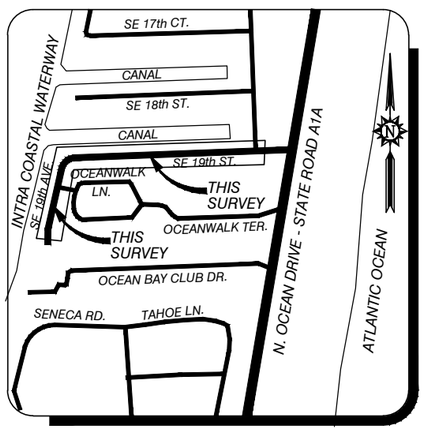
LAUDERDALE BY THE SEA

SE 19TH STREET STORMWATER IMPROVEMENTS

CHEN MOORE & ASSOCIATES PROJECT NO.: 120.058
DECEMBER 2012

BID SET



LOCATION MAP

NOT TO SCALE

CHEN MOORE AND ASSOCIATES

CIVIL AND ENVIRONMENTAL ENGINEERS
500 WEST CYPRESS CREEK ROAD, SUITE 630
FORT LAUDERDALE, FLORIDA 33309
FLORIDA CORPORATE ENGINEERING LICENSE NUMBER 4593

INDEX TO DRAWINGS

SHEET	DESCRIPTION
1	COVER SHEET
2-3	EXISTING CONDITIONS
4-5	STORMWATER IMPROVEMENTS
6-7	RESTORATION
8-9	DETAILS & NOTES

TOWN COMMISSIONERS

MAYOR:	ROSEANN MINNET
VICE MAYOR:	STUART DODD
COMMISSION:	BIRUTE ANN CLOTTEY
	SCOT SASSER
	CHRIS VINCENT
TOWN STAFF:	BUD BENTLEY
	DON PRINCE

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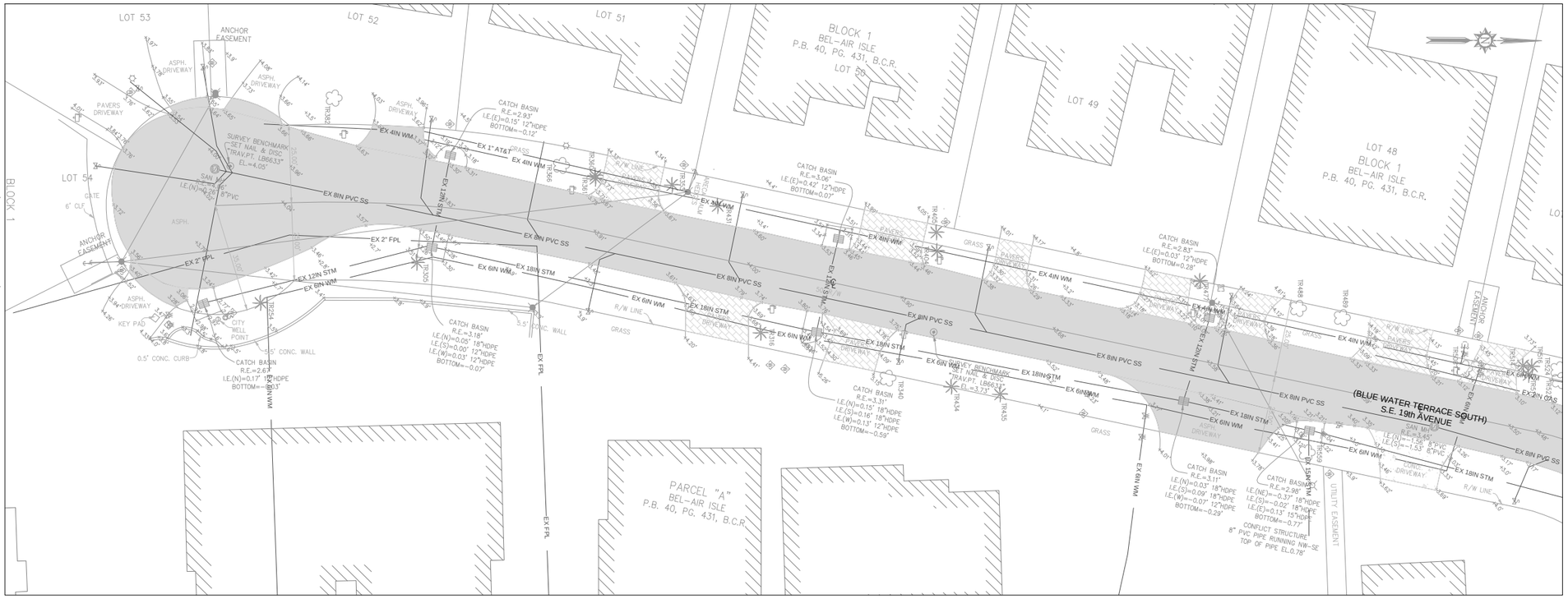
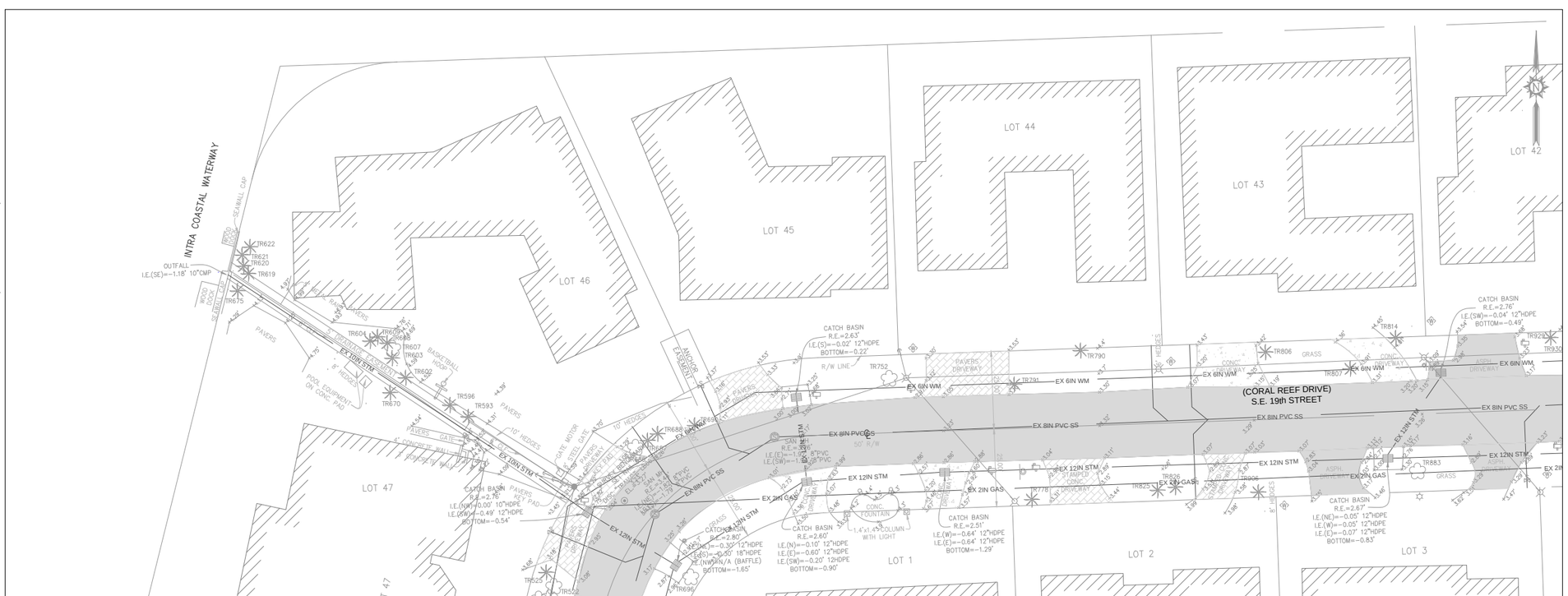
ENGINEER OF RECORD: JASON MCCLAIR P.E.
FLORIDA P.E. REGISTRATION NUMBER: 56962

ALL ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)



HATCH LEGEND:

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE DRIVEWAY
- EXISTING SPECIALTY DRIVEWAY



PERMIT SET
MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

MATERIAL
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NOTICE
INSPECTION REQUIRED
48 HRS. PRIOR TO COMMENCING ANY WORK IN THE PUBLIC RIGHT-OF-WAY CONTACT DON PRINCE WITH THE TOWN OF LAUDERDALE-BY-THE-SEA AT 954-776-0576 AS WELL AS CHEN MOORE AND ASSOCIATES AT 954-730-0707

NOTE
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LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR IS TO POTHOLE AHEAD OF EXCAVATION TO AVOID ANY CONFLICT WTH EXISTING UTILIES.

CONTRACTOR TO USE CAUTION WHEN WORKING UNDER OR AROUND OVERHEAD POWER LINES

0 1/2 1

IF THIS BAR MEASURES 1", THEN THIS DRAWING IS AT FULL SCALE (1" = 20')

NO.	DATE	REVISION	BY
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TOWN OF LAUDERDALE BY THE SEA

JASON MCCLAIR, P.E.
CIVIL ENGINEER
FL. Reg. No. 56962

CHEN MOORE
ASSOCIATES
800 W. Cypress Creek Rd Suite 630
Fort Lauderdale, FL 33309
Tel: 954-730-0707
EB 0004593

LAUDERDALE BY THE SEA
SE 19TH STREET

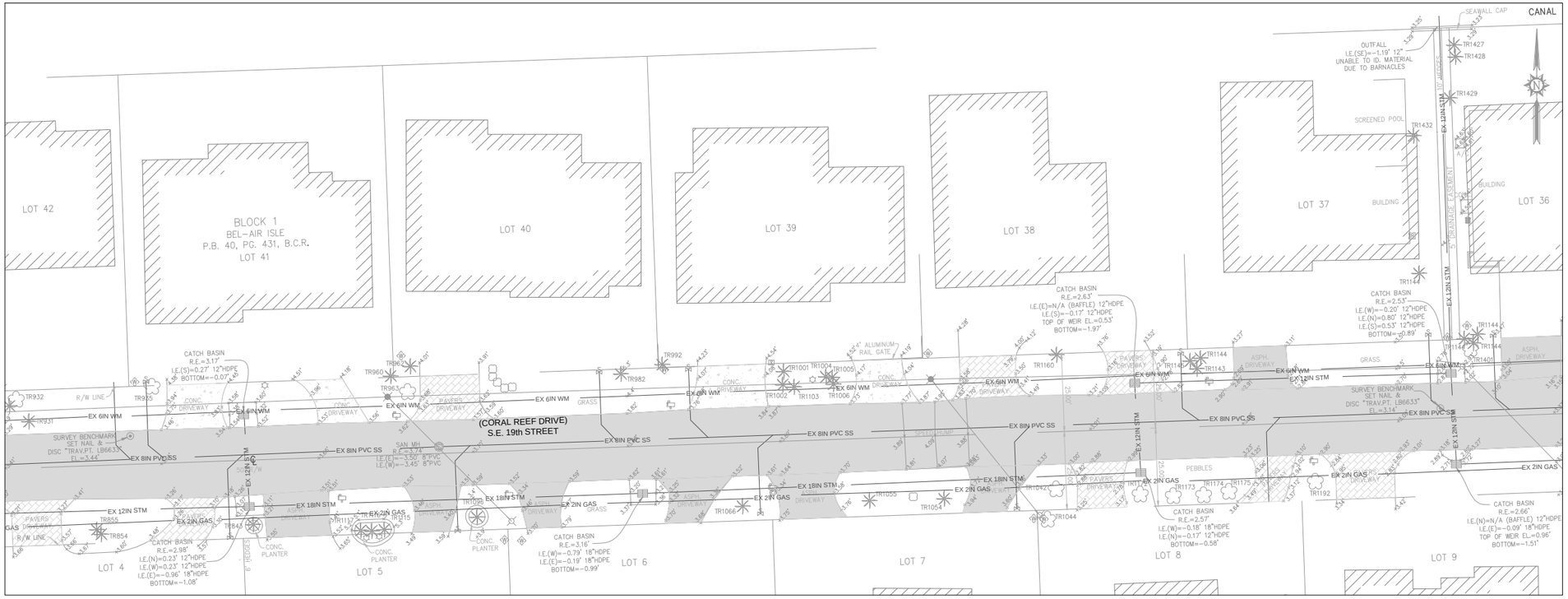
EXISTING CONDITIONS
SHEET EC-1

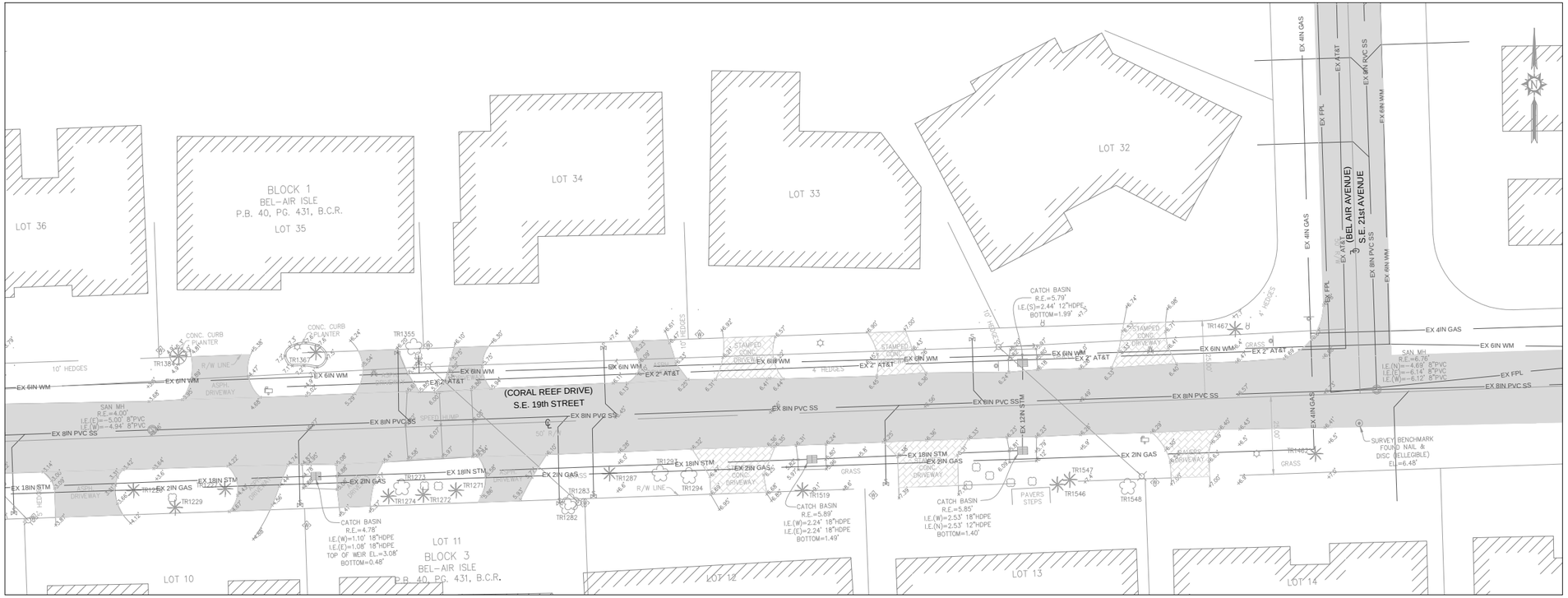
Date: 12/10/12

Sheet: 2 of 9

Drawing:
File location:

ALL ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)





HATCH LEGEND:

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- EXISTING CONCRETE DRIVEWAY
- EXISTING SPECIALTY DRIVEWAY

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500 W Cypress Creek Rd Suite 630
Ft. Lauderdale, FL 33309
Tel: 954-730-0707
EB 0004593

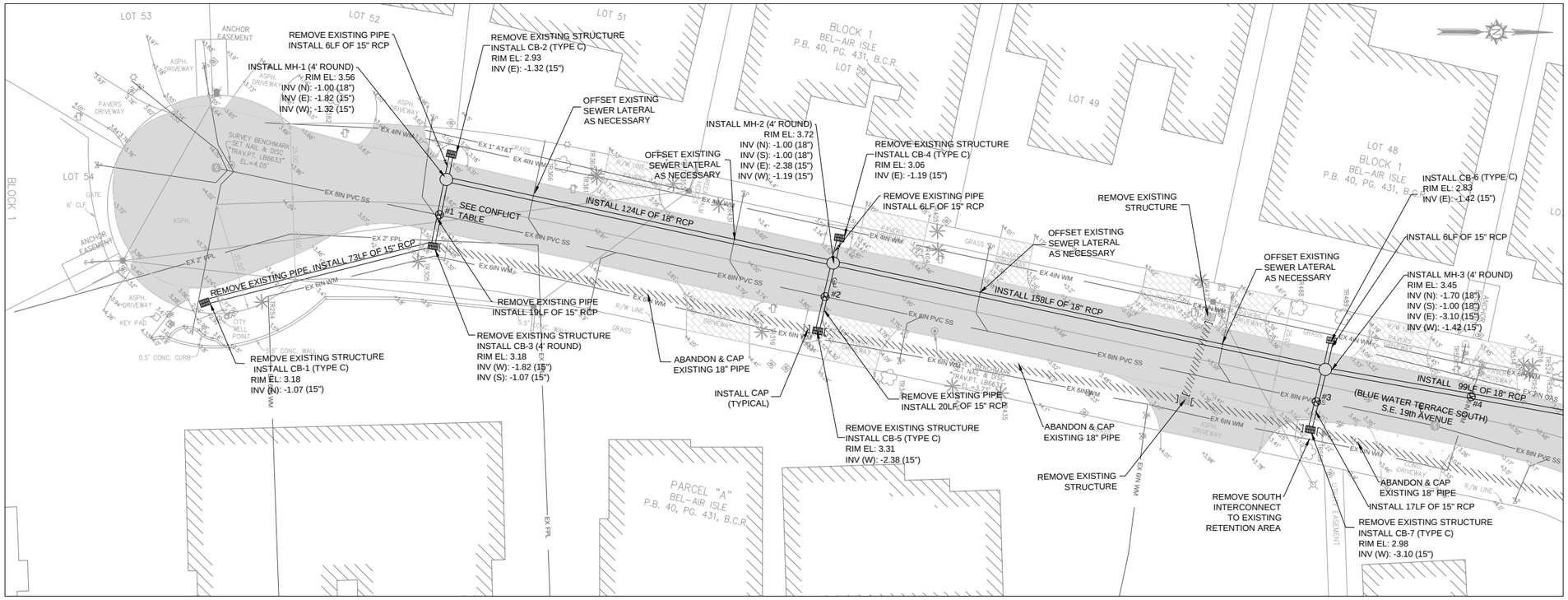
LAUDERDALE BY THE SEA
SE 19TH STREET

EXISTING CONDITIONS
SHEET EC-2

Date: 12/10/12

Sheet: 3 of 9

Drawing:



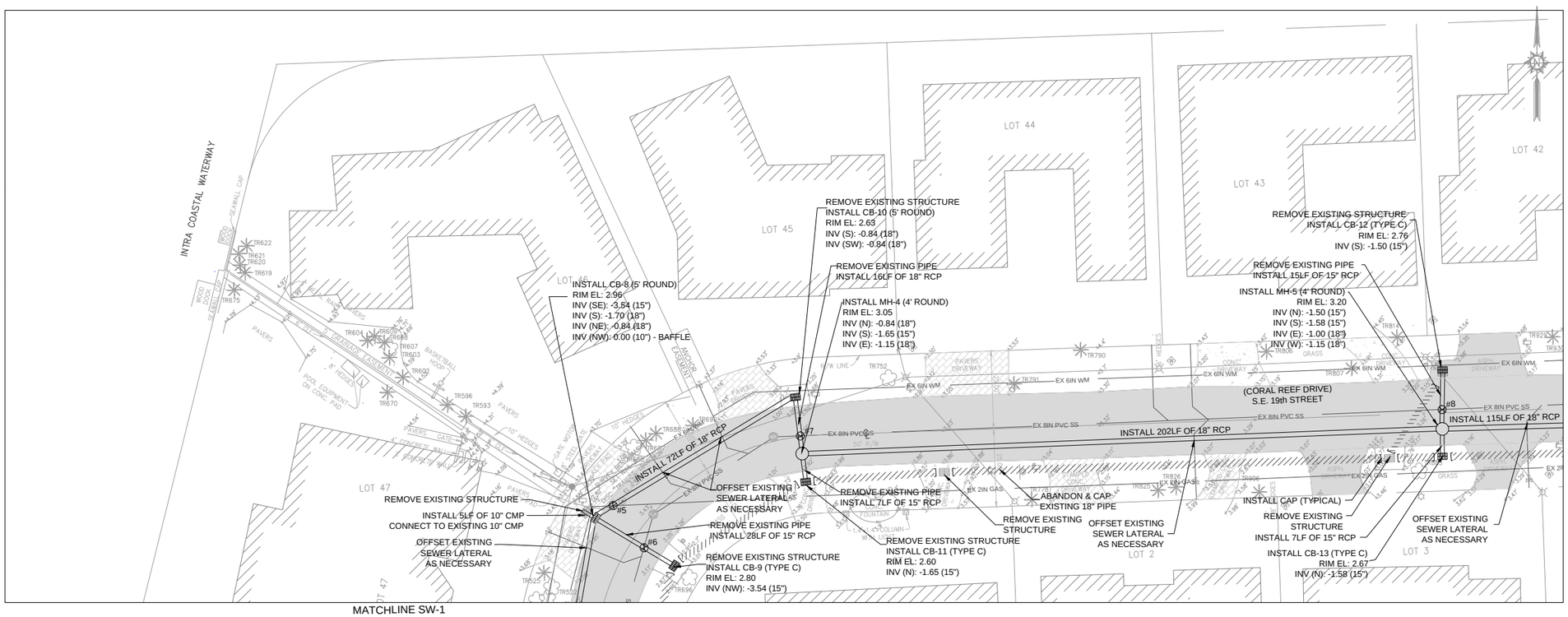
ALL ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

CONFLICT TABLE - CLEARANCES

	CLEARANCE (FEET)	PROPOSED STORM PIPE ELEVATION	UTILITY CONFLICT ELEVATION
#1)	0.5'	STM TOP=-0.57	SS BOP=-0.07
#2)	0.5'	STM TOP=-1.13	SS BOP=-0.63
#3)	0.5'	STM TOP=-1.85	SS BOP=-1.35
#4)	0.5'	STM TOP=-0.20	WM BOP=+0.30
#5)	1.13'	STM TOP=-0.36	GAS BOP=+0.77
#6)	0.5'	STM TOP=-2.29	SS BOP=-1.79
#7)	0.5'	STM BOP=-0.84	SS TOP=-1.34
#8)	0.63'	STM BOP=-1.50	SS TOP=-2.13

HATCH LEGEND:

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE DRIVEWAY
- EXISTING SPECIALTY DRIVEWAY
- ABANDON & CAP EXISTING PIPE



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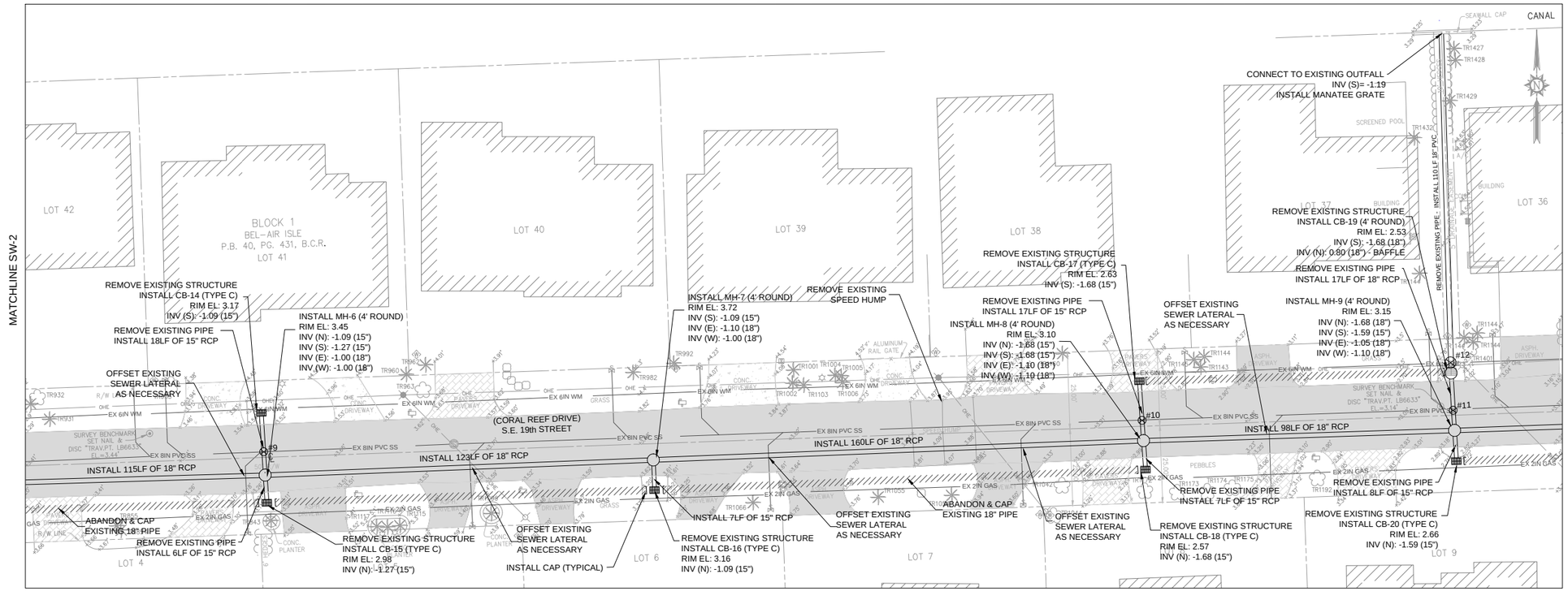
LAUDERDALE BY THE SEA
SE 19TH STREET

STORMWATER IMPROVEMENTS
SHEET SW-1

Date: 12/10/12

Sheet: 4 of 9

Drawing:
File location:



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CONFLICT TABLE - CLEARANCES

CLEARANCE (FEET)	PROPOSED STORM PIPE ELEVATION	UTILITY CONFLICT ELEVATION
#9) 1.47'	STM BOP=-1.09	SS TOP=-2.56
#10) 1.95'	STM BOP=-1.68	SS TOP=-3.63
#11) 2.30'	STM BOP=-1.68	SS TOP=-3.98
#12) 1.47'	STM BOP=0.80	WM TOP=-0.67
#13) 4.96'	STM BOP=0.53	SS TOP=-4.43
#14) 6.67'	STM BOP=1.54	SS TOP=-5.13

HATCH LEGEND:

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- EXISTING CONCRETE DRIVEWAY
- EXISTING SPECIALTY DRIVEWAY
- ABANDON & CAP EXISTING PIPE

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LAUDERDALE BY THE SEA
SE 19TH STREET

STORMWATER IMPROVEMENTS
SHEET SW-2

Date: 12/10/12

Sheet: 5 of 9

Drawing:
File location:

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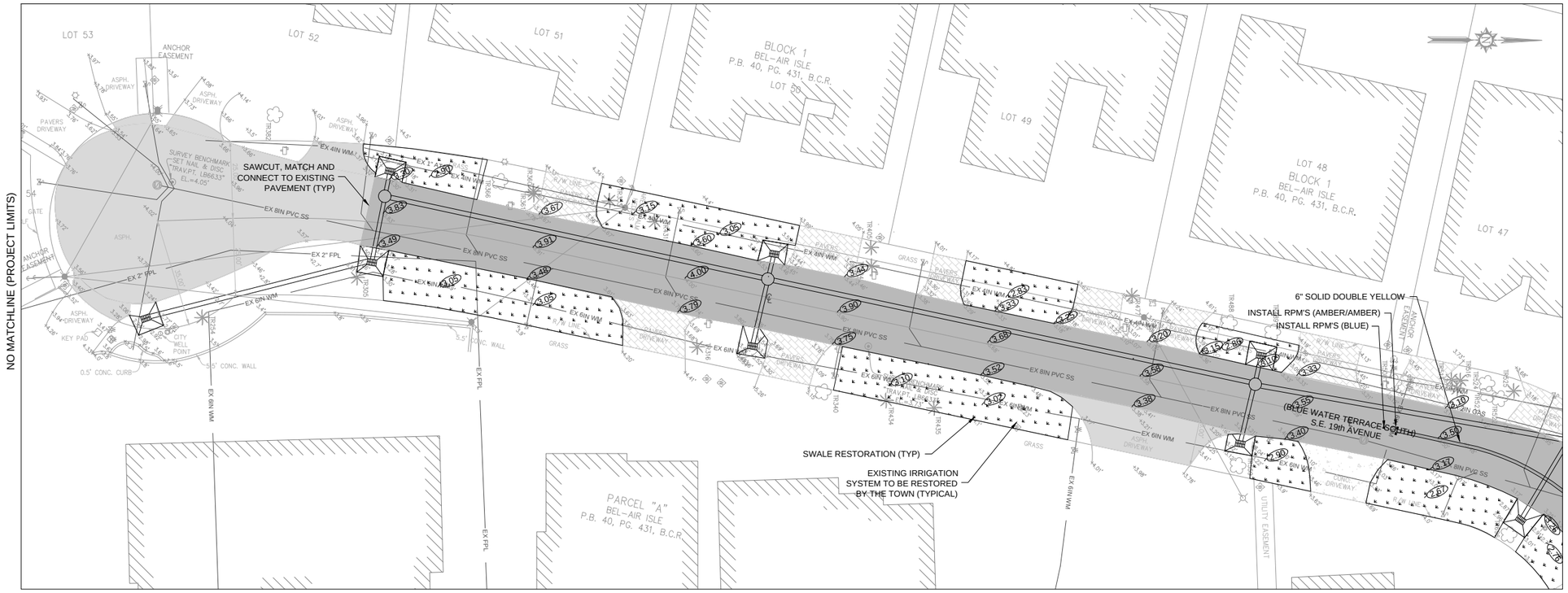
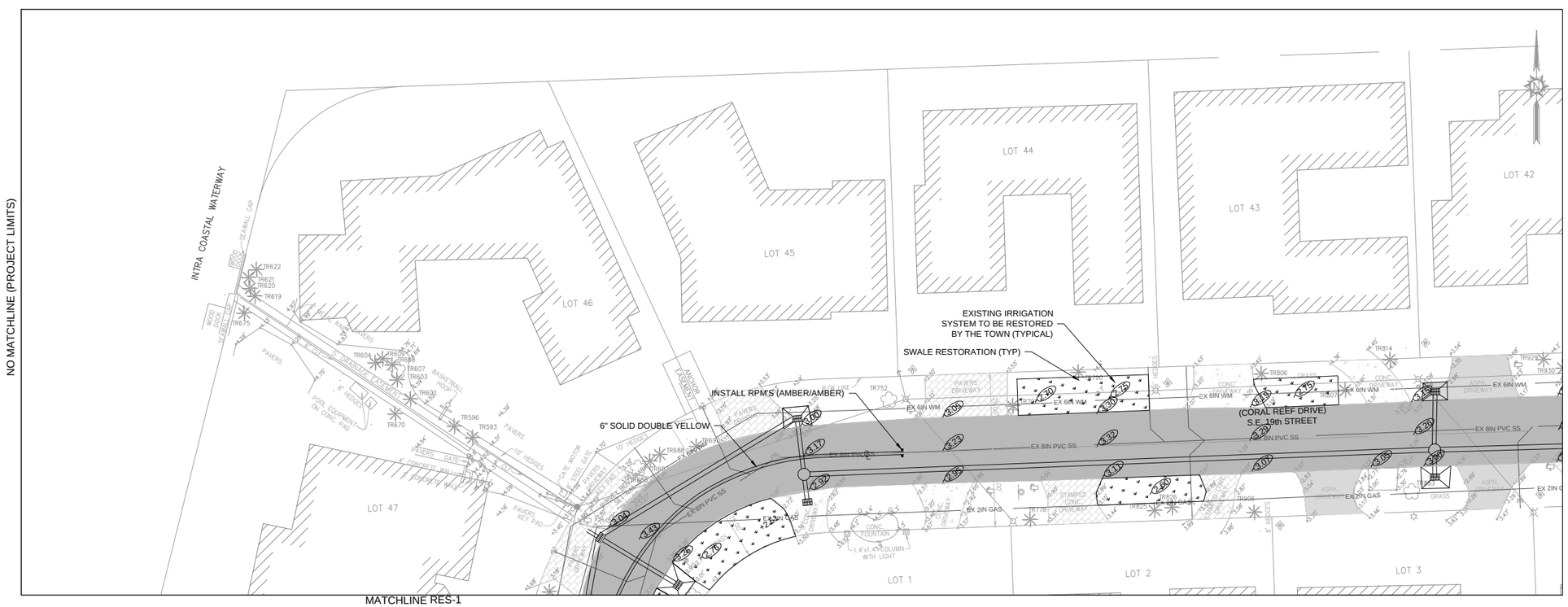


HATCH LEGEND:

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE DRIVEWAY
- EXISTING SPECIALTY DRIVEWAY
- PROPOSED ASPHALT RESTORATION
- PROPOSED SWALE GRADING
- PROPOSED DRIVEWAY RESTORATION



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EB 0004593

LAUDERDALE BY THE SEA
SE 19TH STREET

RESTORATION PLAN
SHEET RES-1

Date: 12/10/12

Sheet: 6 of 9

Drawing:

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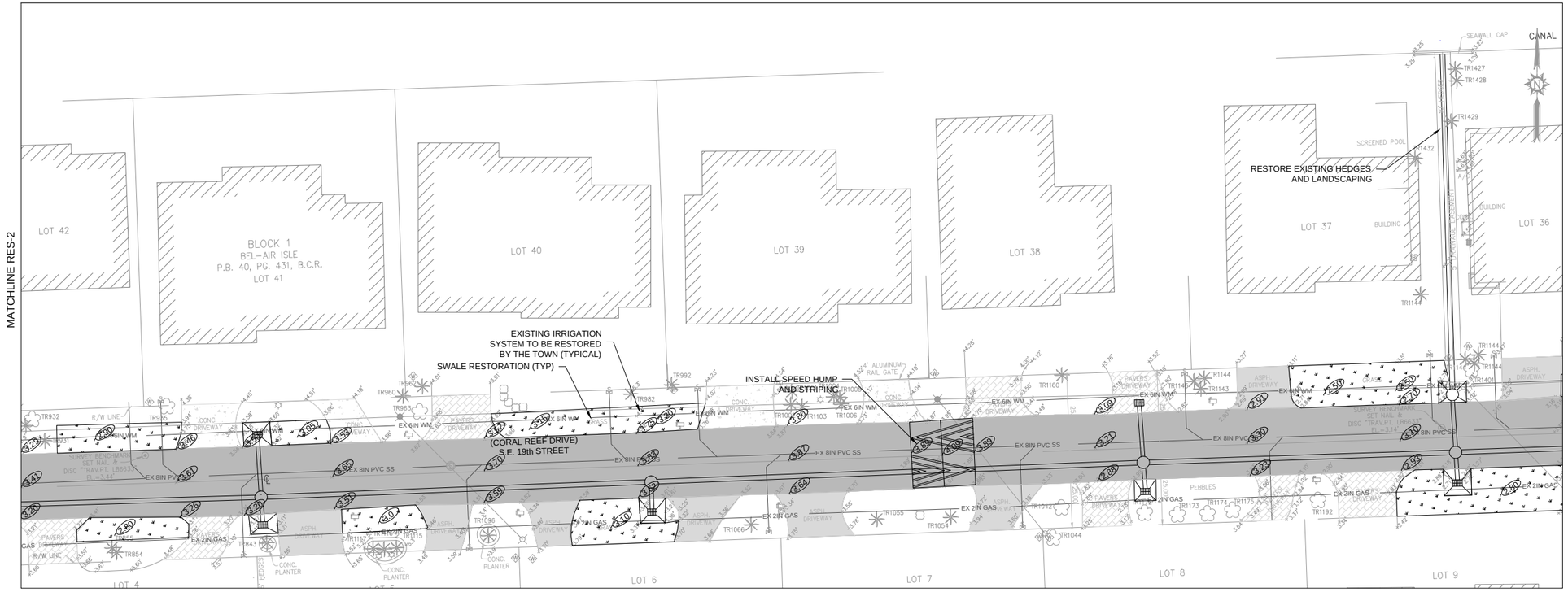
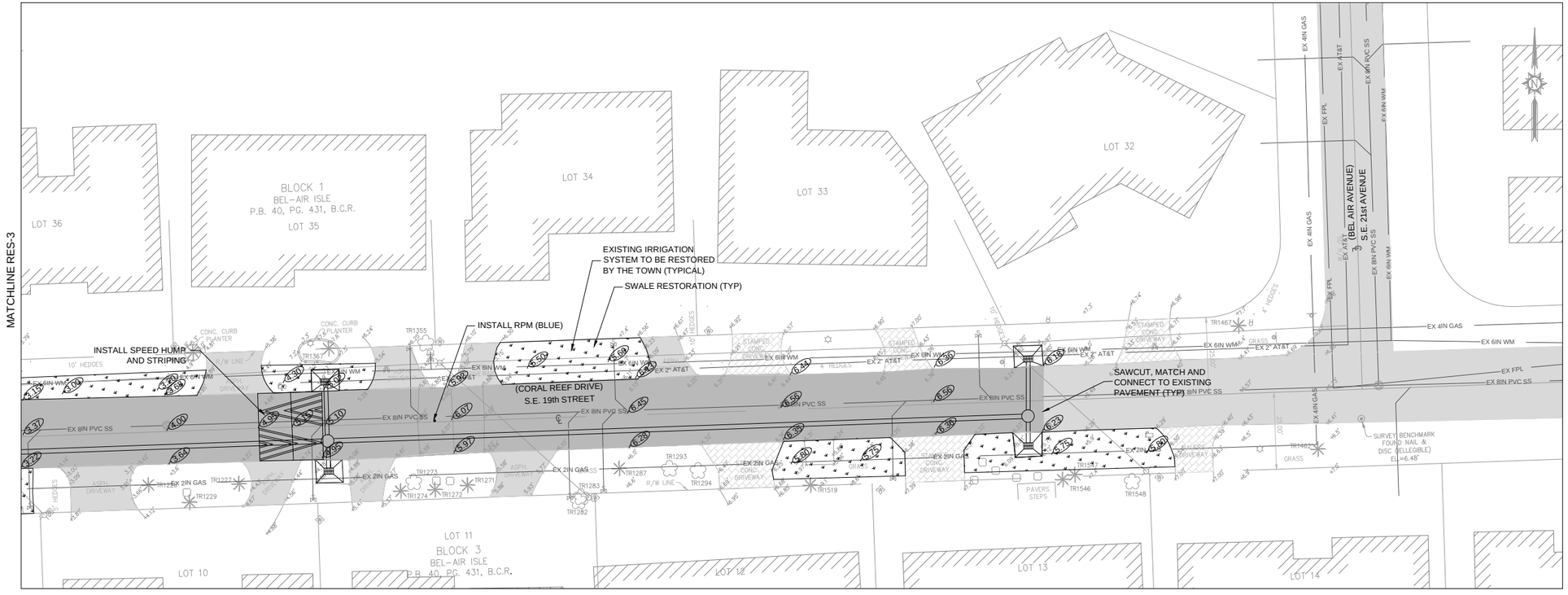


HATCH LEGEND:

- EXISTING ASPHALT PAVEMENT
- EXISTING CONCRETE DRIVEWAY
- EXISTING SPECIALTY DRIVEWAY
- PROPOSED ASPHALT RESTORATION
- PROPOSED SWALE GRADING



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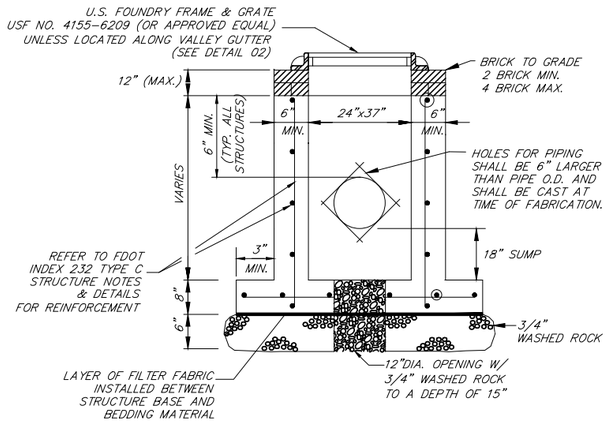
LAUDERDALE BY THE SEA
SE 19TH STREET

RESTORATION PLAN
SHEET RES-2

Date: 12/10/12

Sheet: 7 of 9

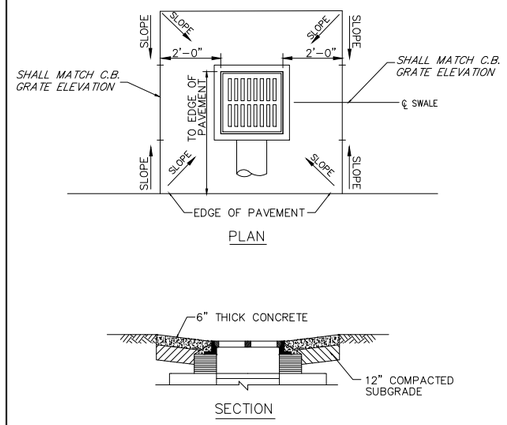
Drawing:



NOTES:
1. RECOMMENDED MAXIMUM PIPE SIZE
   2'-0" WALL – 18" PIPE
   3'-1" WALL – 24" PIPE
2. TYPE C INLETS ARE TO USE USF 4155-6209 FRAME AND GRATE; UNLESS LOCATED ALONG VALLEY GUTTER, SEE DETAIL 02
3. ALL DRAINAGE MANHOLE CONNECTIONS ARE TO HAVE A WATER STOP GASKET (ADS GASKET OR APPROVED EQUAL).
4. ANY STRUCTURES ABOVE WATER TABLE REQUIRES WEEP HOLES
5. MINIMUM SUMP ALLOWABLE IS 18"

1 TYPE "C" INLET WITH FRAME AND GRATE

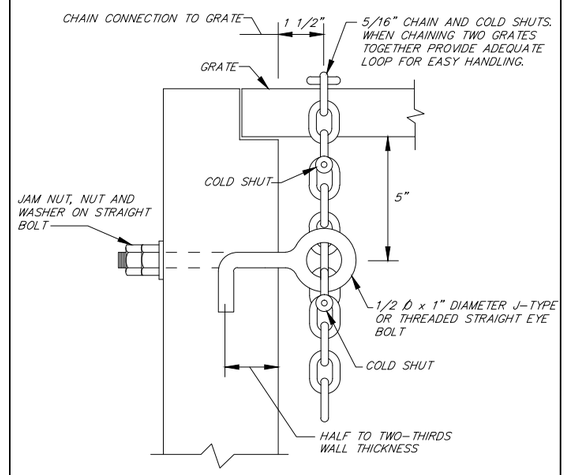
N.T.S.



NOTES:
1. PAVING AROUND CATCH BASIN TO BE 6" THICK CONCRETE ON COMPACTED SUBGRADE.
2. APRON TO BE 2' MINIMUM ON THREE SIDES, THE FOURTH SIDE EXTENDED TO EDGE OF PAVEMENT.

2 CATCH BASIN APRON

N.T.S.

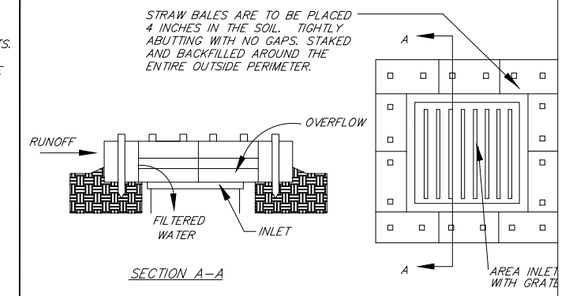


NOTE: WHEN ALTERNATE "G" GRATE IS SPECIFIED, THE CHAIN, BOLT, NUTS, WASHER AND COLD SHUTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE GRATE.

COST OF EYE BOLT AND CHAIN TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR INLETS.

3 EYE BOLT AND CHAIN

N.T.S.



NOTES:

1. STRAW BALE FILTERS ARE NOT TO BE USED IF ADJACENT AREA TO INLET IS PAVED.

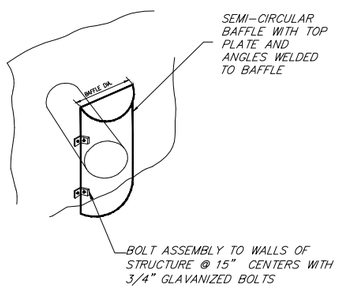
2. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)

3. EMBED THE BALES 4" INTO THE SOIL AND OFFSET CORNERS OR PLACE BALES WITH ENDS TIGHTLY ABUTING, GRAVEL BACKFILL WILL PREVENT EROSION OR FLOW AROUND THE BALES.

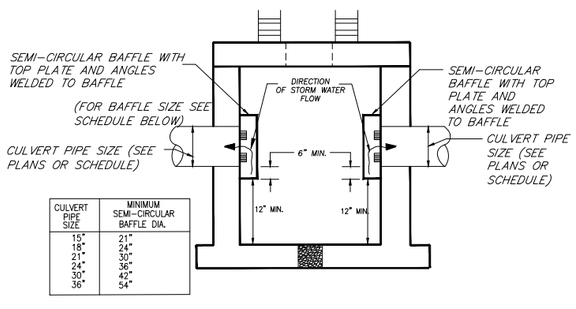
4. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BY-PASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.

4 STRAW BALE INLET BARRIER DETAIL

N.T.S.



TYPICAL PRB

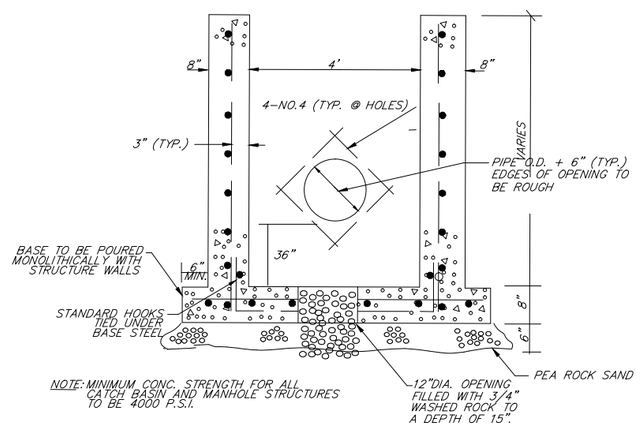


CULVERT PIPE SIZE	MINIMUM SEMI-CIRCULAR BAFFLE DIA.
15"	21"
18"	24"
21"	30"
24"	36"
30"	42"
36"	54"

NOTE:
1. FOR LOCATIONS OF BAFFLE, SEE PLAN SHEETS.

5 TYPICAL BAFFLE

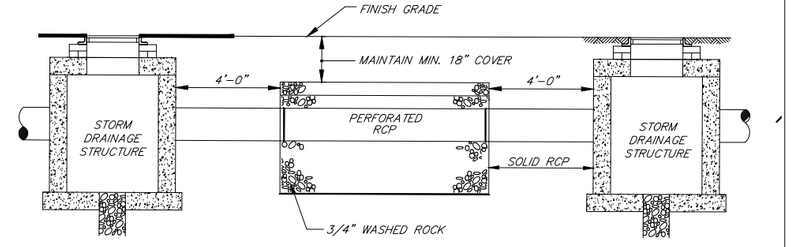
N.T.S



NOTE: MINIMUM CONC. STRENGTH FOR ALL CATCH BASIN AND MANHOLE STRUCTURES TO BE 4000 P.S.I.

6 CIRCULAR DRAINAGE STRUCTURE DETAIL

N.T.S.



ELEVATION

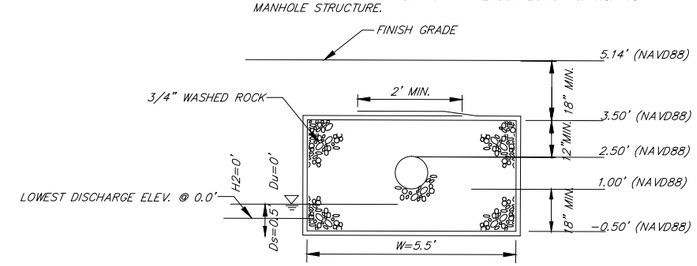
NOTES:

1. PIPES SHALL CONNECT TO ADDITIONAL CATCH BASINS AS REQUIRED.

2. BALLAST ROCK SHALL BE FROM FRESH WATER WASHED FREE OF DELETERIOUS MATTER.

3. TRENCH TO BE LINED WITH AMOCO PROPEX 4545 OR APPROVED EQUIVALENT TYPE FILTER FABRIC. OVERLAP TRENCH LINING MATERIAL A MINIMUM OF 2' AT TOP OF TRENCH. CLOSE ENDS AND STRAP AROUND PIPE.

4. WATER STOP GASKET REQUIRED AT THE CONNECTION OF RCP TO MANHOLE STRUCTURE.



SECTION FOR 18" DIAMETER PIPE

7 EXFILTRATION TRENCH

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TOWN OF LAUDERDALE BY THE SEA

JASON MCCLAIR, P.E.
CIVIL ENGINEER
FL. Reg. No. 56962

CHEN-MOORE & ASSOCIATES
500 W. Cypress Creek Rd Suite 630
Ft. Lauderdale, FL 33309
Tel: 954-730-0707
EB 0004593

LAUDERDALE BY THE SEA
SE 19TH STREET

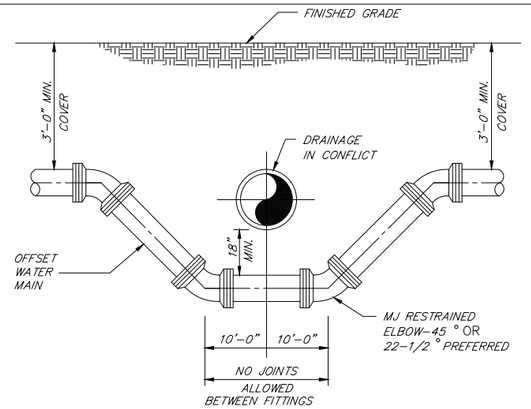
STORMWATER DETAILS
SHEET SW-3

Date: 12/10/12

Sheet: 8 of 9

Drawing:

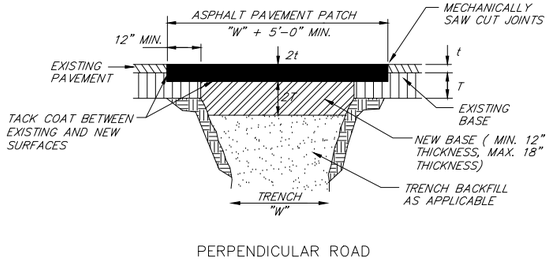
File location:



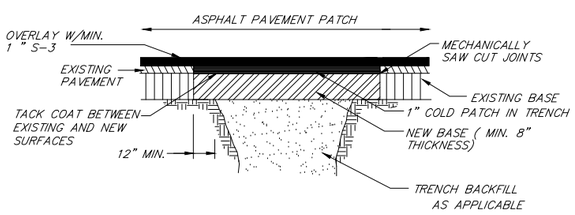
NOTE: WHERE CONDITIONS PERMIT, PIPE DEFLECTION MAY BE USED INSTEAD OF BENDS TO OBTAIN THE MINIMUM CLEARANCE. FACTORY OFFSETS MAY BE USED ON 6" OR SMALLER MAINS.

8 TYPICAL CONFLICT DETAIL

N.T.S



PERPENDICULAR ROAD CROSSINGS (TYPE Ⅲ)



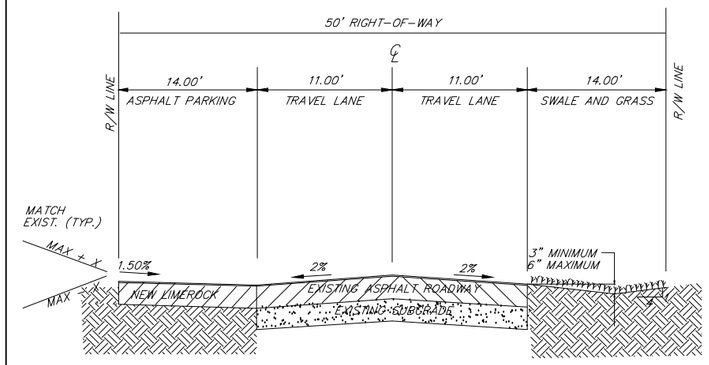
STANDARD PARALLEL ROAD RESTORATION (TYPE Ⅳ)

GENERAL NOTES:

1. REPLACE BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE. MINIMUM 12", MAXIMUM 18", MINIMUM LBR 100.
2. BASE MATERIAL SHALL BE PLACED IN 6" MAXIMUM (LOOSE MEASUREMENT) LAYERS AND EACH LAYER THOROUGHLY ROLLED AND TAMPED TO 98% OF MAXIMUM DENSITY, PER A.A.S.H.T.O. T-180.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. ALL EDGES AND SURFACES SHALL BE TACK COATED.
5. SURFACE MATERIAL SHALL BE CONSISTENT WITH THE EXISTING SURFACE.
6. BASE MATERIAL SHALL BE CONSISTENT WITH THE EXISTING BASE.
7. IF THE DITCH IS FILLED TEMPORARILY IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE/PATCH TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL REPLACED WITH PERMANENT PATCH.
8. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
9. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180.
10. A MINIMUM 6" BEDDING OF 3/4" ROCK IS TO BE INSTALLED ABOVE AND BELOW THE PIPE.
11. HOT MIX WILL BE REQUIRED FOR ALL LONGITUDINAL TRENCHES EXCEPT DRIVEWAYS.

10 SURFACE RESTORATION DETAIL

N.T.S



FOR ASPHALT AND CONCRETE X=12:1
FOR FILL AND SOD X=3:1

9 TYPICAL 50' ROAD SECTION

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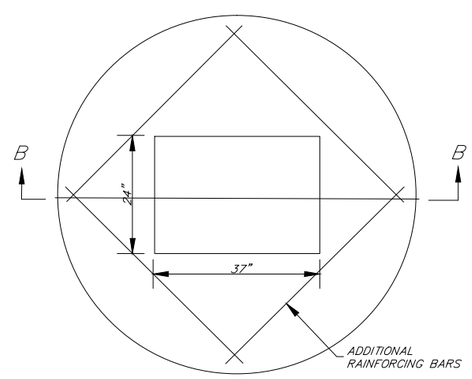
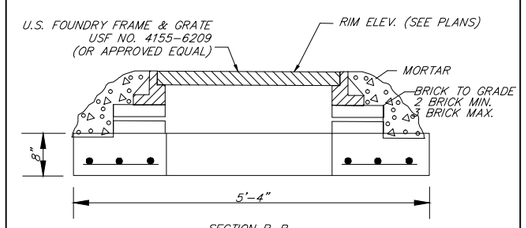


PLAN



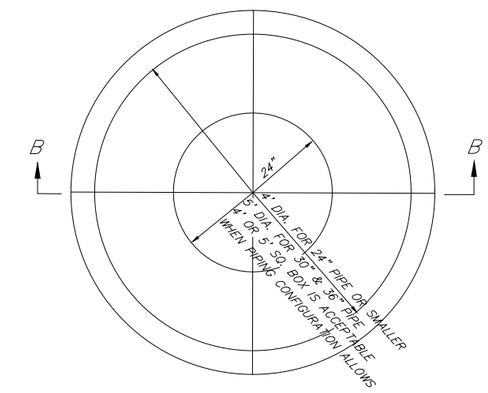
SECTION B-B

DRAINAGE NOTES:

1. DETAIL TO BE USED FOR CATCH BASIN CB-2

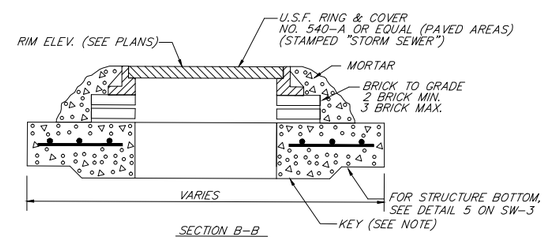
11 MAS TOP SLAB (CATCH BASIN) DETAIL

N.T.S



PLAN

KEY NOTE: KEY CUT IS REQUIRED W/PRECAST TOPS ONLY. IF TOP SLAB IS CAST IN PLACE, USE NO. 4-12" LONG BARS EQUALLY PLACED TO SECURE TOP SLAB TO SIDE WALLS



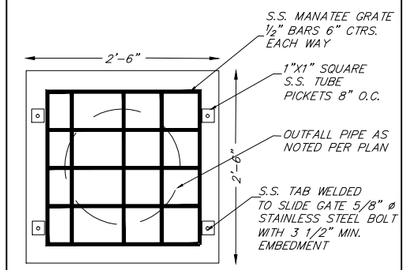
SECTION B-B

DRAINAGE NOTES:

1. ALL TEMPORARY PLUGS INSIDE THE DRAINAGE PIPES SHALL BE REMOVED AFTER THE COMPLETION OF CONSTRUCTION.
2. WHERE BAFFLES ARE INSTALLED IN THE DRAINAGE STRUCTURES, THE MINIMUM DISTANCE BETWEEN THE BAFFLE AND THE OPPOSING WALL SHALL BE 2.0'.

12 MAS TOP SLAB (MANHOLE) DETAIL

N.T.S



13 MANATEE GRATE DETAIL

N.T.S

GENERAL NOTES:

1. EXISTING CONDITIONS BASED ON SURVEY PREPARED BY STONER AND ASSOCIATES IN MARCH 2012.
2. ALL WORK ALONG THE ENTIRE PROJECT SHALL BE LOCATED AND CONSTRUCTED USING THE ROADWAY BASE/CENTER LINE AS REFERENCE. ALL ELEVATIONS SHOWN HEREON ARE IN FEET AND REFER TO N.A.V.D. OF 1988.
3. EXISTING PUBLIC UTILITIES SHOWN ARE BASED ON INFORMATION SUPPLIED BY OTHERS. THIS INFORMATION IS NOT GUARANTEED AS TO ITS ACCURACY OF COMPLETENESS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UNDERGROUND FACILITIES PRIOR TO THE START OF THE CONSTRUCTION AND COORDINATE WITH THE VARIOUS UTILITY AGENCIES TO RELOCATE, BYPASS OR OTHERWISE INSURE THAT UTILITY SERVICES WILL NOT BE INTERRUPTED OR DAMAGED DURING THE CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL PUBLIC UTILITY INSTALLATIONS DURING THE CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL PUBLIC UTILITY INSTALLATIONS AND STRUCTURES FROM DAMAGE AS SPECIFIED IN SECTION 01005 "GENERAL REQUIREMENTS". FOR UNDERGROUND LOCATIONS CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC. AT 1-800-432-4770.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH CURRENT SITE CONDITIONS AND SHALL REPORT ANY DISCREPANCIES TO THE TOWN ENGINEER PRIOR TO STARTING WORK.
5. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS TO CHEN MOORE AND ASSOCIATES FOR ALL DRAINAGE STRUCTURES AND PIPING.
6. WHERE NEW PAVEMENT IS TO MEET EXISTING PAVEMENT, OR WHERE EXISTING PAVEMENT IS TO BE RECONSTRUCTED, THE EDGES OF EXISTING PAVEMENT SHALL BE SAW CUT. RESTORATION SHALL BE IN ACCORDANCE WITH CONTRACT DOCUMENTS.
7. ALL EXISTING FEATURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNDISTURBED UNLESS OTHERWISE NOTED. ALL CONSTRUCTION ACTIVITIES SHALL BE INSIDE THE PUBLIC RIGHT OF WAY.
8. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR LEAVE EXCAVATED TRENCHES, OR PARTS OF, EXPOSED OR OPEN AT THE END OF THE WORKING DAY, WEEKENDS, HOLIDAYS OR OTHER TIMES WHEN THE CONTRACTOR IS NOT WORKING. ALL TRENCH AND EXCAVATIONS SHALL BE COVERED, FIRMLY SECURED, BARRICADED, AND MARKED ACCORDINGLY FOR PEDESTRIAN TRAFFIC.
9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES.
10. WHERE REPLACEMENT OF SIDEWALKS, PAVEMENTS, PAVEMENTS MARKINGS, ETC. ARE NEEDED, CONTRACTOR SHALL MATCH EXISTING SECTIONS, ELEVATIONS, MATERIALS, ETC.
11. ALL DIMENSIONS ON THESE PLANS ARE APPROXIMATED AND SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD.
12. ALL PROPOSED PERFORATED PIPES SHALL BE SMOOTH LINED REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE STATED.
13. CATCH BASIN GRATE ELEVATIONS SHALL BE 1" MINIMUM BELOW LOW POINT OF EDGE OF EXISTING PAVEMENT; ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE. ALL MANHOLES SHALL BE SET FLUSH WITH FINAL PAVEMENT ELEVATION.
14. CONTRACTOR TO DEMOLISH THE EXISTING ASPHALT APRON AND CONSTRUCT CATCH BASIN PAVEMENT.
15. CONTRACTOR SHALL CLEAN EXISTING CATCH BASINS, MANHOLES AND PIPING IN THE EXISTING DRAINAGE SYSTEM.
16. ALL AREAS DAMAGED BY CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER. GRASSED AREAS DAMAGED BY CONSTRUCTION SHALL BE RESTORED. ALL REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.
17. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF FLORIDA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE CITY OF POMPANO BEACH STANDARDS.
18. THE CONTRACTOR SHALL PROVIDE A DIGITAL COPY AND FOUR SETS OF 'AS-BUILT' DRAWINGS FOR THE TOWN UPON COMPLETION OF CONSTRUCTION. THESE DRAWINGS SHALL INDICATE BUT NOT BE LIMITED TO ALL CHANGES OCCURRING DURING CONSTRUCTION AND THE ACTUAL 'AS-BUILT' INVERT, RIM, AND GRATE ELEVATIONS OF ALL PIPING AT THE DRAINAGE STRUCTURES.
19. THE CONTRACTOR SHALL KEEP THE EXISTING STORM SYSTEM CLEAR AND CLEAN OF ALL DEBRIS FROM THE CONSTRUCTION OF THIS PROJECT.
20. THE CONTRACTOR SHALL CONSTRUCT SILT BARRIERS, HAY BAIL FENCES, ETC. TO PREVENT TURBID RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
21. THE CONTRACTOR SHALL PROVIDE SAFETY MEASURES IN COMPLIANCE WITH OSHA REQUIREMENTS AND, FOR TRENCHES 5-FEET AND DEEPER, COMPLY WITH ALL REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.
22. CONTRACTOR IS TO NOTIFY THE BROWARD SHERIFF'S OFFICE, FIRE DEPARTMENT AND THE SCHOOL DISTRICT ABOUT CONSTRUCTION.
23. AFTER REMOVING ANY EXISTING STRUCTURES, SURFACE SHALL BE BACKFILLED AND RESTORED TO ITS ORIGINAL CONDITION UNLESS OTHERWISE NOTED.
24. CONTRACTOR SHALL MEET WITH THE TOWN ONCE THE LOCATION OF THE CATCH BASIN HAVE BEEN STAKED OUT. THE TOWN SHALL MODIFY THE LOCATION AS NECESSARY.

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TOWN OF LAUDERDALE BY THE SEA

JASON MCCLAIR, P.E.
CIVIL ENGINEER
FL. Reg. No. 56962

CHEN MOORE ASSOCIATES
500 W Cypress Creek Rd Suite 630
Ft Lauderdale, FL 33309
Tel: 954-730-0707
EB 0004593

LAUDERDALE BY THE SEA
SE 19TH STREET

STORMWATER IMPROVEMENTS
SHEET SW-4

Date: 12/10/12

Sheet: 9 of 9

Drawing: