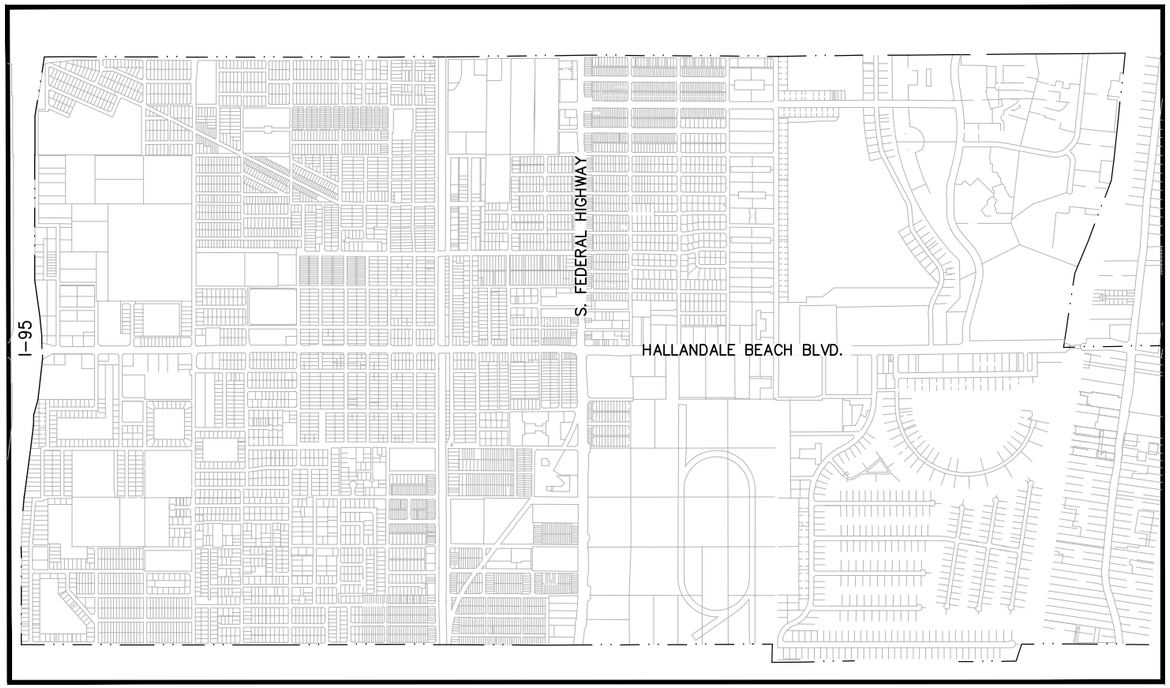
CITY OF HALLANDALE BEACH

STORMWATER PIPE CLEANING PROJECT

EXHIBIT C



LOCATION MAP
N.T.S.

BID # FY 2015-2016-000 STORMWATER PIPE CLEANING

EXHIBIT C CIVIL PLANS

CITY COMMISSION

MAYOR
JOY COOPER

CITY COMMISSIONER
ANTHONY A. SANDERS

CITY COMMISSIONER
KEITH LONDON

CITY COMMISSIONER
WILLIAM JULIAN

CITY COMMISSIONER
MICHELE LAZAROW

INDEX OF SHEETS

SHEET #	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES, & ABBREVIATIONS
3	SUMMARY OF QUANTITIES
4	KEY MAP
5–13	PLAN SHEETS
14–17	MAINTENANCE OF TRAFFIC

NOTES:

1. THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE CITY OF HALLANDALE BEACH STANDARDS, BROWARD COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS, PARTS 1, 2 AND 3, OF THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS, THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AS AMENDED BY THE CONTRACT DOCUMENTS.
2. ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ENLARGED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

Call 48 hours before you dig
It's the Law!
1-800-432-4770
Sunshine State One Call of Florida, Inc.

PREPARED FOR
CITY OF HALLANDALE BEACH
PUBLIC WORKS DEPARTMENT
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

PREPARED BY
A.D.A. ENGINEERING, INC.
8550 NW 33rd STREET, SUITE 202
DORAL, FLORIDA 33122

APRIL 2016

ENGINEER OF RECORD:

JEFFREY VOLLAT
FLORIDA REGISTRATION P.E. No. 63930

GENERAL NOTES:

1. ALL CONSTRUCTON SHALL BE PERFORMED IN A SAFE MANNER. SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND THE MANUAL OF UNIFORM OF TRAFFIC CONTROL DEVICES (MUTCD) SHALL BE STRICTLY OBSERVED.
2. CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM PLANS FOR CONSTRUCTION PURPOSES.
3. THE CONTRACTOR SHALL NOTIFY THE CITY OF HALLANDALE BEACH PUBLIC WORKS AT LEAST 24 HOURS PRIOR TO BEGINNING WORK.
4. WHERE MATERIAL OR DEBRIS HAS WASHED OR FLOWED INTO OR BEEN PLACED IN WATER COURSES, GRAVITY SEWER, DITCHES, DRAINS, CATCH BASINS, OR ELSEWHERE AS A RESULT OF THE CONTRACTOR'S OPERATIONS, SUCH MATERIAL OR DEBRIS SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF DURING PROGRESS OF THE WORK, AND THE AREA KEPT IN A CLEAN AND NEAT CONDITION.
5. THE CONTRACTOR SHALL RESTORE OR REPLACE, WHEN AND AS DIRECTED BY THE CITY OF HALLANDALE BEACH, ANY PUBLIC OR PRIVATE PROPERTY DAMAGED BY THE WORK, EQUIPMENT, EMPLOYEES, OR SUBCONTRACTORS TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS IMMEDIATELY PRIOR TO BEGINNING OF OPERATIONS.
6. CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC FLOW PATTERNS THROUGHOUT ALL CLEANING OPERATIONS.
7. DEWATERING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, SHOULD IT BE REQUIRED.
8. THE SCOPE OF THIS PROJECT IS FOR PIPES 18" – 72" IN DIAMETER ONLY. NO WORK IS TO BE PERFORMED ON PIPES OUT OF THIS RANGE. QUANTITIES DO NOT COUNT ANY PIPE OUT OF THIS RANGE.
9. BID ALTERNATE ITEMS 1A–5A ASSUME 10% OF PIPES WILL NEED REPAIR. CURED–IN–PLACE–PIPE IS THE PREFERRED REPAIR METHODOLOGY.
10. BID ALTERNATE ITEMS 6A–20A ARE ASSUMING ONE–THIRD OF ALL PIPES IN CATEGORY ARE LIGHT CLEANING, ONE–THIRD MEDIUM CLEANING, AND ONE–THIRD HEAVY CLEANING.
11. BID ITEMS 3–7 INCLUDE THE CLEANING, TV INSPECTION, AND DISPOSAL OF MATERIAL IN THE UNIT COSTS.
12. CONTRACTOR SHALL SUBMIT DVD'S OF INSPECTION FOOTAGE CLEARLY LABELED AS TO WHICH RUNS OF PIPE ARE BEING VIEWED TO THE CITY ONCE A MONTH (ON THE 1ST IF POSSIBLE) THROUGHOUT THE DURATION OF THE PROJECT.
13. WATER SOURCE WILL BE CITY FIRE HYDRANTS WHICH WILL REQUIRE A WATER METER FOR CONSTRUCTION WATER USE. CONTRACTOR TO PAY FOR THE WATER AND INCLUDE IN THE DESILTING UNIT PRICING.

ABBREVIATIONS:

AVE. = AVENUE
BLVD. = BOULEVARD
CT. = COURT
DR. = DRIVE
HWY = HIGHWAY
NE = NORTHEAST
NW = NORTHWEST
PL. = PLACE
RD. = ROAD
S = SOUTH
SE = SOUTHEAST
SW = SOUTHWEST
ST. = STREET
TERR. = TERRACE

LEGEND:

EXISTING DRAINAGE MANHOLE
EXISTING DRAINAGE INLET
RIGHT–OF–WAY / LOT LINE
66" EXISTING DRAINAGE PIPE
CITY LIMITS

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	N/A	GEN_NOTES
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

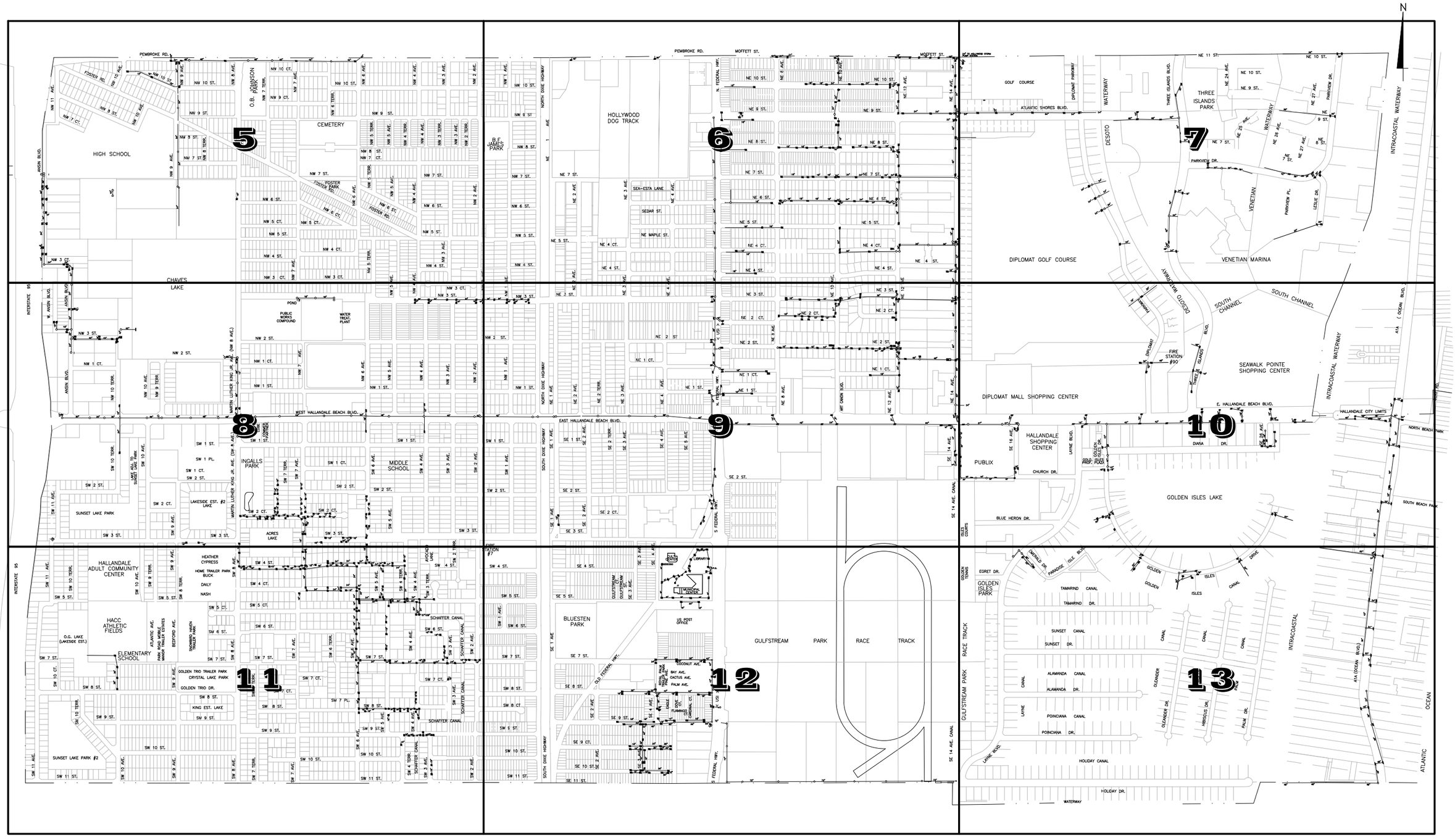
STORMWATER PIPE CLEANING
NOTES, LEGEND, & ABBREVIATIONS

SUMMARY OF QUANTITIES:

ITEM NUMBER	BID ITEM	DESCRIPTION	UNITS	QUANTITY
1	0101-1	MOBILIZATION	LS	1
2	0102-1	MAINTENANCE OF TRAFFIC	LS	1
3	0430-94-1	DESILTING PIPE, 0-24"	LF	47,910
4	0430-94-2	DESILTING PIPE, 25-36"	LF	13,753
5	0430-94-3	DESILTING PIPE, 37-48"	LF	18,621
6	0430-94-4	DESILTING PIPE, 49-60"	LF	10,142
7	0430-94-5	DESILTING PIPE, 61" OR GREATER	LF	4,333
8	0430-94-6	GRADE AND RE-SOD	SY	10
9	0430-94-7	DISPOSAL OF LARGE ITEMS	EA	10
10	0430-94-8	PLUG INSTALLATION & REMOVAL (18-24")	WEEK	1
11	0430-94-9	PLUG INSTALLATION & REMOVAL (25-36")	WEEK	1
12	0430-94-10	PLUG INSTALLATION & REMOVAL (37-48")	WEEK	1
13	0430-94-11	PLUG INSTALLATION & REMOVAL (49-60")	WEEK	1
14	0430-94-12	PLUG INSTALLATION & REMOVAL (61-72")	WEEK	1
15	0430-94-13	4" HYDRAULIC PUMP	HOUR	1
16	0430-94-14	6" HYDRAULIC PUMP	HOUR	1
17	0430-94-15	8" HYDRAULIC PUMP	HOUR	1

BID ALTERNATE:

1A	0450-1	REPAIR DAMAGED STORM PIPE, 0-24"	LF	4,791
2A	0450-2	REPAIR DAMAGED STORM PIPE, 25-36"	LF	1,375
3A	0450-3	REPAIR DAMAGED STORM PIPE, 37-48"	LF	1,862
4A	0450-4	REPAIR DAMAGED STORM PIPE, 49-60"	LF	1,014
5A	0450-5	REPAIR DAMAGED STORM PIPE, 61" OR GREATER	LF	433
6A	0430-94-17	LIGHT CLEANING, 18-24"	LF	15,970
7A	0430-94-18	MEDIUM CLEANING, 18-24"	LF	15,970
8A	0430-94-19	HEAVY CLEANING, 18-24"	LF	15,970
9A	0430-94-20	LIGHT CLEANING, 25-36"	LF	4,458
10A	0430-94-21	MEDIUM CLEANING, 25-36"	LF	4,458
11A	0430-94-22	HEAVY CLEANING, 25-36"	LF	4,458
12A	0430-94-23	LIGHT CLEANING, 37-48"	LF	6,207
13A	0430-94-23	MEDIUM CLEANING, 37-48"	LF	6,207
14A	0430-94-24	HEAVY CLEANING, 37-48"	LF	6,207
15A	0430-94-25	LIGHT CLEANING, 49-60"	LF	3,381
16A	0430-94-26	MEDIUM CLEANING, 49-60"	LF	3,381
17A	0430-94-27	HEAVY CLEANING, 49-60"	LF	3,381
18A	0430-94-28	LIGHT CLEANING, 61-72"	LF	1,444
19A	0430-94-29	MEDIUM CLEANING, 61-72"	LF	1,444
20A	0430-94-30	HEAVY CLEANING, 61-72"	LF	1,444



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ADAENG
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 0000321 2

BY: _____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	N.T.S.	KEY_SHEET
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

KEY SHEET

SHEET 4 OF 17

N

PEMBROKE RD.

SEE SHEET 6

SEE SHEET 8

HIGH SCHOOL

CEMETERY

O.B. JOHNSON PARK

FOSTER PARK

FOSTER RD.

CHAVES

ANSIN BLVD.

NW 11 AVE.

NW 10 AVE.

NW 9 AVE.

NW 8 AVE.

NW 7 AVE.

NW 6 AVE.

NW 4 AVE.

NW 3 AVE.

NW 2 AVE.

NW 10 ST.

NW 9 ST.

NW 8 ST.

NW 7 ST.

NW 6 ST.

NW 5 ST.

NW 4 ST.

NW 3 CT.

NW 7 CT.

NW 9 CT.

NW 10 CT.

NW 8 TERR.

NW 6 TERR.

NW 5 TERR.

NW 4 TERR.

NW 3 TERR.

NW 2 TERR.

NW 6 CT.

NW 5 CT.

FOSTER RD.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A·D·A

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 5 OF 17

N

PEMBROKE RD.

MOFFETT ST.

MOFFETT ST.

N. FEDERAL HWY.

NORTH DIXIE HIGHWAY

NW 1 AVE.

NW 10 ST.

NW 9 ST

B.F. JAMES PARK

NW 8 ST.

NW 7 ST.

NW 6 ST.

NW 5 ST.

NW 4 ST.

NE 1 AVE

HOLLYWOOD DOG TRACK

NE 7 ST.

NE 2 AVE

NE 3 AVE.

NE 4 AVE.

SEA-ESTA LANE

SEDAR ST.

NE MAPLE ST.

NE 5 ST.

NE 4 CT.

NE 4 ST.

NE 10 ST.

NE 8 AVE.

NE 10 AVE.

NE 12 AVE.

NE 14 AVE.

NE 9 ST.

NE 8 ST.

NE 7 ST.

NE 6 ST.

NE 5 ST.

NE 4 CT.

NE 4 ST.

SEE SHEET 5

SEE SHEET 7

SEE SHEET 9

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY: _____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 6 OF 17

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 7 OF 17

SEE SHEET 5

SEE SHEET 9

SEE SHEET 11

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A·D·A
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY: _____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 8 OF 17

SEE SHEET 6

SEE SHEET 12

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A·D·A
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SEE SHEET 7

SEE SHEET 9

DIPLOMAT MALL SHOPPING CENTER

PARKWAY

DESOTO WATER

SOUTH CHANNEL

SOUTH CHANNEL

DIPLOMAT

FIRE STATION #90

THREE ISLANDS BLVD.

SEAWALK POINTE SHOPPING CENTER

INTRACOASTAL WATERWAY

A1A (OCEAN BLVD.)

N

E. HALLANDALE BEACH BLVD.

HALLANDALE CITY LIMITS

NORTH BEACH

SE 16 AVE.

HALLANDALE SHOPPING CENTER

LAYNE BLVD.

GOLDEN ISLES DR.

GOLD. ISLES PROF. PLAZA

DIANA DR.

SE 26 AVE.

PUBLIX

CHURCH DR.

GOLDEN ISLES LAKE

SOUTH BEACH PAR

BLUE HERON DR.

ISLES COURTS

SEE SHEET 13

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A·D·A
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

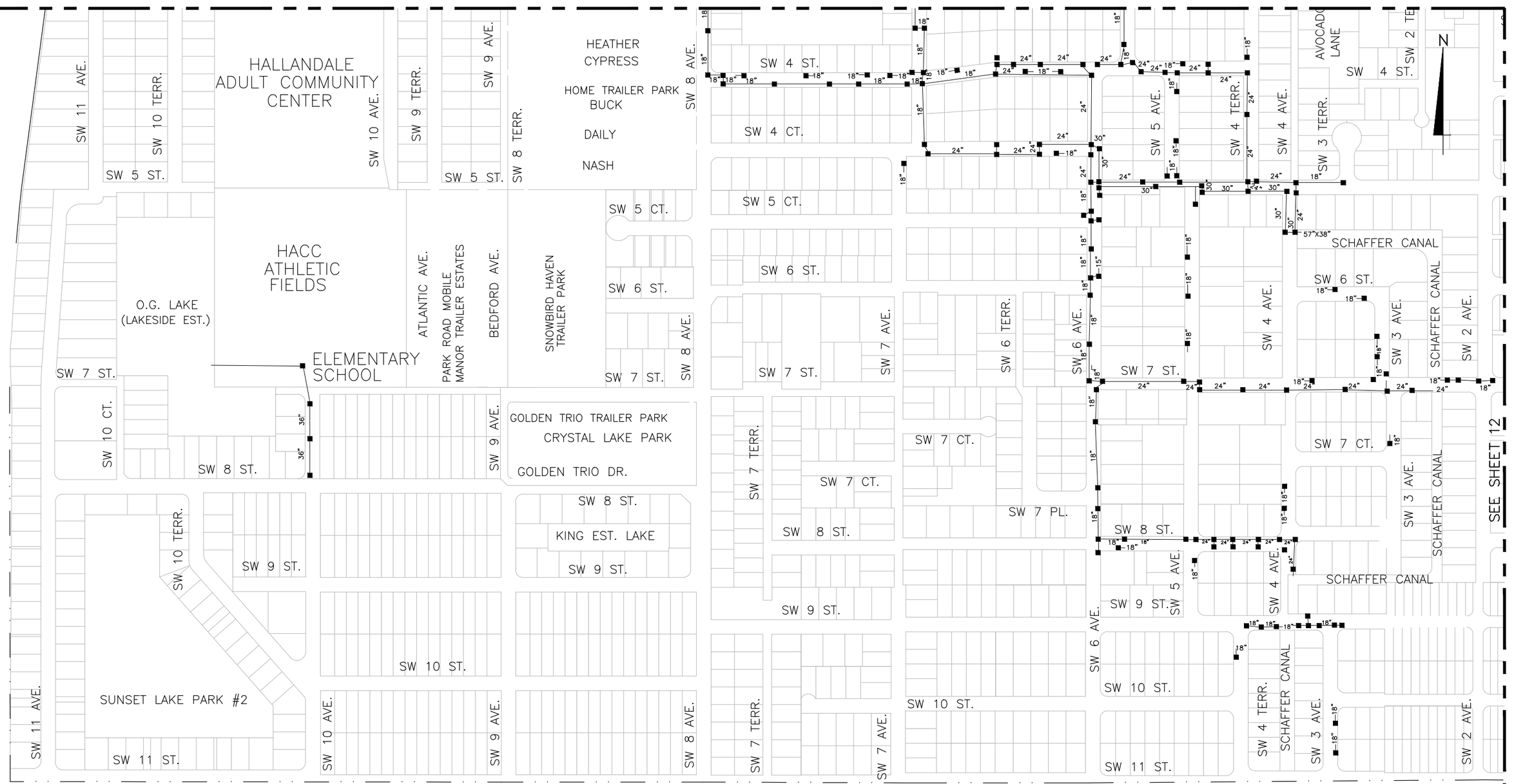
CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 10 OF 17



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A·D·A
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 0000003212

BY:
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE: 04/15/16	SCALE: 1"=500'	CADD FILE: PLAN_SHEETS
DESIGN BY: J.V.	DRAWN BY: M.K.	CHECKED BY: B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 11 OF 17

SEE SHEET 9

TATION #7

SW 4 ST.

SW 5 ST.

SW 1 AVE.

SW 6 ST.

SW 7 ST.

SEE SHEET 11

SW 8 ST.

SW 8 CT

SW 9 ST.

SW 10 ST.

SW 11 ST.

SOUTH DIXIE HIGHWAY

SE 4 ST.

SE 5 ST.

GULFSTREAM CT.

GULFSTREAM ST.

SE 3 AVE.

SE 4 AV

CULT CENTER

SE00C092

LIBRARY

P.S.

MUNICIPAL CENTER

BLUESTEN PARK

US POST OFFICE

SE 1 AVE

SE 7 ST.

OLD FEDERAL HWY.

SE 8 ST.

SE 2 AVE

SE 9 ST.

SE 4 AVE.

EAGLE

DOVE CT.

FLAMINGO CT.

CARDINAL CT.

SE 9 CT.

SE 2 AVE.

SE 3 AVE.

SE 10 ST.

SE 11 ST.

COCONUT AVE.

ROYAL PALM TRAILER PARK

PINE AVE.

BAY AVE.

CACTUS AVE.

PALM AVE.

USI

S FEDERAL HWY.

GULFSTREAM PARK RACE TRACK

SEE SHEET 13

SE 14 AVE. CANAL

N

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A.D.A.
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 0000321 2

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 12 OF 17

SEE SHEET 10

SEE SHEET 12

GOLDEN TENNIS

EGRET DR.

GOLDEN ISLES PARK

RACE TRACK

GULFSTREAM PARK

EMERALD DR.

PARADISE ISLE BLVD.

GOLDEN ISLES DRIVE

GOLDEN ISLES CANAL

TAMARIND CANAL

TAMARIND DR.

SUNSET CANAL

SUNSET DR.

ALAMANDA CANAL

ALAMANDA DR.

LAYNE CANAL

POINCIANA CANAL

POINCIANA DR.

LAYNE BLVD.

HOLIDAY CANAL

HOLIDAY DR.

WATERWAY

OLEANDER CANAL

OLEANDER DR.

HIBISCUS CANAL

HIBISCUS DR.

PALM CANAL

PALM DR.

INTRACOASTAL

A1A (OCEAN BLVD.)

OCEAN

ATLANTIC

N

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

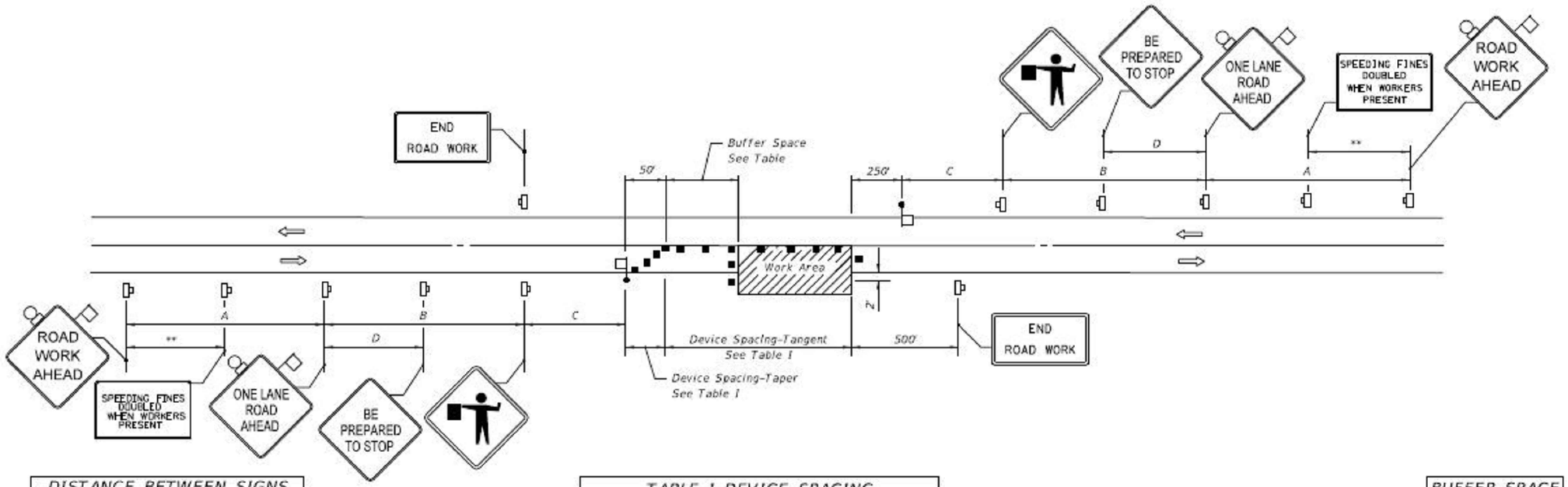
CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	1"=500'	PLAN_SHEETS
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

PLAN SHEET

SHEET 13 OF 17



DISTANCE BETWEEN SIGNS				
Speed (mph)	Spacing (ft.)			
	A	B	C	D
40 or less	200	200	200	100
45	350	350	350	175
50	500	500	500	250
55 or greater	2640	1640	1000	500

* The ROAD WORK 1 MILE sign may be used as an alternate to the ROAD WORK AHEAD sign.

** 500' beyond the ROAD WORK AHEAD sign or midway between signs whichever is less.

*** BE PREPARED TO STOP sign may be omitted for speeds of 45 MPH or less.

TABLE I DEVICE SPACING				
Speed (mph)	Max. Distance Between Devices (ft.)			
	Cones or Tubular Markers		Type I or Type II Barricades or Vertical Panels or Drums	
	Taper	Tangent	Taper	Tangent
25 to 45	20	50	20	50
50 to 70	20	50	20	100

BUFFER SPACE	
Speed (mph)	Dist. (ft.)
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

When Buffer Space cannot be attained due to geometric constraints, the greatest attainable length shall be used, but not less than 200 ft.

SYMBOLS

- Work Area
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Automated Flagger Assistance Devices (AFAD), With Gate
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. Work operations shall be confined to one traffic lane, leaving the opposite lane open to traffic.
2. Additional one-way control may be effected by the following means:
   1. Flag-carrying vehicle;
   2. Official vehicle;
   3. Pilot vehicles;
   4. Traffic signals.

   When flaggers are the sole means of one-way control, the flaggers shall be in sight of each other or in direct communication at all times.
3. The ONE-LANE ROAD signs are to be fully covered and the FLAGGER signs either removed or fully covered when no work is being performed and the highway is open to two-way traffic.
4. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
5. The two channelizing devices directly in front of the work area and the one channelizing device directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
6. For Temporary Raised Rumble Strips, general TCZ requirements and additional information, refer to Index No. 600.

DURATION NOTES

1. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed limit is 45 mph or less.
   c. No sight obstructions to vehicles approaching the work area for a distance equal to the buffer space.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

2-LANE, 2-WAY WORK W/IN TRAVEL WAY

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A.D.A.
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 0000321

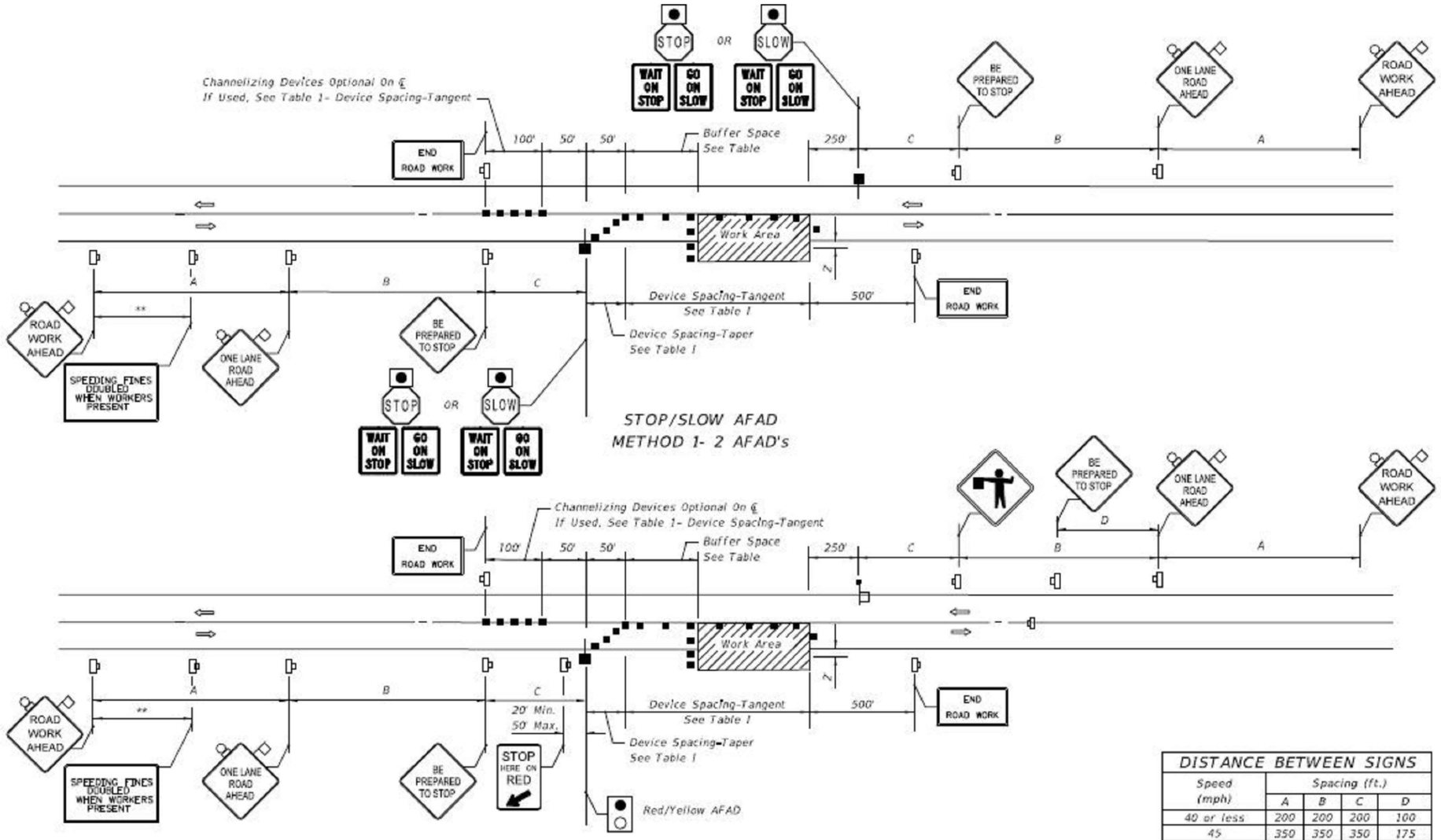
BY:
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE: 04/15/16	SCALE: N.T.S.	CADD FILE: MOT
DESIGN BY: J.V.	DRAWN BY: M.K.	CHECKED BY: B.W.

STORMWATER PIPE CLEANING

MAINTENANCE OF TRAFFIC



DISTANCE BETWEEN SIGNS				
Speed (mph)	Spacing (ft.)			
	A	B	C	D
40 or less	200	200	200	100
45	350	350	350	175
50	500	500	500	250
55 or greater	2640	1640	1000	500

* (See Sheet 1 Notes)
** (See Sheet 1 Notes)

AUTOMATED FLAGGER ASSISTANCE DEVICES (AFAD) NOTES

1. AFAD's shall only be used in situations where there is only one lane of approaching traffic in the direction to be controlled.
2. When used at nighttime, the AFAD flagging station shall be illuminated.
3. When the AFAD is not in use, it shall be moved outside the clear zone or be shielded by a barrier or crash cushion and the signs associated with the AFAD shall be removed or covered.
4. Duration Notes shown on sheet 1 of 2 do not apply when AFAD are used.
5. Only qualified flaggers who have been trained in the operation of the AFAD may operate the AFAD. When in use, each AFAD must be in view of and attended at all times by the flagger operating the device. Use two flaggers and one of the following methods in the deployment of AFAD:
   Method 1: Place an AFAD at each end of the temporary traffic control zone.
   Method 2: Place an AFAD at one end of the temporary traffic control zone and a flagger at the opposite end.

A single flagger may simultaneously operate two AFAD (Method 1) or may operate a single AFAD on one end of the temporary traffic control zone while being the flagger at the opposite end of the temporary traffic control zone (Method 2) if all four of the following conditions are present:

a. The flagger has an unobstructed view of the AFAD(s);
b. The flagger has an unobstructed view of approaching traffic in both directions; and
c. For Method 1, the AFAD's are less than 800 ft apart. For Method 2, the AFAD and the flagger are less than 800 ft apart.
d. Ensure two trained flaggers are available on-site to provide normal flagging operations should an AFAD malfunction.

2–LANE, 2–WAY WORK W/IN TRAVEL WAY

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY:
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

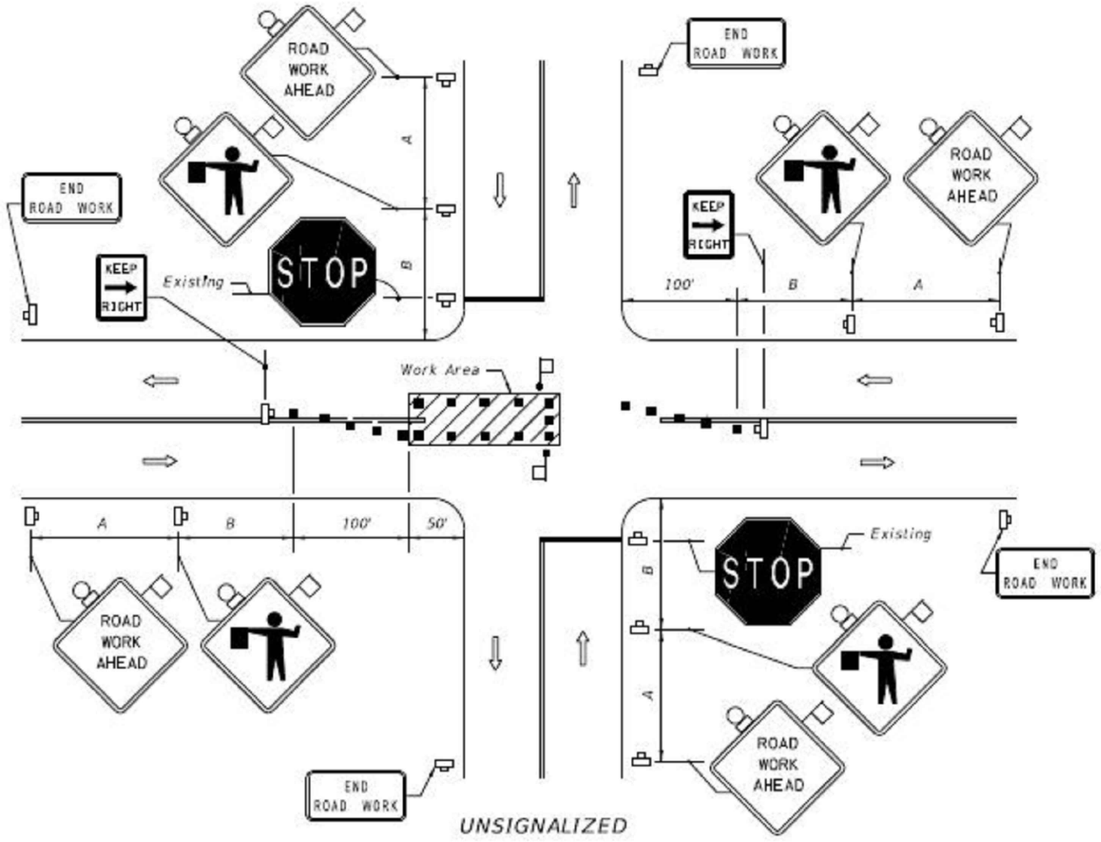
CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

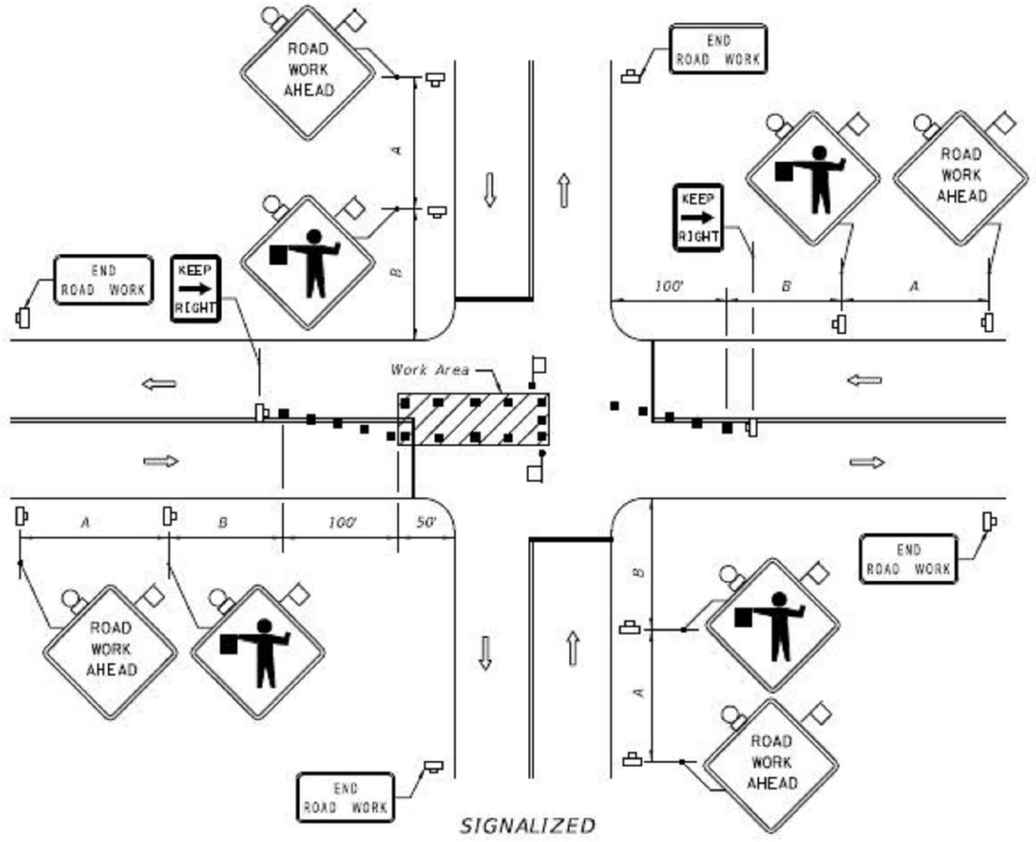
DATE:	SCALE:	CADD FILE:
04/15/16	N.T.S.	MOT
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

MAINTENANCE OF TRAFFIC

SHEET 15 OF 17





SYMBOLS

- Work Area
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Stop Bar
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. The FLAGGER legend sign may be substituted for the symbol sign.
2. When vehicles in a parking zone block the line of sight to TCZ signs, the signs shall be post mounted and located in accordance with Index No. 17302.
3. If the work space extends across a crosswalk, the crosswalk should be closed using the information in Index No. 660.
4. Flaggers shall be located where they can control more than one direction of traffic.

   Flaggers shall be in sight of each other or in direct communication at all times.
5. Maximum spacing between channelizing devices shall be not greater than 20'.
6. Temporary signal phasing modifications are to be approved by the District Traffic Operations Engineer prior to the beginning of work.
7. For Temporary Raised Rumble Strips, general TCZ requirements and additional information, refer to Index No. 600.

DURATION NOTES

1. ROAD WORK AHEAD AND END ROAD WORK sign may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed is 45 mph or less.
   c. No sight obstructions to vehicles approaching the work area for a distance equal to A plus B.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.

DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.)	
	A	B
40 mph or less	200	200
45 mph	350	350

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF A PORTION OF ONE OR MORE TRAFFIC LANES IN AN INTERSECTION.

2–LANE, 2–WAY WORK IN INTERSECTION

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 00003212

BY: _____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

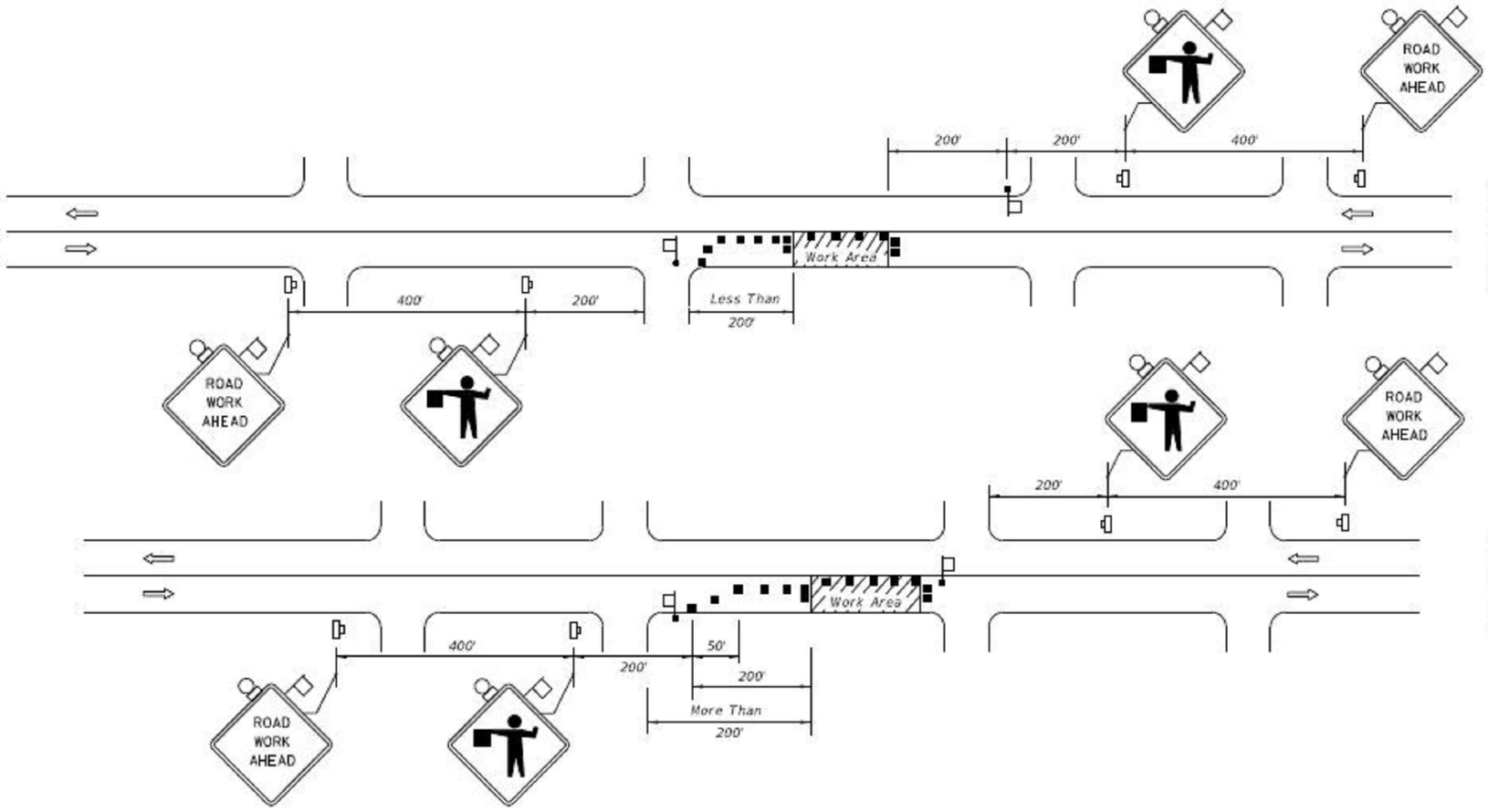
CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	N.T.S.	MOT
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

MAINTENANCE OF TRAFFIC

SHEET 16 OF 17



CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF ONE TRAFFIC LANE, FOR WORK AREAS LESS THAN 200' DOWNSTREAM FROM AN INTERSECTION FOR A PERIOD OF MORE THAN 60 MINUTES.

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH ON THE PAVEMENT REQUIRING THE CLOSURE OF ONE TRAFFIC LANE, FOR WORK AREAS 200' OR MORE DOWNSTREAM FROM AN INTERSECTION FOR A PERIOD OF MORE THAN 60 MINUTES.

SYMBOLS

- Work Area
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Channelizing Device (See Index No. 600)
- Work Zone Sign
- Flagger
- Lane Identification + Direction of Traffic

GENERAL NOTES

1. Work operations shall be confined to one travel lane, leaving the opposing travel lane open to traffic.
2. When vehicles in a parking zone block the line of sight to TCZ signs or when TCZ signs encroach on a normal pedestrian walkway, the signs shall be post mounted and located in accordance with Index No. 17302.
3. If work area is confined to an outside auxiliary lane, the work area shall be barricaded and the FLAGGER signs replaced by ROAD WORK AHEAD signs. Flaggers are not required.
4. Flaggers shall be in sight of each other or in direct communication at all times.
5. The FLAGGER legend sign may be substituted for the symbol sign.
6. The maximum spacing between devices shall be no greater than 25.'
7. For Temporary Raised Rumble Strips, general TCZ requirements and additional information, refer to Index No. 600.
8. The two channelizing devices directly in front and directly at the end of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.

DURATION NOTES

1. ROAD WORK AHEAD sign may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Speed is 45 mph or less.
   c. No sight obstructions to vehicles approaching the work area for a distance of 600 feet.
   d. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   e. Volume and complexity of the roadway has been considered.

2–LANE, 2–WAY WORK NEAR INTERSECTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

A.D.A.
8550 N.W. 33RD STREET • SUITE 202
DORAL, FLORIDA 33122
PHONE (305) 551-4608 • FAX (305) 551-8977
WWW.ADAENG.NET EB # 0000321 2

BY:_____
JEFFREY VOLLAT
P.E. No. 63930
CIVIL ENG. STATE OF FL.

CITY OF HALLANDALE BEACH
630 NW 2ND STREET
HALLANDALE BEACH, FL 33009

DATE:	SCALE:	CADD FILE:
04/15/16	N.T.S.	MOT
DESIGN BY:	DRAWN BY:	CHECKED BY:
J.V.	M.K.	B.W.

STORMWATER PIPE CLEANING

MAINTENANCE OF TRAFFIC

SHEET 17 OF 17