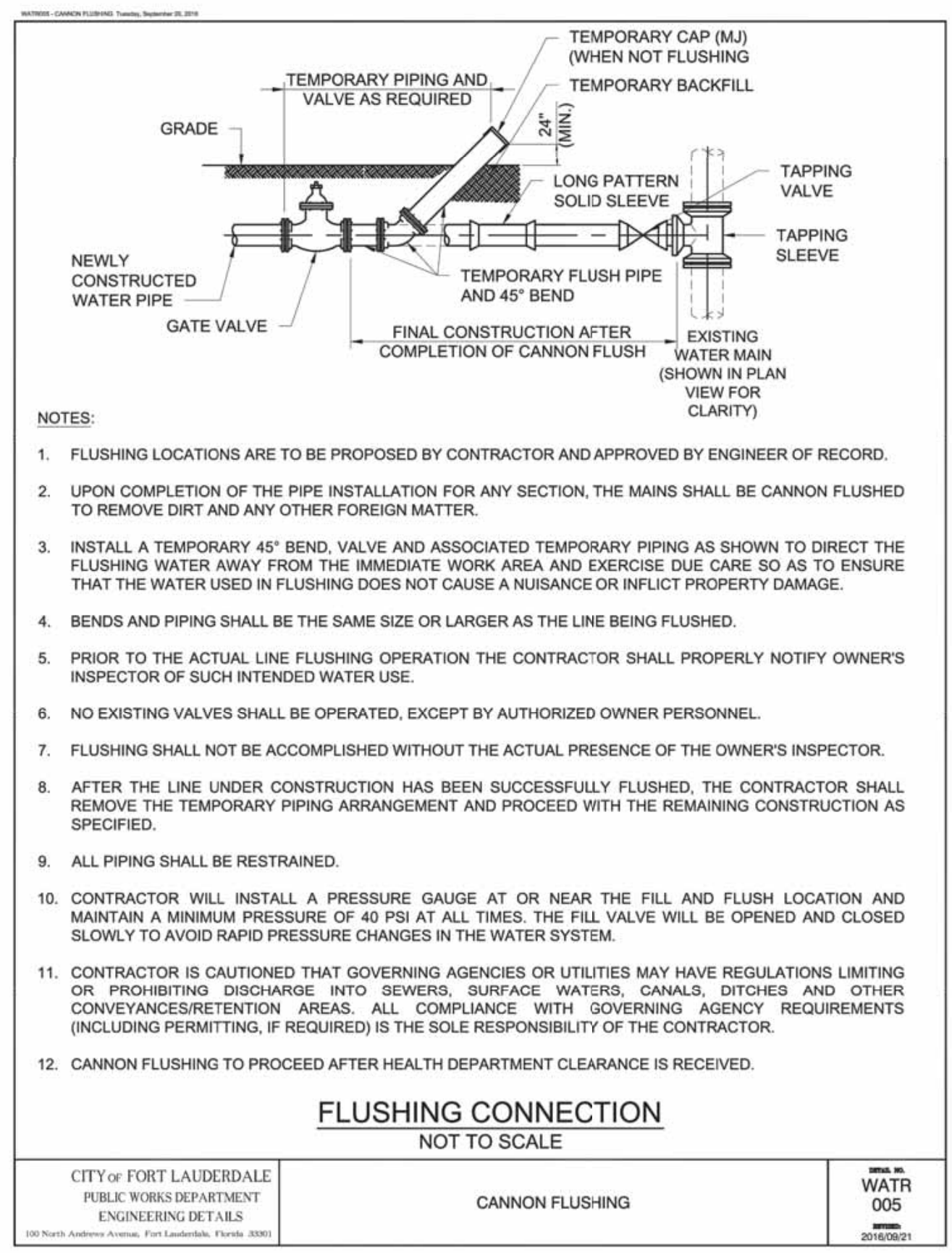
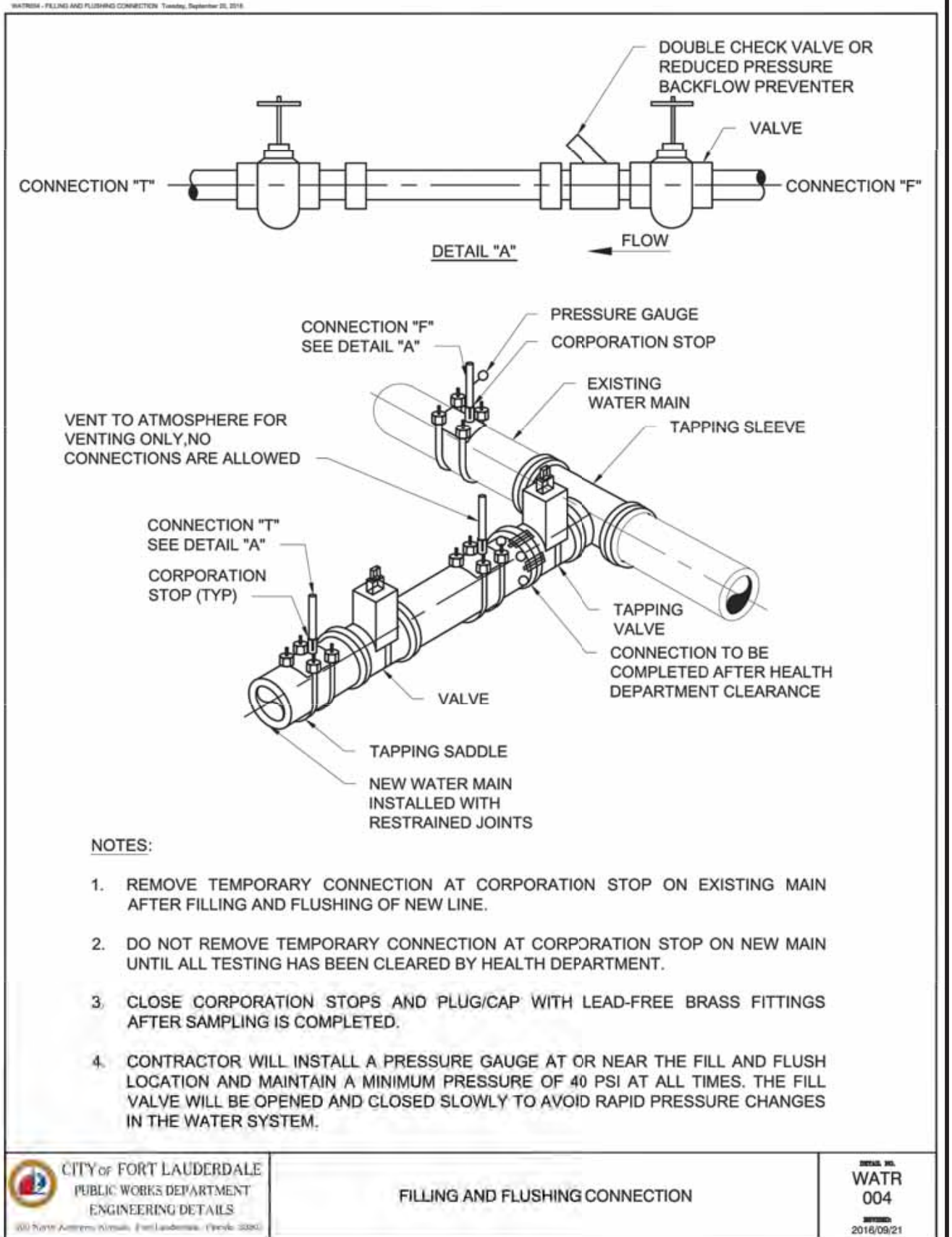
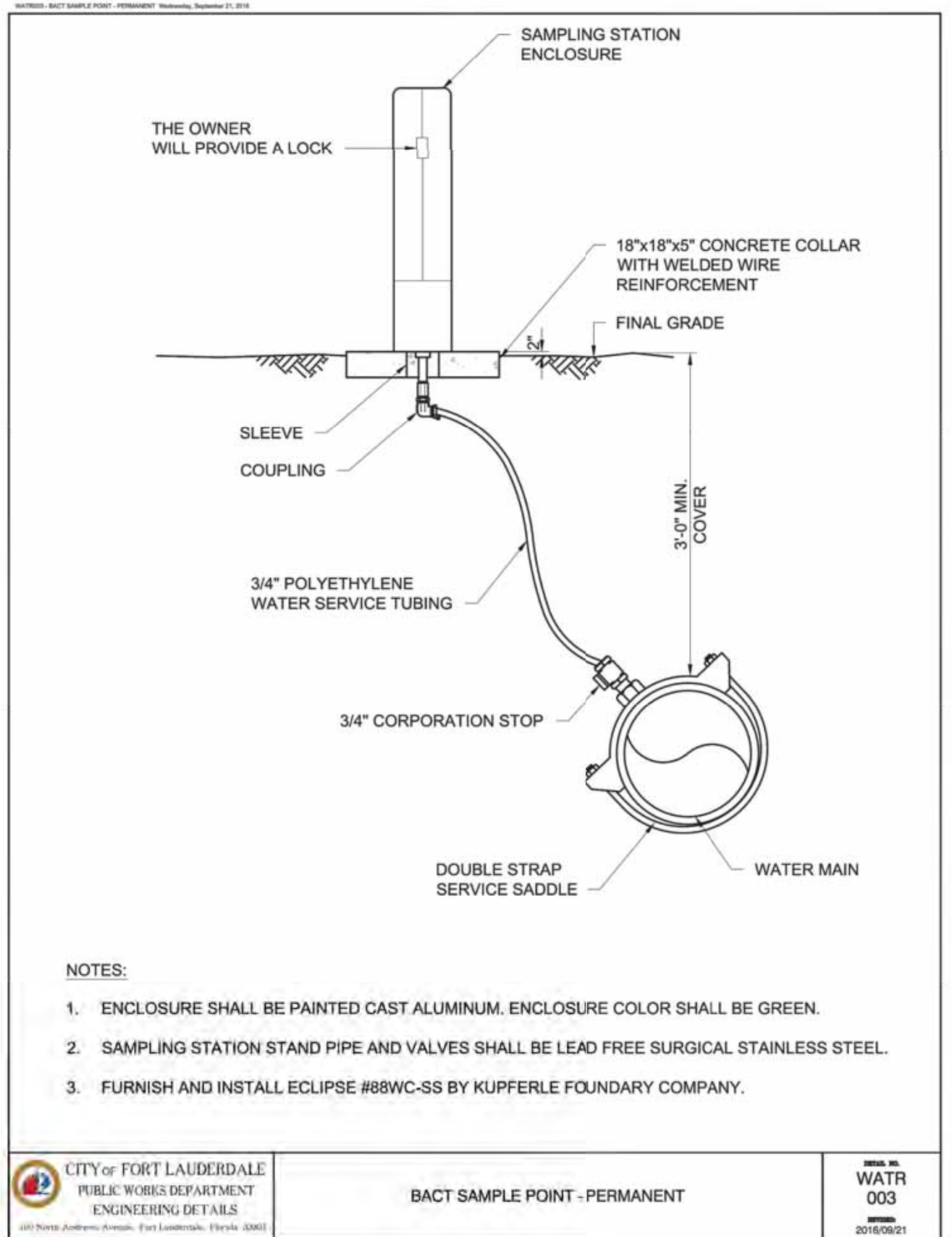
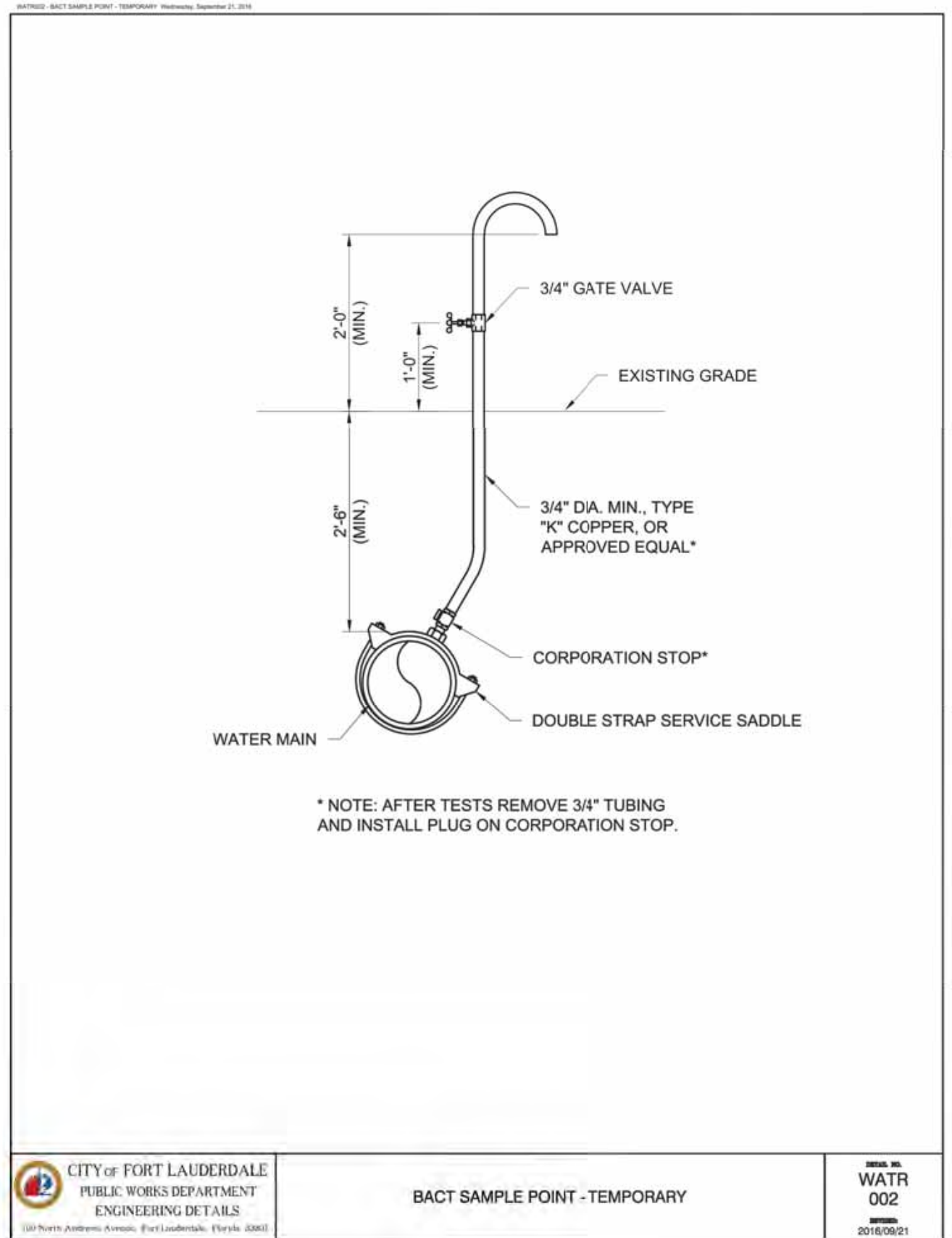
**WATER MAIN SEPARATION IN ACCORDANCE WITH F.A.C. RULE 62-555.314**

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (NOTE 1)	JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (NOTE 2)			
VACUUM SANITARY SEWER			
GRAVITY SANITARY SEWER (NOTE 3), SANITARY SEWER FORCE MAIN, RECLAIMED WATER			
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 FT. MINIMUM	—	—

**NOTES:**

- WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
- RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
- 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
- ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPE SO THAT THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATE JOINT LOCATIONS ALLOWED UNDER FAC 62-555.314 WILL ONLY BE ALLOWED BY THE ENGINEER ON A CASE-BY-CASE BASIS.

CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT ENGINEERING DETAILS  
**WATER MAIN SEPARATION**  
 WATR 001  
 2016/09/21



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ENGINEER: GARY R. RAY, P.E.  
 REG. NO: 46682  
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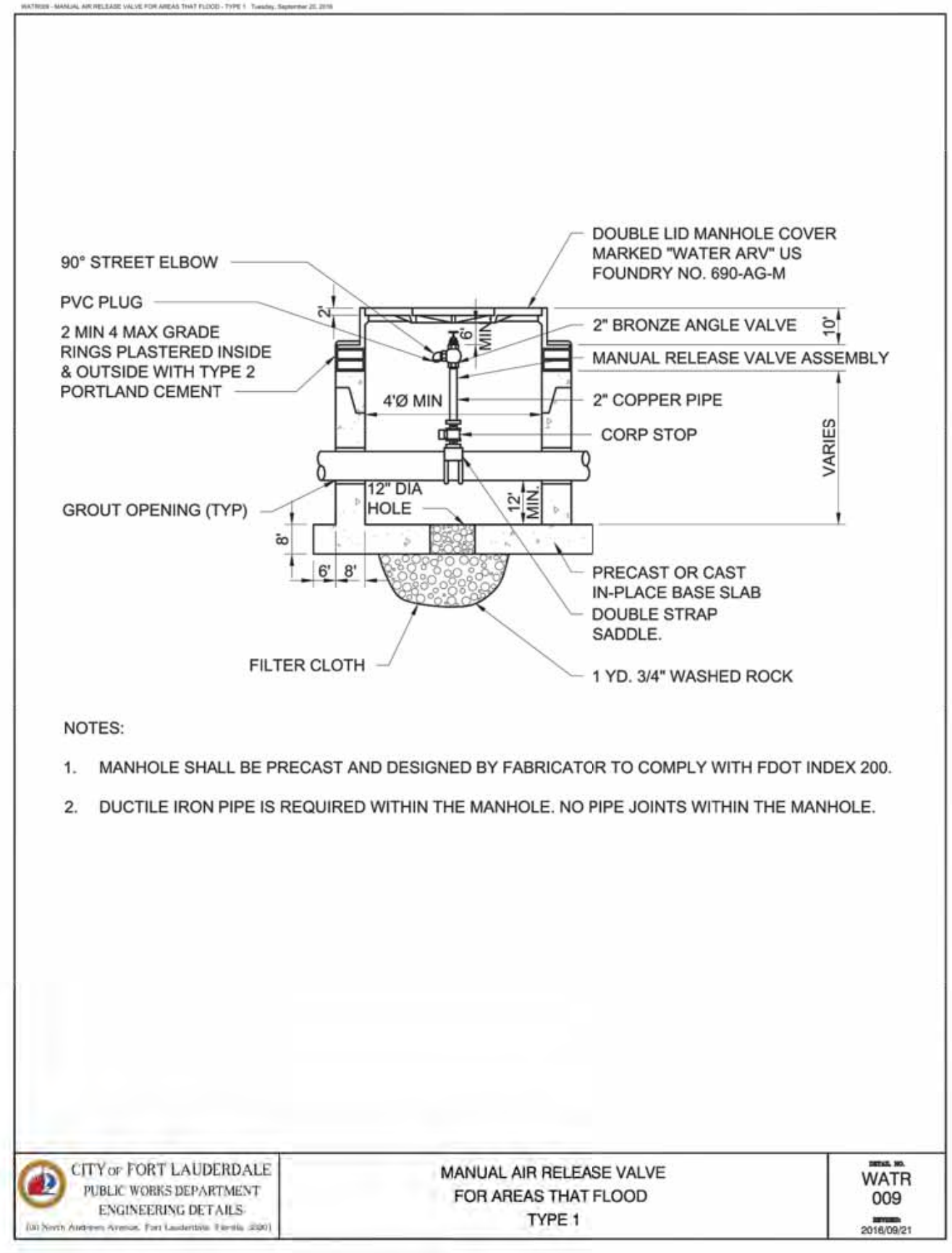
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**DESIGN CRITERIA PACKAGE**  
**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**STANDARD DETAILS**

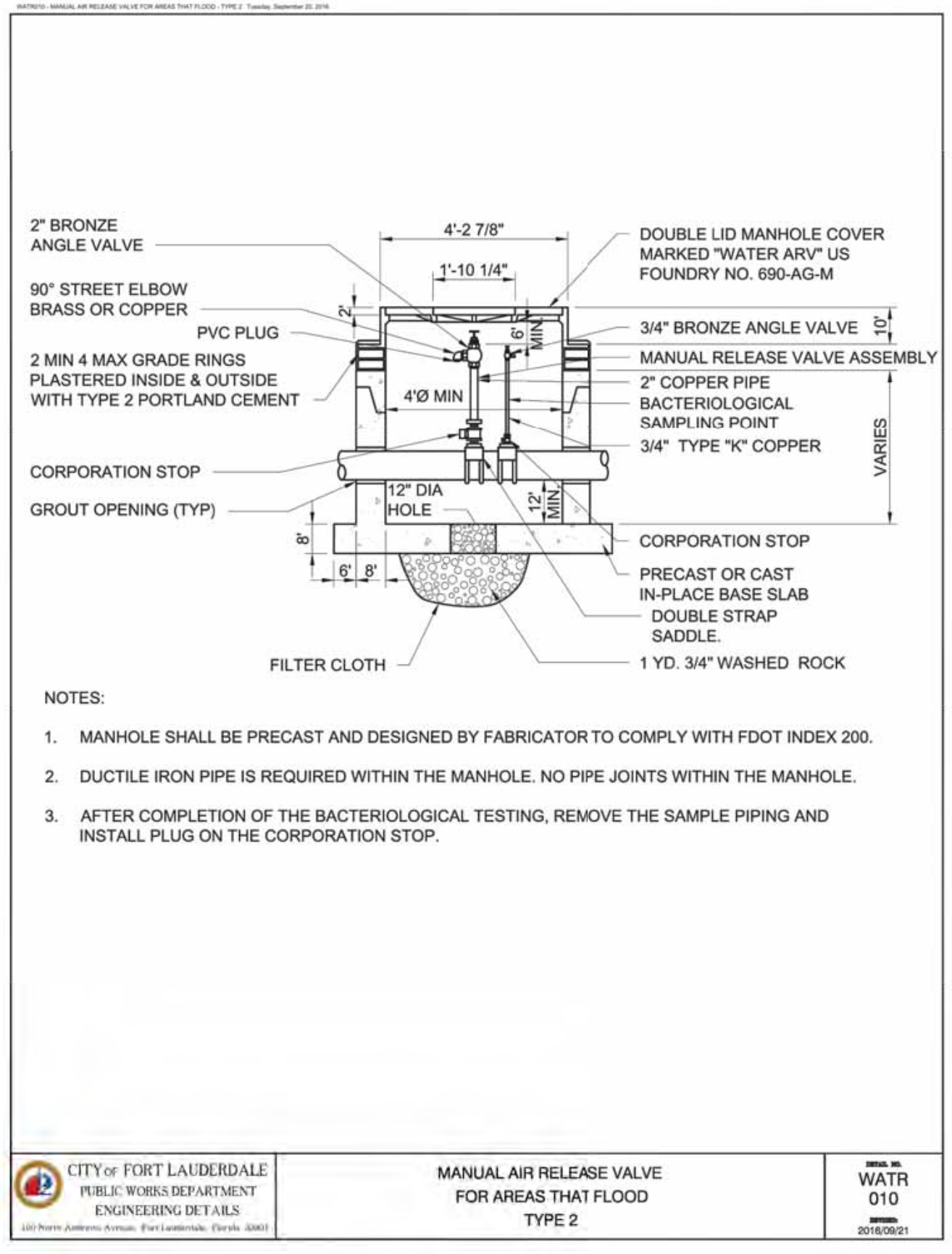
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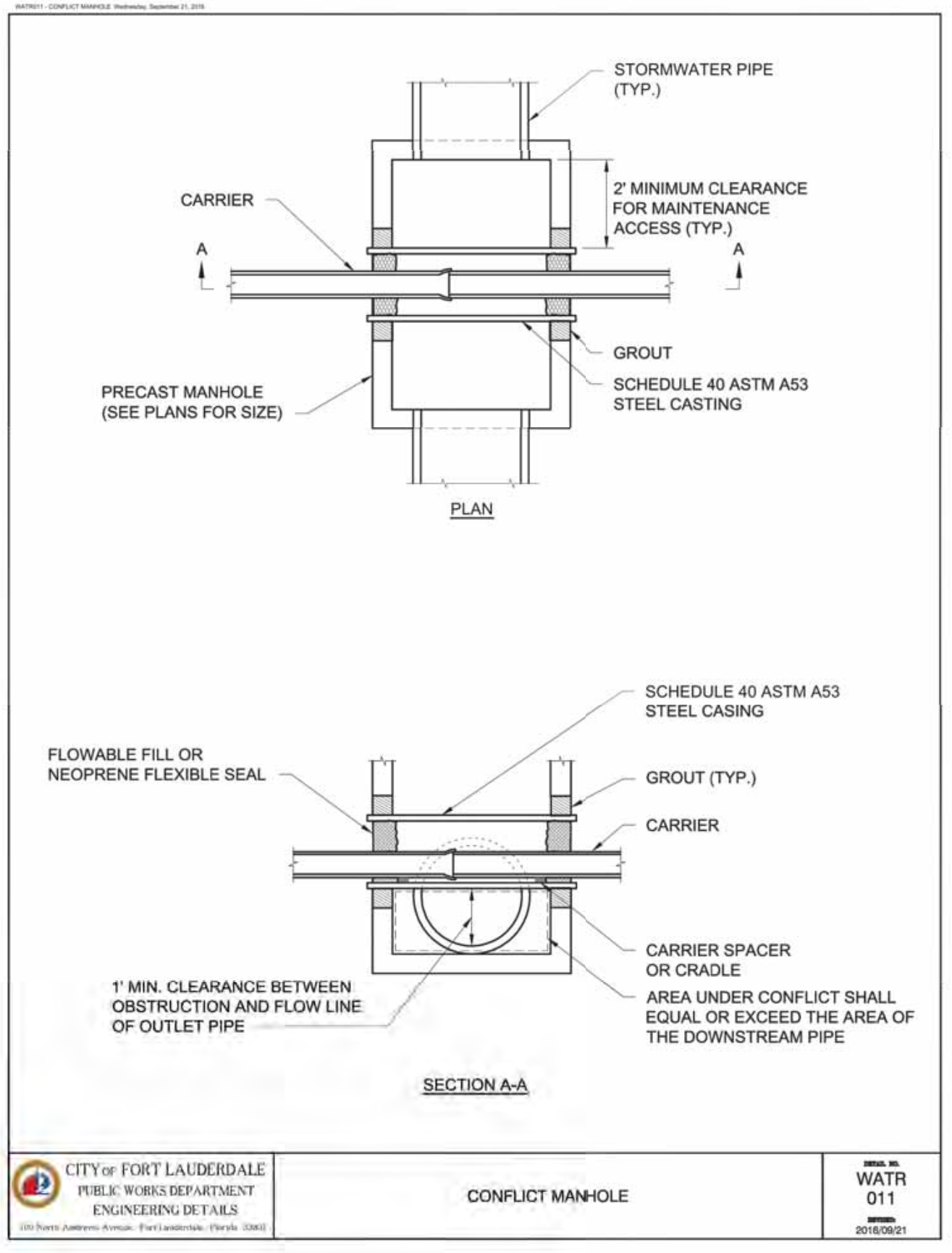
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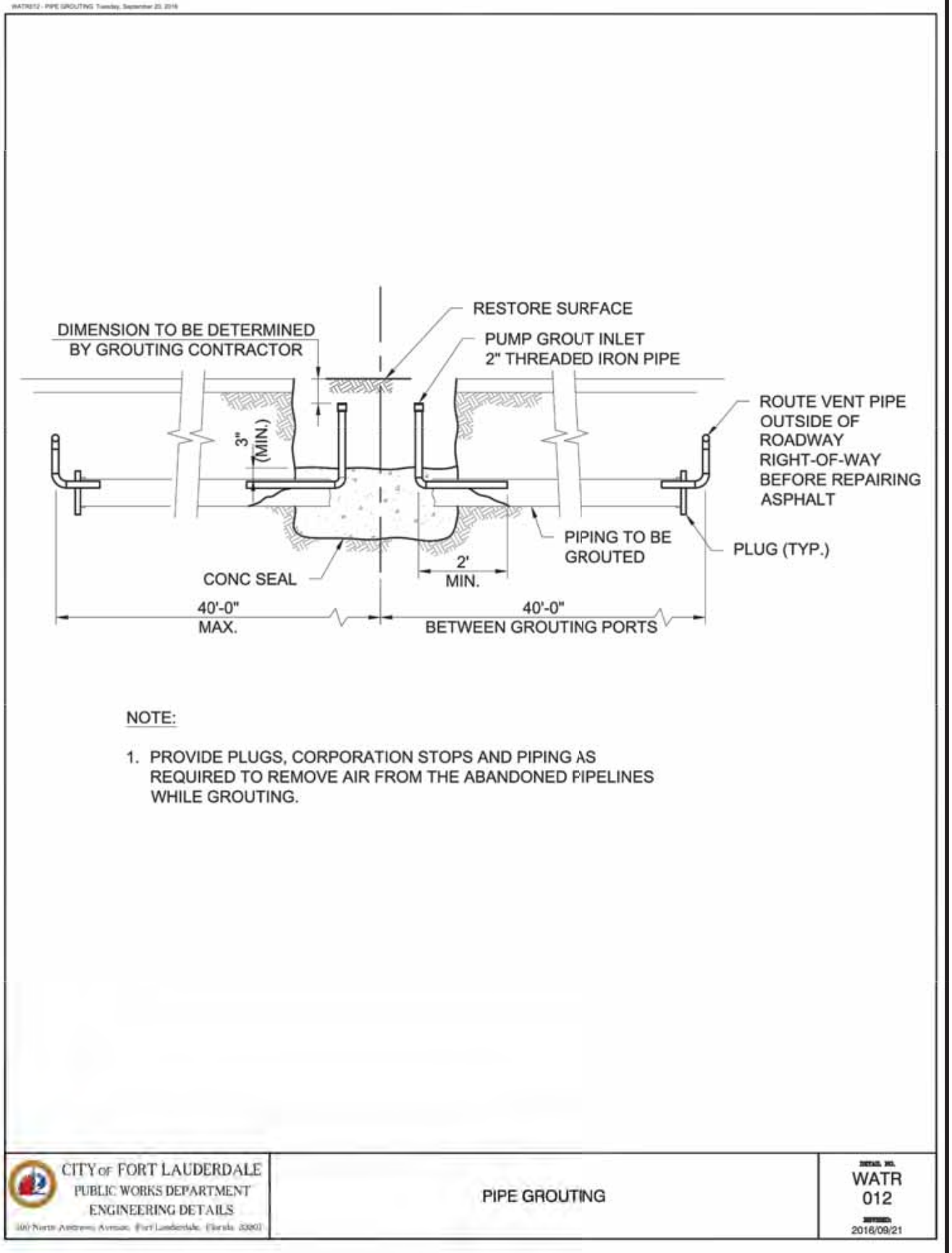
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**WATR 009**  
 2016/09/01



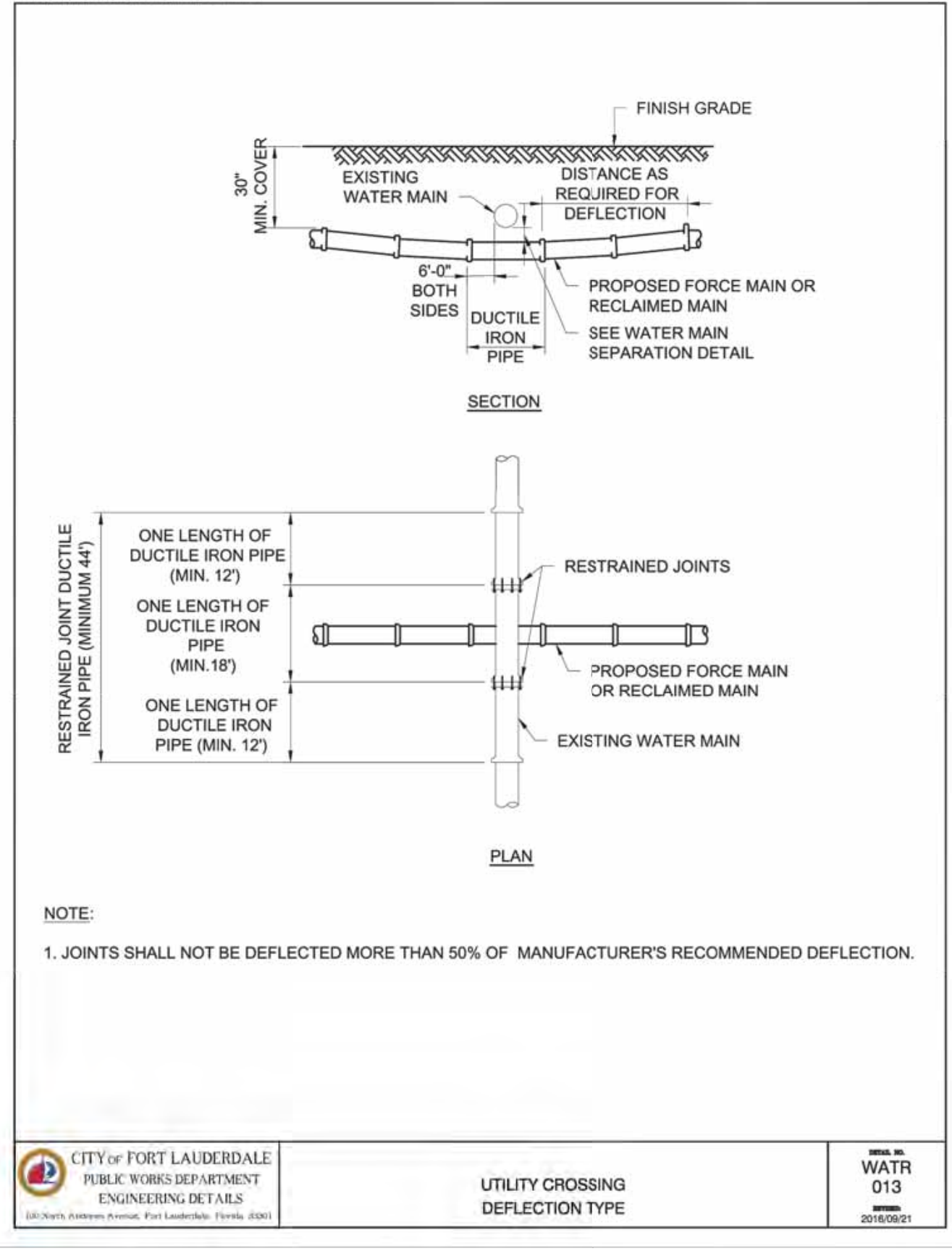
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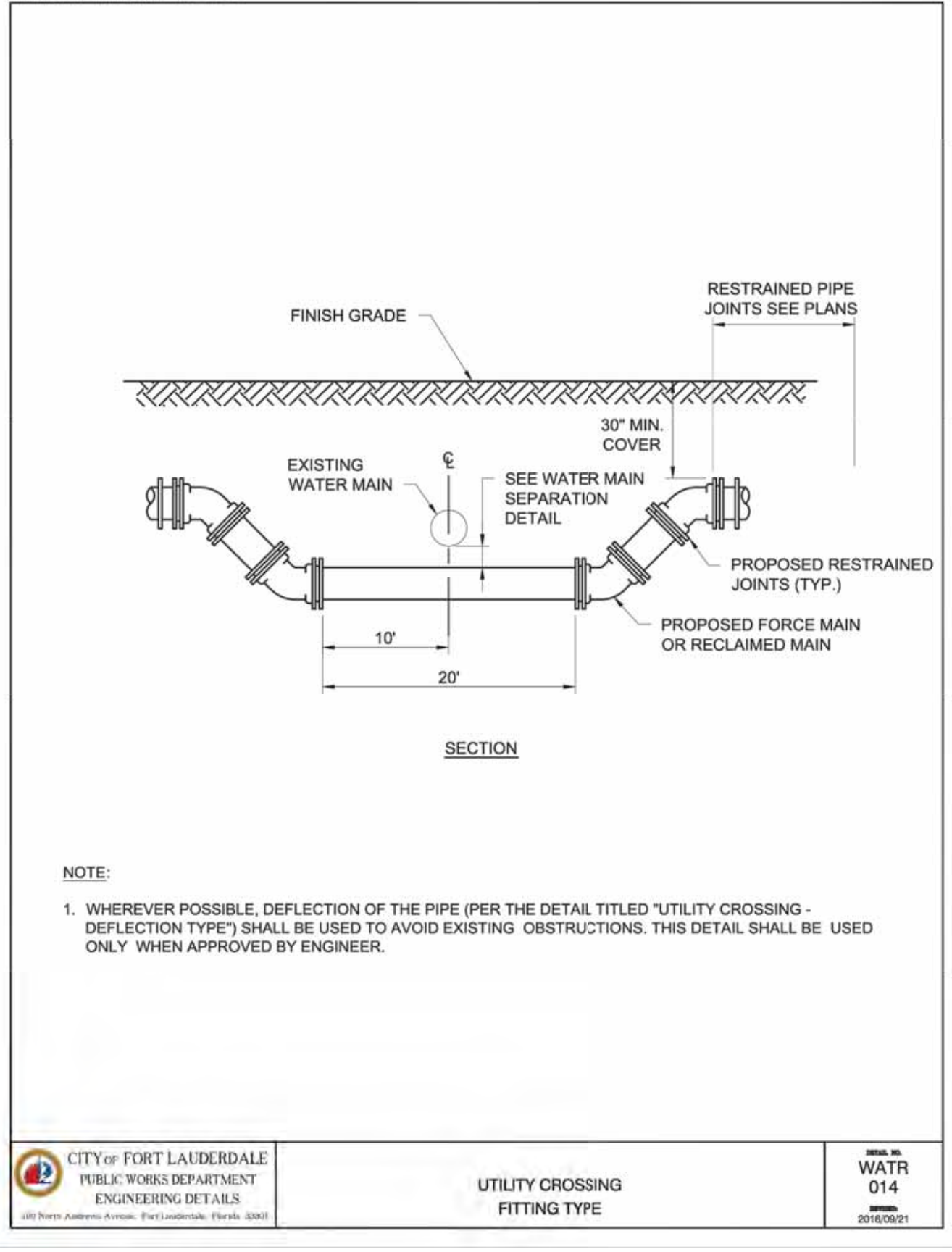
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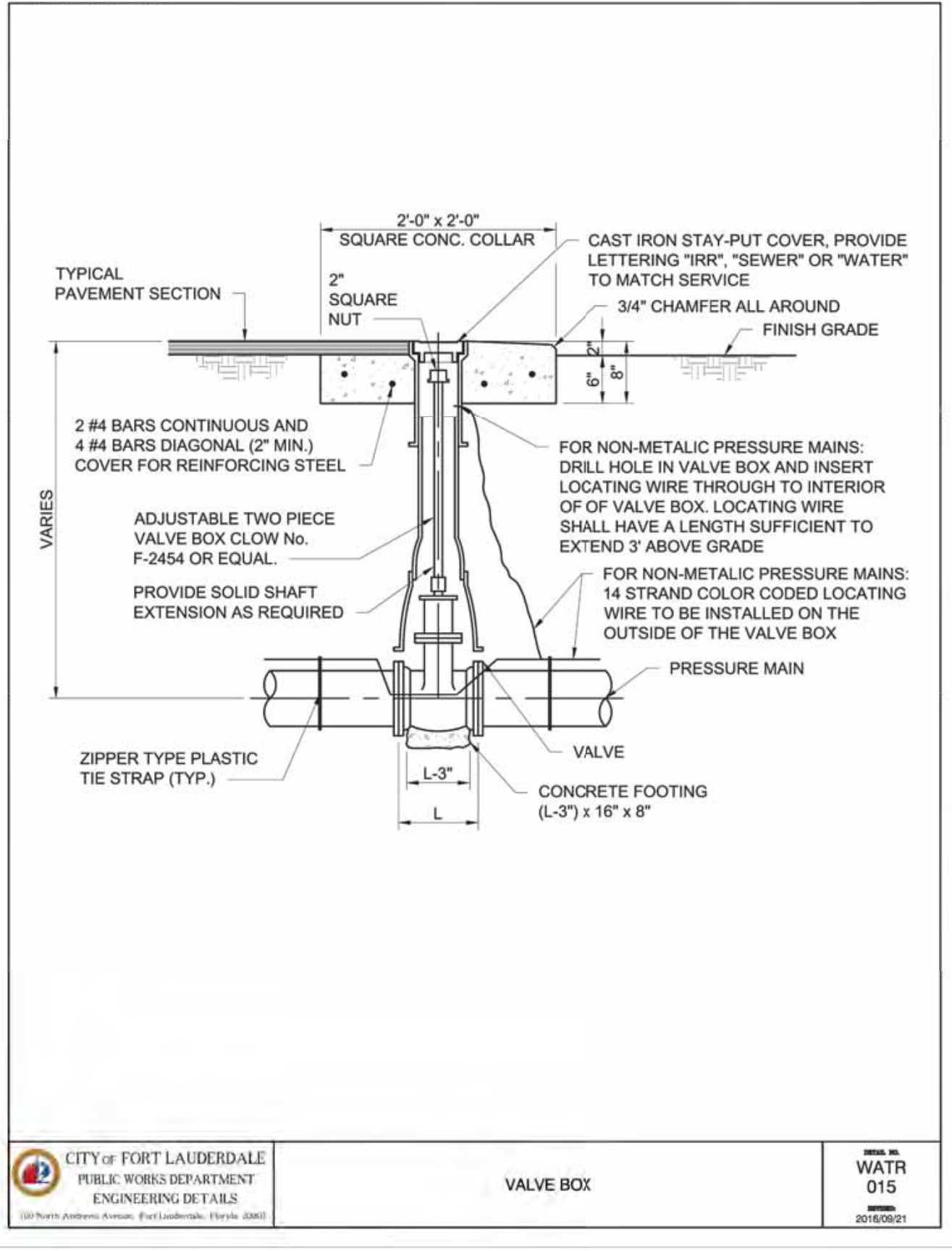
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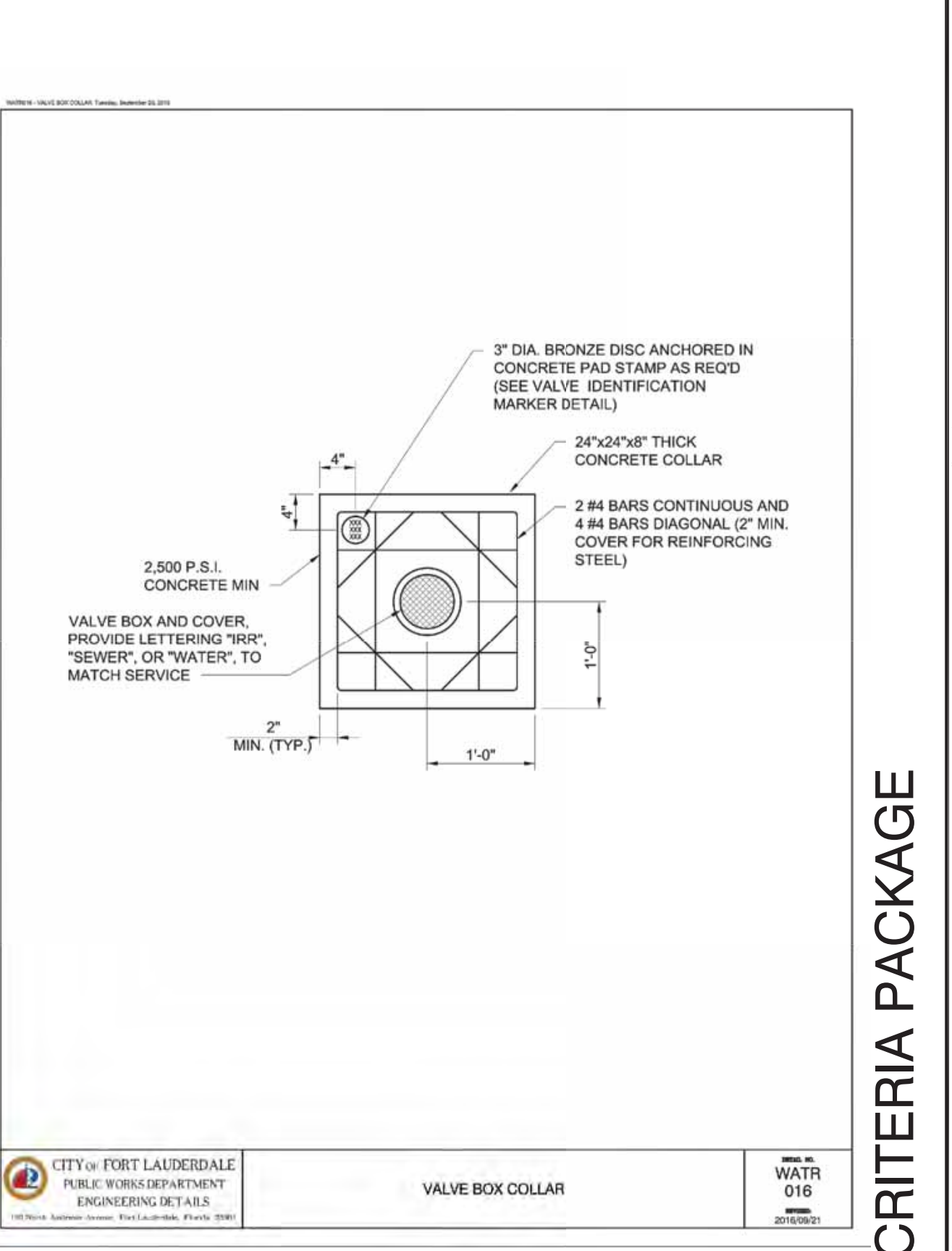
CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT ENGINEERING DETAILS  
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**WATR 013**  
 2016/09/01



CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT ENGINEERING DETAILS  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301  
**WATR 014**  
 2016/09/01



CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT ENGINEERING DETAILS  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301  
**WATR 015**  
 2016/09/01



CITY OF FORT LAUDERDALE PUBLIC WORKS DEPARTMENT ENGINEERING DETAILS  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301  
**WATR 016**  
 2016/09/01



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**DESIGN CRITERIA PACKAGE**

**CITY OF FORT LAUDERDALE**  
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 DATE: 9/29/2021

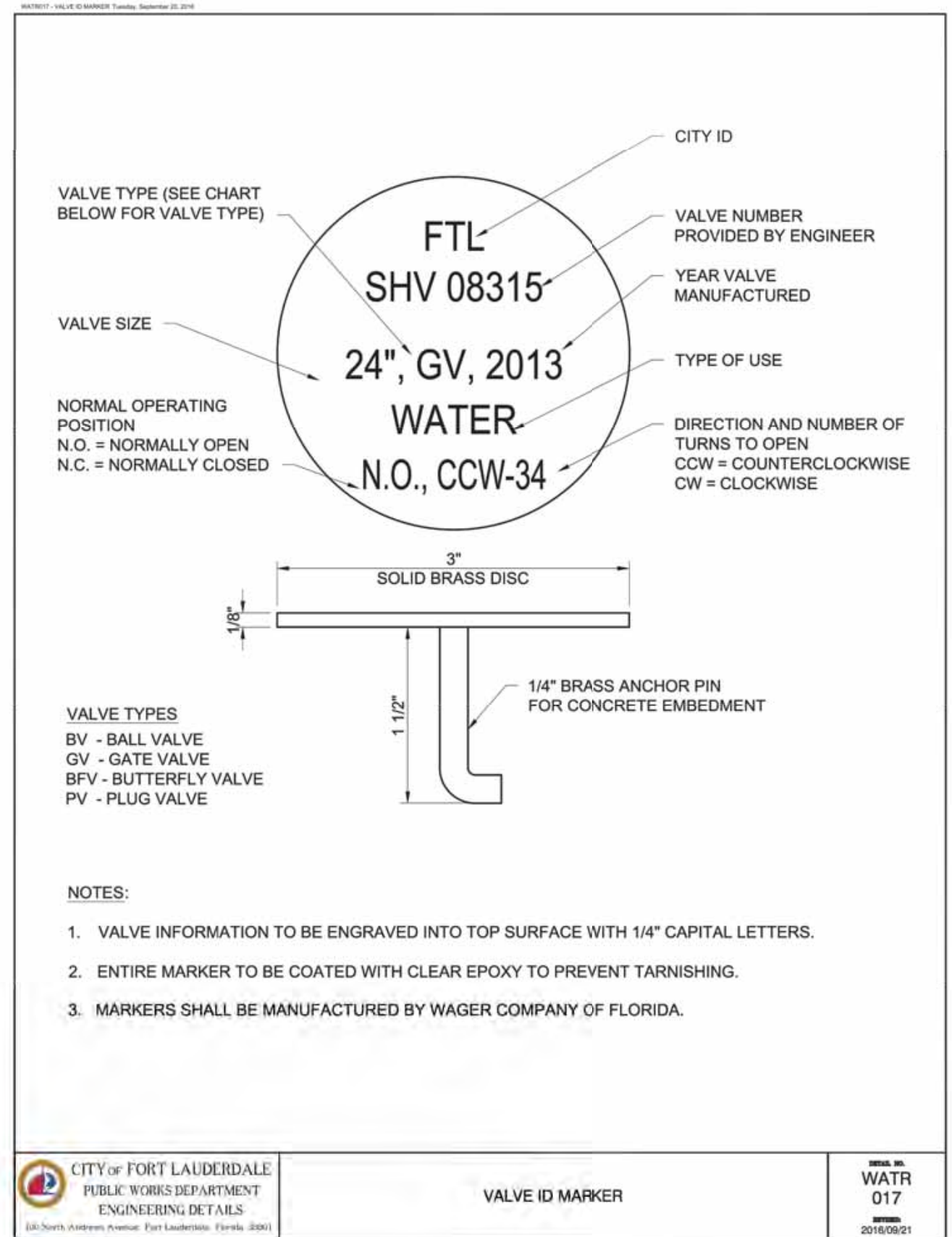
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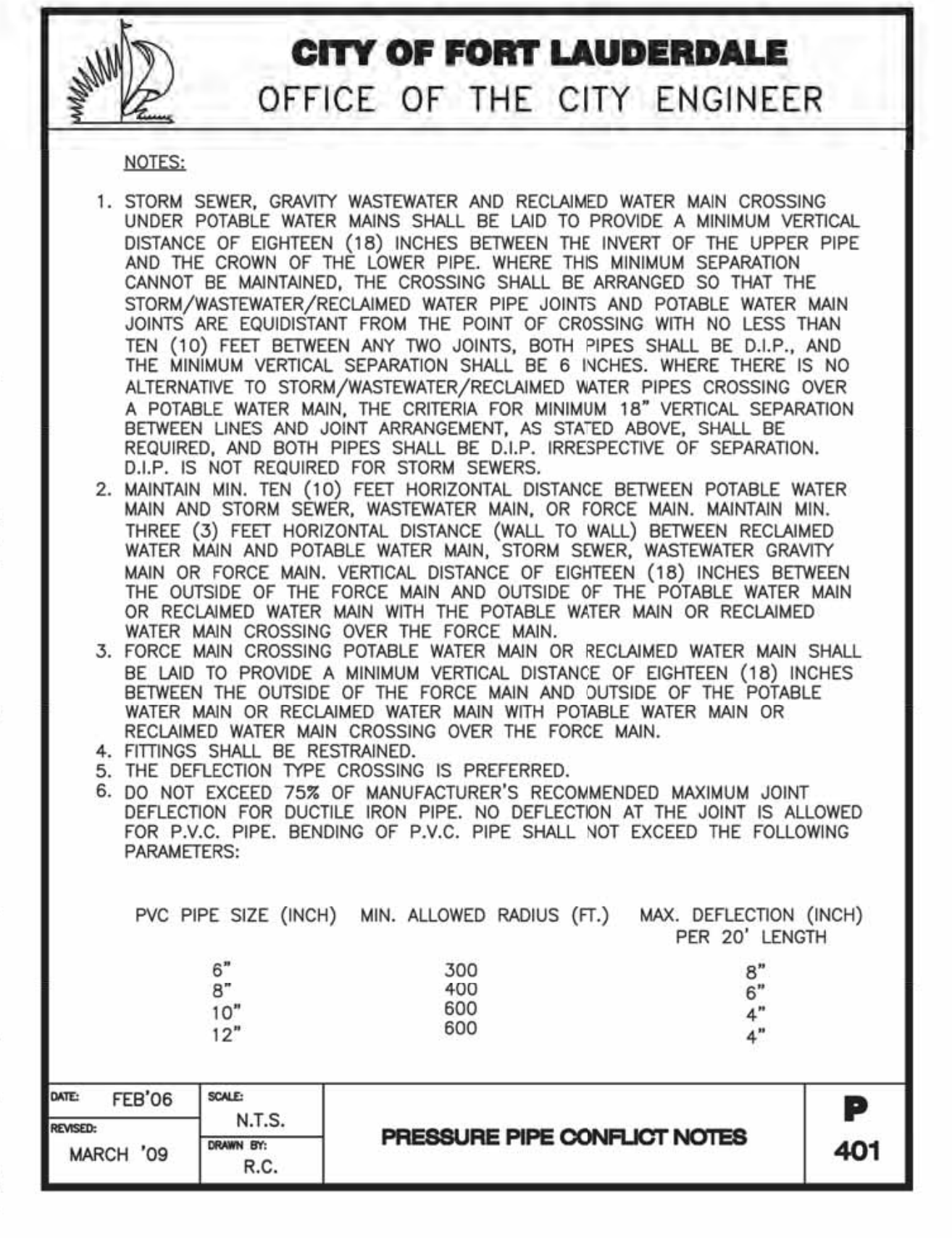
**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**STANDARD DETAILS**

SHEET NO.	OF
13	31
CAD FILE:	12412-MULTI-DET
DRAWING FILE NO.	4-142-31

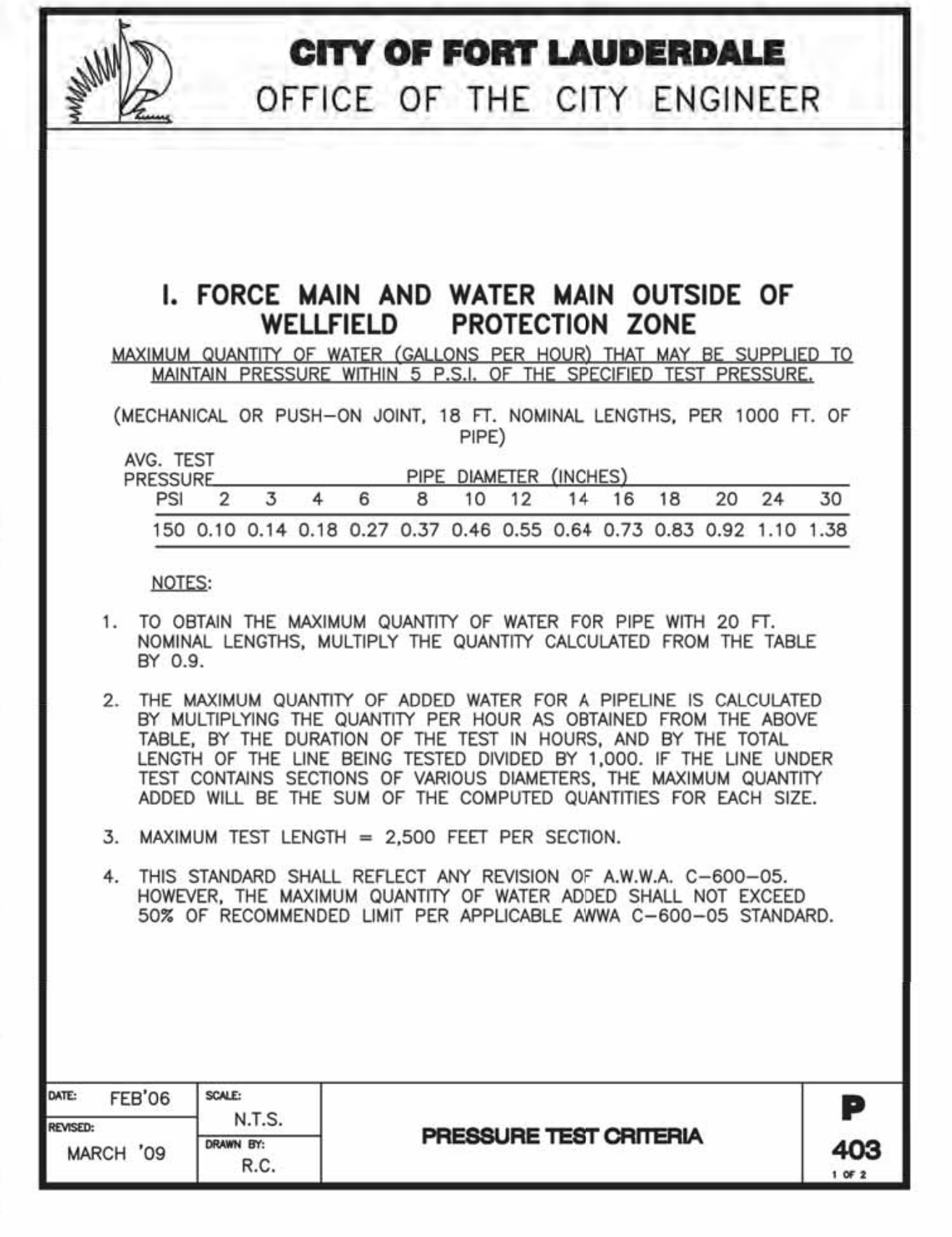
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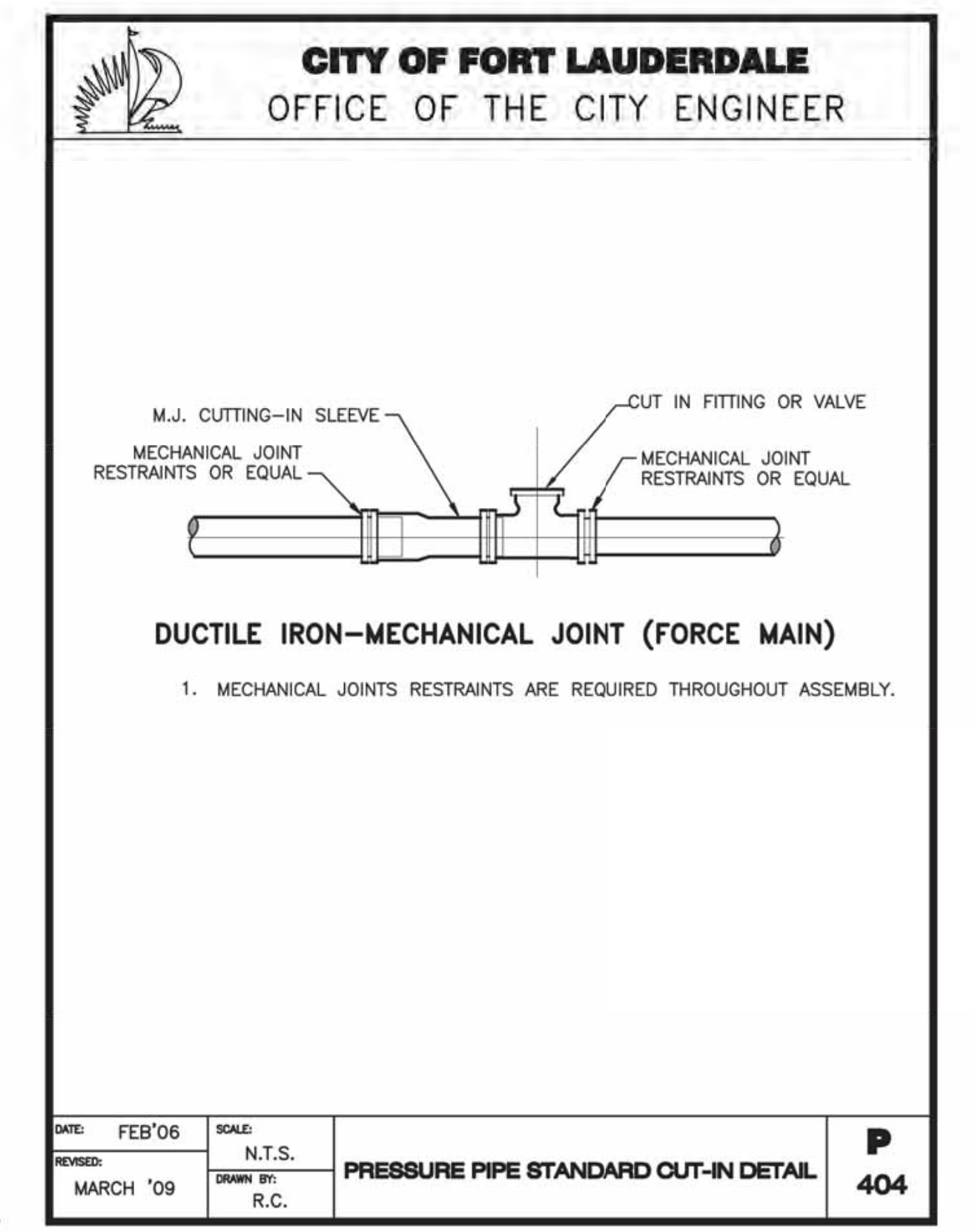
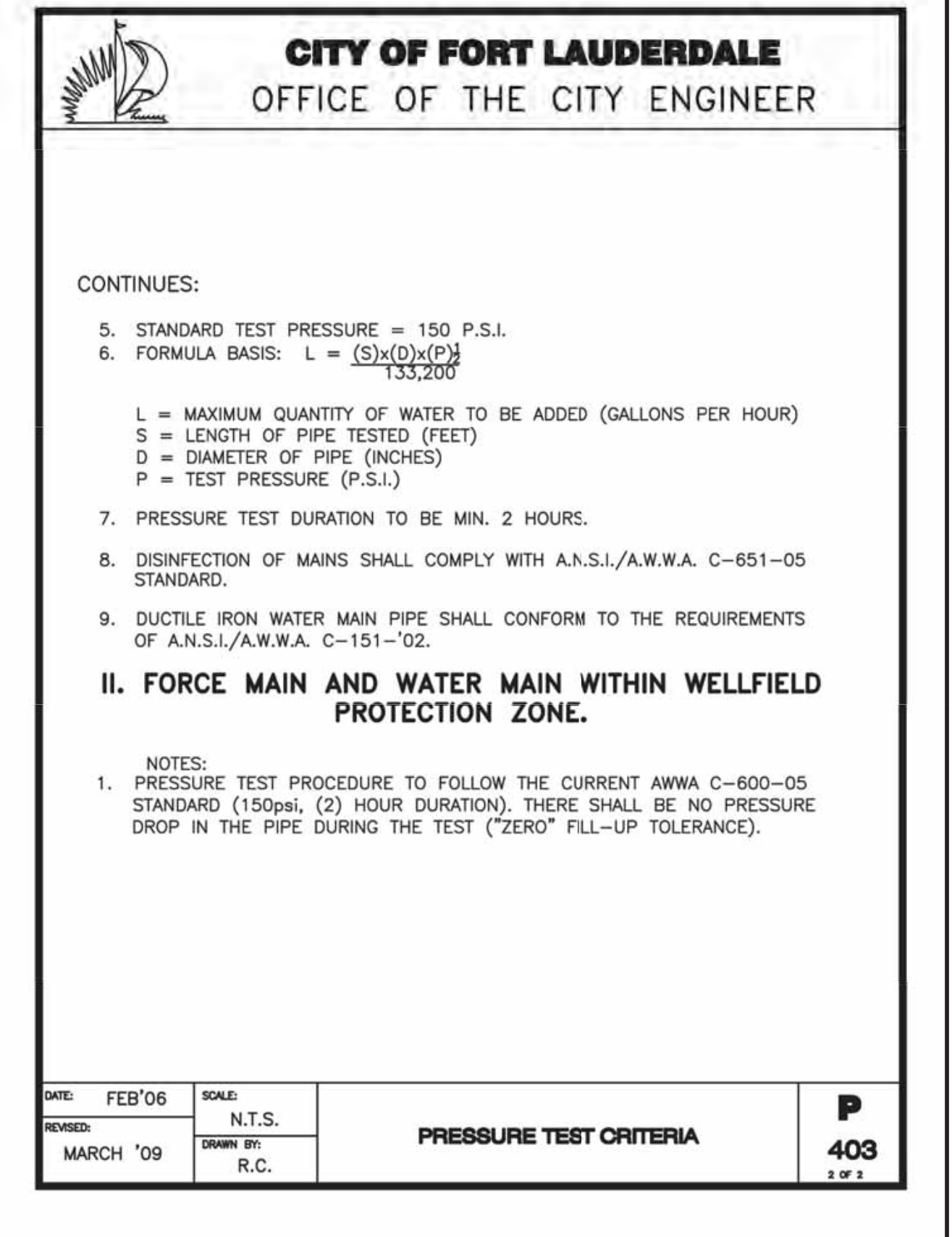
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REVISION: MARCH '09	DRAWN BY: R.C.		



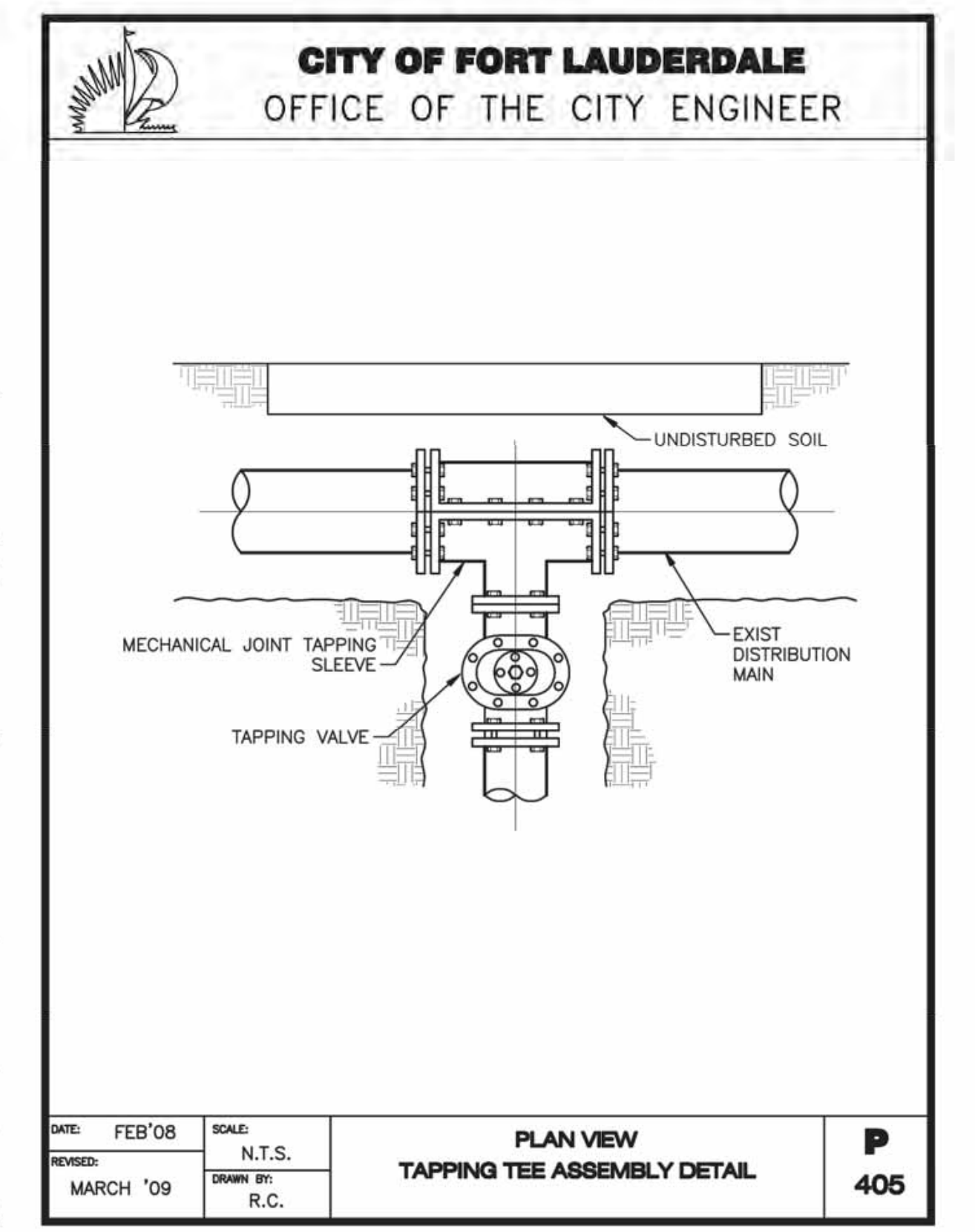
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REVISION: MARCH '09	DRAWN BY: R.C.		



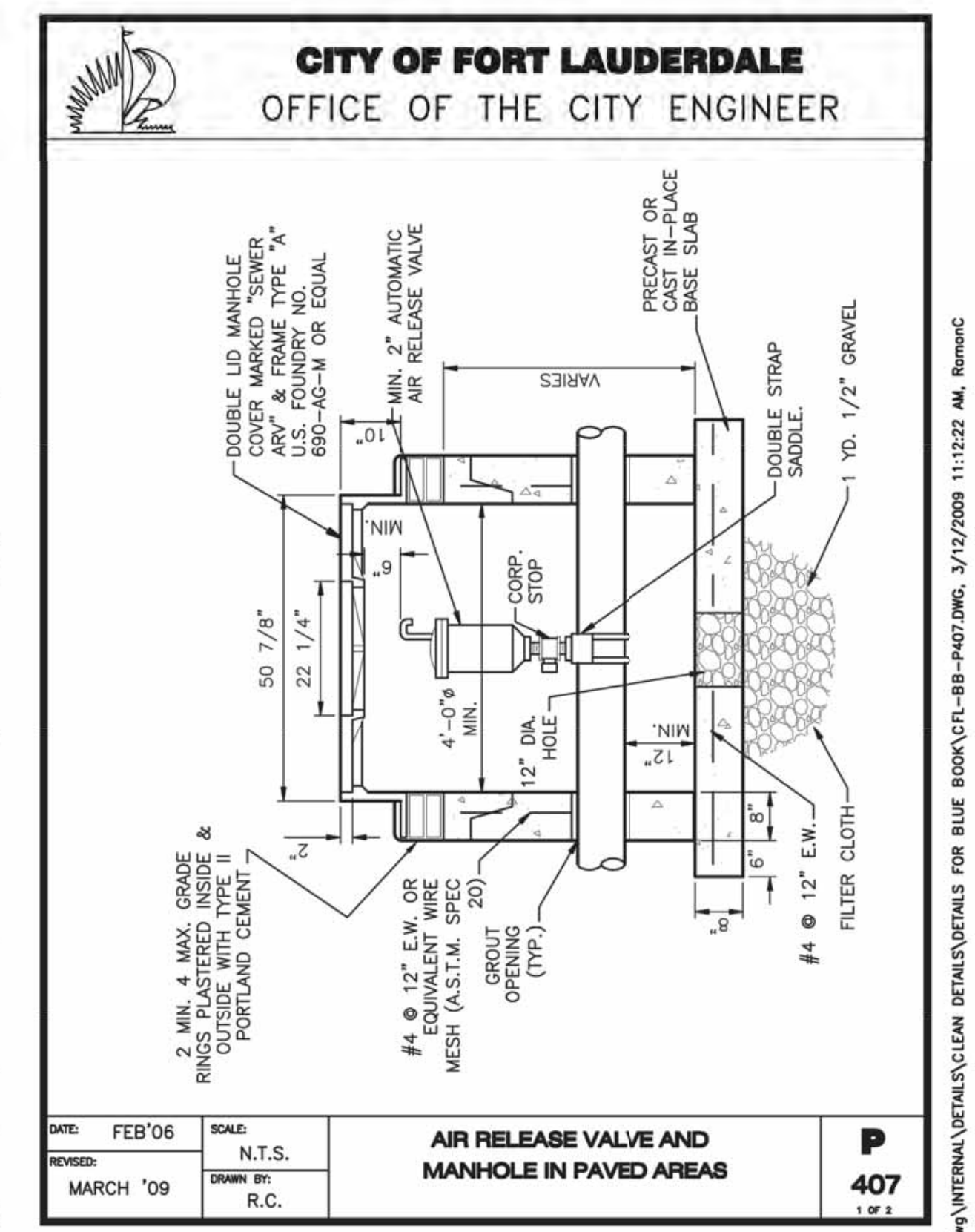
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REVISION: MARCH '09	DRAWN BY: R.C.		



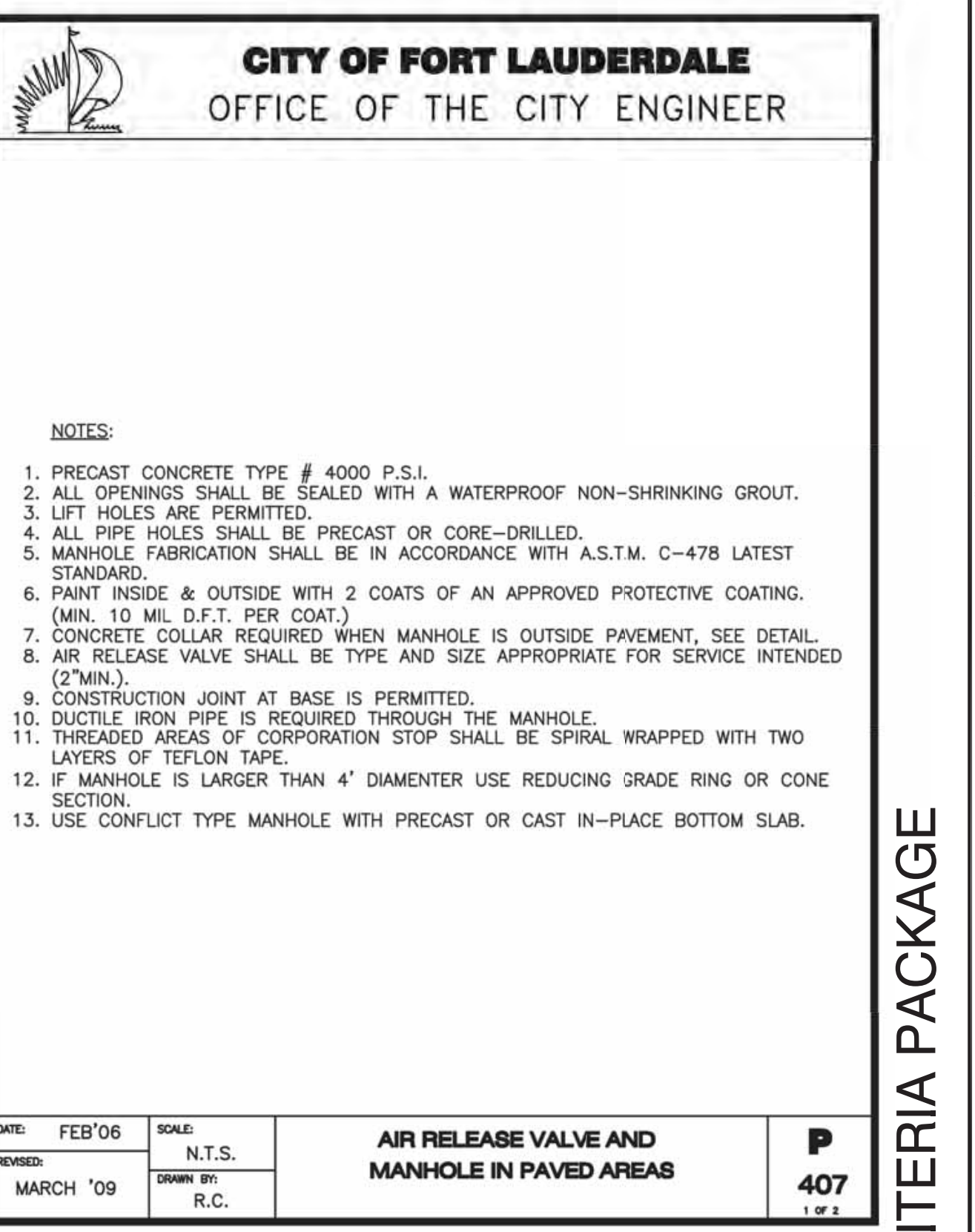
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REVISION: MARCH '09	DRAWN BY: R.C.		



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REVISION: MARCH '09	DRAWN BY: R.C.		



DATE: FEB'06	SCALE: N.T.S.	<b>P</b>	<b>407</b>
REVISION: MARCH '09	DRAWN BY: R.C.		



PREPARED BY:  
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**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RAY, P.E.  
REG. No. 46682  
DATE: 9/29/2021

DESIGNED BY: SCALE: AS NOTED  
CHECKED BY: GR AS NOTED  
FIELD BOOK: GR

DATE: MAR 2021  
DRAWN BY: AL

PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
STANDARD DETAILS

REVISIONS

NO.	DATE	BY (CR/D)	DESCRIPTION

SHEET NO. 14 OF 31  
CAD FILE: 12412-MULTI-DET  
DRAWING FILE NO. 4-142-31

DESIGN CRITERIA PACKAGE

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**FORCE MAIN ENTERING MANHOLE**

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**P 408**

NOTES:  
1. FORCE MAIN TO ENTER MANHOLE AS CLOSE AS POSSIBLE TO 180° TO GRAVITY OUTLET.  
2. THE INVERT LEVEL OF FORCE MAIN AT POINT OF ENTRY SHALL BE 6" ABOVE INVERT OF MANHOLE.  
3. CORE ENTRY ONLY INTO EXISTING MANHOLES.  
4. TRAP TO BE LOCATED PRIOR TO DROP INTO MANHOLE.  
5. USE TWO 45° ELBOWS PAST TRAP IF ELEVATION DROP IS REQUIRED TO ENTER MANHOLE.  
6. FLOW CHANNEL REQUIRED.  
7. MANHOLE TO BE COATED AS SPECIFIED.

**CITY OF FORT LAUDERDALE**  
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**PIPE SUPPORT**

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**PS 500**

NOTES:  
1. PROVIDE HALF ROUND RIGID INSULATION AND INSULATION PROTECTION SHIELD, SIMILAR TO GRINNELL FIGURE 167 OR ELCEN FIGURE 219, WHERE PIPING IS INSULATED.  
2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE 'W' OR KORFUND KORPAD 40, UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.  
3. FOR BASE, HEIGHT AND FLANGE DIMENSIONS, SEE TABLE.

PIPE SIZE	DIMENSION TABLE				
	A	B	C	D	E
4"	3"	4-1/4"	9"	2-1/2"	9-1/4" 14"
6"	3"	5-1/2"	9"	2-1/2"	10-1/2" 15-1/4"
8"	3"	6-7/8"	9"	2-1/2"	11-3/4" 16-1/2"
10"	3"	8-1/2"	9"	2-1/2"	13-1/2" 18-1/4"
12"	3"	9-15/16"	9"	2-1/2"	15" 19-3/4"



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**DEAD ENDS**

SIZE	DISTANCE IN FEET			
	A	B	C	D
4"	1.8	1.8	5.4	
6"	1.8	1.8	7.2	
8"	1.8	1.8	9.0	
10"	1.8	1.8	10.8	
12"	1.8	1.8	12.6	
14"	1.8	1.8	14.4	
16"	1.8	1.8	16.2	
20"	1.8	1.8	19.8	
24"	1.8	1.8	21.6	

NOTE:  
1. FOR PIPE SIZE OVER 24" SEE SPECIFICATIONS  
2. ALL JOINTS WITHIN THE CALCULATED LENGTH PLUS THE NEXT JOINT BEYOND THE CALCULATED LENGTH MUST BE RESTRAINED.  
3. IF THE DISTANCE BETWEEN FITTINGS IS LESS THAN OR EQUAL TO THE CALCULATED RESTRAINT LENGTH, RESTRAIN ALL JOINTS BETWEEN THOSE FITTINGS.

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**P 409**

**CITY OF FORT LAUDERDALE**  
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**RESTRAINED COUPLING**

**RESTRAINED FLANGED COUPLING ADAPTER**

TEST PRESSURE	TIE ROD SCHEDULE						
	25 PSI	50 PSI	100 PSI	150 PSI	225 PSI	375 PSI	
PIPE DIAMETER (IN.)	MINIMUM PIPE WALL THICKNESS (IN.) *	TIE RODS DIA. (IN.)	TIE RODS NO. (REQD.)	TIE RODS DIA. (IN.)	TIE RODS NO. (REQD.)	TIE RODS DIA. (IN.)	TIE RODS NO. (REQD.)
6	3/16	—	—	5/8	2	5/8	2
8	3/16	—	—	5/8	2	5/8	2
10	3/16	—	—	5/8	2	5/8	2
12	3/16	5/8	2	5/8	2	5/8	2

DATE: FEB'06 SCALE: N.T.S.  
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**PS 501**

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**DEFLECTIONS**

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**P 409**

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**GUARD POST**

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**PS 502**

**CITY OF FORT LAUDERDALE**  
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**OFFSETS**

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**P 409**

**CITY OF FORT LAUDERDALE**  
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**PIPE CONCRETE ENCASEMENT**

DATE: FEB'06 SCALE: N.T.S.  
REVISED: MARCH '09 DRAWN BY: R.C.

**PS 503**

PREPARED BY:  
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RAY, P.E.  
REG. NO. 46682  
DATE: 9/29/2021

DRAWN BY: AL  
DESIGNED BY: GR  
CHECKED BY: GR  
FIELD BOOK:

NO.	DATE	BY (CHKD)	DESCRIPTION

**DESIGN CRITERIA PACKAGE**

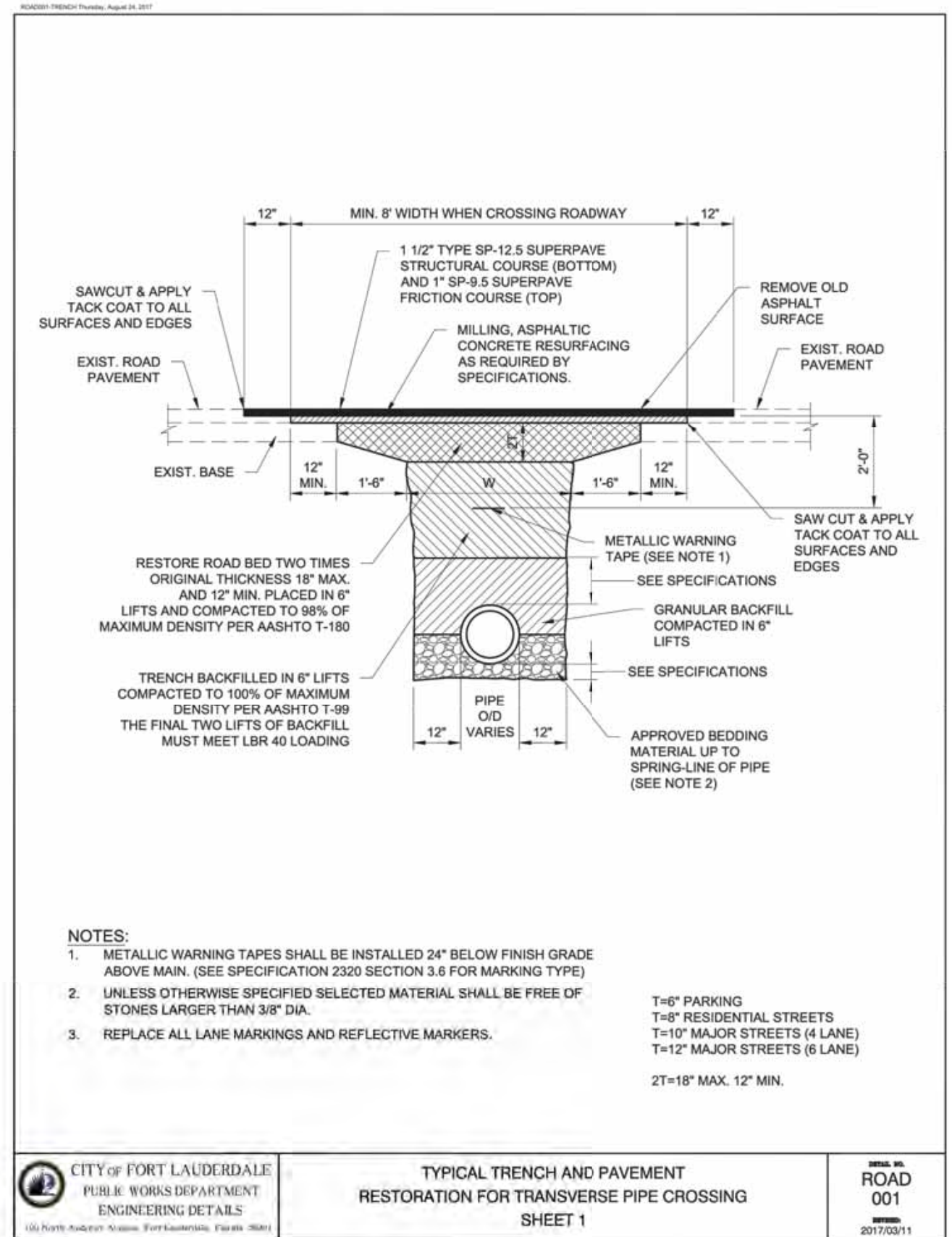
PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
STANDARD DETAILS

SHEET NO. OF  
**15 31**

CAD FILE: 12412-MULTI-DET  
DRAWING FILE NO. 4-142-31



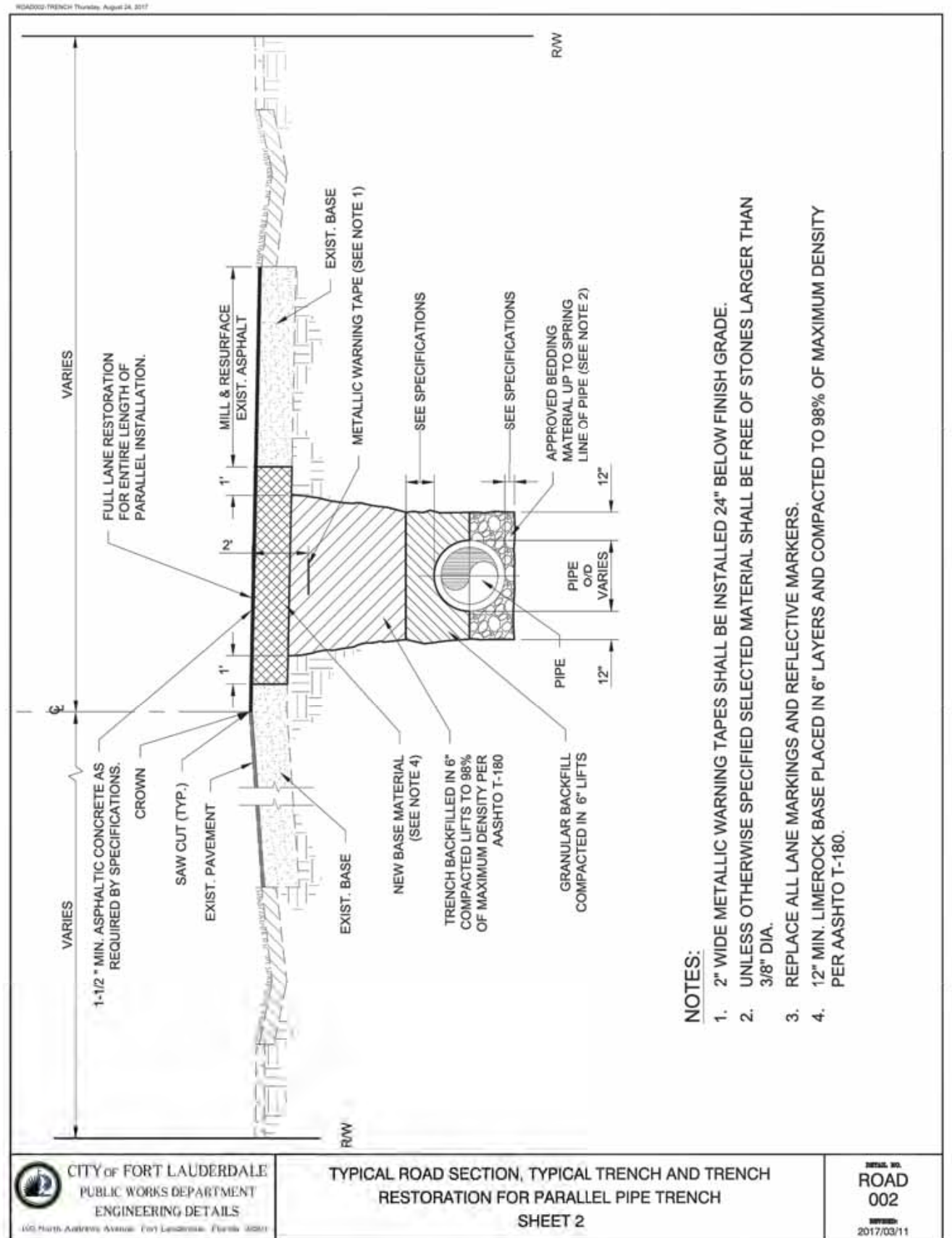
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**TYPICAL TRENCH AND PAVEMENT RESTORATION FOR TRANSVERSE PIPE CROSSING**  
 SHEET 1

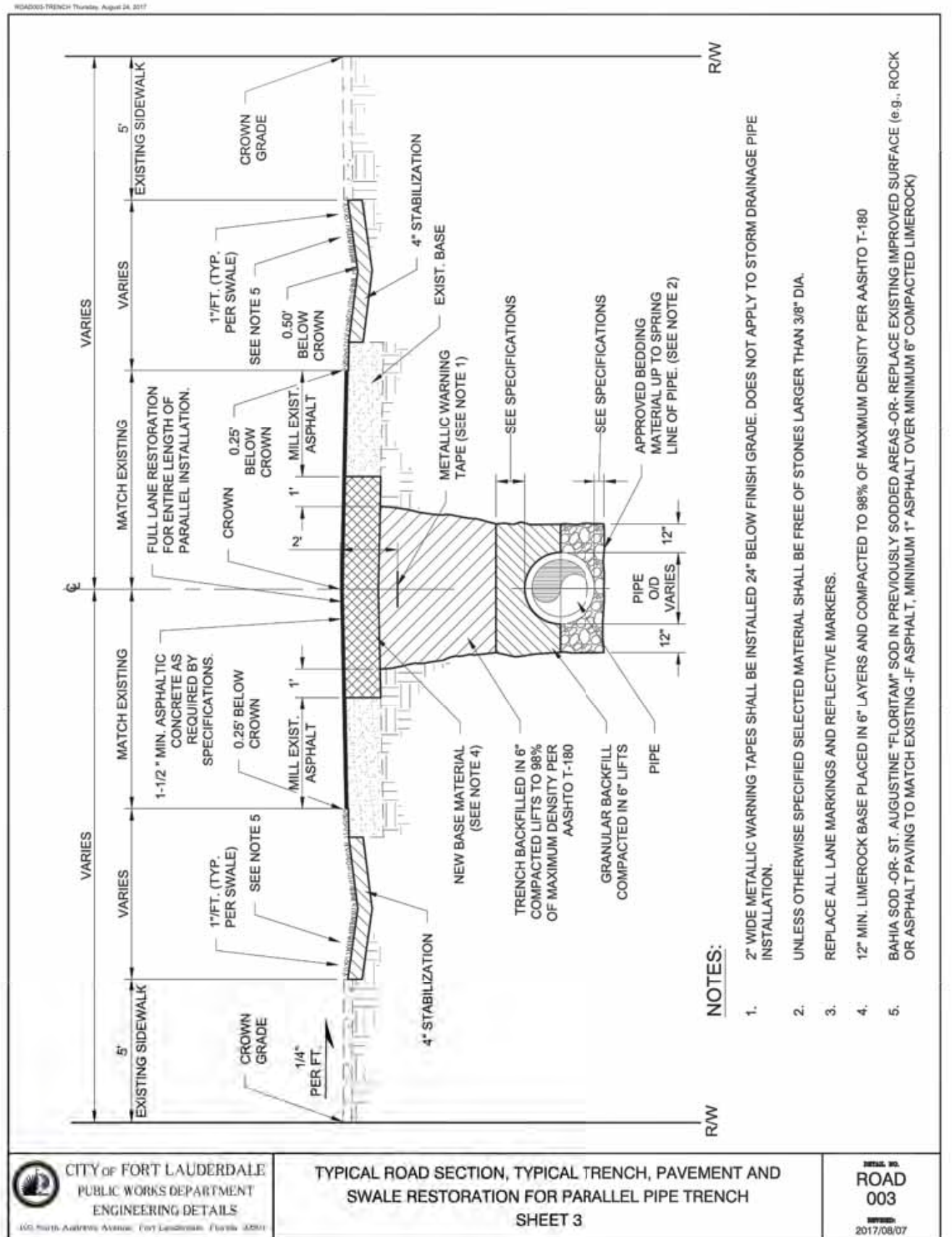
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 201702011



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**TYPICAL ROAD SECTION, TYPICAL TRENCH AND TRENCH RESTORATION FOR PARALLEL PIPE TRENCH**  
 SHEET 2

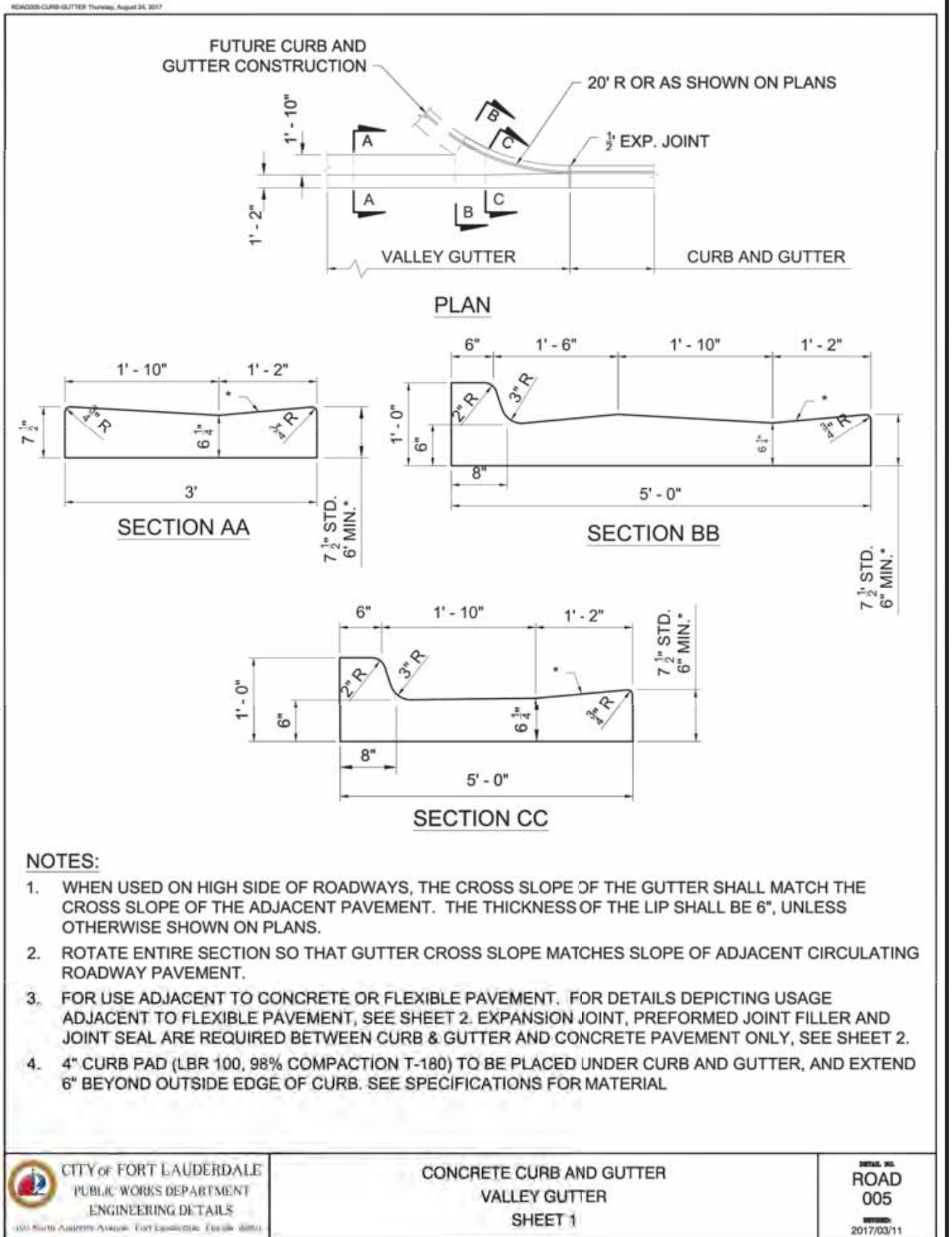
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**TYPICAL ROAD SECTION, TYPICAL TRENCH, PAVEMENT AND SWALE RESTORATION FOR PARALLEL PIPE TRENCH**  
 SHEET 3

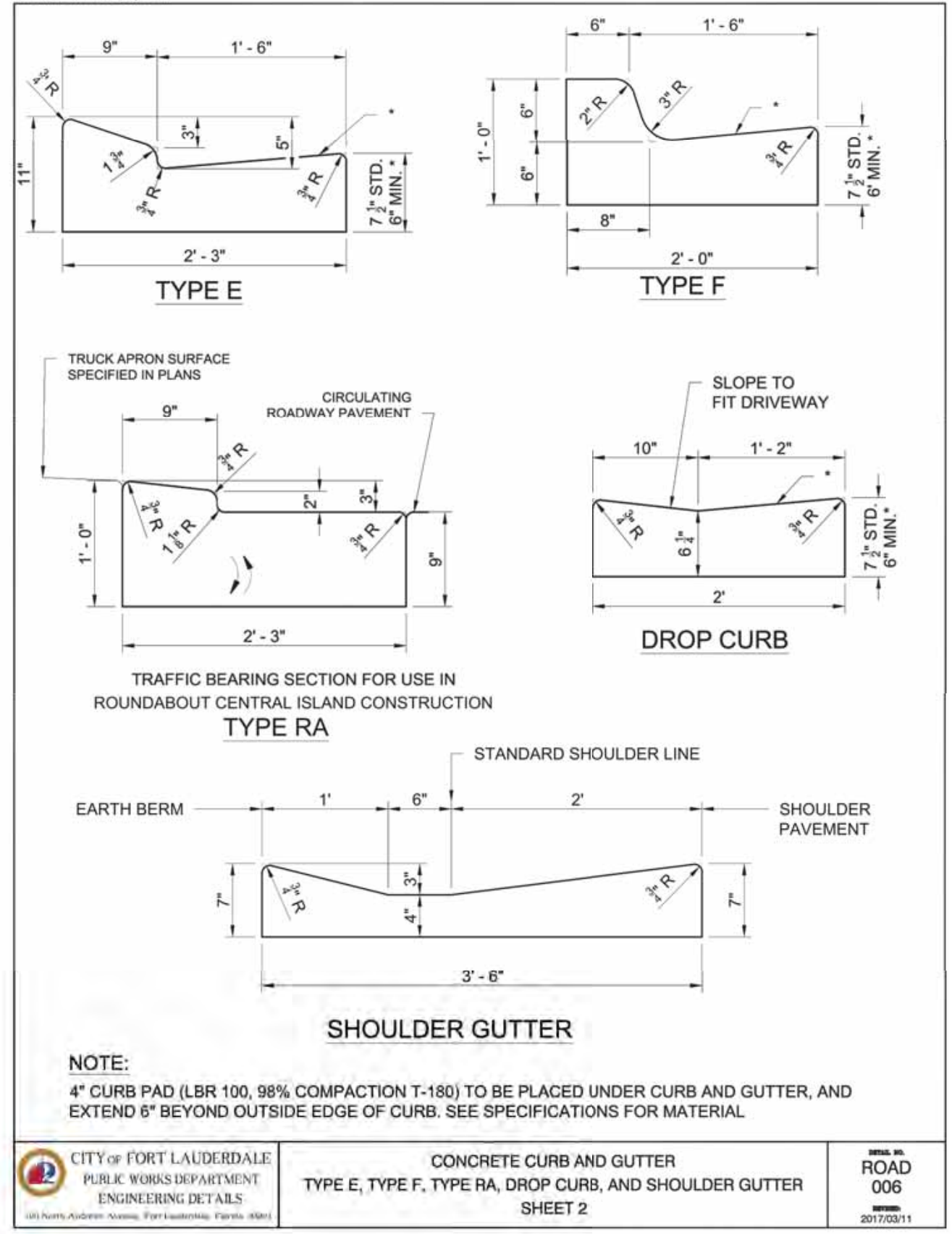
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**CONCRETE CURB AND GUTTER VALLEY GUTTER**  
 SHEET 1

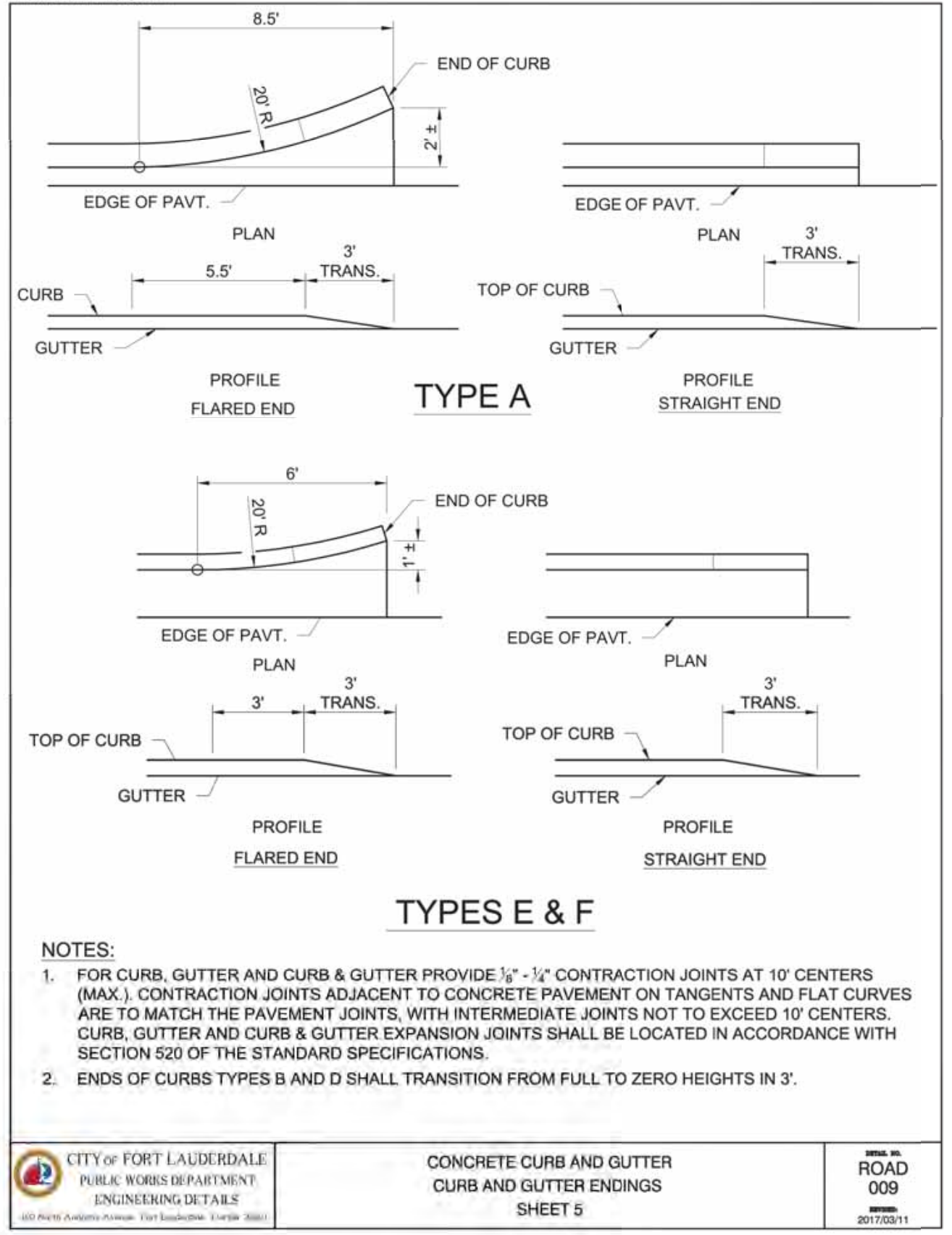
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**CONCRETE CURB AND GUTTER TYPE E, TYPE F, TYPE RA, DROP CURBS, AND SHOULDER GUTTER**  
 SHEET 2

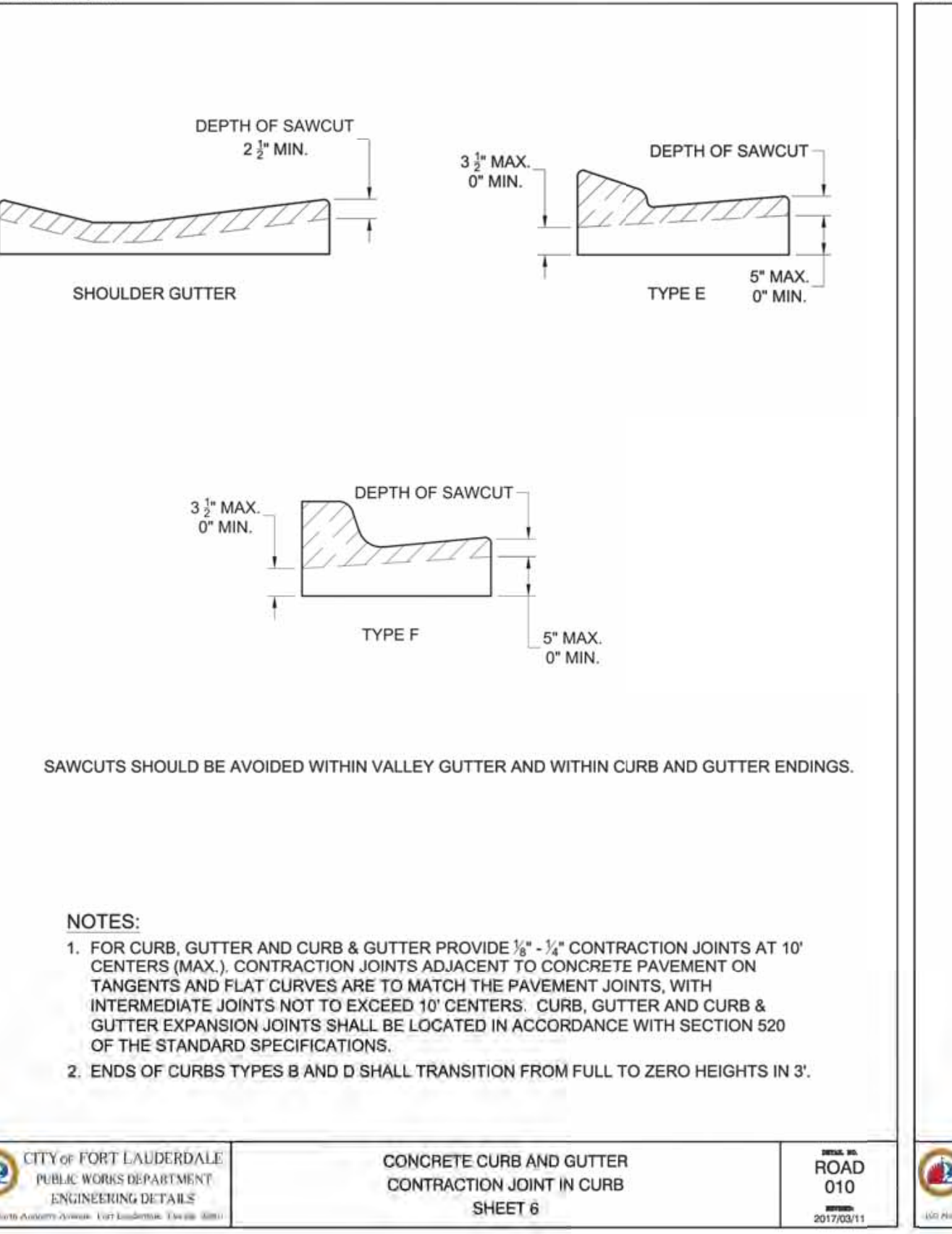
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**CONCRETE CURB AND GUTTER CURB AND GUTTER ENDINGS**  
 SHEET 5

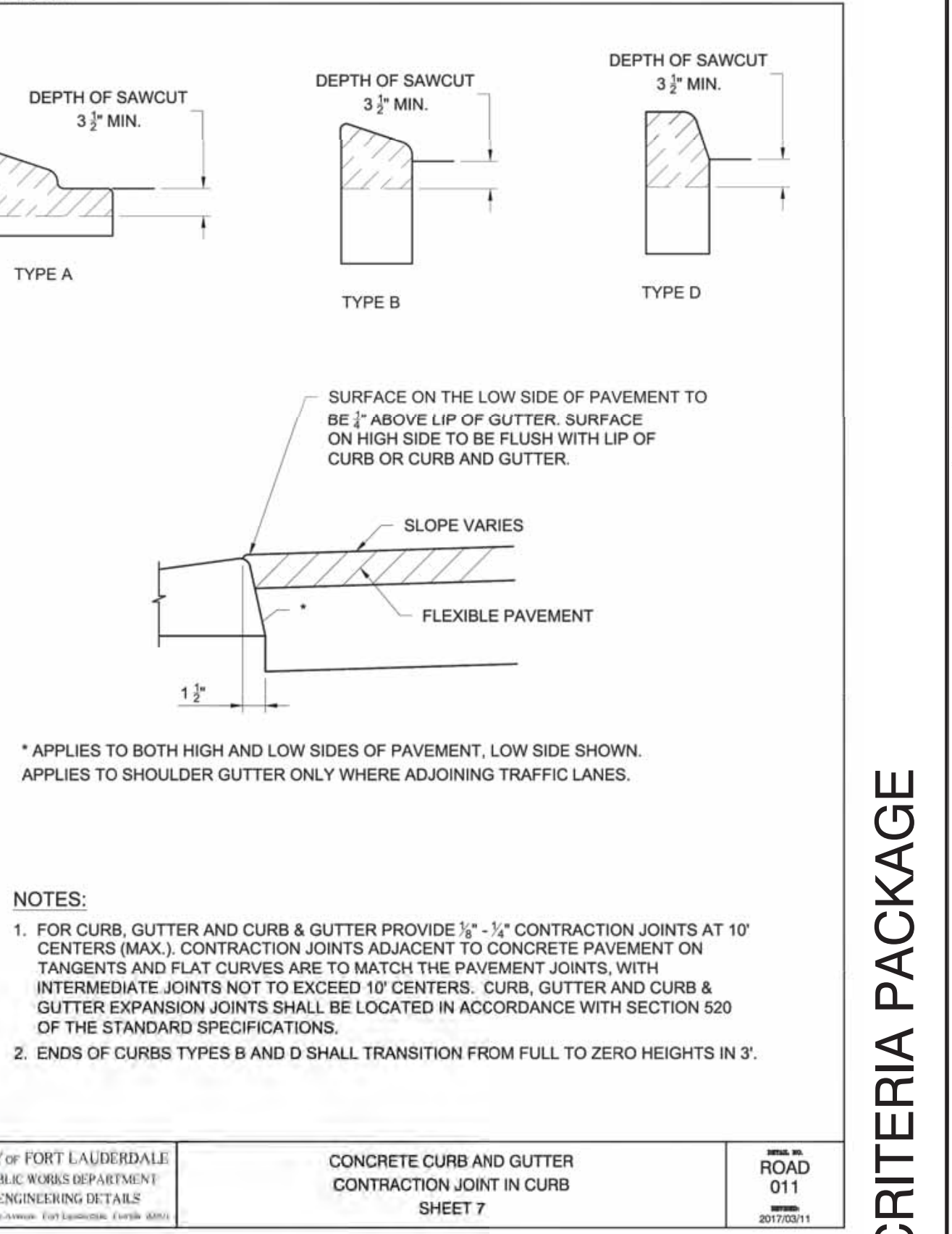
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**CONCRETE CURB AND GUTTER SHOULDER GUTTER AND SAWCUTS**  
 SHEET 6

**ROAD 010**  
 201702011



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**CONCRETE CURB AND GUTTER CONTRACTION JOINT IN CURB**  
 SHEET 7

**ROAD 011**  
 201702011



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 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RAY, P.E.  
 REG. NO. 46682  
 DATE: 9/29/2021

DRAWN BY: AL  
 DATE: MAR 2021

DESIGNED BY: SCALE: AS NOTED  
 GR AS NOTED

CHECKED BY: GR  
 GR

FIELD BOOK: 064-855-5100  
 FAX:

NO.	DATE	BY	CHKD	DESCRIPTION

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**STANDARD DETAILS**

SHEET NO.	OF
16	31
CAD FILE: 12412-MULTI-DET	
DRAWING FILE NO. 4-142-31	

**DESIGN CRITERIA PACKAGE**

Plotted By: Moring, Morissa. Sheet: Sct:PUMP STATION A-16 DESIGN CRITERIA PACKAGE. Layout: DETAIL-17. September 28, 2021. 04:14:38pm. K:\VTL\0433\0433\_jobs\043184401.ctb. Location: C:\Users\morissam\OneDrive\Documents\12412-MULTI-DET.DWG. This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Release of and improper reliance on this document without written authorization and approval by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

**GENERAL NOTES**

- SIDEWALK CURB RAMPS SHALL BE CONSTRUCTED AT LOCATIONS THAT WILL PROVIDE CONTINUOUS UNOBSTRUCTED PEDESTRIAN CIRCULATION PATH TO PEDESTRIAN AREAS, ELEMENTS AND FACILITIES WITHIN THE RIGHT OF WAY AND TO ACCESSIBLE PEDESTRIAN ROUTES ON ADJACENT SITES. CURBED FACILITIES WITH SIDEWALKS AND THOSE WITHOUT SIDEWALKS ARE TO HAVE CURB RAMPS CONSTRUCTED FOR ALL INTERSECTIONS AND TURNOUTS WITH CURBED RETURNS. TO ACCOMMODATE CURB RAMPS, PARTIAL CURB RETURNS ARE TO EXTEND TO THE LIMITS PRESCRIBED IN INDEX NO. 515. RAMPS CONSTRUCTED AT LOCATIONS WITHOUT SIDEWALKS ARE TO HAVE A LANDING CONSTRUCTED AT THE TOP OF EACH RAMP. SEE LANDINGS FOR CURB RAMPS WITHOUT SIDEWALKS.
- WHEN ALTERING EXISTING PEDESTRIAN FACILITIES WHERE EXISTING RESTRICTED CONDITIONS PRECLUDE THE ACCOMMODATION OF A RAMP SLOPE OF 1:12, A RAMP SLOPE BETWEEN 1:12 AND 1:10 IS PERMITTED FOR A RISE OF 6" MAXIMUM. WHERE COMPLIANCE WITH THE REQUIREMENTS FOR CROSS SLOPE CANNOT BE FULLY MET, THE MINIMUM FEASIBLE CROSS SLOPE SHALL BE PROVIDED. RAMP SLOPES ARE NOT REQUIRED TO EXCEED 19' IN LENGTH.
- IF SIDEWALK CURB RAMPS ARE LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, THEN PROVIDED TRANSITION SLOPES TO THE RAMP, OTHERWISE A SIDEWALK CURB MAY BE REQUIRED.
- ALL SIDEWALKS, RAMPS, AND LANDINGS WITH A CROSS SLOPE OF 0.02 SHOWN IN THIS INDEX ARE 0.02 MAXIMUM. ALL RAMP SLOPES SHOWN IN THIS INDEX AS 1:12 ARE 1:12 MAXIMUM. LANDINGS SHALL HAVE SLOPES LESS THAN OR EQUAL TO 0.02 IN ANY DIRECTION.
- GRADE BREAKS AT THE TOP AND BOTTOM OF RAMPS SHALL BE PARALLEL TO EACH OTHER AND PERPENDICULAR TO THE DIRECTION OF THE RAMP SLOPE.
- WHERE A SIDEWALK CURB RAMP IS CONSTRUCTED WITHIN EXISTING CURB, CURB AND GUTTER AND/OR SIDEWALK, THE EXISTING CURB OR CURB AND GUTTER SHALL BE REMOVED TO THE NEAREST JOINT BEYOND THE CURB TRANSITION OR TO THE EXTENT THAT NO REMAINING SECTION OF CURB OR CURB AND GUTTER IS LESS THAN 7' LONG. EXISTING SIDEWALKS SHALL BE REMOVED TO THE NEAREST JOINT BEYOND THE TRANSITION SLOPE OR TO THE EXTENT THAT NO REMAINING SECTION OF SIDEWALK IS LESS THAN 7' LONG. FOR CONCRETE SIDEWALK DETAILS REFER TO INDEX 310.
- SIDEWALK CURB RAMP ALPHA-IDENTIFICATIONS ARE FOR REFERENCE PURPOSES (PLANS, PERMITS, ETC.). ALPHA-IDENTIFICATIONS CR1 AND CR2 WERE INTENTIONALLY OMITTED.
- DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH OF THE RAMP AND TO A DEPTH OF 2'. DETECTABLE WARNINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIFICATION SECTION 527. FOR THE LAYOUT OF DETECTABLE WARNINGS, REFER TO THE TYPICAL PLACEMENT OF DETECTABLE WARNINGS DETAILS. DETECTABLE WARNINGS SHALL NOT BE PROVIDED ON TRANSITION SLOPES.
- WHEN DETECTABLE WARNINGS ARE PLACED ON A SLOPE GREATER THAN 5%, DOMES SHALL BE ALIGNED WITH THE CENTERLINE OF THE RAMP; OTHERWISE DOMES ARE NOT REQUIRED TO BE ALIGNED.
- DETECTABLE WARNINGS SHALL BE REQUIRED ON SIDEWALKS AND SHARED USE PATHS AT:
  - INTERSECTING ROADS
  - MEDIAN CROSSINGS GREATER THAN OR EQUAL TO 6' IN WIDTH
  - RAILROAD CROSSINGS
  - SIGNALIZED DRIVEWAYS
- DETECTABLE WARNINGS - ACCEPTANCE CRITERIA:
  - COLOR AND TEXTURE SHALL BE COMPLETE AND UNIFORM
  - 90% OF INDIVIDUAL TRUNCATED DOMES SHALL BE IN
  - ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT STANDARDS FOR TRANSPORTATION FACILITIES, SECTION 705
  - THERE SHALL BE NO MORE THAN 4 NON-COMPLIANT DOMES IN ANY ONE SQUARE FOOT
  - NON-COMPLIANT DOMES SHALL NOT BE ADJACENT TO OTHER NON-COMPLIANT DOMES
  - SURFACES SHALL NOT DEVIATE MORE THAN 0.10" FROM A TRUE PLANE
- DETECTABLE WARNINGS SHALL BE INSTALLED NO GREATER THAN 5' FROM THE BACK OF CURB OR EDGE OF PAVEMENT.
- DETECTABLE WARNINGS SHALL NOT BE INSTALLED OVER GRADE BREAKS.

**DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS**

ROAD 013  
20170311

**CONCRETE SIDEWALK ON CURBED ROADWAYS**

SHEET 1

ROAD 035  
20170311

**CONCRETE SIDEWALK ON CURBED ROADWAYS**

SHEET 2

ROAD 036  
20170311

**CITY OF FORT LAUDERDALE**  
OFFICE OF THE CITY ENGINEER

**ASPHALT TAPER DETAIL**

**C**  
101

ROAD 036  
20170311

**CITY OF FORT LAUDERDALE**  
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**HOSE BIB**

**M**  
961

ROAD 013  
20170311

**CITY OF FORT LAUDERDALE**  
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**GENERAL NOTES**

- BASE MATERIAL SHALL BE PLACED IN LAYERS NOT THICKER THAN 6" COMPACTED THICKNESS AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO 98% OF MAXIMUM DENSITY, PER AASHTO T-180.
- ASPHALT PAVEMENT JOINTS (ASPHALTIC CONCRETE) SHALL BE MECHANICALLY SAWED.
- NEW SURFACE MATERIAL WILL BE D.O.T. TYPE III ASPHALTIC CONCRETE.
- BASE MATERIAL SHALL HAVE A MINIMUM LBR OF 100 & MINIMUM CARBONATE CONTENT OF 70% FOR MAJOR STREETS AND 60% FOR RESIDENTIAL STREETS.
- IF THE DITCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH ON MAJOR STREET AND 1-1/2" ASPHALTIC CONCRETE PATCH ON RESIDENTIAL STREET AND PARKING LOT TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL PLACED WITH A PERMANENT PATCH.
- GAS MAINS 4" OR SMALLER IN SIZE SHALL BE CONSTRUCTED AS SHOWN IN THIS DETAIL WITH THE PROVISION OF 3" MINIMUM WIDTH CONTINUOUS METALLIC TAPE OR #12 WIRE WRAPPED AROUND THE CONDUITS.
- THE PROVISIONS IN THIS DETAIL SUPERSEDES ALL OTHER RELATED PROVISIONS MENTIONED IN CITY OF FORT LAUDERDALE CONSTRUCTION STANDARDS AND SPECIFICATIONS.
- THIS DETAIL APPLIES FOR ROAD CROSSINGS ONLY. FOR PARALLEL INSTALLATIONS WITHIN THE ROADWAY, EITHER HALF A LANE OR A FULL RESTORATION SHALL BE CONSTRUCTED IN CONFORMANCE WITH APPLICABLE DETAILS.

**RESTORATION OF PAVEMENT**

**UTILITIES INSTALLATION CROSSING**

**P**  
4.11  
2 of 2

ROAD 036  
20170311

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**RESTORATION OF PAVEMENT**

**UTILITIES INSTALLATION PARALLEL**

**P**  
4.12

ROAD 036  
20170311

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OFFICE OF THE CITY ENGINEER

**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**STANDARD DETAILS**

PREPARED BY:  
**Kimley»Horn**

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REVISIONS

NO.	DATE	BY	CHKD	DESCRIPTION

SHEET NO. 17 OF 31

DRAWING FILE NO. 4-142-31

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ENGINEER: GARY R. RAY, P.E.  
REG. NO. 46682  
DATE: 9/29/2021  
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CHECKED BY: AS NOTED  
FIELD BOOK: GR

Plotted By: Morissa, Morissa Sheet: Set:PUMP STATION A-16 DESIGN CRITERIA PACKAGE Layout:SWPP-18 September 28, 2021 04:14:44pm K:\VTL\civil\043\_jba\03184401\_cna 12464-416 ps a-16 rev location\CAD\plan\sheet\12412-MUL-DET.dwg  
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### EROSION AND SEDIMENT CONTROL:

- CONTRACTOR TO EMPLOY BEST MANAGEMENT PRACTICES THROUGHOUT CONSTRUCTION IN ORDER TO ENSURE POLLUTION PREVENTION. CONTRACTOR TO COMPLY WITH ALL LOCAL STATE AND OTHER GOVERNMENTAL ENVIRONMENTAL REGULATIONS THROUGHOUT CONSTRUCTION.
- DURING CONSTRUCTION ALL CATCH BASIN INLETS SHALL BE PROTECTED TO PREVENT SEDIMENT AND DEBRIS FROM ENTERING THE CATCH BASIN.
- SILT FENCES SHALL BE INSTALLED AS NECESSARY TO CONTROL OR PREVENT DISCHARGE OF SEDIMENT ONTO ADJACENT UNDISTURBED AREAS, OR OFF-SITE AREAS.
- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED WITHIN A REASONABLE PERIOD OF TIME TO ASSURE MINIMUM EROSION OF SOILS.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
- ALL EXPOSED AREAS SHALL BE SOCCED AS SPECIFIED WITHIN 30 DAYS OF FINAL GRADING.
- MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
- CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DESIRED NECESSARY BY CITY, COUNTY, AND STATE OF FLORIDA ON SITE INSPECTION, AT NO ADDITIONAL COST TO THE OWNER.
- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES.
- IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- BURNING OF DEBRIS WILL NOT BE ALLOWED.
- CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- CONTRACTOR IS TO PROVIDE EROSION CONTROL SEDIMENTATION BARRIER (MAY BALES OR SILTATION CURTAIN) TO PREVENT DRIFTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS. IN ADDITION CONTRACTOR SHALL PLACE STRAW MULCH OR OTHER SUITABLE MATERIAL ON GROUND IN AREAS WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER AND EXIT SITE IN THE OPINION OF THE ENGINEER AND/OR LOCAL AUTHORITIES IF EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR BY VEHICULAR TRAFFIC. THE CONTRACTOR IS TO REMOVE AND CLEAN SUDS CARTS TO THE SATISFACTION OF THE ENGINEER AND/OR AUTHORITIES. EROSION CONTROL BARRIER SHALL BE ESTABLISHED AS THE FIRST ITEM OF WORK.

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DETAIL

EROSION AND SEDIMENT CONTROL NOTES

SHEET 1

ESC  
001

- THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S STORMWATER PERMITTING PROGRAM APPLIES TO ALL CONSTRUCTION ACTIVITY THAT: 1) CONTRIBUTES STORMWATER DISCHARGES TO SURFACE WATER OF THE STATE OR INTO A MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4); 2) DISTURBS ONE OR MORE ACRES OF LAND; OR 3) LEAS THAN ONE ACRE IS INCLUDED IF THE ACTIVITY IS PART OF A LARGER COMMON PLAN OF DEVELOPMENT THAT WILL MEET OR EXCEED THE ONCE ACRE THRESHOLD. DISTURB INCLUDES CLEANING, GRADING AND EXCAVATING.
- FOR CONSTRUCTION ACTIVITY THAT IS SUBJECT TO THE NPDES FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S STORMWATER PERMITTING PROGRAM, THE CONTRACTOR SHALL:
  - OBTAIN A GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION DOCUMENT 62-621-300(A).
  - COMPLY WITH ALL REQUIREMENTS OF THE GENERIC PERMIT.
  - DEVELOP AND IMPLEMENT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
  - COMPLETE A NOTICE OF INTENT (NOI) FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION FORM 62-621-300(B) IN ITS ENTIRETY USING THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S WEBSITE.
  - SUBMIT COPIES OF THE SWPPP AND THE NOI TO THE ENGINEER AS INFORMATIONAL RECORDS. THESE SUBMITTALS WILL NOT BE REVIEWED BY THE ENGINEER.
  - CONTRACTOR TO CLEAN AND REPAIR ALL EXISTING STORMWATER INFRASTRUCTURE THAT IS IMPACTED BY CONSTRUCTION ACTIVITIES BEFORE LEAVING THE JOB SITE.
  - CONTRACTOR TO REMOVE ALL FILTER FABRIC AND POLLUTION PREVENTION ITEMS BEFORE THE FINAL WALK-THROUGH.

CITY OF FORT LAUDERDALE  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DETAIL

EROSION AND SEDIMENT CONTROL NOTES

SHEET 2

ESC  
001

GRVEL CONSTRUCTION ENTRANCE

ESC  
002

DROP INLET PROTECTION - SEDIMENT BARRIER

ESC  
004

DROP INLET PROTECTION - INLET INSERT

ESC  
003

CURB INLET PROTECTION - CURB FILTER

ESC  
006

CURB INLET PROTECTION - GRAVEL BAG

ESC  
007

CURB INLET PROTECTION - BLOCK AND STONE

ESC  
007

SILT FENCE - SHEET 1

ESC  
009

SILT FENCE - SHEET 2

ESC  
010

TURBIDITY BARRIER - FLOATING

ESC  
011

PORTABLE SEDIMENT TANK

ESC  
012

**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**STORMWATER POLLUTION PREVENTION PLAN**

NO.	DATE	BY (CHKD)	DESCRIPTION






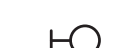
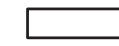













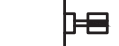







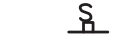




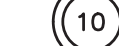























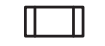




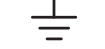
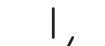

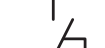






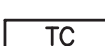






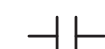



























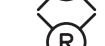
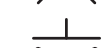

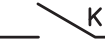
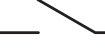









SHEET NO. <b>18</b>	OF <b>31</b>
CAD FILE: 12412-MUL-DET	
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DESIGNED BY: GR	SCALE: AS NOTED	CHECKED BY: GR	FIELD BOOK:	
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PLAN SYMBOLS	PLAN SYMBOLS (CONTINUED)	CONTROL DIAGRAM SYMBOLS	ABBREVIATIONS	NOTES
 HOME RUN TO PANELBOARD. NO. OF ARROWS INDICATE NO. OF CIRCUITS, HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2 #12 CONDUCTORS.  CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING  CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.  CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.  FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.  CONDUIT ROUTING ENVELOPE (CONCRETE ENCASED DUCTBANK).  WALL MOUNTED LED LIGHTING FIXTURE.  LED LIGHTING FIXTURE, CEILING MOUNTED.  EXTERIOR LED LUMINAIRE AND MOUNTING STANDARD.  EXISTING EXTERIOR LIGHTING.  EMERGENCY BATTERY PACK LIGHTING FIXTURE.  JUNCTION BOX N.E.C. SURFACE MOUNTED UNLESS INDICATED OTHERWISE.  JUNCTION BOX PER N.E.C., NEMA 4X 316 SSS, FLUSH MOUNTED UNLESS INDICATED OTHERWISE.  MOTOR JUNCTION BOX, NEMA 4X 316 SS JUNCTION BOX, 12" X 12" X 6" MINIMUM SIZE ENLARGE IF REQUIRED PER N.E.C.  FLUSH OR SURFACE MOUNTED LIGHTING PANELBOARD.  FLUSH OR SURFACE MOUNTED POWER PANELBOARD.  DRY TYPE TRANSFORMER. NO. INDICATES KVA RATING.  LIQUID FILLED TRANSFORMER, KVA RATING AS SHOWN  FLUSH MOUNTED RECEPTACLE WITH USB OUTLET  20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.  20A, 125V, 3W GFI DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR OR 6" ABOVE FINISHED COUNTER AS REQUIRED (AFC)  20A, 125V, 3W DUPLEX RECEPTACLE, SURFACE MOUNTED.  SURFACE MOUNTED GROUND FAULT WEATHERPROOF RECEPTACLE 20A, 125V, 3W - MOUNTED 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED.  20A, 125V, 3W DOUBLE DUPLEX RECEPTACLE IN FLUSH OUTLET BOX.  FLUSH MOUNTED GROUND FAULT WEATHERPROOF DUPLEX RECEPTACLE 20A, 125V, 3W - MOUNTED 48" ABOVE FINISHED FLOOR.  FLUSH MOUNTED GFI WP DUPLEX RECEPTACLE WITH COVER RATED NEMA 4 WHILE IN USE.  DISCONNECT RACK MOUNTED.  OFF REMOTE/DISCONNECT RACK MOUNTED WITH JUNCTION BOX MOUNTED BELOW OFF REMOTE. NEMA 3R SS UNLESS OTHERWISE NOTED.  SINGLE POLE SWITCH IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED (TYPICAL).  SINGLE POLE SWITCH, SURFACE MOUNTED.  THREE-WAY SWITCH IN FLUSH OUTLET BOX.  FOUR-WAY SWITCH IN FLUSH OUTLET BOX.  NON-FUSIBLE DISCONNECT SWITCH, 30A,3P NEMA 4X 316 SS UNLESS OTHERWISE INDICATED.  NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.  ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.  FUSED DISCONNECT SWITCH(30/20, 30=SWITCH RATING, 20=FUSE RATING) 3 POLE-UNLESS NOTED OTHERWISE.  MOTORIZED VALVE  COMBINATION MOTOR STARTER, DISCONNECT SWITCH  VARIABLE FREQUENCY DRIVE  THERMOSTAT  ELECTRIC HEATER	 CONTROL PULLBOX. SEE "PULL BOX DETAIL"  POWER MANHOLE. SEE "MANHOLE DETAIL"  FLOW SWITCH  FLOW ELEMENT  LEVEL ELEMENT  LIMIT SWITCH  SEAL FAIL  LIQUID LEVEL SWITCH  VIBRATION SWITCH  ANALYSIS INDICATING TRANSMITTER  FLOW INDICATING TRANSMITTER  LEVEL INDICATING TRANSMITTER  TEMPERATURE SWITCH  SPACE HEATER  ANALYTICAL ELEMENT  PRESSURE INDICATING TRANSMITTER  <b>SINGLE LINE DIAGRAM SYMBOLS</b>  COMBINATION MOTOR STARTER  GROUND FAULT INTERRUPTER  FUSE  CAPACITOR  MOLDED CASE CIRCUIT BREAKER  TYPICAL SELECTOR SWITCH AND CONTROL. SEE ELEMENTARY DIAGRAMS FOR EXACT TYPE.  ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.  SERVICE OR EQUIPMENT GROUND.   NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.  NON-FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS.  CROUSE HINDS EYSR FITTING w/CHICO SPEED SEAL COMPOUND  LIGHTING PANELBOARD  POWER PANELBOARD.  CURRENT TRANSFORMERS  POTENTIAL TRANSFORMERS.  NEMA 4X 316 STAINLESS STEEL TERMINATION CABINET.  TEMPERATURE SWITCH  SEAL FAIL SWITCH  PRESSURE INDICATING TRANSMITTER  HIGH LEVEL FLOAT  FLOW INDICATING TRANSMITTER  FLOW ELEMENT	 NORMALLY OPEN CONTACT  NORMALLY CLOSED CONTACT  LIMIT SWITCH, NORMALLY OPEN  LIMIT SWITCH, NORMALLY CLOSED  PRESSURE SWITCH, NORMALLY OPEN  PRESSURE SWITCH, NORMALLY CLOSED  FLOAT SWITCH, NORMALLY OPEN  FLOAT SWITCH, NORMALLY CLOSED  FLOW SWITCH, NORMALLY OPEN  FLOW SWITCH, NORMALLY CLOSED  TEMPERATURE SWITCH, NORMALLY OPEN  TEMPERATURE SWITCH, NORMALLY CLOSED  NORMALLY OPEN, TIMED TO CLOSE CONTACT  NORMALLY CLOSED, TIMED TO OPEN CONTACT  NORMALLY CLOSED, TIMED TO CLOSE CONTACT  NORMALLY OPEN, TIMED TO OPEN CONTACT  LIMIT SWITCH  FLOW SWITCH  PRESSURE SWITCH  SOLENOID VALVE  LIQUID LEVEL SWITCH  VIBRATION SWITCH  SMOKE DETECTOR  ALARM RELAY  ALARM TIMER  CONTROL RELAY  MOTOR STARTER  TIMING RELAY  TORQUE SWITCH  ALARM INDICATING LIGHT  RUN INDICATING LIGHT  MOMENTARY CONTACT PUSHBUTTON  MOMENTARY BREAK PUSHBUTTON OR RESET  KEYED SWITCH  MAINTAINED CONTACT ON-OFF SWITCH  START/STOP(S/S) CONTROL SWITCH  MAINTAINED CONTACT  THREE POSITION MAINTAINED CONTACT SELECTOR SWITCH  FUSE  MOLDED CASE CIRCUIT BREAKER  CONTROL POWER TRANSFORMER  REMOTE TERMINAL BLOCK POINT	<p>A AMPERES AC ABOVE FINISHED FLOOR AFF AMPS INTERRUPTING CURRENT BREAKER BLDG BUILDING BLDG CONTROL PANEL CPT CONTROL POWER TRANSFORMER CU CONDENSING UNIT CT CURRENT TRANSFORMER DB DIGESTER BLOWER DE DUKE ENERGY EEB EAST ELECTRICAL BUILDING EFF EFFLUENT ELEC ELECTRICAL EM EMERGENCY ENCL ENCLOSURE ETM ELAPSED TIME METER EUH ELECTRIC UNIT HEATER EXHA EXHAUST FPL FLUORESCENT POWER &amp; LIGHT FTC FLOAT CABLE TERMINATION CABINET FVNR FULL VOLTAGE NON-REVERSING GENERATOR GFR GROUND FAULT RECEPTACLE GFI GROUND FAULT INTERRUPTER GRD GROUND GRS GALVANIZED RIGID STEEL HOA HAND-OFF-AUTOMATIC HOR HAND-OFF-REMOTE HP HORSEPOWER JB JUNCTION BOX KVA KILO VOLT-AMPERES KW KILOWATT LCP LOCAL CONTROL PANEL LP LOOP NUMBER LOP LOCAL OPERATOR PANEL LTG LIGHTING MAX MAXIMUM MCB MAIN CIRCUIT BREAKER MIN MINIMUM MLO MAIN LUGS ONLY MSC MANUFACTURER SUPPLIED CABLE MOUNTED MTD MOUNTED N NEUTRAL NEC NATIONAL ELECTRICAL CODE NOT TO SCALE OH OVERHEAD P POLE PM PHASE MONITOR PS PUMP STATION PSCP PUMP STATION CONTROL PANEL SH SHIELDED SPD SURGE PROTECTION DEVICE SS STAINLESS STEEL SSS SOLID STATE STARTER STR STARTER SW SWITCH TC TERMINATION CABINET TYP TYPICAL UG UNDERGROUND UPS UNINTERRUPTIBLE POWER SUPPLY V VOLT VFD VARIABLE FREQUENCY DEVICE WEB WEST ELECTRICAL BUILDING W WATT W/ WITH WP WEATHERPROOF XFMR TRANSFORMER ø PHASE</p>	<ol style="list-style-type: none"> <li>ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED.</li> <li>ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, LIGHT FIXTURES, ETC., THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO SUBMITTING HIS BID.</li> <li>ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 NATIONAL ELECTRICAL CODE, 2020 FLORIDA BUILDING CODE, 2014 NATIONAL FIRE PROTECTION ASSOCIATION AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.</li> <li>MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING, UNLESS OTHERWISE NOTED.</li> <li>IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.</li> <li>ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C. OR LOCAL CODES. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250-122 OF THE NATIONAL ELECTRIC CODE.</li> <li>ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.</li> <li>ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/OWNER.</li> <li>CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN TWO YEARS FROM DATE OF ACCEPTANCE.</li> <li>CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.</li> <li>THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF THE FPL. SEE 16050 FOR ADDITIONAL INFORMATION.</li> <li>CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.</li> <li>ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/ TYPE WRITTEN DIRECTORIES (NEW &amp; EXISTING).</li> <li>ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.</li> <li>DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL DRAWINGS &amp; THE APPROVED MANUFACTURER'S SHOP DRAWINGS FOR THE EXACT LOCATION OF ALL EQUIPMENT.</li> <li>NON-SHADED TEXT DENOTES NEW EQUIPMENT, STRUCTURES AND WORK. SHADED AND SLANTED TEXT DENOTES EXISTING EQUIPMENT OR STRUCTURES.</li> <li>ALL CONTROL PANELS SHALL BE UL LISTED AND SHALL COMPLY WITH ARTICLE 409 OF THE NEC.</li> <li>ALL EMPTY CONDUITS SHALL BE INSTALLED WITH PULL STRING.</li> </ol>

ERIC HAMMOND, P.E.  
FL LICENSE # PE39048

DRAWN BY: H.A. DATE: 04/08/2021  
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (CHKD)	DESCRIPTION

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PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS

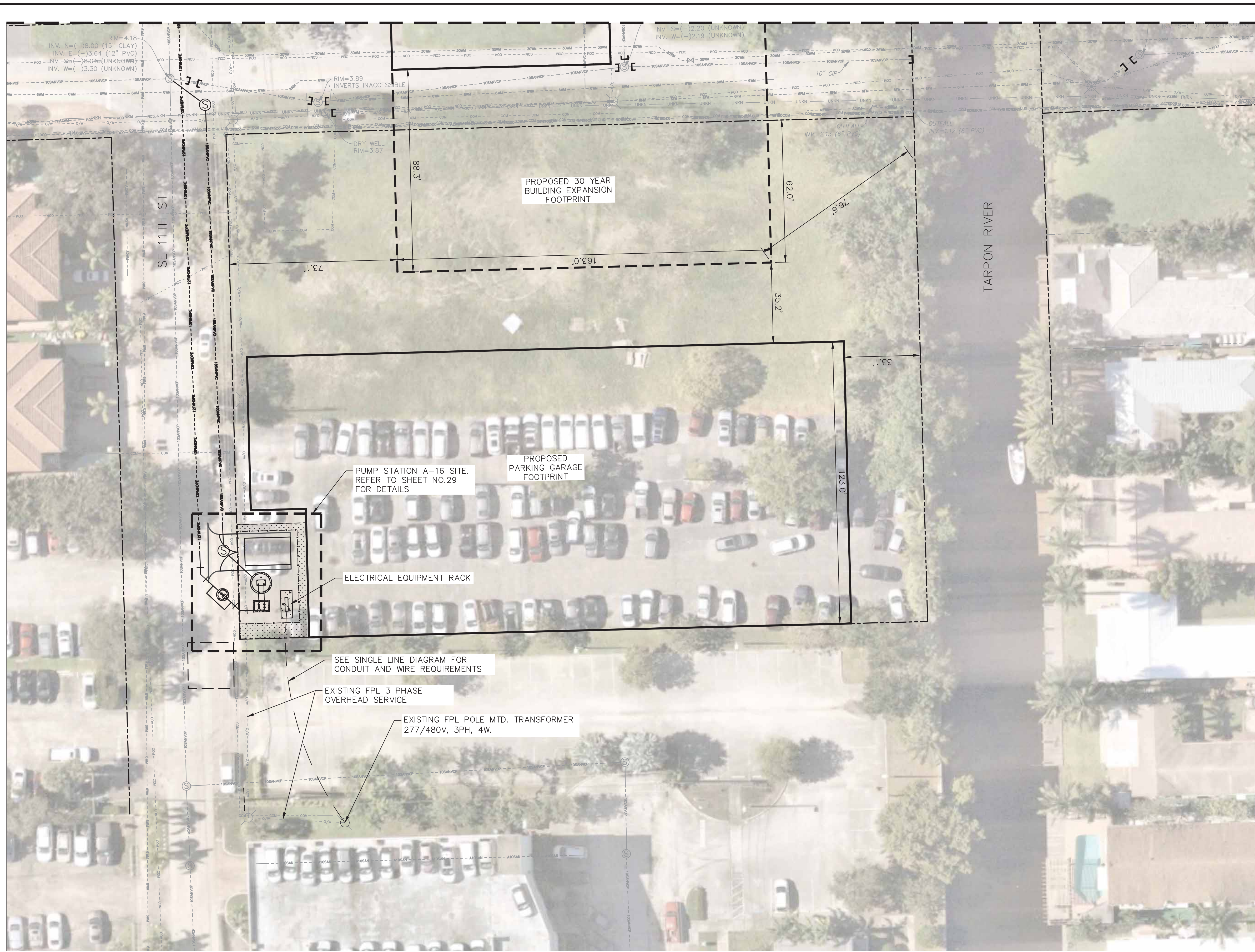
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DRAWING FILE NO. 4-142-31

DESIGN CRITERIA PACKAGE

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EB 5315



Plotted By: Olga Litvinskaya Sheet Set: #12412-20-SITE.dwg Layout: E20 September 28, 2021 04:48:45pm M:\ACAD\_DWG\S\Pump Station A-16 Working Drawings\12412-20-SITE.dwg  
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**ELECTRICAL SITE PLAN**  
 SCALE: 1"=20'-0"  
 20 10 0 20'



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 EB 5315

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**WASTEWATER DESIGN CRITERIA PACKAGE**  
**ELECTRICAL SITE PLAN**

SHEET NO.	OF
20	31
CAD FILE: 12412-20-SITE	
DRAWING FILE NO. 4-142-31	

REVISIONS		DESCRIPTION
NO.	DATE	BY (CHK'D)

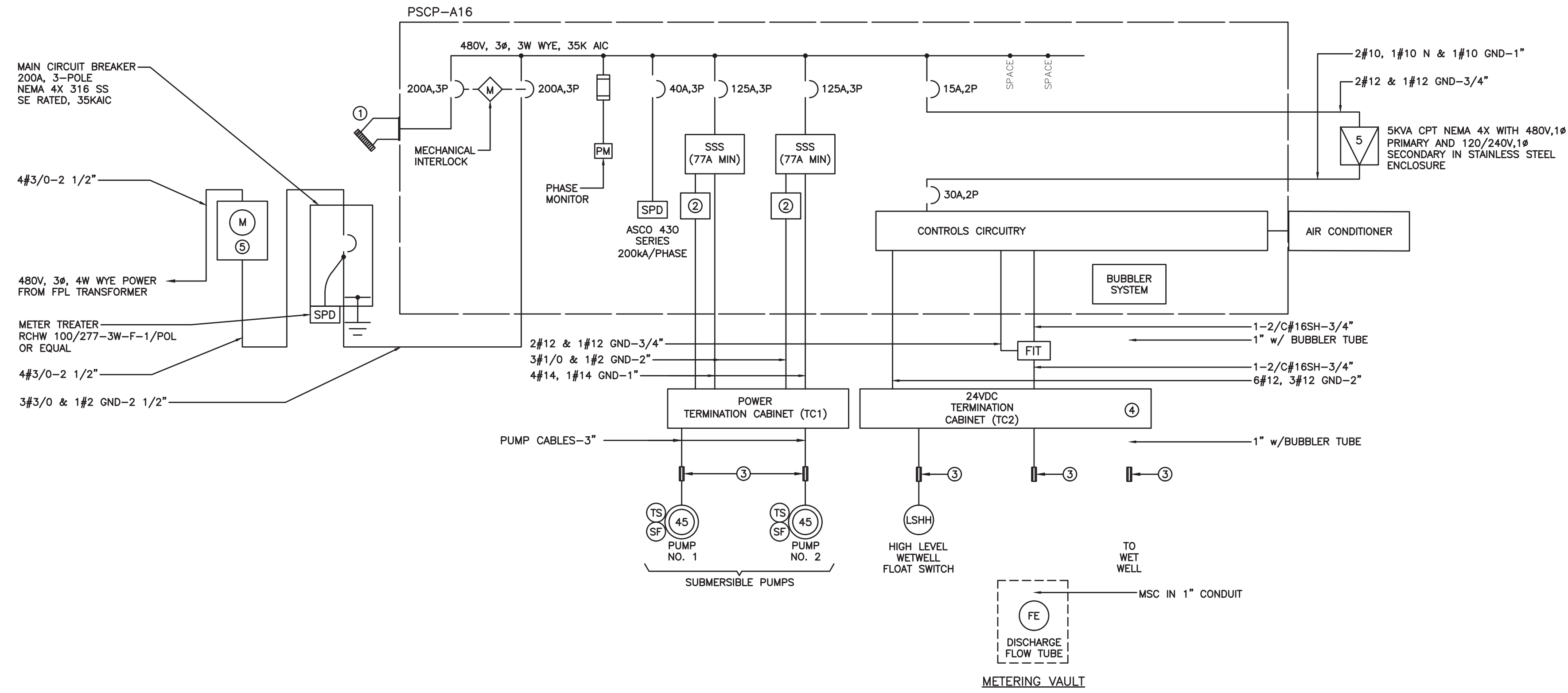


**CITY OF FORT LAUDERDALE**  
**PUBLIC WORKS DEPARTMENT**  
**ENGINEERING & ARCHITECTURE**  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY: H.A.	DATE: 04/08/2021
DESIGNED BY: H.A.	SCALE: AS NOTED
CHECKED BY: E.H.	FIELD BOOK:

ERIC HAMMOND, P.E.  
 FL LICENSE # PE39048

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**KEY NOTES:**

- ① GENERATOR RECEPTACLE EATON ARL2042.
- ② PUMP SUPERVISION RELAY.
- ③ CROUSE HINDS EYSR FITTING FILLED WITH CHICO CEMENT (TYP.)
- ④ FURNISH WITH 20 PERCENT SPARE TERMINALS.
- ⑤ FPL METER CAN. FURNISHED AND INSTALLED BY CONTRACTOR.
- ⑥ CONFIGURE FLOW METER FOR OPERATION EXTERNALLY POWERED 4-20MA CIRCUIT.

**SINGLE LINE DIAGRAM**

**LOAD TABULATION**

SERVICE VOLTAGE: 480V, 3Ø WYE

DESCRIPTION	LOAD	AMPACITY
① SUBMERSIBLE PUMPS	2 @ 45 HP EACH	= 130.0 AMPS
MISCELLANEOUS	5 KVA	= 10.6 AMPS
	CONNECTED LOAD	= 140.5 AMPS

② MINIMUM SERVICE ENTRANCE = 140.5 AMPS + (0.25)(65.0) = **156.75** AMPS

**NOTES:**

- ① AMPACITIES PER PUMP NEC TABLE 250, USING NEXT LARGEST STANDARD SIZE.
- ② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

ERIC HAMMOND, P.E.  
FL. LICENSE # PE39048

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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (CHKD)	DESCRIPTION

**DESIGN CRITERIA PACKAGE**  
PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
SINGLE LINE DIAGRAM

SHEET NO.	OF
21	31
GAD FILE: 12412-21-RISR	
DRAWING FILE NO. 4-142-31	



HAMMOND & ASSOCIATES, INC.  
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EB 5315

POS	QTY	DESCRIPTION	MANUFACTURER PART NUMBER
1	1	MICROLOGIX 1100 PROGRAMMABLE CONTROLLER	ALLEN-BRADLEY, 1763-L16BWA
2	1	16-POINT SINK/SOURCE 24V INPUT MODULE	ALLEN-BRADLEY, 1762-IQ16
3	0	6-POINT SINK/SOURCE DC INPUT AND 6-POINT AC/DC RELAY OUTPUT MODEL	ALLEN-BRADLEY, 1762-IQBOW6
4	1	4-CHANNEL CURRENT ANALOG INPUT MODULE	ALLEN-BRADLEY, 1762-IF4
5	1	COMPACT POWER SUPPLY, OUTPUT 24-28V DC, 100W, 4A INPUT VOLTAGE 100/240V AC	ALLEN-BRADLEY, 1606-XLP100E
6	1	SPIDER STX INDUSTRIAL RAIL ETHERNET SWITCH	HIRSCHMAN, 943 824-002
7	25	END ANCHOR, USED W/ STANDARD 35MM DIN RAIL, GRAY	ALLEN-BRADLEY, 1492-EAJ35
8	13	FINGER-SAFE SINGLE CIRCUIT FUSE BLOCK, NO BLOWN FUSE INDICATOR #30-#12 AWG, BLACK	ALLEN-BRADLEY, 1492-H6
9	5	1/2A, FAST-ACTING GLASS BODY FUSE 1/4IN X 1 1/4IN	LITTLEFUSE, 0312.500
10	6	1/32A, FAST-ACTING GLASS BODY FUSE 1/4IN X 1 1/4IN	GRANGER, ICM28
11	1	2A, SLO-BLO GLASS BODY FUSE, 1/4IN X 1 1/4IN	LITTLEFUSE, 0313.002
12	0	4A, SLO-BLO GLASS BODY FUSE, 1/4IN X 1 1/4IN	LITTLEFUSE, 0313.004
13	8	END BARRIER SINGLE CIRCUIT FUSE OR ISOLATION BLOCKS, BLACK	ALLEN-BRADLEY, 1492-N37
14	100	IEC 1-CIRCUIT FEED-THROUGH BLOCK, 4MM MAX WIRE, GRAY	ALLEN-BRADLEY, 1492-J4
15	12	END BARRIER, GRAY	ALLEN-BRADLEY, 1492-EBJ3
16	1	MINIATURE CIRCUIT BREAKER, 10 AMP RATING	ALLEN-BRADLEY, 1492-GH100
17	2	MINIATURE CIRCUIT BREAKER, 5 AMP RATING	ALLEN-BRADLEY, 1492-GH050
18	2	MINIATURE CIRCUIT BREAKER, 2 AMP RATING	ALLEN-BRADLEY, 1492-GH020
19	5	SURGE AND FILTER PROTECTION, DIN RAIL MOUNT, DATALINE UL 4979, 24V DC	ALLEN-BRADLEY, 4983-DD24
20	1	DIN RAIL AC SOLA-HD UNINTERRUPTIBLE POWER SYSTEM SDU - A SERIES AND SDU CF DRY CONTACT I/O RELAY CARD	EMMERSON SDU500A + SDUCFRELYCARD
21	3	CONTROL RELAY OCTAL 8 PIN/COIL 120 VAC/ DPDT, 10 AMP RATING	750XBXR4M4L
22	3	DIN RAIL MOUNT RELAY SOCKET SCREW TYPE, 8 PIN	IDEC, SR2P-06
23	1	ENCLOSURE BACK PANEL, WHITE	HOFFMAN, A60P36
24	1	ENCLOSURE CABINET SS 316 NEMA 4X ONE-DOOR, 3 POINT LATCH, 72 X 36 X 16	HOFFMAN
25	6	CENTER JUMPERS	ALLEN-BRADLEY, 1492-CJJ6-10
26	1	SNAP-IN MARKER CARD, WHITE	ALLEN-BRADLEY, 1492-M6X12
27	1	GROUND BAR KIT, 14 POSITION #14-4AWG	ELECTRICENTER ECGB14
28	4	DIN RAIL 35MM ALUMINUM 1M	IDEC, BDN-1000
29	3	PANDUCT TYPE MC METRIC NARROW SLOT WIRING DUCT, GRAY 0.97 X 2.85 IN, 2M	PANDUIT, MC25X75IG2
30	3	WIRING DUCT COVER, 2M	PANDUIT, C251G2
31	0	RECTANGULAR LOUVERED VENT, STAINLESS STEEL 5"W X 4-5/8"H	WEST MARINE, 226993
32	1	CONTROL CABINET OUTLET FOR MOUNTING ON DIN RAILS	PHOENIX CONTACT SD-US/SC/LA/GY - 2963860
33	2	500 OHM RESISTORS, 1/2 WATT	
34	2	CAT 5E ETHERNET PATCH CABLE 2 FT	
35	0	WIRE LABELS, HEAT SHRINK WIRE LABELS	
36	0	PIN TERMINALS - BLUE	PANDUIT, FSD80-8DSL6
37	0	PIN TERMINAL - RED	PANDUIT, FS78-8-DSL2
38	1	MAPLE SYSTEMS 7" HMI TOUCHSCREEN 24VDC	MAPLESYSTEMS HM15070B
39	2	YELLOW, PILOT LIGHT, LED 120 VAC	ALLEN-BRADLEY, 800FD-P5N5
40	2	RED PILOT LIGHT, LED 120 VAC	ALLEN-BRADLEY, 800FD-P4N5
41	1	AMBER PILOT LIGHT, LED 120 VAC	ALLEN-BRADLEY, 800FD-P0N5
42	2	UWZ SERIES AC HOUR METERS, FLUSH MOUNT, 120 VAC	INTERMATIC UWZ52E-120U
43	0	APC SMART-UPS ON-LINE, 1050 WATTS/1500VA, INPUT 120V / OUTPUT 120V	APC, SURTA1500XL
44	1	18" LED UNDERCABINET, WHITE + 48" POWER CORD	HALO HU1018D930P + HU105P
45	1	GFI DUAL RECEPTACLE, 20 AMP	HUBBLE GFWRST20W OR SIMILAR
46	0	750 OCTAL RELAYS, 11 PIN/ 3PDT, 16 AMP RATING	MAGNECRAFT, 750XCXM4L
47	0	RELAY SOCKET 300 VAC 10 AMP TYPE K	SQUARE D, 8501NR62
48	2	30MM SELECTOR SWITCH 3 POSITION, TYPE K, BLACK KNOB	SQUARE D, 9001KS43B/LEGENT PLAT
49	0	30MM CONTACT BLOCK 1N/O 1N/C	SQUARE D, 9001KA1
50	2	SELECTOR PADLOCK	SQUARE D, 9001K7
51	0	PANEL LIGHT SWITCH	SQUARE D, 9001SKS11BH5
52	1	40MM MUSHROOM HEAD BUTTON, TWO POSITIONS, NON-ILLUMINATED	CUTLER-HAMMER, HT8DBR
53	1	PRESSURE GAUGE, 4" DIAL, 1/4" PROCESS CONNECTION, RANGE 0-200", PANEL MOUNT WITH FRONT FLANGE	MCDANIEL CONTROLS
54	1	DIN RAIL MOUNTED CABINET THERMOSTAT, 32-140 F, NO CONTACT	PFANNENBERG FLZ 530 PN#17121000010
55	6	MINIATURE CIRCUIT BREAKER (QOU) STANDARD, 10A, 1 POLE, 120/240 VAC, HACR RATED	SQUARE D, QOU110
56	2	MINIATURE CIRCUIT BREAKER (QOU), STANDARD 15A, 1 POLE, 120/240 VAC, HACR RATED	SQUARE D, QOU115
57	2	MINI-CAS 120V RELAYS FOR PUMP THERMAL/SEAL FAIL PROTECTION	FLYGT MINI-CAS 120, 14-407129
58	1	PHASE MONITORING RELAY 3 PHASE 180-500 VOLT	MARCOMATIC PMPU
59	2	480V THREE PHASES S-811+ EATON SOFTSTARTER WITH DIM. INCLUDING PROTECTIVE MODEL EMS39 AND FAN COOLING KIT	EATON SB11+ SERIES
60	2	CURRENT TRANSFORMERS 10A TO 50A, 4-20MA, 24VDC	EATON EAC1420SC
61	2	3P 600VAC POWERPACT H-FRAME MOLDED CASE THERMAL-MAGNETIC CIRCUIT BREAKERS, UNIT MOUNT	SQUARE D
62	2	3P 600VAC POWERPACT H-FRAME MOLDED CASE THERMAL-MAGNETIC CIRCUIT BREAKERS, UNIT MOUNT	SQUARE D
63	2	POWER SUPPLY, OUTPUT 24-28V DC, 10A INPUT VOLTAGE 100/240V AC	EATON, PSG240E
64	1	600VAC POWER DISTRIBUTION BLOCKS, SURFACE MOUNT, 3 POLES, 2 LINE TERMINALS, 6 LOAD TERMINALS	SQUARE D 9080LB SERIES
65	1	600VAC POWER DISTRIBUTION BLOCKS, SURFACE MOUNT, 1 POLE, 2 LINE TERMINALS, 6 LOAD TERMINALS	SQUARE D 9080LB SERIES
66	1	3-POLE FUSE HOLDER, AC: 600VAC, FINGER-SAFE DESIGN, DIN RAIL MOUNTING	EATON BUSSMAN CHM3DNU OR SIMILAR
67	3	1A FAST ACTING MIDGET FUSE WITH 600VAC VOLTAGE RATING FOR PROTECTION OF CONTROL AND ELECTRONIC CIRCUITS	LITTLEFUSE OBLS001.T OR SIMILAR
68	1	AIR COMPRESSOR FOR FUSE WITH BUBBLER TYPE LIQUID LEVEL CONTROL SYSTEMS W/ MOUNTING BRACKET RANGE OF 0-15 FEET OF WATER COLUMN	INGRAM PRODUCTS PART NO. HR10WB3 + PART NO. HRMTBKT
69	1	GENERAL PURPOSE PRESSURE TRANSMITTER, 4-20MA 2-WIRE SIGNAL OUTPUT, SS 316L WETTED PARTS, 0-15 PSI RANGE, +/-0.5% ACCURACY, 1/4" MALE NPT CONNECTION	WIKA 50426397
70	2	24VDC STANDARD DPDT SCREW CONNECTION TERMINAL BLOCK RELAYS	EATON XRU2D24 + XRR2D24
71	1	ENCLOSURE INNER DOOR ALARM (BRUSHED)	DEAD FRONT
72	1	LIGHT SOURCE	FEDERAL SIGNAL LP1-120R
73	1	RECEPTACLE ASSEMBLY WITH AJ BACK BOXES AND ANGLE ADAPTERS 200A 3 PHASES 4 POLES	CROUSE HINDS
74	1	MAGNETIC SWITCH INC FOR SS ENCLOSURE	
75	1	MAGNETIC FLOW METER	ABB MAGMASTER

NOTES:  
 ① BILL OF MATERIALS SHALL NOT BE CONSIDERED AS FINAL. VENDOR SHALL PROVIDE ALL DEVICES AND EQUIPMENT REQUIRED TO PROVIDE THE FUNCTIONALITY POWER SOURCE CIRCUITS INDICATED AND REQUIRED.

ERIC HAMMOND, P.E.  
 FL LICENSE # PE39048

DRAWN BY: H.A. DATE: 04/08/2021  
 DESIGNED BY: ISCALE: AS NOTED  
 CHECKED BY: E.H.  
 FIELD BOOK:

CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE  
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (RHD)	DESCRIPTION

PROJECT # 12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 CONTROL PANEL BILL OF MATERIALS

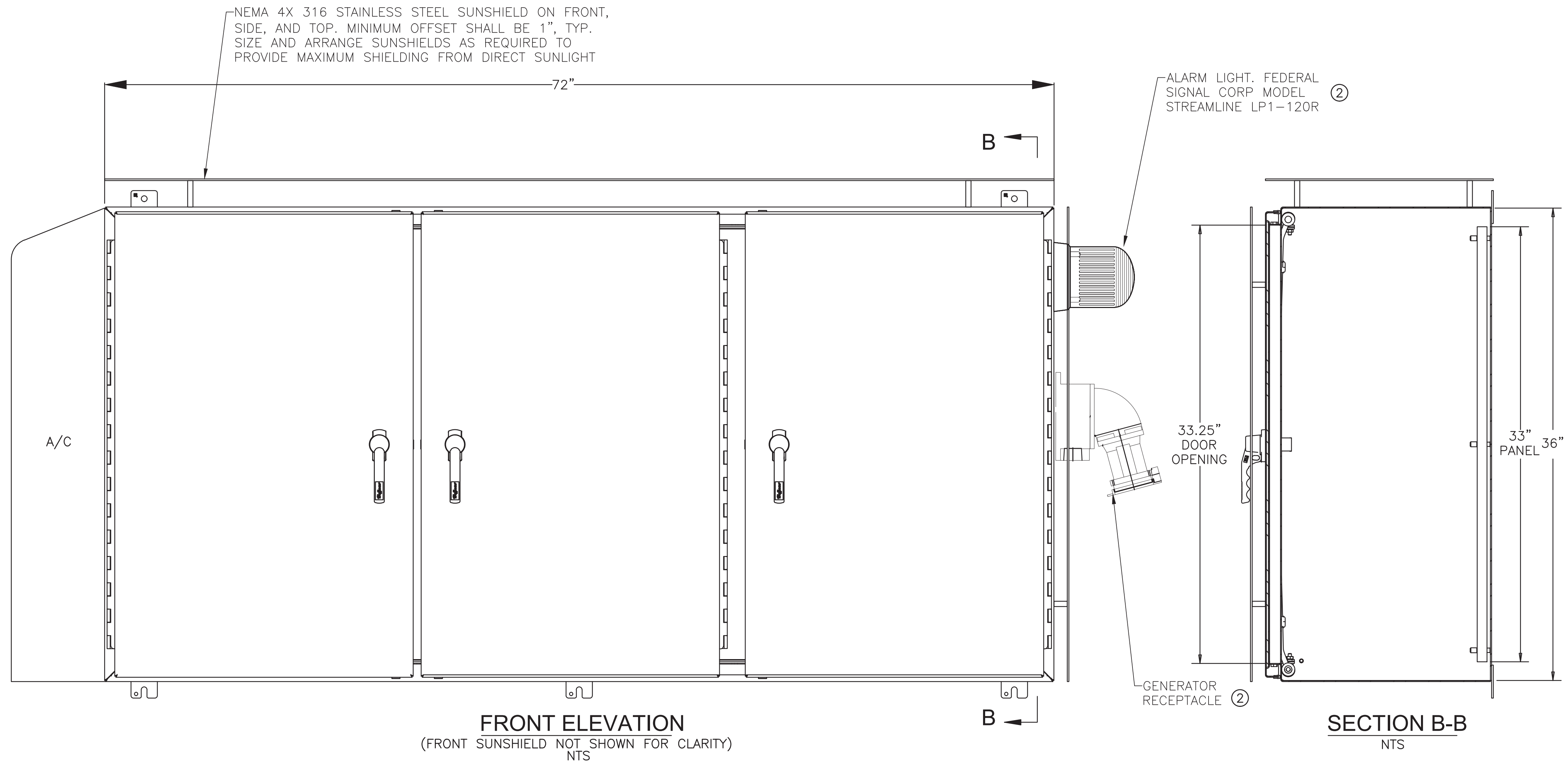
SHEET NO. 22 OF 31  
 CAD FILE: 12412-22-PBOM  
 DRAWING FILE NO. 4-142-31

DESIGN CRITERIA PACKAGE

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 P.E. #39048  
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**NOTES:**

- ① CABINET DIMENSIONS SHALL NOT EXCEED DIMENSIONS SHOWN.
- ② CUT OUT AREAS OF SUNSHIED AS REQUIRED FOR INSTALLATION.



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**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**CONTROL PANEL EXTERIOR LAYOUT**

SHEET NO.	OF
23	31
CAD FILE: 12412-23-PANL	
DRAWING FILE NO. 4-142-31	

REVISIONS		DESCRIPTION
NO.	DATE	BY (CHKD)



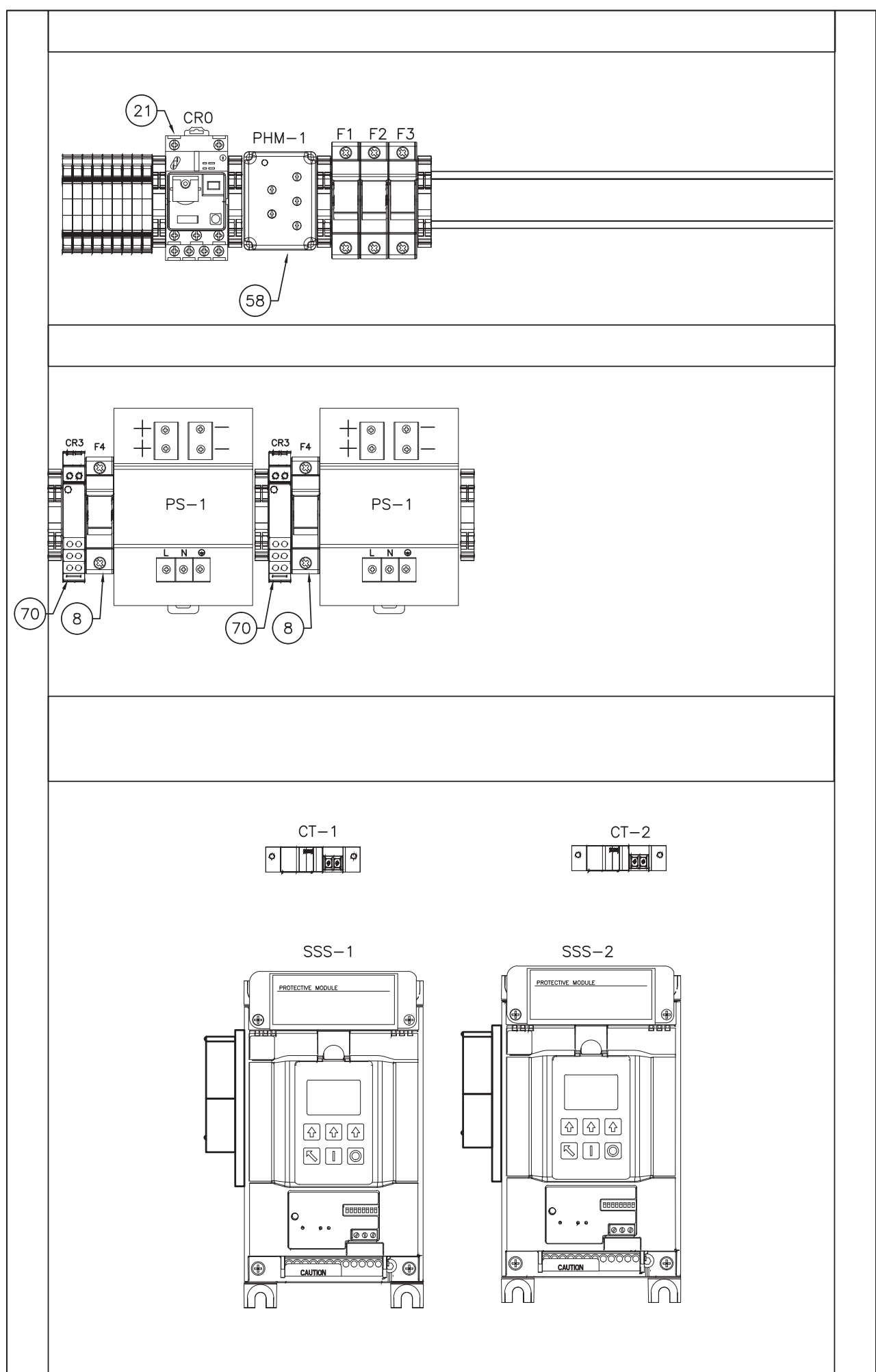
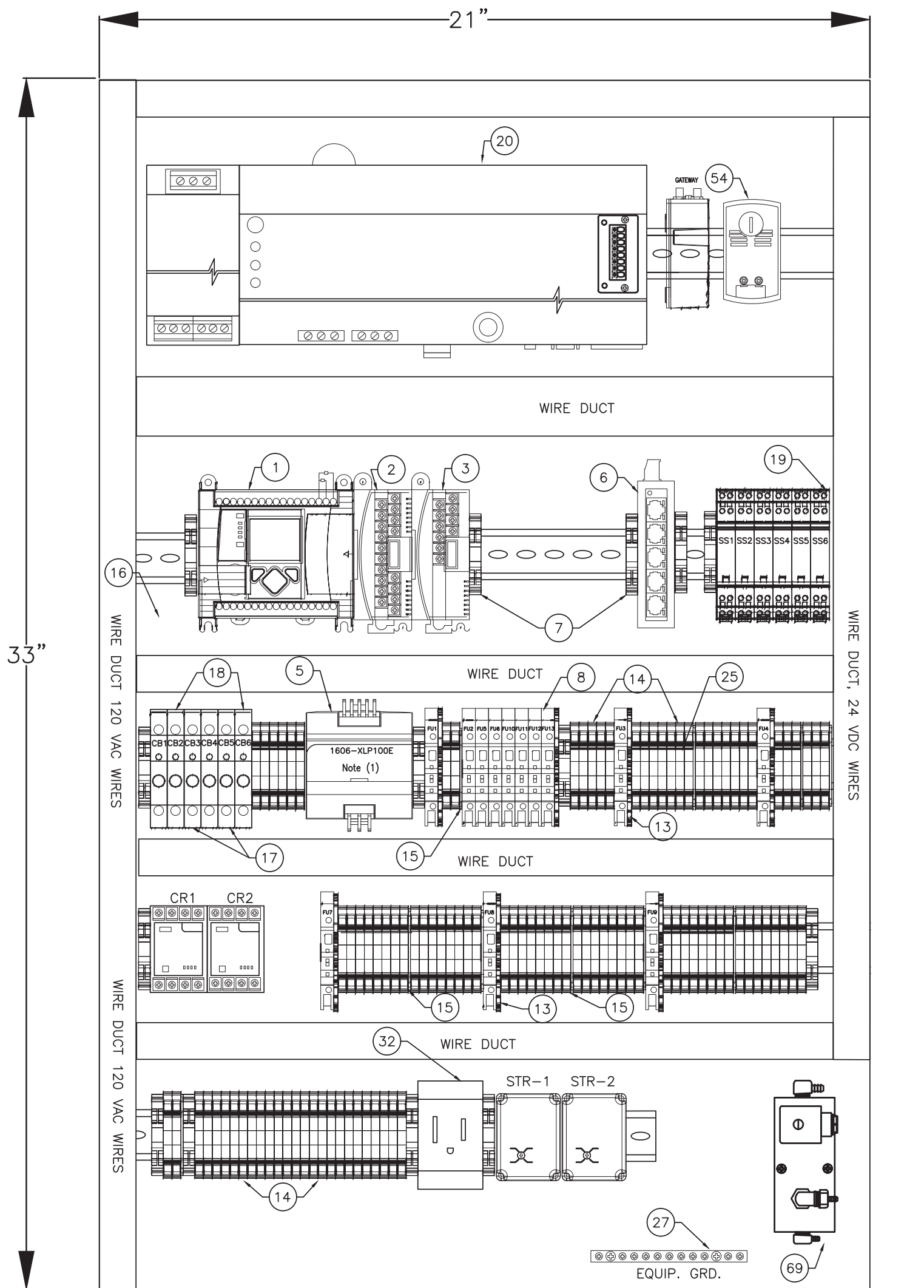
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 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

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CHECKED BY:	E.H.	FIELD BOOK:	

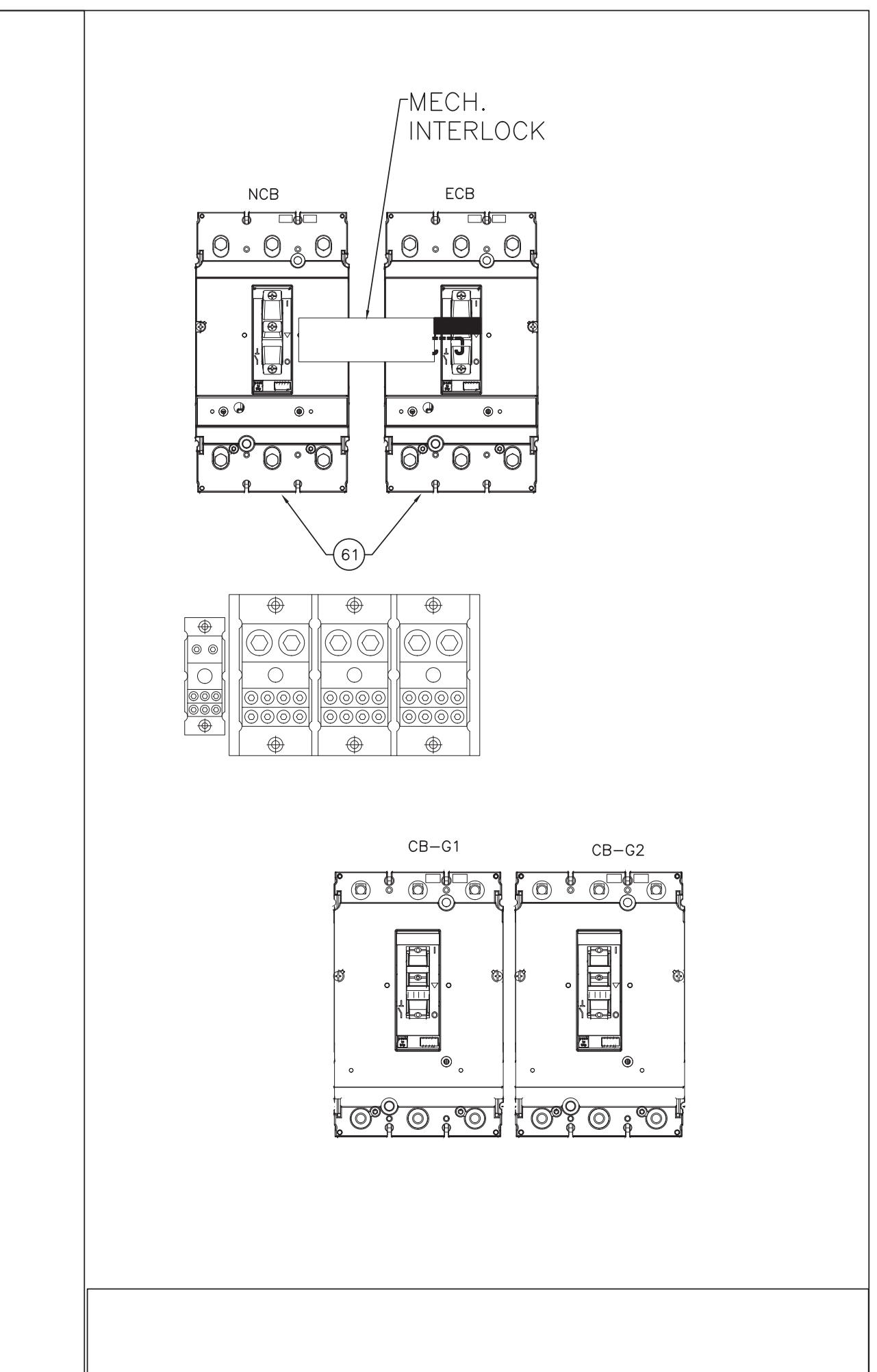
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**GENERAL ELECTRICAL NOTES:**  
 1. FOR EACH SECTION, USE LEFT WIRE DUCTS FOR 120 VAC WIRES AND RIGHT WIRE DUCTS FOR 24 VDC WIRES.



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**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**CONTROL PANEL COMPONENT LAYOUT**

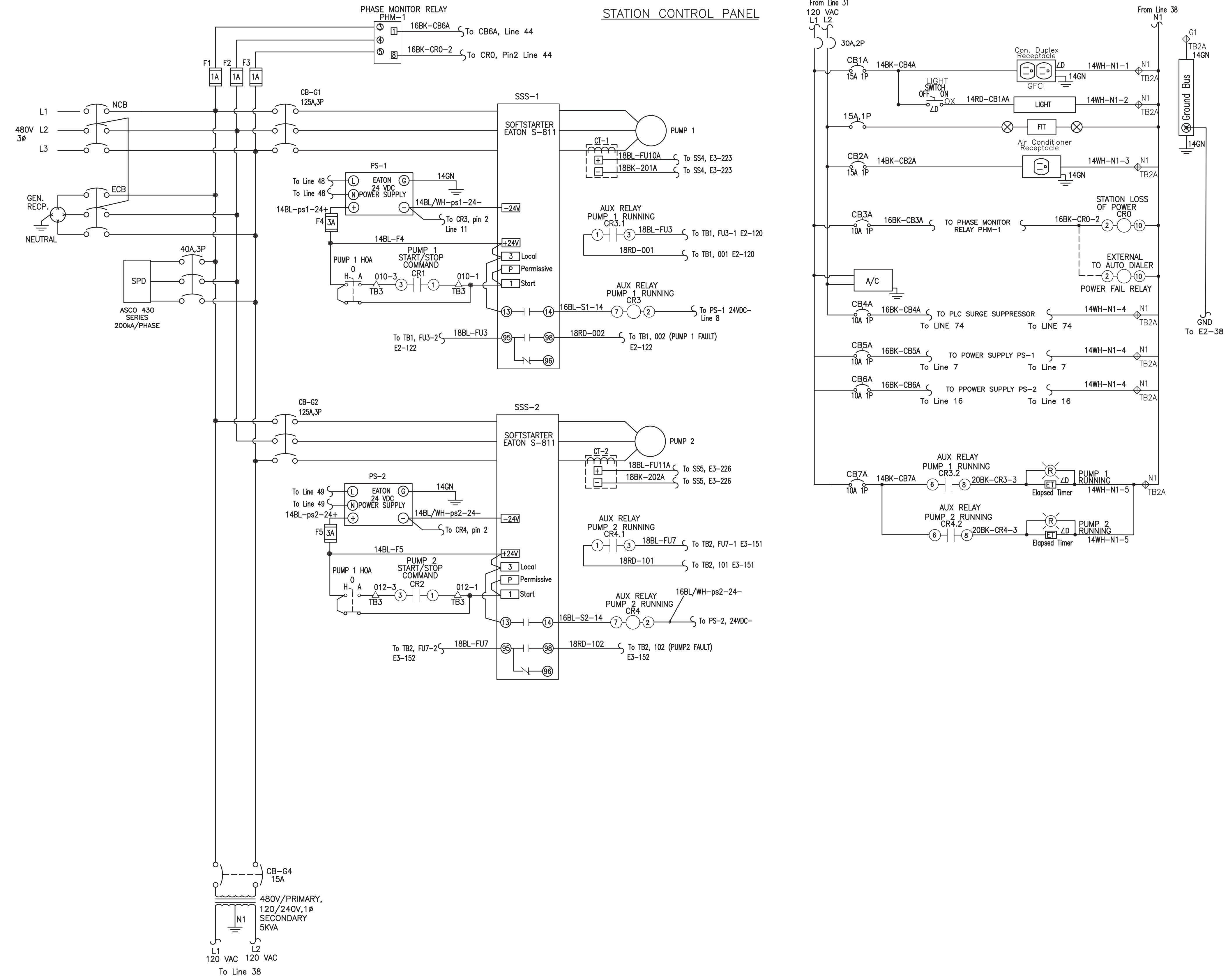
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DRAWING FILE NO. 4-142-31	

NO.	DATE	BY (CHK'D)	DESCRIPTION

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STATION CONTROL PANEL

ERIC HAMMOND, P.E.  
FL LICENSE # PE39048

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DESIGNED BY:	H.A.	SCALE:	AS NOTED
CHECKED BY:	E.H.		
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS	
NO.	DESCRIPTION

PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
CONTROL PANEL ELEMENTARY DIAGRAM -  
SHEET 1

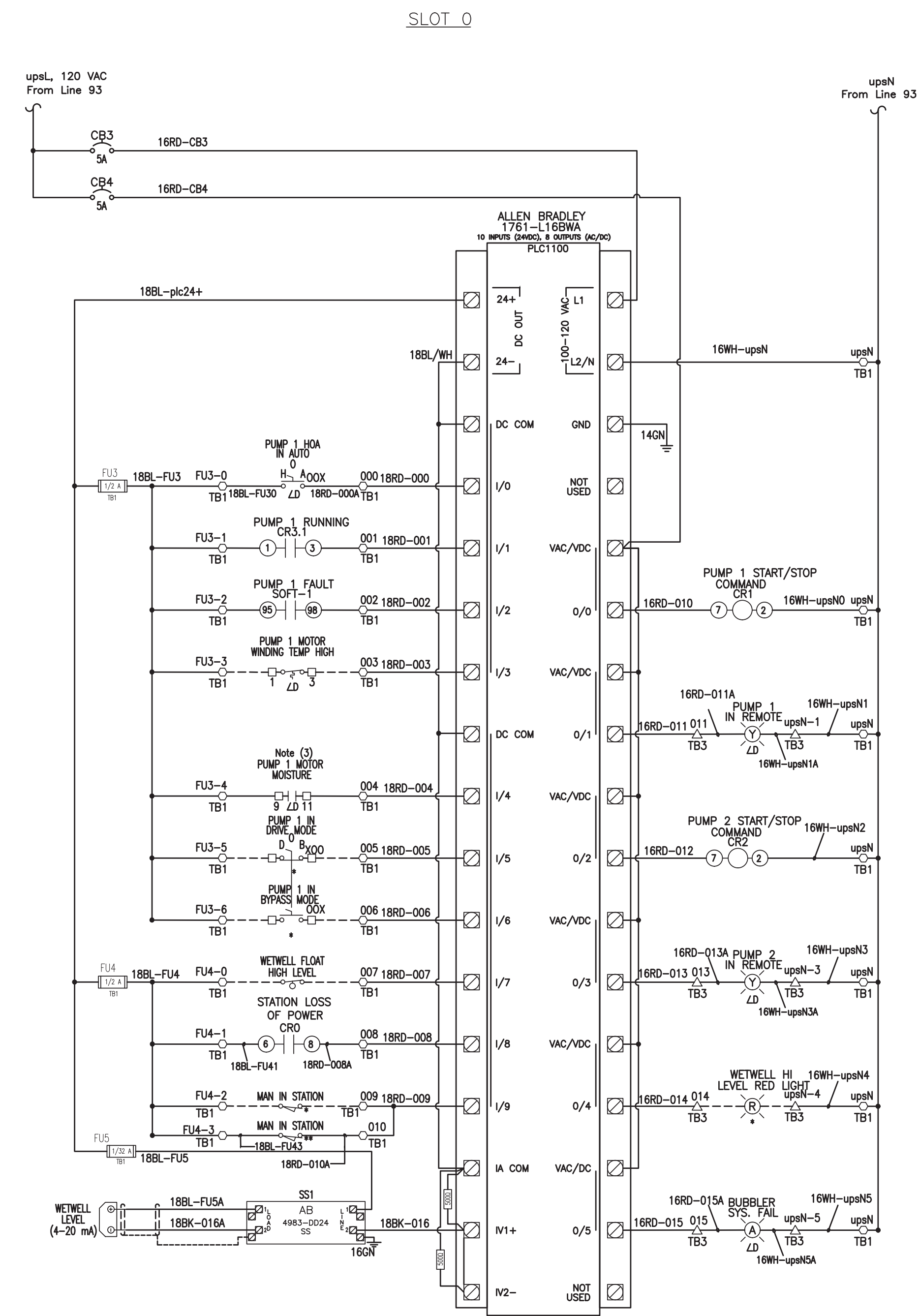
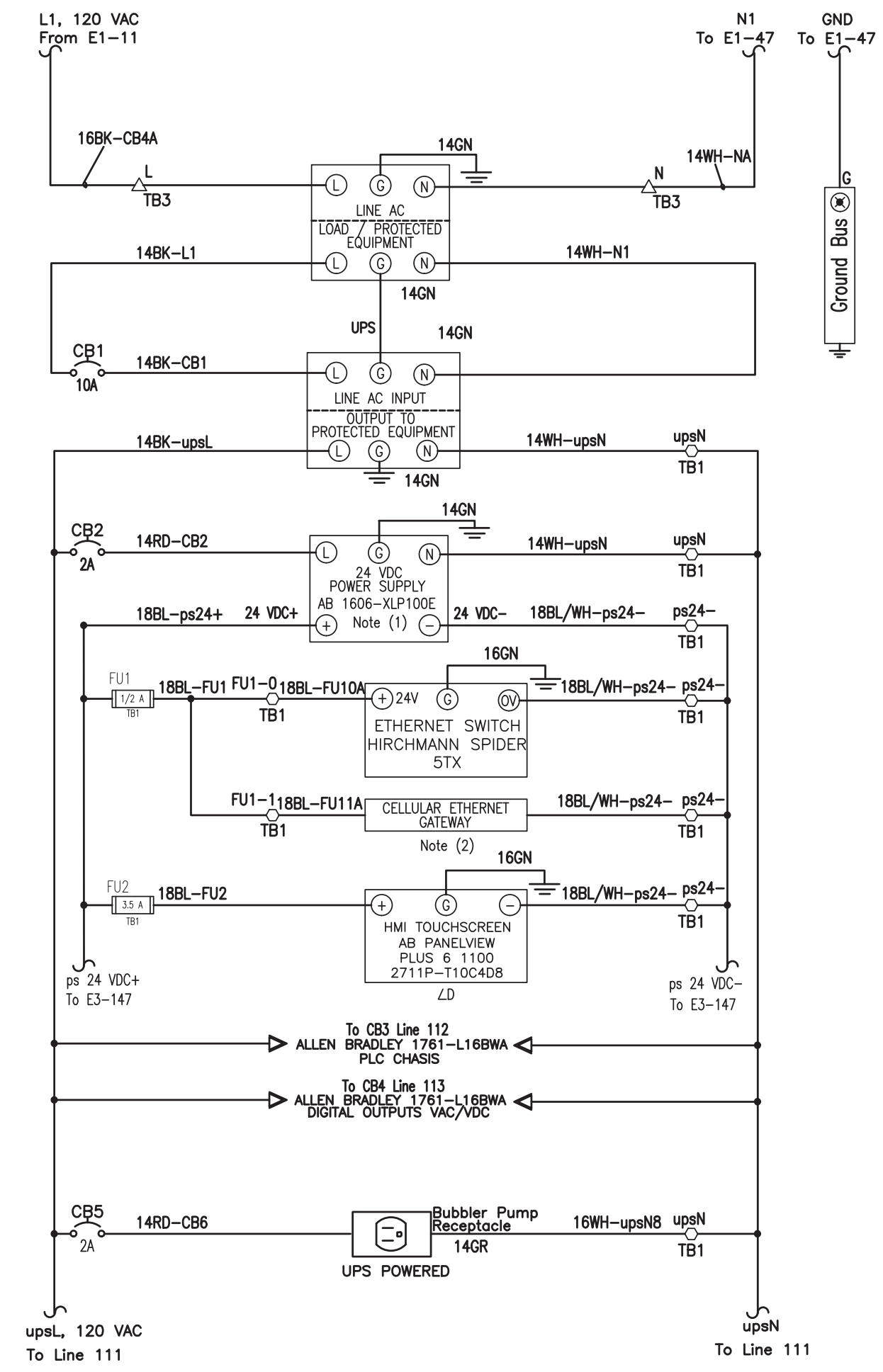
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DRAWING FILE NO. 4-142-31	



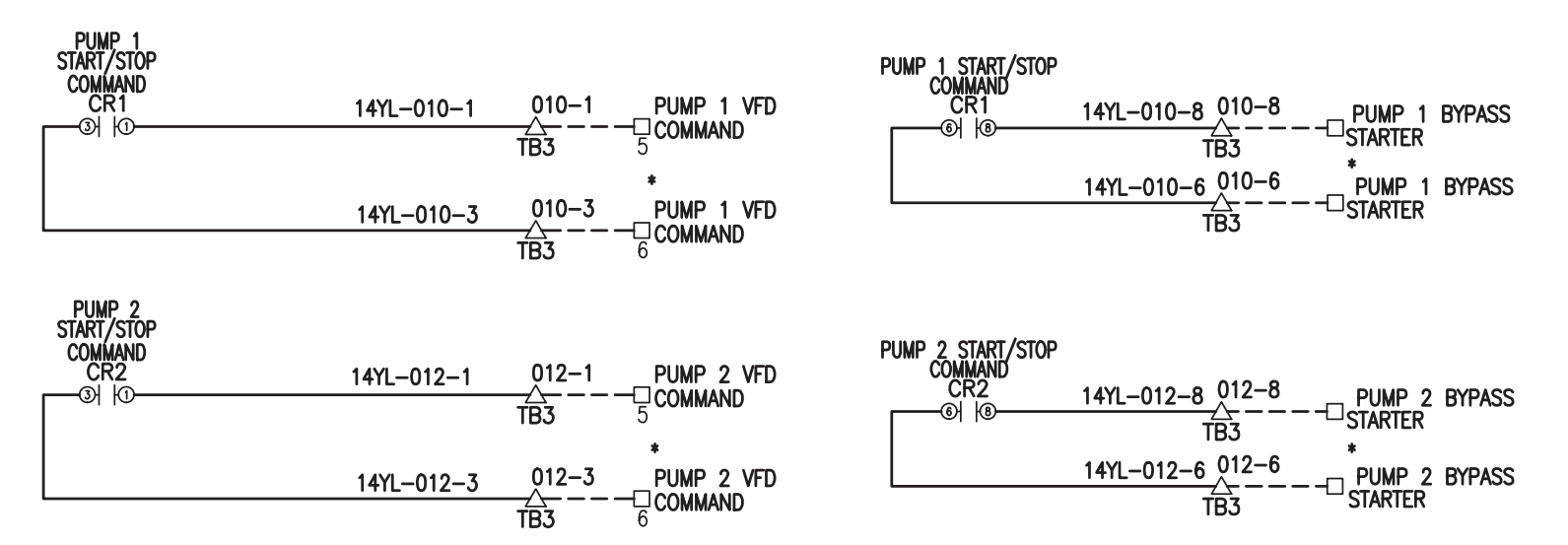
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- GENERAL ELECTRICAL NOTES:**
- FINAL COMPONENT SIZE AND SELECTION TO BE DETERMINED BY SYSTEM SUPPLIER IN COORDINATION WITH CITY. IF PANEL VIEW PLUS 400 OR 600 IS REQUIRED, CHANGE POWER SUPPLY TO AB MODEL 160R-XLP100E.
  - SIERRA MODEL Raven XE V2221E-V CELLULAR RADIO TO BE PROVIDED AND CONFIGURED BY CITY.
  - PUMP SEAL FAIL RELAY, IF NEEDED AS PER SPEC OF PUMP MANUFACTURER.
  - LD DENOTES DEVICE MOUNTED ON PANEL DOOR.
  - WIRING GUIDE:
    - 18BL-FU1 WIRE NUMBER (CHARACTERS TO RIGHT OF DASH ONLY)
    - WIRE COLOR
    - WIRE GAUGE IN AWG
  - DENOTES COMPONENT MOUNTED OUTSIDE CONTROL PANEL
  - DENOTES FIELD WIRING OUTSIDE CONTROL PANEL
  - TB1 Terminal Block
    - TB2 Terminal Block
    - △ TB3 Terminal Block
    - ◇ TB2A Terminal Block
    - ◇ TB3A Terminal Block
  - DOOR INTRUSION SWITCH. PROVIDE ONE FOR EACH DOOR AND WIRE IN SERIES.



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**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412  
 PUMP STATION A-16 UPGRADE  
 WASTEWATER DESIGN CRITERIA PACKAGE  
 CONTROL PANEL ELEMENTARY DIAGRAM -  
 SHEET 2**

SHEET NO.	OF
26	31
GAD FILE: 12412-26-PANL	
DRAWING FILE NO. 4-142-31	

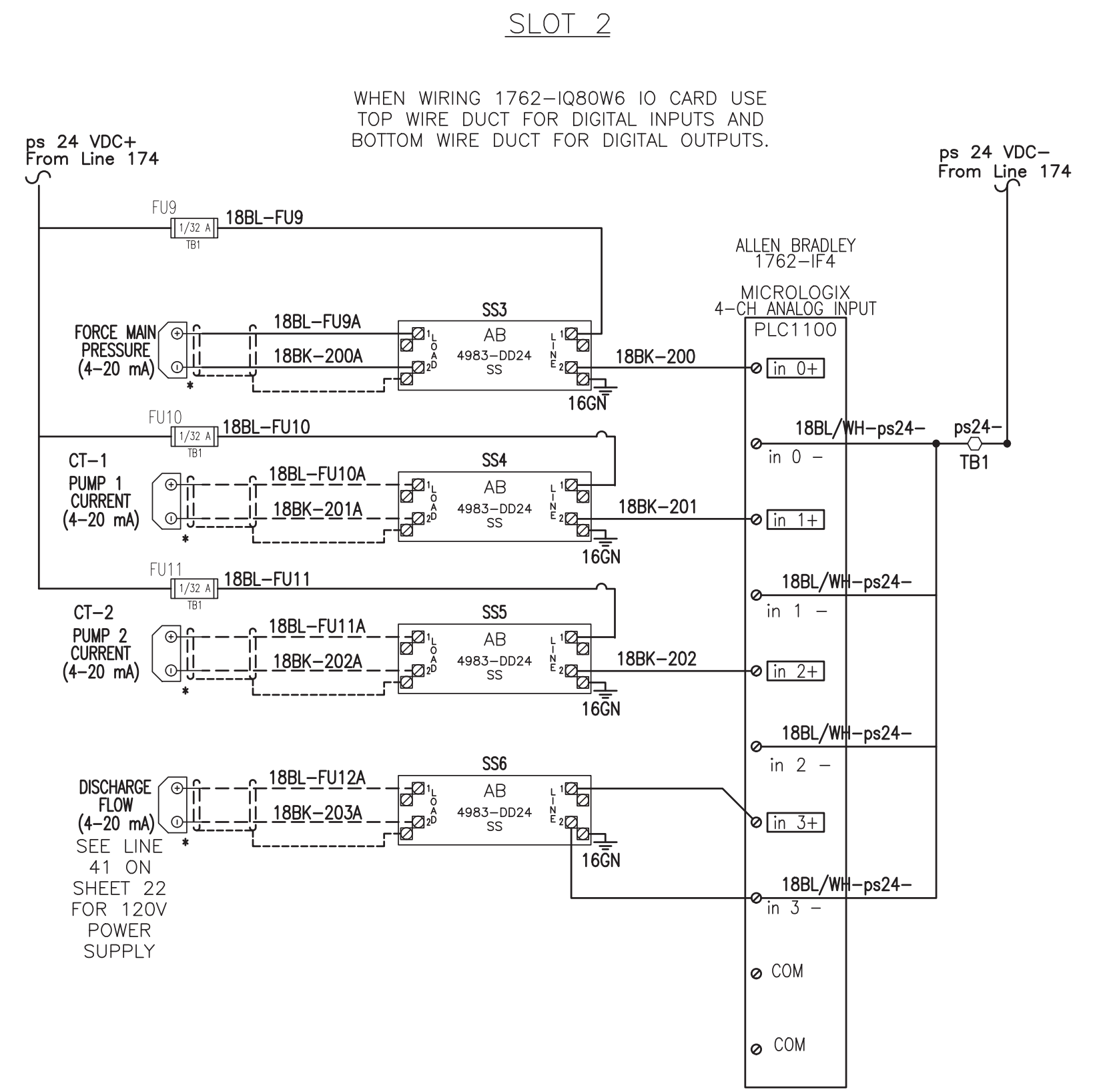
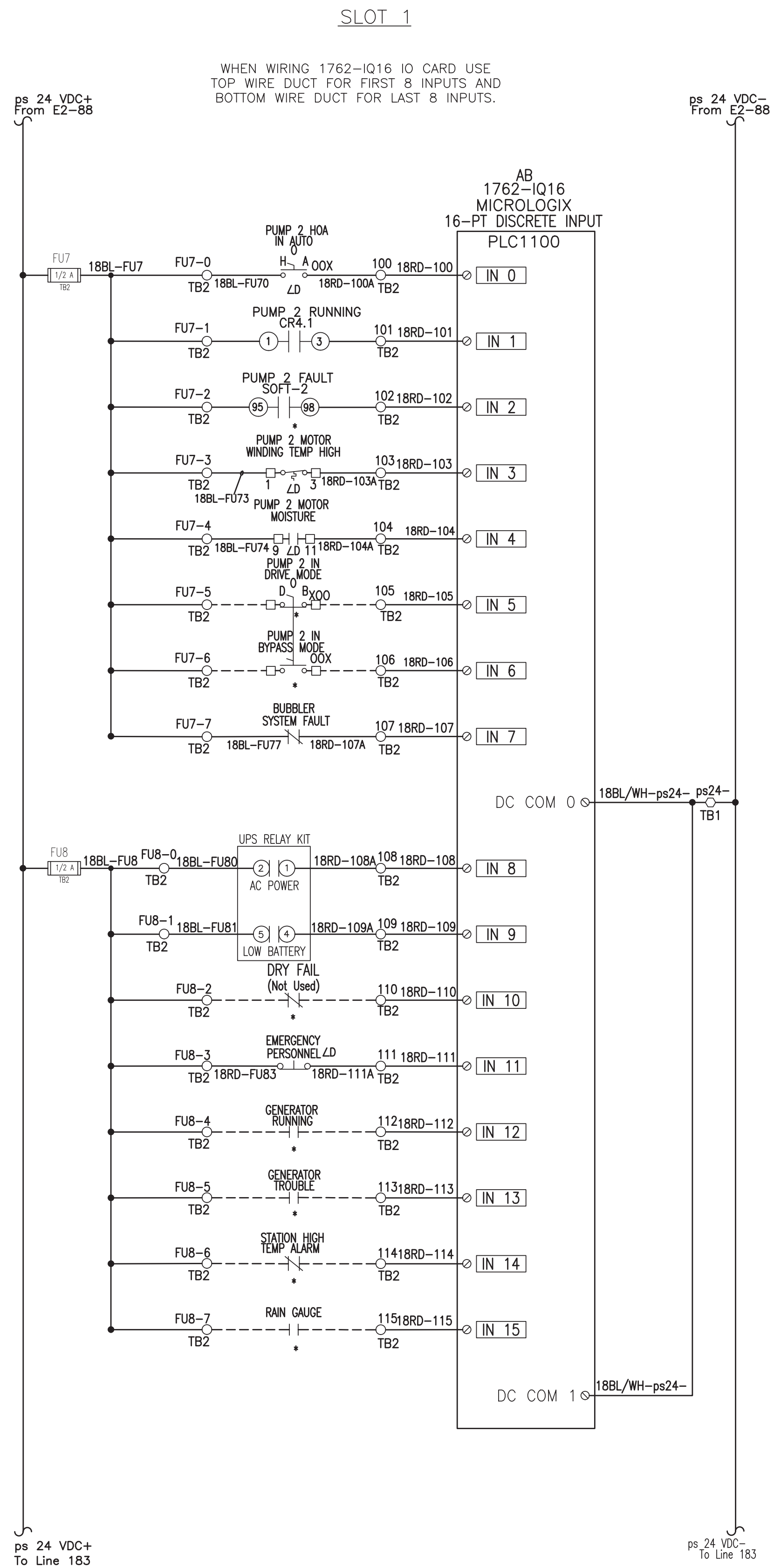
NO.	DATE	BY (CRD)	DESCRIPTION

**CITY OF FORT LAUDERDALE  
 PUBLIC WORKS DEPARTMENT  
 ENGINEERING & ARCHITECTURE**

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

ERIC HAMMOND, P.E.  
 FL LICENSE # PE39048  
 DRAWN BY: H.A. DATE: 04/08/2021  
 DESIGNED BY: H.A. AS NOTED  
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**GENERAL ELECTRICAL NOTES:**

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  - SIERRA MODEL Raven XE V2221E-V CELLULAR RADIO TO BE PROVIDED AND CONFIGURED BY CITY.
  - PUMP SEAL FAIL RELAY. IF NEEDED AS PER SPEC OF PUMP MANUFACTURER.
  - LD DENOTES DEVICE MOUNTED ON PANEL DOOR.
  - WIRING GUIDE:
    - 18BL-FU1 WIRE NUMBER (CHARACTERS TO RIGHT OF DASH ONLY)
    - WIRE COLOR
    - WIRE GAUGE IN AWG
  - \* DENOTES COMPONENT MOUNTED OUTSIDE CONTROL PANEL
  - DENOTES FIELD WIRING OUTSIDE CONTROL PANEL
- TB1 Terminal Block
  - TB2 Terminal Block
  - △ TB3 Terminal Block
  - ⊕ TB2A Terminal Block
  - ◇ TB3A Terminal Block

**DESIGN CRITERIA PACKAGE**

ERIC HAMMOND, P.E.

FL LICENSE # PE39048

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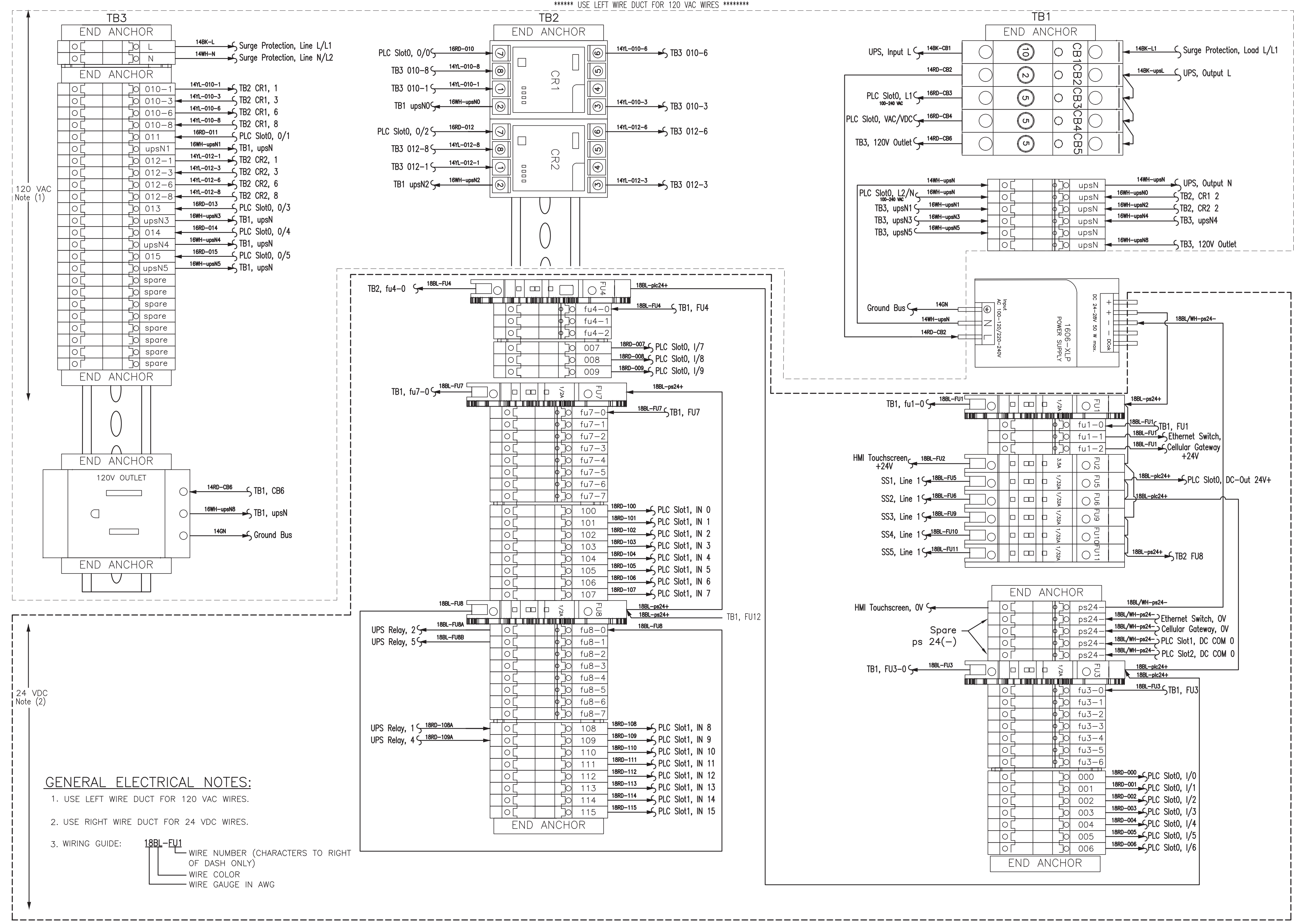
NO.	DATE	BY (CHK'D)	DESCRIPTION

**PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
CONTROL PANEL ELEMENTARY DIAGRAM -  
SHEET 3**

SHEET NO.	OF
27	31
GAD FILE: 12412-27-PANL	
DRAWING FILE NO. 4-142-31	

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P.E. #39048  
EB 5315

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120 VAC  
Note (1)

24 VDC  
Note (2)

**GENERAL ELECTRICAL NOTES:**

1. USE LEFT WIRE DUCT FOR 120 VAC WIRES.
2. USE RIGHT WIRE DUCT FOR 24 VDC WIRES.
3. WIRING GUIDE:
 

	188L-FU1	WIRE NUMBER (CHARACTERS TO RIGHT OF DASH ONLY)
		WIRE COLOR
		WIRE GAUGE IN AWG

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CHECKED BY: E.H.			
FIELD BOOK:			

**CITY OF FORT LAUDERDALE**  
PUBLIC WORKS DEPARTMENT  
**ENGINEERING & ARCHITECTURE**  
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (CRD)	DESCRIPTION

**DESIGN CRITERIA PACKAGE**

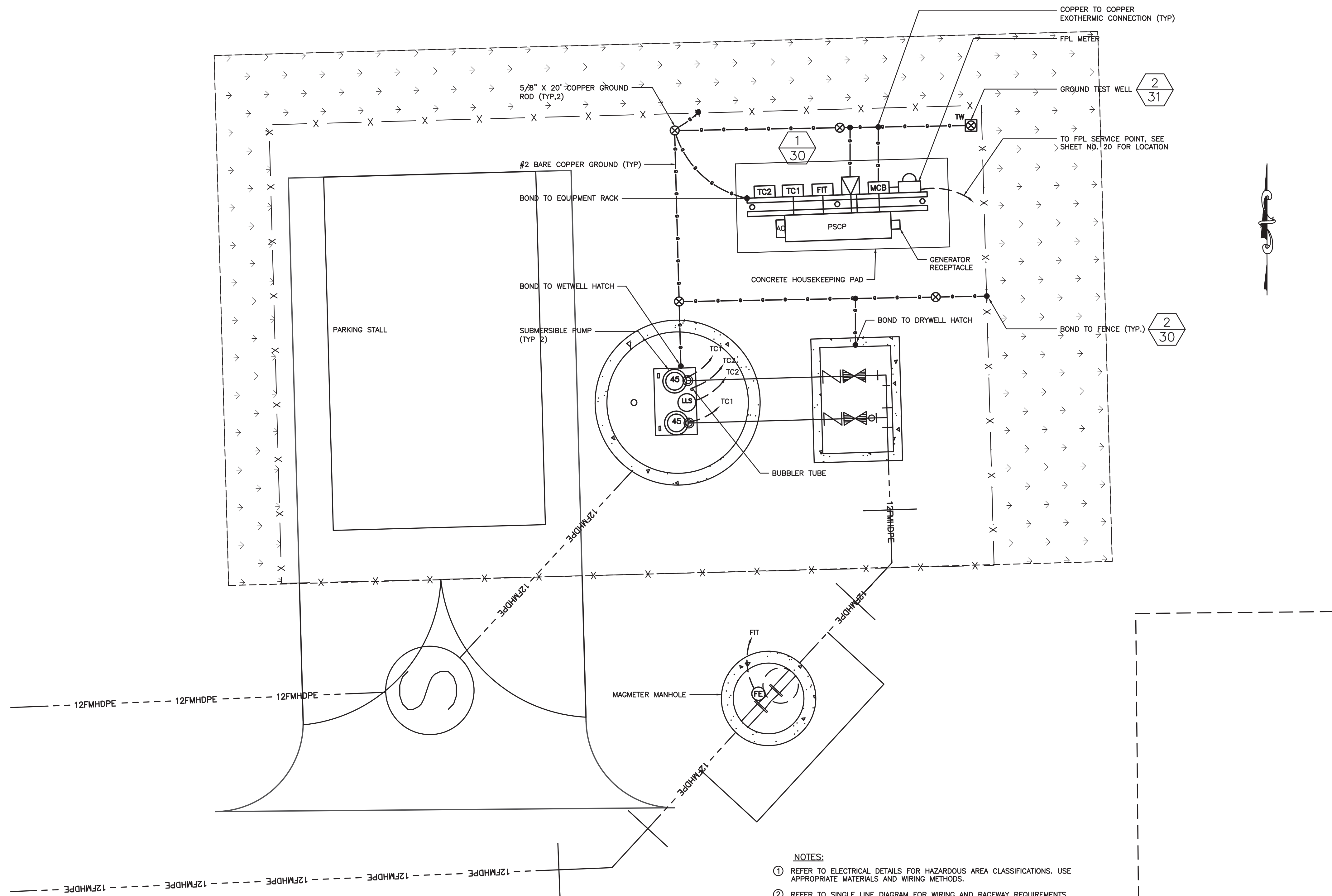
**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**CONTROL PANEL INTERCONNECTION**  
**WIRING DIAGRAM**

SHEET NO.	OF
<b>28</b>	<b>31</b>
GAD FILE: 12412-28-PANL	
DRAWING FILE NO. 4-142-31	



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**ELECTRICAL PLAN VIEW**  
SCALE: 3/8"=1'-0"  
12" 0 1 2 4'

- NOTES:**
- ① REFER TO ELECTRICAL DETAILS FOR HAZARDOUS AREA CLASSIFICATIONS. USE APPROPRIATE MATERIALS AND WIRING METHODS.
  - ② REFER TO SINGLE LINE DIAGRAM FOR WIRING AND RACEWAY REQUIREMENTS.
  - ③ ALL CONDUITS ENTERING THE WET WELL, INCLUDING PIPING FOR BUBBLER TUBE, SHALL TERMINATE WITHIN SIX INCHES OF THE WET WELL ACCESS HATCH OPENING.
  - ④ AVOID MOISTURE TRAPS IN RACEWAY INSTALLATION.
  - ⑤ WHEREVER POSSIBLE, PROVIDE 24" SPACING BETWEEN RACEWAYS HOUSING POWER CONDUCTORS AND RACEWAYS HOUSING 24VDC DISCRETE AND ANALOG CIRCUITS.



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**DESIGN CRITERIA PACKAGE**

**PROJECT # 12412**  
**PUMP STATION A-16 UPGRADE**  
**WASTEWATER DESIGN CRITERIA PACKAGE**  
**ENLARGED ELECTRICAL PLAN**

SHEET NO.	OF
<b>29</b>	<b>31</b>
CAD FILE: 12412-29-PLAN	
DRAWING FILE NO. 4-142-31	

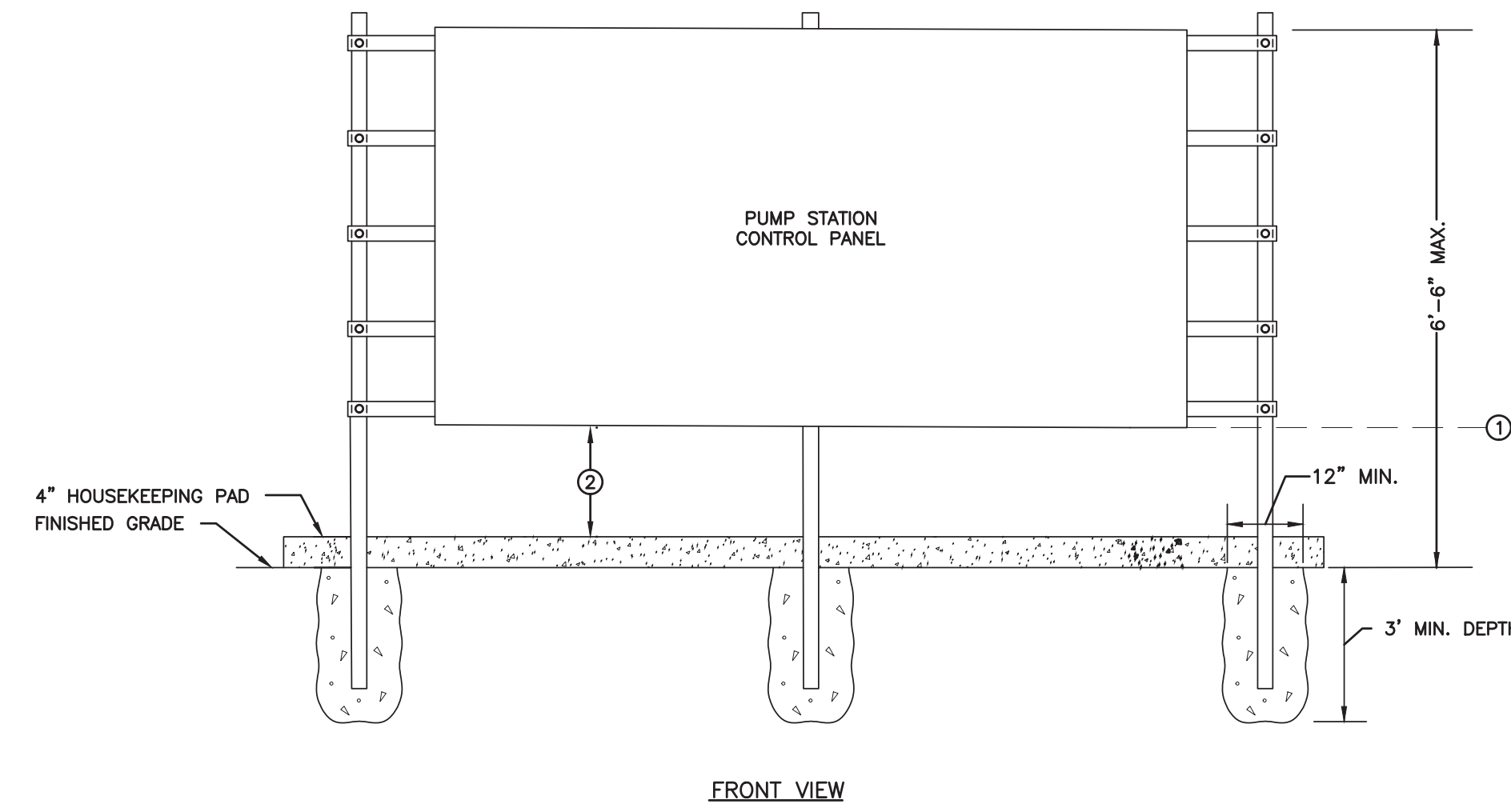
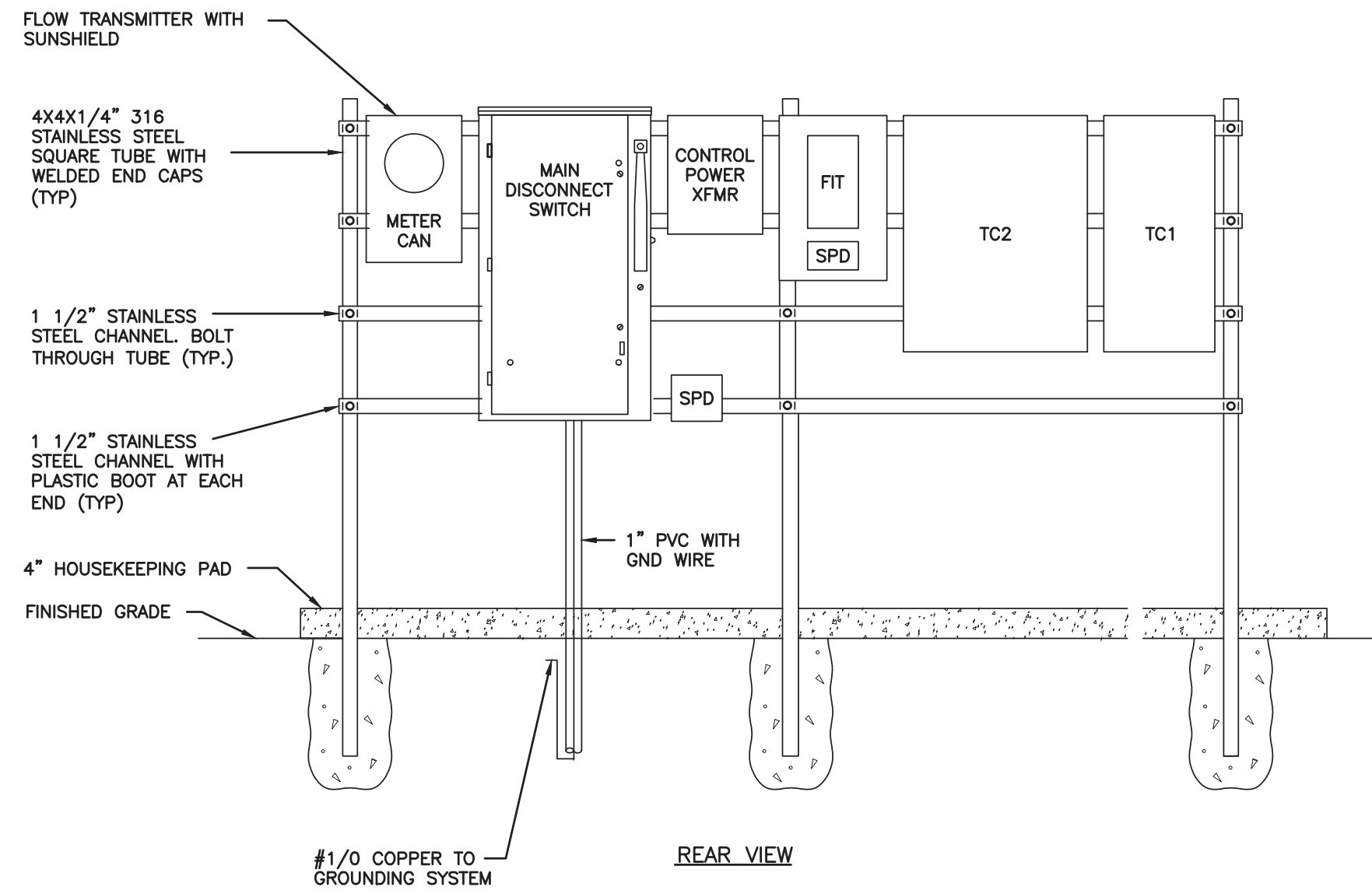
REVISIONS	
NO.	DESCRIPTION

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DRAWN BY:	H.A.	DATE:	04/08/2021
DESIGNED BY:	H.A.	AS NOTED	
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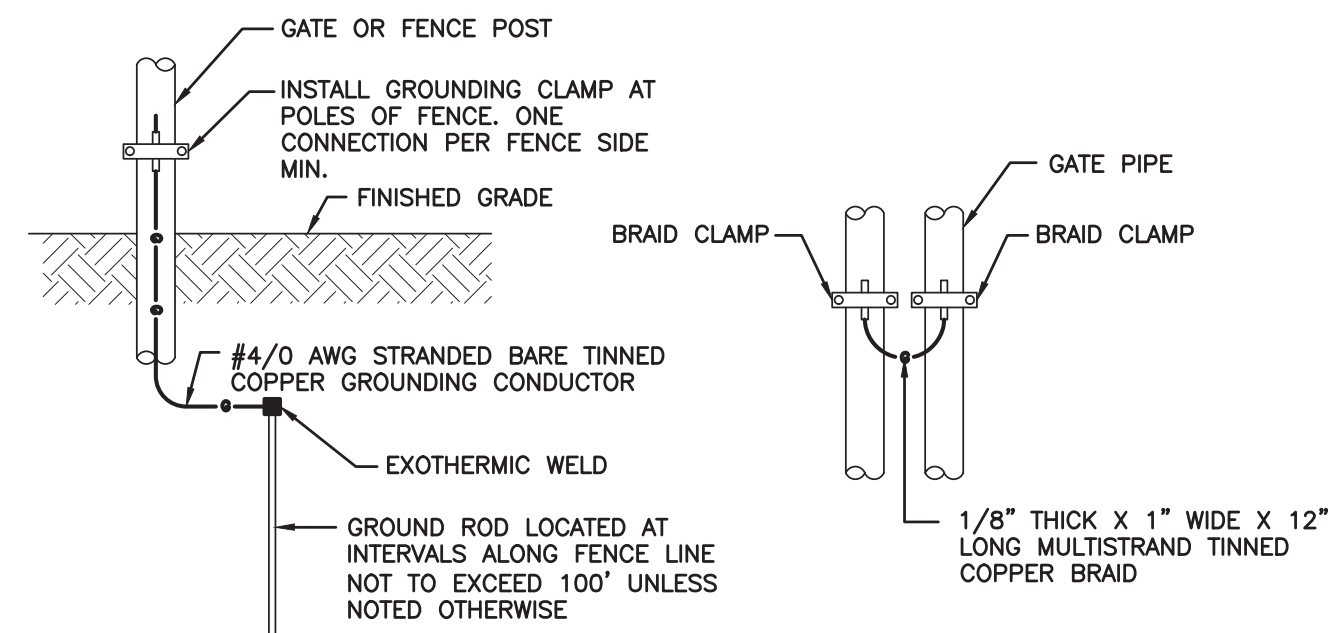
**GENERAL NOTES:**

- A. DEPTH AS REQUIRED TO MEET FLORIDA BUILDING CODE WIND LOAD REQUIREMENTS. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.
- B. ALL HARDWARE SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
- C. REAR SUNSHIELDS ARE REQUIRED FOR ALL ELECTRICAL EQUIPMENT RACKS. SEE TYPICAL EQUIPMENT RACK REAR SUNSHIELD DETAIL BELOW.
- D. REFER TO SINGLE LINE DIAGRAM FOR WIRING AND RACEWAY REQUIREMENTS.
- E. CONTRACTOR MAY REARRANGE THE ORDER OF EQUIPMENT ON THE RACK, TO SUIT THE INSTALLATION.

**KEY NOTES:**

- ① BASE FLOOD ELEVATION IS 6'-0" NAVD 88, FLOOD ZONE X. INSTALL BOTTOM OF ALL ELECTRICAL EQUIPMENT AT BASE FLOOD ELEVATION.
- ② DIMENSION "X", CONFIRM GRADE ELEVATION AND DIMENSION "X" WITH ENGINEER PRIOR TO PANEL INSTALLATION.

1  
30 ELECTRICAL EQUIPMENT RACK FRONT/REAR VIEW ELEVATION  
NOT TO SCALE



2  
30 TYPICAL GATE/FENCE POST GROUNDING DETAIL  
NOT TO SCALE

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**DESIGN CRITERIA PACKAGE**  
PROJECT # 12412  
PUMP STATION A-16 UPGRADE  
WASTEWATER DESIGN CRITERIA PACKAGE  
ELECTRICAL DETAILS - 1

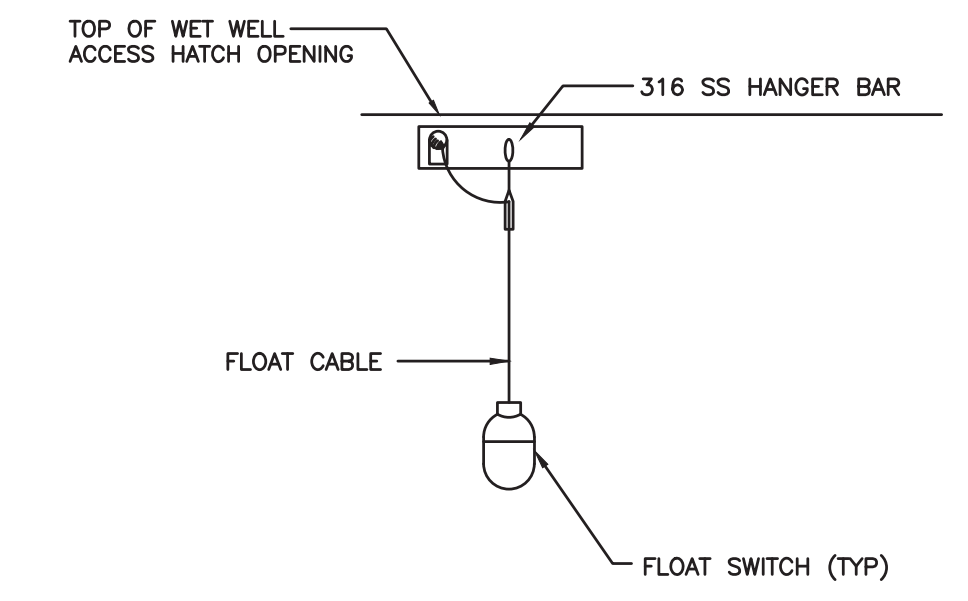
SHEET NO.	OF
30	31
GAD FILE: 12412-30-DETL	
DRAWING FILE NO. 4-142-31	



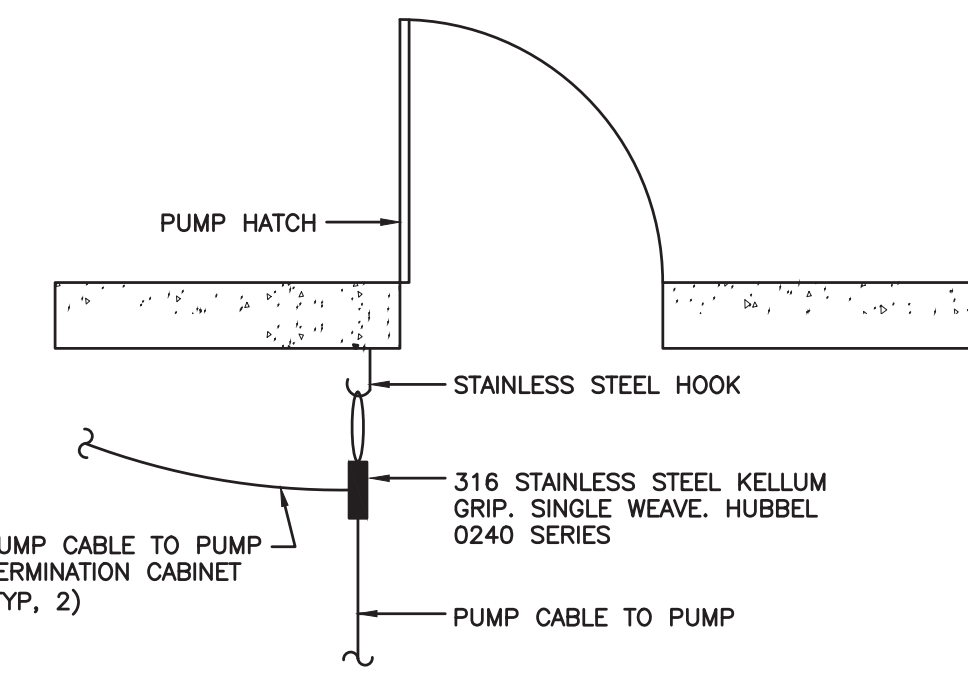
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**DESIGN CRITERIA PACKAGE**

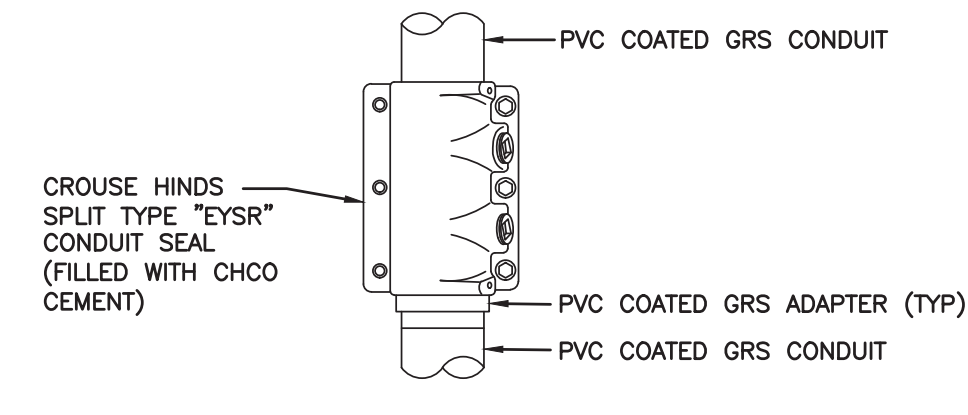
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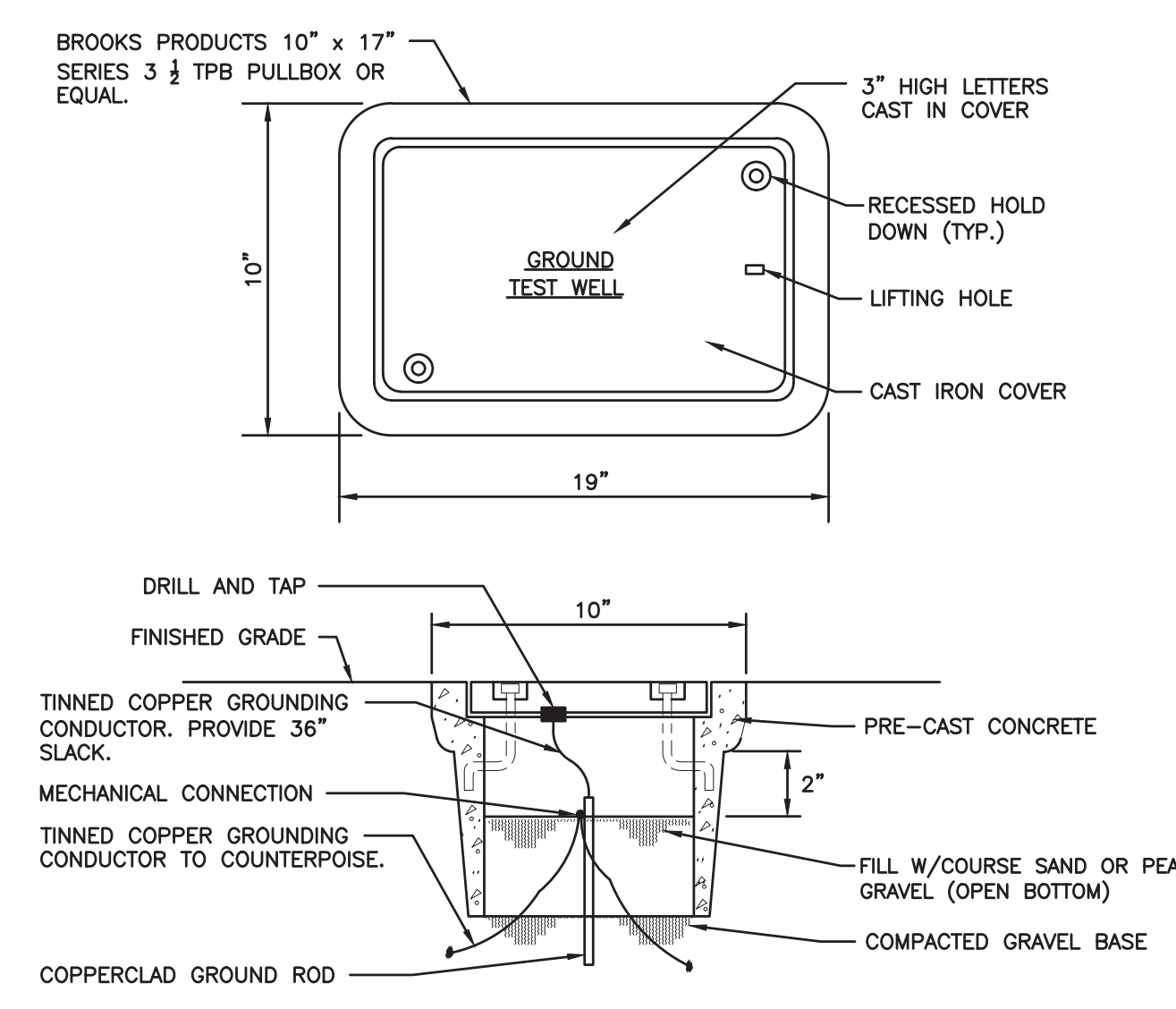
1  
31 TYPICAL LEVEL SWITCH MOUNTING DETAIL  
N.T.S.



3  
31 TYPICAL PUMP CABLE MOUNTING DETAIL  
N.T.S.

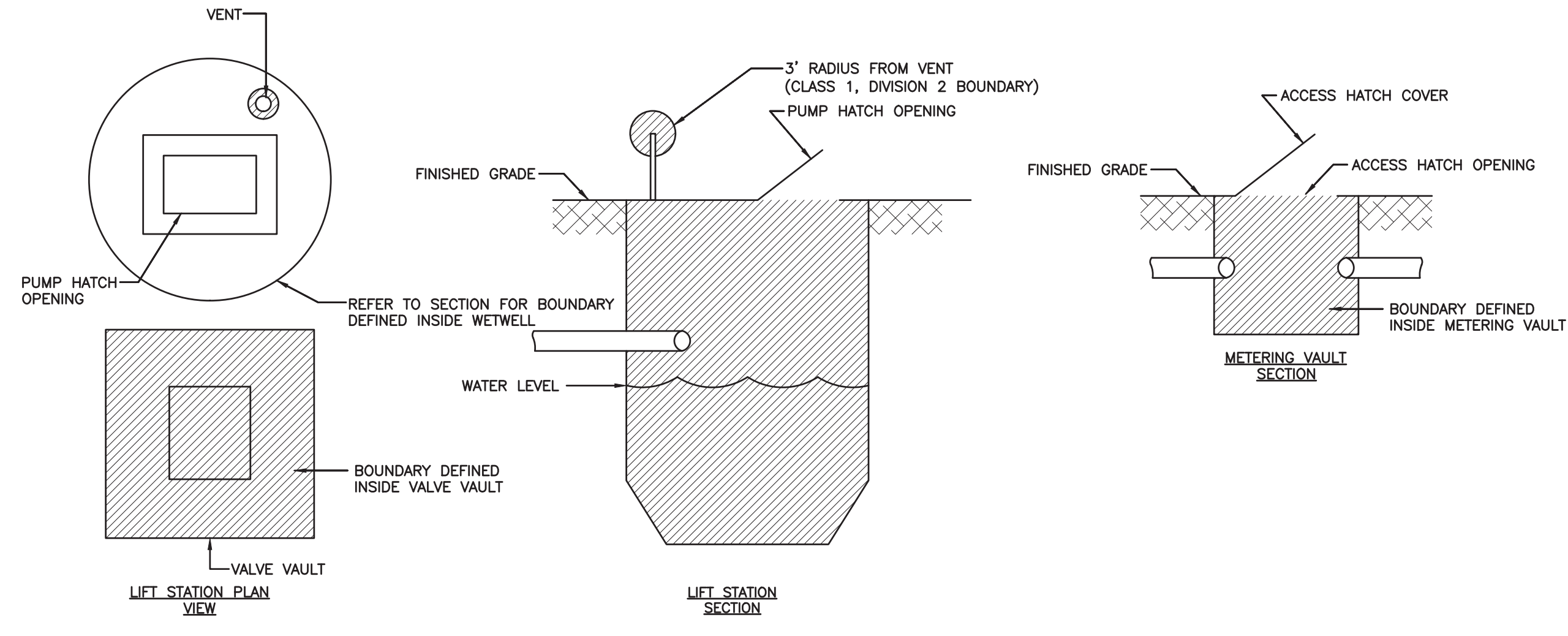


5  
31 CONDUIT SEAL DETAIL  
SCALE: N.T.S.

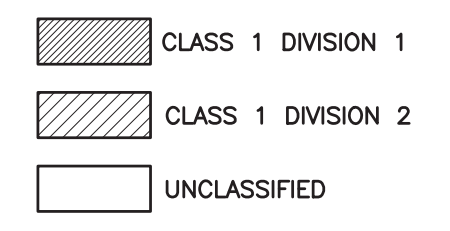


2  
31 TYPICAL GROUND TEST WELL  
SCALE: N.T.S.

NOTES:  
① TEST WELL AND COVER SHALL BE H-20 RATED.



- NOTES:
- ① WET WELL HAZARDOUS AREA CLASSIFICATION ASSIGNED PER 2018 NFPA 820, TABLE 4.2.2, ROW 11-a.
  - ② DRY WELL HAZARDOUS AREA CLASSIFICATION ASSIGNED PER 2018 NFPA 820, TABLE 4.2.2, ROW 12-a.
  - ③ VALVE VAULT HAZARDOUS AREA CLASSIFICATION ASSIGNED PER 2018 NFPA 820, TABLE 4.2.2, ROW 31-a.
  - ④ METERING VAULT HAZARDOUS AREA CLASSIFICATION ASSIGNED PER 2018 NFPA 820, TABLE 4.2.2, ROW 36-a.



4  
31 HAZARDOUS AREA CLASSIFICATION  
SCALE: N.T.S.

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DESIGN CRITERIA PACKAGE

PROJECT # 12412  
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ELECTRICAL DETAILS - 2

SHEET NO.	OF
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