

INDIAN RIVER COUNTY BOARD OF COUNTY COMMISSIONERS

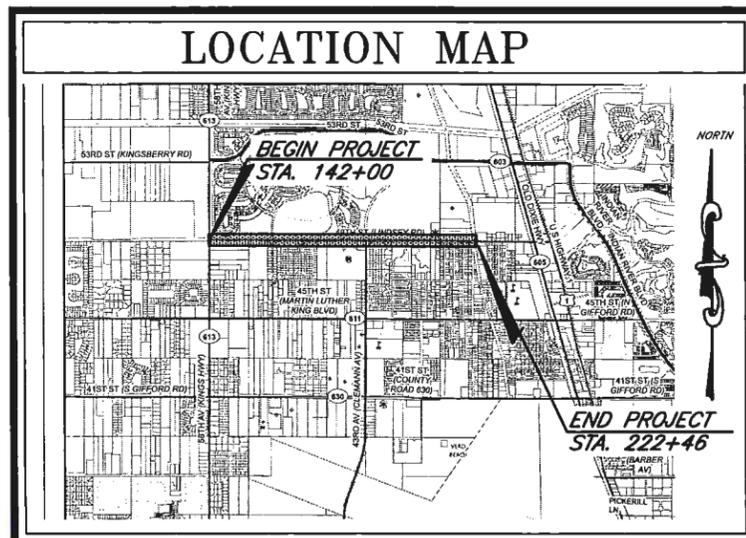
49TH STREET MILLING AND RESURFACING (58TH AVENUE TO 31ST AVENUE)

PROJECT NO. IRC-1414
F.M. NO. 436850-1-54-01

SHEET INDEX

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LOCATION MAP



S-20,21,22 T-32 R-39
LENGTH OF PROJECT
9120 L.F. (1.73 MILES)



PREPARED BY

INDIAN RIVER COUNTY
DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

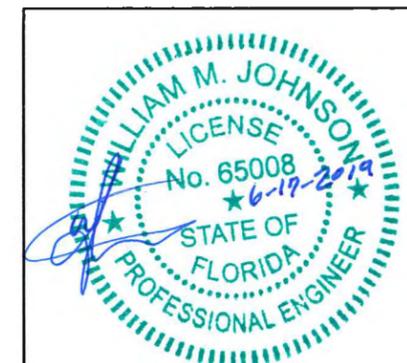
1801 27TH STREET, VERO BEACH, FL. 32960

ASSISTANT PUBLIC WORKS DIRECTOR: JAMES W. ENNIS, P.E., PMP
ENGINEER OF RECORD: WILLIAM M. JOHNSON, P.E.

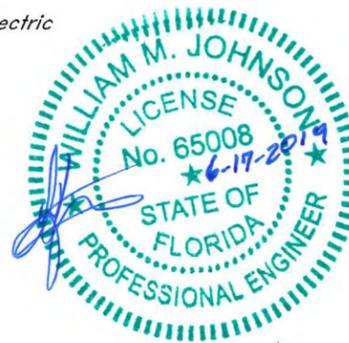
PLAN REVISION SUMMARY

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION, DESIGN STANDARDS (BOOKLET DATED 2017) AND SUPPLEMENTS THERETO, UNLESS OTHERWISE NOTED ON PLANS.

GOVERNING SPECIFICATIONS:
THE FLORIDA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATION FOR ROAD & BRIDGE CONSTRUCTION, DATED JULY 2017, SUPPLEMENTS THERETO, AND SPECIAL PROVISIONS THERETO IF NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT.



AASHTO	American Association of State Highway and Transportation Officials	E	East	P or Plan	Plan Quantity
Abd.	Abandoned	El. or Elev.	Elevation	Pavt.	Pavement
AC or Asph. Conc.	Asphaltic Concrete	Elec.	Electric	PC	Point of Curvature
ACMP	Aluminized Corrugated Metal Pipe	Engr.	Engineer	PCC	Point of Compound Curvature
Adj.	Adjust	EOP	Edge of Pavement	PE	Professional Engineer
Al	Aluminum	Eq.	Equation or Equal	PERF.	Perforated
Approx.	Approximate	ERCP	Elliptical Reinforced Concrete Pipe	PGL	Profile Grade Line
Asph.	Asphalt	Esmt.	Easement	PI	Point of Intersection
ASTM	American Society for Testing Materials	Est. or Estm.	Estimate	PL or P	Property Line
Ave.	Avenue	EW	Endwall	PP	Power Pole
		Exc. or Excav.	Excavation	PRC	Point of Reverse Curvature
		Exist.	Existing	Proj.	Project
B/C, B.C.	Back of Curb			PRM	Permanent Reference Monument
BCCMP	Bituminous Coated Corrugated Metal Pipe	F or Final	Final Quantity	PSI or psi	Pounds Per Square Inch
BE	Buried Electric	FDOT	Florida Department of Transportation	PT	Point of Tangency
Beg.	Begin	FE	Floor Elevation	PVC	Polyvinyl Chloride
Bk.	Back	FH	Fire Hydrant	PVI	Point of Vertical Intersection
BL, BLC	Base Line, Base Line Control	FM	Force Main		
Bldg.	Building	FOC	Fiber Optics Cable		
Blvd.	Boulevard			R or Rad.	Radius
BM	Benchmark	GM	Gas Main	R or Rng.	Range
Brg.	Bearing	GPS	Global Positioning System	RCP	Reinforced Concrete Pipe
BT	Buried Telephone Cable or Duct	Gr.	Grade, Guardrail or Grate	RCPA	Reinforced Concrete Pipe Arch
				Rd.	Road
				Req. or Reqd.	Required
C & G	Curb and Gutter	Hdwl.	Headwall	Res.	Residence
CAP	Corrugated Aluminum Pipe	Hndrl.	Handrail	RR	Railroad
CATV	Cable Television	Hse.	House	RT.	Right
CB	Catch Basin	Hwy.	Highway	R/W, ROW	Right of Way
CBC	Concrete Box Culvert				
CBS	Concrete Box Structure	I.R.F.W.C.D.	Indian River Farms Water Control District	S	South
CD	Cross Drain	Inv.	Invert	SAN or San.	Sanitary
CI	Cast Iron	IP	Iron Pipe	SD	Side Drain, Storm Drain
CIP	Cast Iron Pipe			Sect.	Section
CIPL	Cast in Place	L	Length, Length of Curve, Left	Sht.	Sheet
Cl. or Clear	Clearance	LBR	Limerock Bearing Ratio	Shldr.	Shoulder
CL, C/L or C	Center Line	LF	Linear Foot/Feet	Spec.	Specification
CM	Concrete Monument	Lt.	Left	Sq. Ft., SF or S.F.	Square Foot
CMP	Corrugated Metal Pipe			Sq. Yd., SY or S.Y.	Square Yard
CMPA	Corrugated Metal Pipe Arch	Max.	Maximum	SR or S.R.	State Road
Co.	County or Company	MES	Mitered End Section	SS	Sanitary Sewer
Con.	Connect or Connection	MH	Manhole	St. or ST.	Street
Conc.	Concrete	MPH or mph	Miles Per Hour	Sta.	Station
Const.	Construct or Construction			SW or Swk.	Sidewalk
Contr.	Contractor	N	North		
Coord.	Coordinate	NA or N/A	Not Applicable	T	Tangent
Cor.	Corner	N & C	Nail & Cap	T, TWP or Twp.	Township
CP	Concrete Pipe	NGVD	National Geodetic Vertical Datum of 1929	TBM	Temporary Bench Mark
Culv.	Culvert	NIC	Not in Contract	TBREM	To Be Removed
CY	Cubic Yard	NTS	Not to Scale	TCE	Temporary Construction Easement
				Tel.	Telephone
				Typ.	Typical
D	Degree of Curvature	OC or O.C.	On Center		
DBI	Ditch Bottom Inlet	OE	Overhead Electric	UG	Underground
Dept.	Department	OH	Overhead	Util.	Utilities
DT	Ditch				
Dia. or D	Diameter			VC	Vertical Curve
DIP	Ductile Iron Pipe				
DOT	Department of Transportation				
Dr. or DR.	Drive			W	West
Drwy.	Driveway			WM	Water Main
Dwg.	Drawing			Xsec.	Cross Section



NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000	 DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E.	SECTION: 20-22	FIELD BOOK	DATE: 6-12-19	49TH STREET MILLING AND RESURFACING FROM 58TH AVENUE TO 31ST AVENUE STANDARD ABBREVIATIONS	SHEET 2 OF 16
						DRAWN BY: M. L. HELLER	TOWNSHIP: 32S	PAGE:	PROJECT NUMBER		
						APPROVED BY: W. JOHNSON P.E.	RANGE: 39E		IRC-1414		

GENERAL NOTES

1. ELEVATIONS – ALL ELEVATIONS AND BENCHMARK INFORMATION REFER TO THE NORTH AMERICAN VERTICAL DATUM, 1988.

2. ANY GOVERNMENTAL LAND CORNER OR SURVEY MONUMENTATION WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY:

INDIAN RIVER COUNTY SURVEYOR – DAVID SCHRYVER
(772) 226-1386

3. FOR FURTHER UTILITY COORDINATION CONTACT:

OWNER	CONTACT	PHONE
AT&T	LUKE FOLKERTS	(407) 496-6041
	MARK GUTIERREZ	(561) 329-6717
COMCAST	TONY SPRINGSTEEL	(561) 804-0973
FLORIDA POWER & LIGHT	ROB MORRIS	(772) 223-4215
	JOEL BRAY	(954) 581-3088
INDIAN RIVER COUNTY TRAFFIC	VERONICA FIGUEROA-CHANZA	(772) 226-1326
INDIAN RIVER COUNTY UTILITIES	ARJUNA WERAGODA	(772) 226-1821
INDIAN RIVER FARMS WATER CONTROL DISTRICT	DAVID GUNTER	(772) 562-2141

4. PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.

5. THE CONTRACTOR SHALL CALL "SUNSHINE STATE ONE-CALL" AT 1-800-432-4770, 48 HOURS PRIOR TO DIGGING FOR FIELD LOCATION OF UNDERGROUND UTILITIES.

6. THE SEQUENCE OF CONSTRUCTION SHALL BE THAT ALL UNDERGROUND INSTALLATIONS OF EVERY KIND THAT ARE BENEATH THE PAVEMENT SHALL BE IN PLACE AND HAVE PROPER DENSITY PRIOR TO PAVEMENT CONSTRUCTION.

7. HARDPAN – IF HARDPAN IS ENCOUNTERED IN THE SWALE AREA, IT SHALL BE REMOVED TO A MINIMUM WIDTH OF TWO FEET AT THE SWALE INVERT AND REPLACED WITH CLEAN GRANULAR MATERIAL.

8. SAW CUT AND BUTT JOINT PAVEMENT AS PER "BUTT JOINT DETAIL" AT THE SPECIFIED LOCATIONS ON THE PLANS.

9. ALL PAVEMENT AND CURBING RADII, STATIONING, OFFSETS AND ELEVATIONS REFER TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

10. ALL DRIVEWAYS SHALL BE ADJUSTED TO MATCH THE EDGE OF PAVEMENT AND PROVIDE A SMOOTH TRANSITION TO THE EXISTING DRIVEWAY ELEVATIONS AT THE RIGHT OF WAY LINE.

11. EXISTING DRAINAGE STRUCTURES AND PIPES WITHIN THE CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.

12. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER AND SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY, STATE OR FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED PRIOR TO INITIATING WORK.

13. ALL CHANGES SHALL BE APPROVED IN WRITING BY THE ENGINEER.

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

F.D.O.T.	FLORIDA DEPARTMENT OF TRANSPORTATION
PL.	PROPERTY LINE
WIT. COR.	WITNESS CORNER
FND./FD.	FOUND
STA/OFF	STATION AND OFFSET
PI	POINT OF INTERSECTION
IP	IRON PIPE
PCP	PERMANENT CONTROL POINT
DIA.	DIAMETER
RRSPK	RAILROAD SPIKE
R.O.W., R/W	RIGHT-OF-WAY
ID.	IDENTIFICATION
G.P.S.	GLOBAL POSITIONING SYSTEM
(P)	PLAT DATA
(D)	DESCRIPTION OR DEED CALL
(C)	CALCULATED MEASUREMENT
(O)	OBSERVED MEASUREMENT
(R)	RECORD DATA FROM PLAT OR DEED
BL.	BASELINE
O.R.B., PG.	OFFICIAL RECORD BOOK, PG.
S.L.CO., FL.	ST. LUCIE COUNTY, FLORIDA
I.R.CO., FL.	INDIAN RIVER COUNTY, FLORIDA
RB	REBAR
CM	CONCRETE MONUMENT
T.O.T.I.I.T.F.	TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
P.B., PG.	PLAT BOOK, PAGE
ℙ	PROPERTY LINE
SPKT	SET "P-K" NAIL WITH TAB STAMPED "TRAV. L.B.205"
SRC	SET 1/2"x18" REBAR/CAP" STAMPED "CARTERASSOC. L.B.205"
MES	MITERED END SECTION
ADS	ADVANCED DRAINAGE SYSTEM
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
N.A.V.D. '88	NORTH AMERICAN VERTICAL DATUM 1988
INV.	INVERT
CONC.	CONCRETE
MES	MITERED END SECTION
S.R.	STATE ROAD
EOP	EDGE OF PAVEMENT
PVC	POLYVINYL CHLORIDE (PLASTIC) PIPE
S.R.D.	STATE ROAD DEPARTMENT
L.A.E.	LIMITED ACCESS EASEMENT
S.B.T.&T.CO.	SOUTHERN BELL TELEPHONE & TELEGRAPH COMPANY
W/	WITH
SEC.	SECTION
NO ID.	NO IDENTIFICATION
COR.	CORNER
S/D	SUBDIVISION
F.S.P.I.	FORWARD SIGHT POINT OF INTERSECTION
B.S.P.I.	BACK SIGHT POINT OF INTERSECTION
BK.	BACK
AHD	AHEAD
C.C.R.	CERTIFIED CORNER RECORD
DOC#	DOCKET NUMBER
CALC.	CALCULATED
P.T.	POINT OF TANGENCY
P.C.	POINT OF CURVATURE
CL.	CENTER LINE

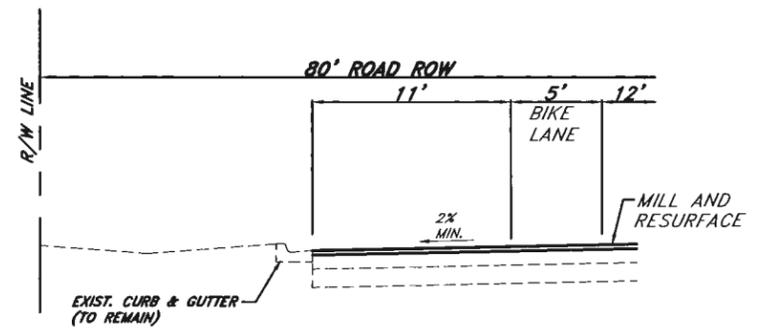
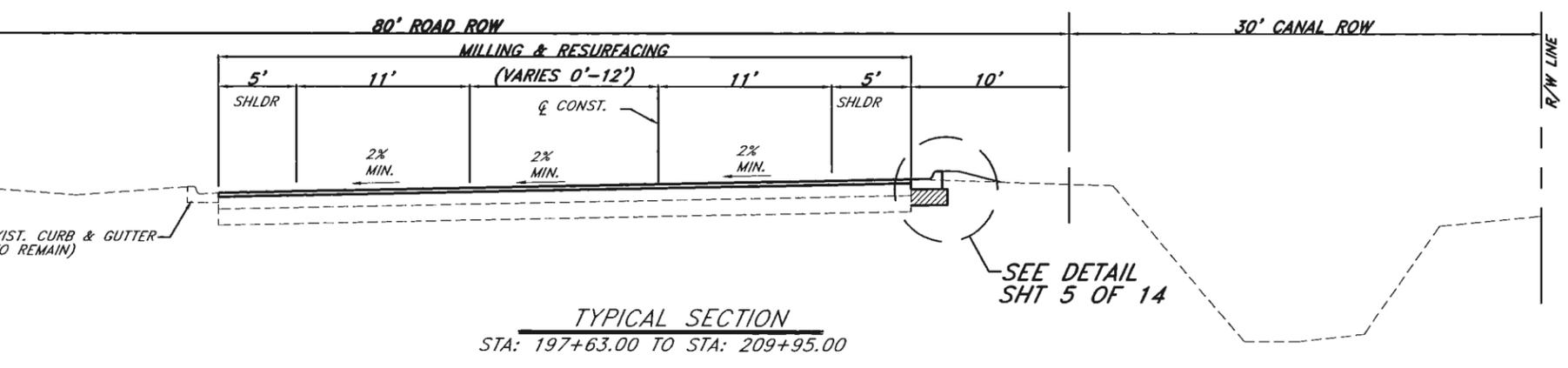
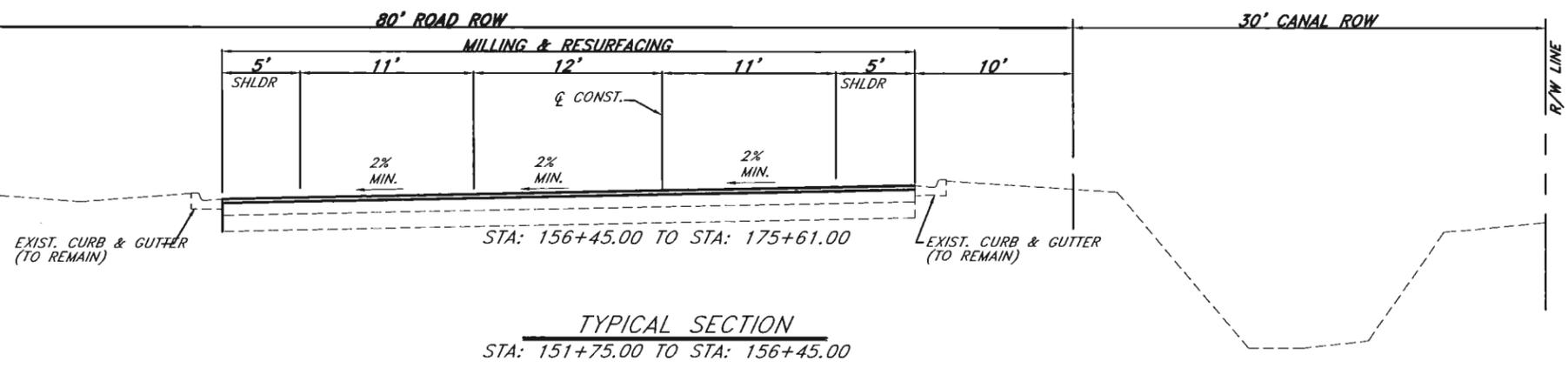
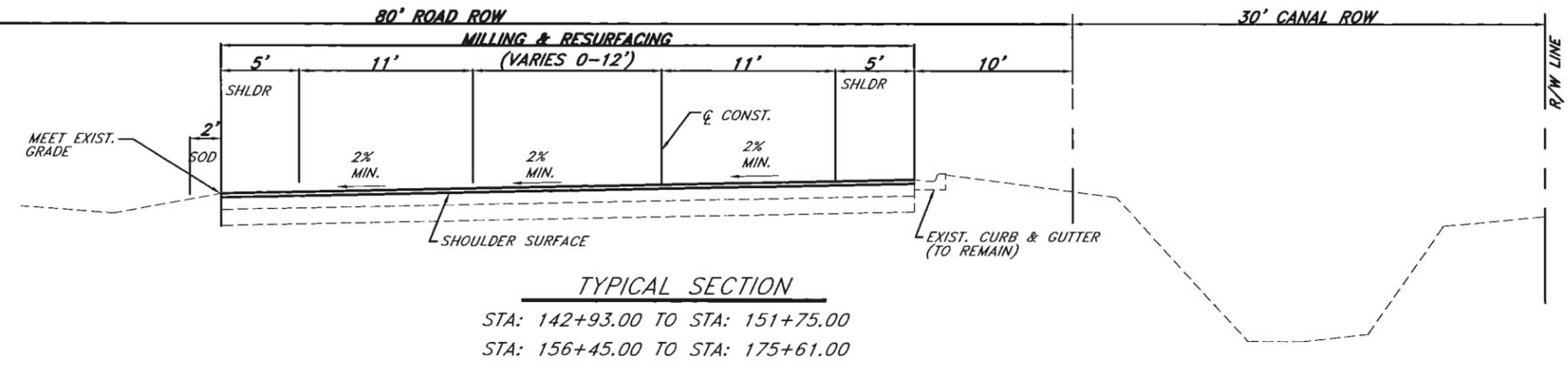
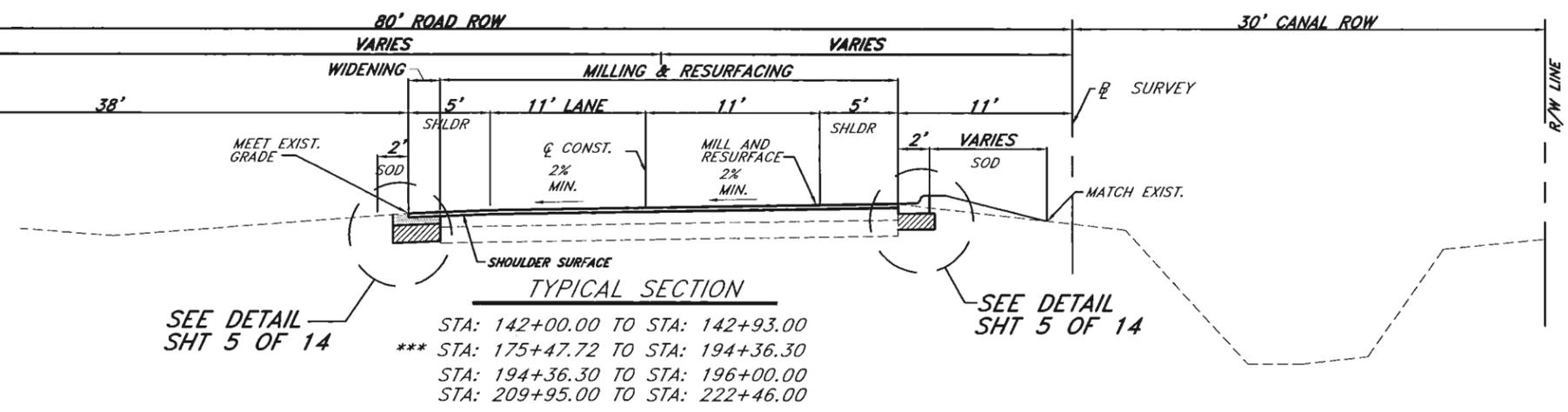
ABBREVIATIONS/SYMBOLS LEGEND:

B.S.	BACK SIGHT
INT.	INTERSECTION
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
T.B.M.	TEMPORARY BENCHMARK
B.M.	BENCHMARK
R/R	RIP RAP
	POINT OF DIRECTIONAL CHANGE ALONG THE RIGHT OF WAY LINE. POINT DENOTED AS STATION AND OFFSET.
T.O.T.I.I.T.F.	TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
5	PARCEL NUMBER DESIGNATION
T	TELEPHONE BOX
W	DRAINAGE INLET
W	WELL
⊙	DRAINAGE MANHOLE
⊙	SANITARY MANHOLE
⊙	TELEPHONE MANHOLE
⊙	WATER VALVE
⊙	REUSE VALVE
⊙	SANITARY VALVE
⊙	GAS VALVE
⊙	LIGHT POLE
⊙	AIR RELEASE VALVE
⊙	BELLSOUTH MANHOLE
⊙	AIR RELEASE VALVE
⊙	CONCRETE UTILITY POLE
⊙	WOOD UTILITY POLE
⊙	ANCHOR
⊙	SIGN
⊙	ELECTRIC BOX
⊙	ELECTRIC PANEL
⊙	TRAFFIC SIGNAL BOX
⊙	MAILBOX
⊙	ELECTRIC METER
⊙	FIRE HYDRANT
⊙	WATER METER
⊙	PULL BOX
⊙	FLAG POLE
4	OAK TREE
U	UNKNOWN TREE SPECIES
⊙	BOTTLE BRUSH
M	MYRTLE
⊙	CABBAGE PALM

TOB	TOP OF BANK
TOE	TOE OF SLOPE
SWALE	SWALE
OE	OVERHEAD ELECTRIC
X-X-X-X-X-X	CHAIN LINK FENCE
□-□-□-□-□-□	STOCKADE FENCE
~~~~~	VEGETATION LINE
-----	EASEMENT LINE
-----	PROPERTY LINE
-----	LOT LINE
-----	1/16 SECTION LINE
-----	1/4 SECTION LINE
-----	SECTION LINE
-----	CENTER OF RIGHT OF WAY
-----	RIGHT OF WAY SIDE STREETS
-----	RECORD RIGHT OF WAY
-----	RIGHT OF WAY ABANDONED



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							DRAWN BY: M. L. HELLER	TOWNSHIP: 32S	PAGE:	PROJECT NUMBER: IRC-1414		
							APPROVED BY: W. JOHNSON P.E.	RANGE: 39E				

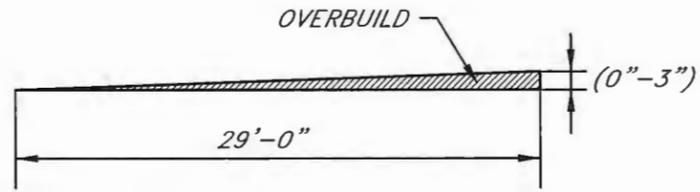


- MILLING**  
MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (1 1/2")
- RESURFACING**  
FRICTION COURSE TYPE FC-12.5 (1 1/2") (TRAFFIC C)
- SHOULDER WIDENING**  
OPTIONAL BASE GROUP 9 (TYPE B 12.5) WITH TYPE SP-12.5 STRUCTURAL COURSE (TRAFFIC C) (1 1/2") AND FRICTION COURSE FC-12.5 (1 1/2") (TRAFFIC C)
- OVERBUILD**  
OVERBUILD WITH SP 12.5 STRUCTURAL COURSE (0" - 3") (TRAFFIC C)

**NOTES:**  
 *** MILLING AND RESURFACING EXCEPTION STATION 175+47.74 TO STATION 194+36.30 TO BE CONSTRUCTED BY OTHERS.  
 - PROVIDE BICYCLE LANE PAVEMENT MARKING, CURB & GUTTER, THROUGHOUT PROJECT LIMITS, INCLUDING MILLING AND RESURFACING EXCEPTION AREA.

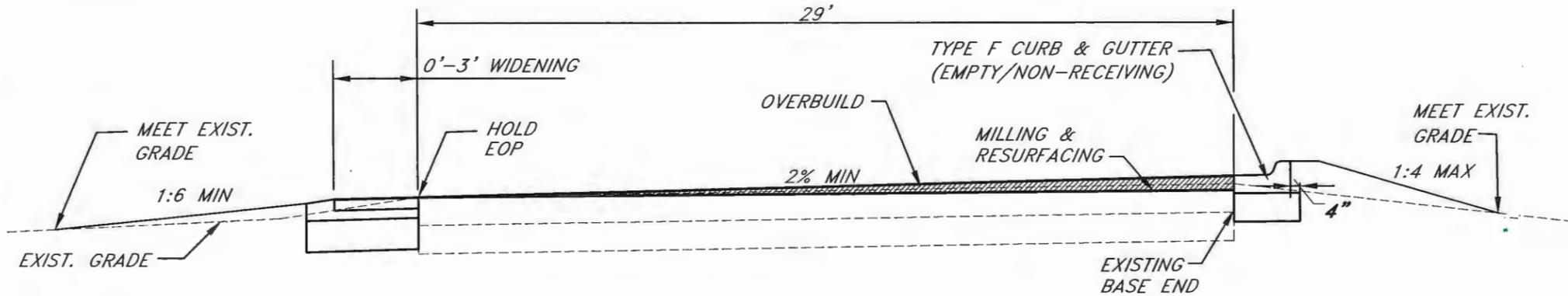
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ks\ENGINEERING DIVISION PROJECTS\1414-49th St_58th Ave to 31st Ave\3-Design\Drawn\1414-COVER.dwg, 6/12/2019 7:41:04 AM, mheller



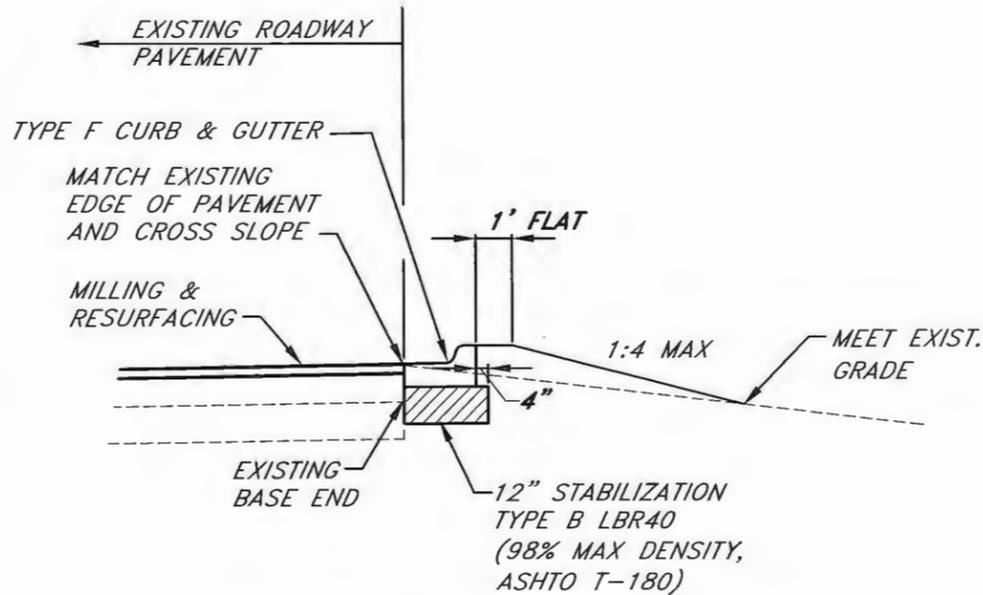
**OVERBUILD DETAIL**

NTS



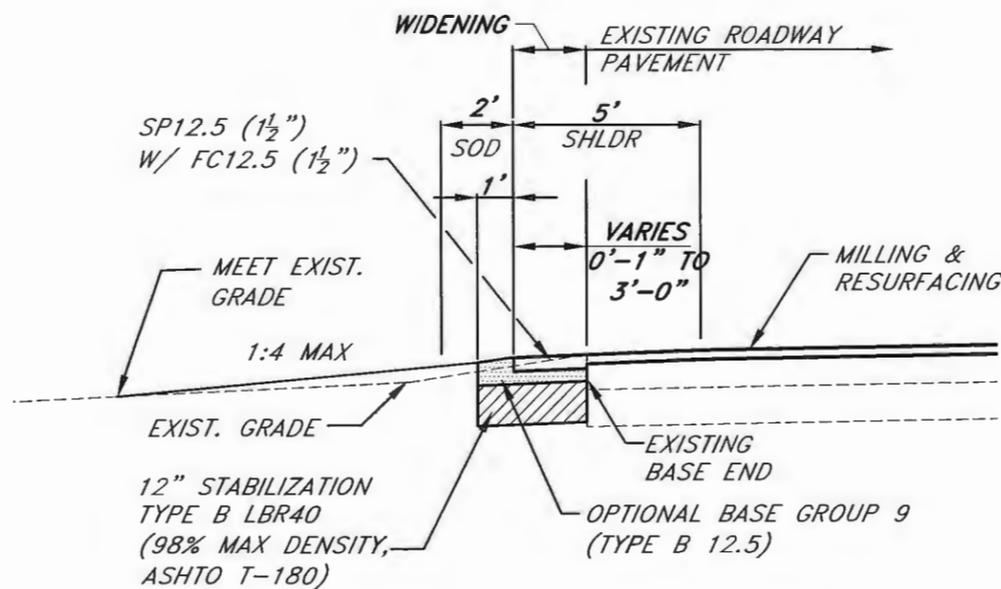
**SLOPE CORRECTION DETAIL**

1"=5'



**CURB & GUTTER DETAIL**

1"=5'

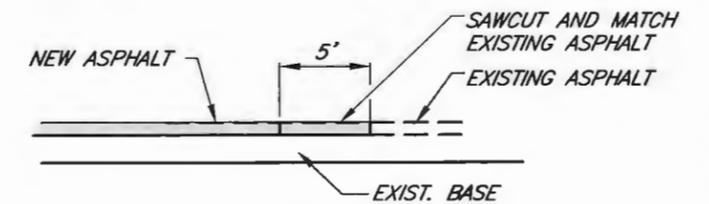


**SHOULDER WIDENING DETAIL**

1"=5'

**OVERBUILD**

EXISTING PAVEMENT CROSS SLOPES		
STATION	EXIST SLOPE	TARGET SLOPE
143+00	3.80%	2.00%
144+00	1.90%	2.00%
145+00	1.65%	2.00%
146+00	2.36%	2.36%
163+00	2.40%	
164+00	1.85%	2.00%
194+00	2.00%	2.00%
195+00	1.82%	2.00%
196+00	2.15%	2.00%
197+00	2.00%	2.00%
198+00	1.03%	2.00%
206+00	3.40%	
207+00	1.70%	3.10%
208+00	2.80%	
211+00	3.00%	3.00%
212+00	1.90%	3.10%
213+00	3.15%	3.15%
214+00	2.31%	3.15%
215+00	2.95%	3.00%
216+00	1.93%	2.50%
217+00	2.00%	2.00%
218+00	2.00%	2.00%
219+00	1.96%	2.00%
220+00	2.50%	2.50%
221+00	2.40%	2.40%
222+00	1.70%	2.00%



**BUTT JOINT DETAIL**

1"=10'

NO.	REVISION	DATE	BY

INDIAN RIVER COUNTY  
1801 27TH STREET  
VERO BEACH, FL 32960  
(772) 567-8000



DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION

DESIGNED BY: W. JOHNSON P.E.	SECTION: 70-72	FIELD BOOK	DATE: 6-12-19
DRAWN BY: M. L. HELLER	TOWNSHIP: 32S	PAGE:	PROJECT NUMBER: IRC-1414
APPROVED BY: W. JOHNSON P.E.	RANGE: 39E		

49TH STREET MILLING AND RESURFACING  
FROM 58TH AVENUE TO 31ST AVENUE  
DETAILS

SHEET 5 OF 16

**SUMMARY OF QUANTITIES**

Item No.	Description	Unit	Quantity
101-1	MOBILIZATION	LS	1
102-1	MAINTENANCE OF TRAFFIC	LS	1
104-1	PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION	LS	1
110-1-1	CLEARING AND GRUBBING	LS	1
120-1	EXCAVATION, REGULAR (ROADWAY)	LS	1
120-6	EMBANKMENT (COMPACTED IN PLACE)	CY	300
160-4	TYPE B STABILIZATION 12" SHOULDER (LBR-40)	SY	2,325
285-709	OPTIONAL BASE GROUP 9 (10" LIMEROCK) LBR100	SY	1,523
327-70-6	MILLING EXISTING ASPHALT (1-1/2" AVERAGE DEPTH)	SY	28,235
334-1-53	SUPERPAVE ASPALTIC CONCRETE (1-1/2" THICK) TRAFFIC C (WIDENING) TYPE SP-12.5	SY	858
334-1-53A	SUPERPAVE ASPALTIC CONCRETE (0"-3" THICK) (OVERBUILD) TYPE SP-12.5 (TRAFFIC C, PG 76-22)	SY	7,733
337-7-83	ASPALT CONCRETE FRICTION COURSE TYPE F.C. 12.5 (PG 76-22, PMA) (1-1/2" THICK) TRAFFIC C	SY	29,093
425-6	VALVE BOX ADJUSTMENT	EA	17
520-1-10	CONCRETE CURB AND GUTTER (TYPE F)	LF	1,728
536-1-1	GUARDRAIL - ROADWAY GENERAL TL-3	LF	350
536-85-26	GUARDRAIL END TREATMENT - TYPE CRT	EA	4
570-1-2	PERFORMANCE TURF - SOD (BAHIA)	SY	3,500
700-1-5	SINGLE POST SIGN (RELOCATE)	AS	3
700-1-5A	SINGLE POST SIGN (BIKE ROUTE)	AS	4
706-3	REFLECTIVE PAVEMENT MARKERS BI-DIRECTIONAL AMBER/AMBER	EA	602
711-4	BICYCLE LANE MARKING, THERMOPLASTIC (WHITE)	EA	20
711-11-123	SOLID TRAFFIC STRIPE (12" WHITE) THERMOPLASTIC (CROSSWALK)	LF	136
711-11-125	SOLID TRAFFIC STRIPE (24" WHITE) THERMOPLASTIC	LF	221
711-11-141	SKIP TRAFFIC STRIPE (6" WHITE 2'-4') THERMOPLASTIC	GM	0.164
711-11-141A	SKIP TRAFFIC STRIPE (6" WHITE 6'-10') THERMOPLASTIC	GM	0.044
711-11-170	TURN ARROWS, THERMOPLASTIC (WHITE)	EA	18
711-11-224	SOLID TRAFFIC STRIP (18" YELLOW) THERMOPLASTIC	LF	651
711-11-241	SKIP TRAFFIC STRIP (6" YELLOW 6'-10') THERMOPLASTIC	GM	0.027
711-16-101	SOLID TRAFFIC STRIPE (6" WHITE) THERMOPLASTIC	GM	2,210
711-16-201	SOLID TRAFFIC STRIPE (6" YELLOW) THERMOPLASTIC	GM	3,114
999-1	RECORD DRAWINGS/AS-BUILTS	LS	1

PAY ITEM FOOTNOTES

102-1 INCLUDES TEMPORARY PAVEMENT, TEMPORARY PAINT STRIPING, BARRIER WALLS, VERTICAL PANELS, ATTENUATORS, TEMPORARY STRIPING, SIGNS, MESSAGE BOARDS, BARRICADES, PERMANENT RELOCATION OF SCHOOL SIGNS AND ALL OTHER TRAFFIC INCIDENTAL ITEMS REQUIRED FOR THE MAINTENANCE OF TRAFFIC. ALL TEMPORARY PAVEMENT STRIPING IS TO BE REMOVED PRIOR TO FINAL STRIPING. VARIABLE CHANGING MESSAGE SIGN SHALL BE IN PLACE 2 WEEKS PRIOR TO ALL ROAD CLOSINGS, COST SHALL BE INCLUDED IN THE MAINTENANCE OF TRAFFIC PAY ITEM. COST SHALL INCLUDE AN MOT PLAN PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA.

104-1 COST SHALL INCLUDE ALL NPDES PERMITTING FEES.

110-1-1 INCLUDES BUT NOT LIMITED TO VEGETATION & TOPSOIL REMOVAL SAW CUT AND/OR REMOVAL OF EXISTING PAVEMENT, ASPHALT OR CONCRETE, CURB OR SIDEWALK, THE REMOVAL OF EXISTING GUARDRAIL AND THE REMOVAL OF EXISTING PIPES CULVERTS, HEADWALLS AND/OR STRUCTURES. WHERE EXISTING PIPES ARE REMOVED AND THE EXISTING STRUCTURE REMAINS, THE RESULTING HOLE SHALL BE FORMED AND FILLED WITH CONCRETE. THE CONTRACTOR SHALL COMPLY WITH THE STATE OF FLORIDA TRENCH SAFETY ACT. INCIDENTAL CONSTRUCTION COSTS INCLUDING, AS-BUILT SURVEYING AND DRAWING PREPARATION, SURVEY STAKING, AND UTILITY COORDINATION ARE INCLUDED IN THE UNIT COST OF RELATED ITEMS.

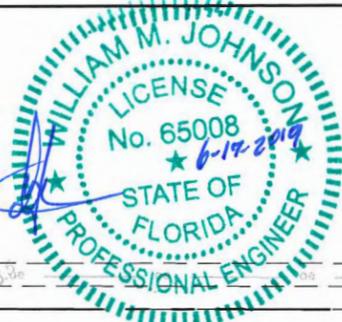
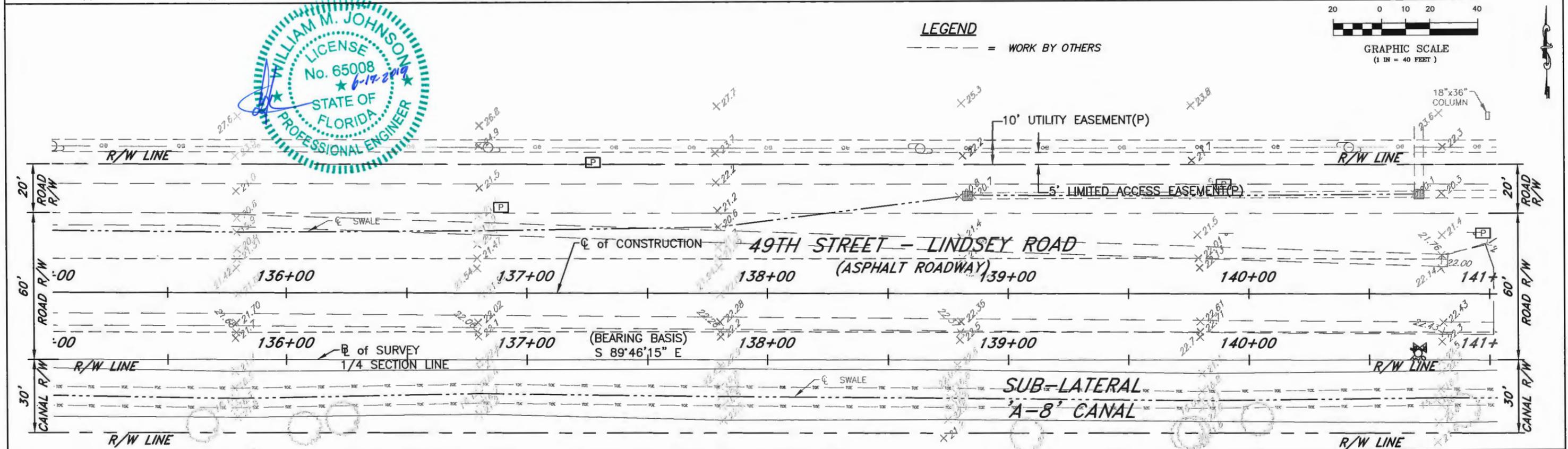
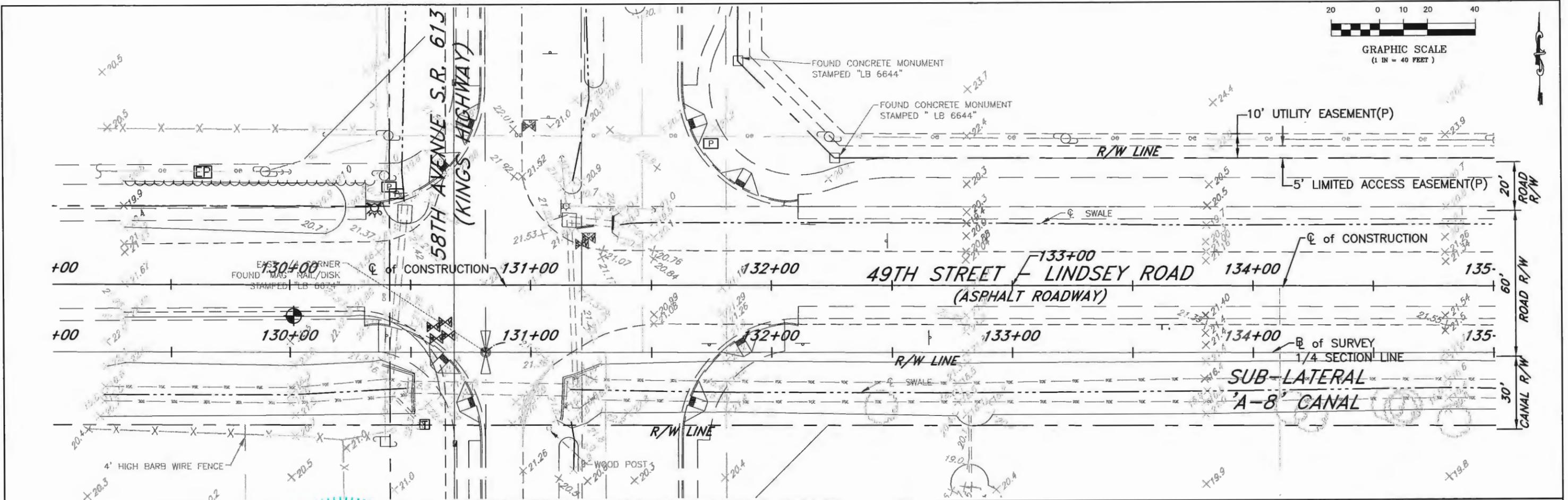
120-1 INCLUDES AREA PROPOSED STABILIZED SHOULDER AND THE RIGHT OF WAY WHERE SIDE SLOPES, SWALE GRADING, ASPHALT AND BASE REMOVAL, AND DITCH GRADING ARE TO BE CONSTRUCTED TO CONFORM TO THE PROPOSED GRADES AND CROSS SECTIONS. THIS ITEM DOES NOT INCLUDE UNDISTURBED AREAS AND/OR PIPE BACKFILL.

327-70-6 - THE COST SHALL INCLUDE THE HAULING OF THE MILLINGS TO THE ADDRESS SPECIFIED IN SECTION 01009, 1.1 (C) OF THE CONTRACT DOCUMENTS. INDIAN RIVER COUNTY WILL RETAIN OWNERSHIP OF THE MILLINGS.

520-1-10 SHALL INCLUDE DROP CURB OPENING AS DETAILED IN F.D.O.T. STANDARD INDEX #300.

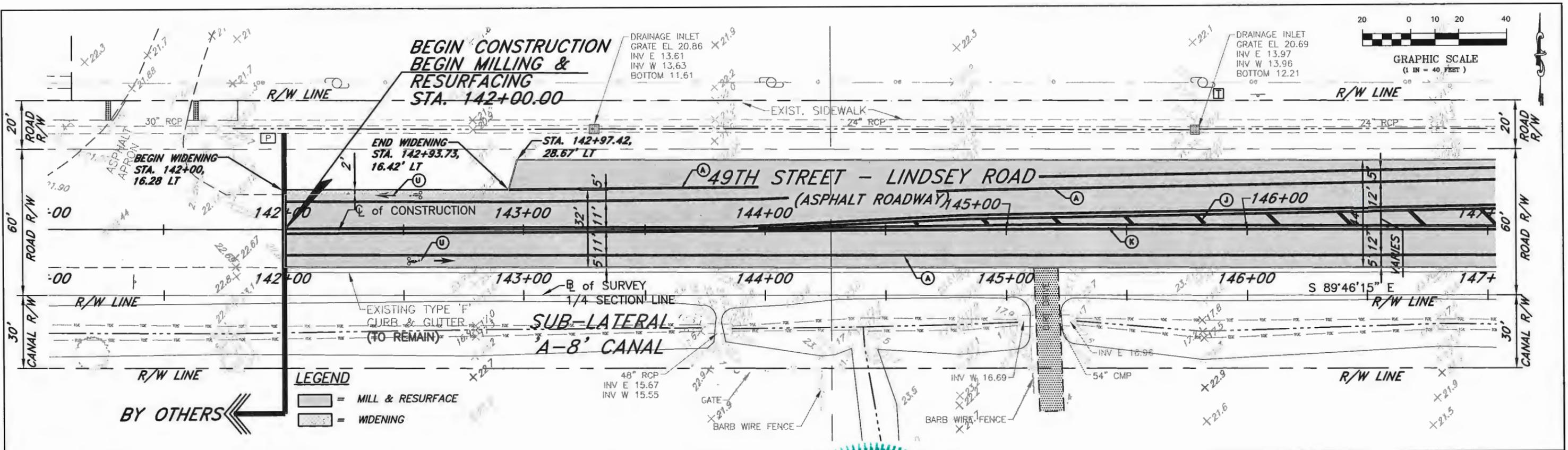


I:\ENGINEERING DIVISION PROJECTS\1414-49th St_58th Ave to 31st Ave\3-Design\Drawings\1414-COVER.dwg, 6/13/2019 1:01:53 PM, mheller



NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000	DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E. DRAWN BY: M. HELLER APPROVED BY: W. JOHNSON P.E.	SECTION: 20-22 TOWNSHIP: 32S RANGE: 39E	FIELD BOOK: DATE: 6-12-19 PROJECT NUMBER: IRC-1414	49TH STREET MILLING AND RESURFACING PAVEMENT MARKINGS STA 129+00 TO STA 141+00	SHEET 7 OF 16
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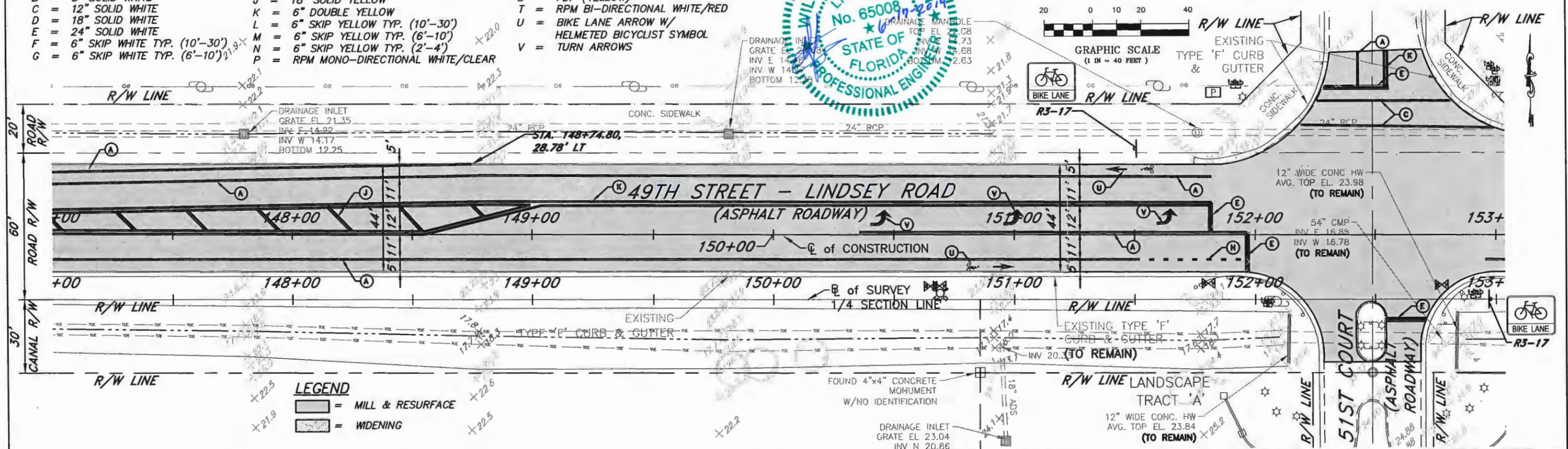
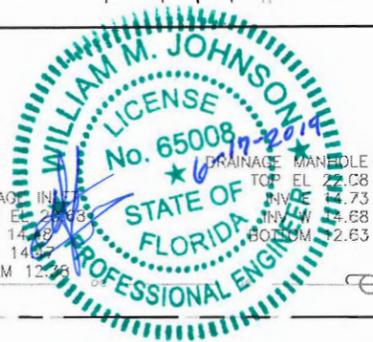
**LEGEND**

= MILL & RESURFACE  
 = WIDENING

BY OTHERS ←

**STRIPING KEY**

- |                                  |                                      |                                    |
|----------------------------------|--------------------------------------|------------------------------------|
| A = 6" SOLID WHITE               | H = 6" SKIP WHITE TYP. (2'-4')       | Q = RPM BI-DIRECTIONAL AMBER/AMBER |
| B = 8" SOLID WHITE               | I = 6" SOLID YELLOW                  | R = 6" DOUBLE YELLOW (6'-10')      |
| C = 12" SOLID WHITE              | J = 18" SOLID YELLOW                 | S = FDP (YELLOW)                   |
| D = 18" SOLID WHITE              | K = 6" DOUBLE YELLOW                 | T = RPM BI-DIRECTIONAL WHITE/RED   |
| E = 24" SOLID WHITE              | L = 6" SKIP YELLOW TYP. (10'-30')    | U = BIKE LANE ARROW W/             |
| F = 6" SKIP WHITE TYP. (10'-30') | M = 6" SKIP YELLOW TYP. (6'-10')     | HELMETED BICYCLIST SYMBOL          |
| G = 6" SKIP WHITE TYP. (6'-10')  | N = 6" SKIP YELLOW TYP. (2'-4')      | V = TURN ARROWS                    |
|                                  | P = RPM MONO-DIRECTIONAL WHITE/CLEAR |                                    |

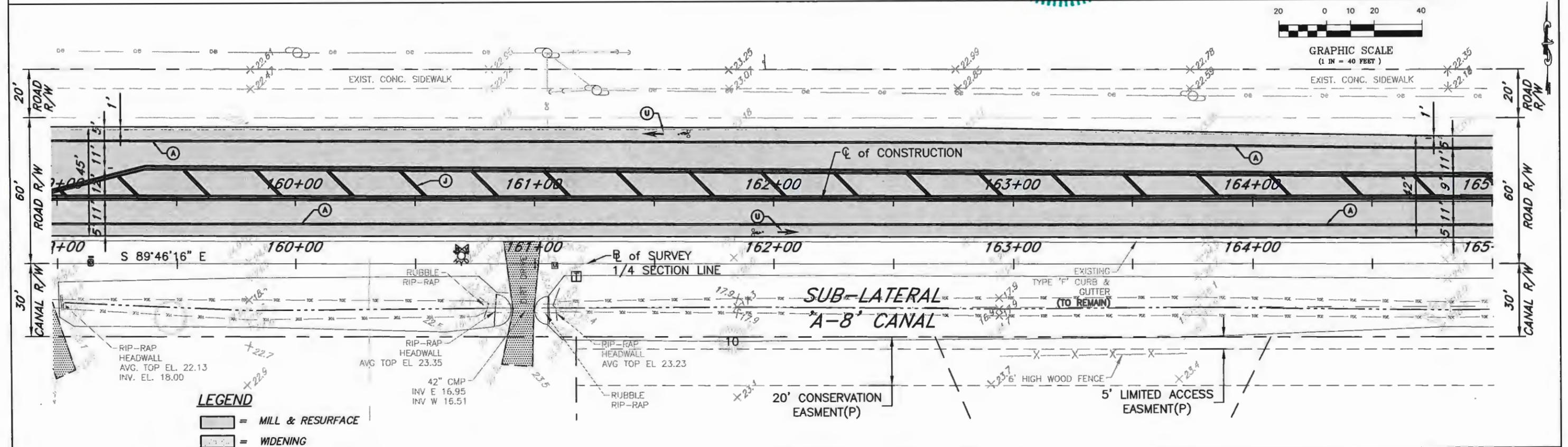
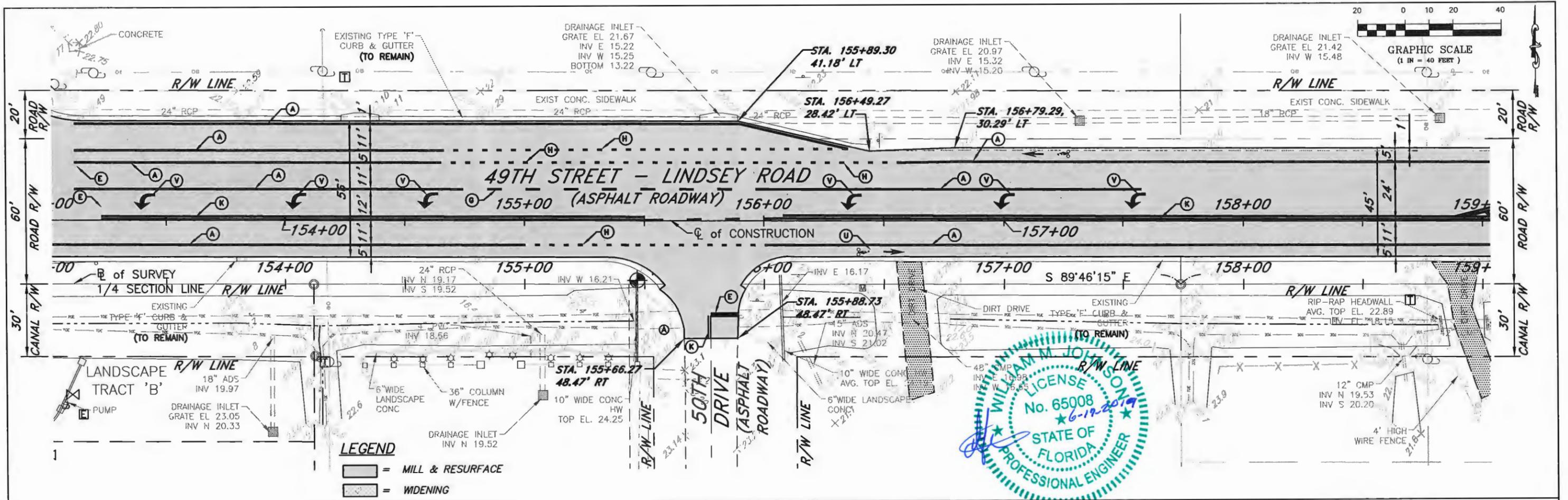


**LEGEND**

= MILL & RESURFACE  
 = WIDENING

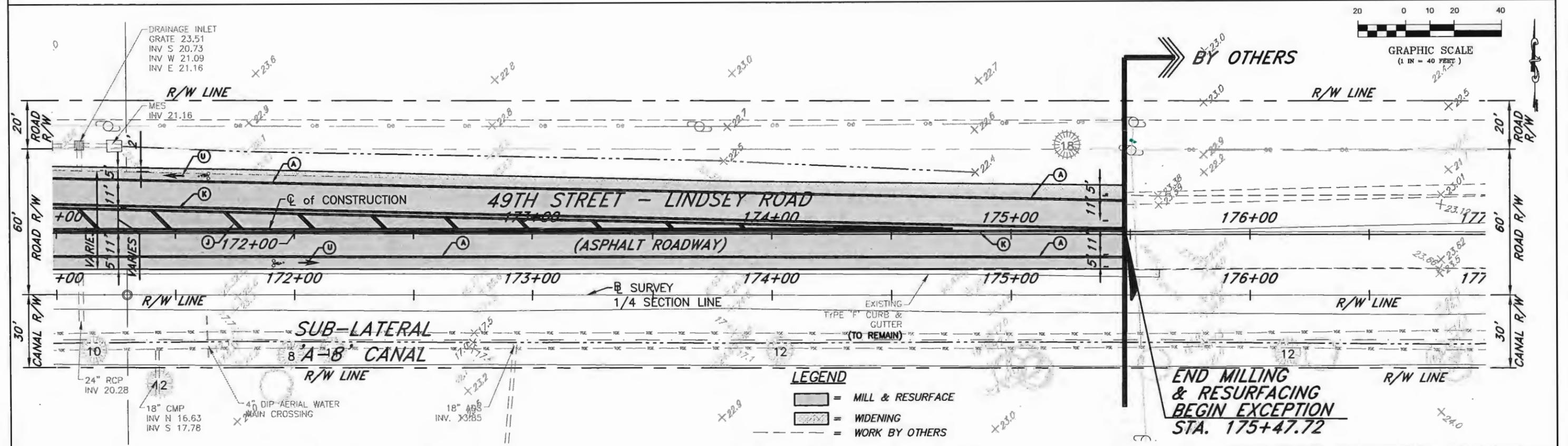
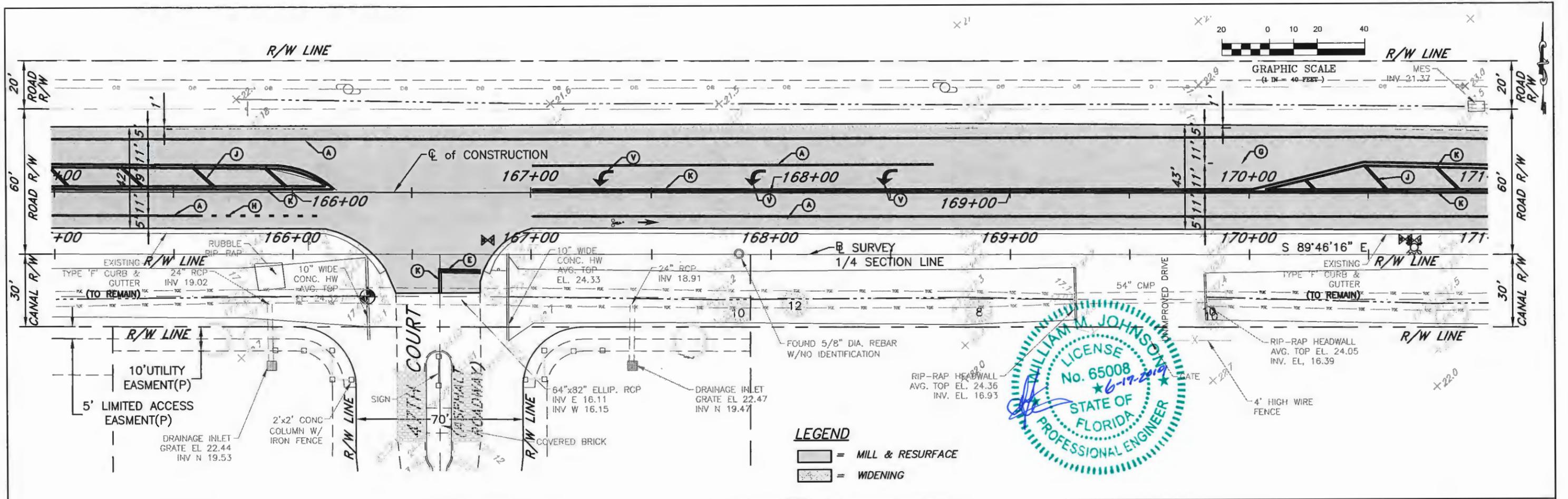
NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000		DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E. SECTION: 20-22 DRAWN BY: M. HELLER TOWNSHIP: 32S APPROVED BY: W. JOHNSON P.E. RANGE: 39E	FIELD BOOK: PAGE:	DATE: 6-12-19 PROJECT NUMBER IRC-1414	49TH STREET MILLING AND RESURFACING PAVEMENT MARKINGS STA 141+00 TO STA 153+00	SHEET 8 OF 16
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NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000	DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E. SECTION: 20-22 DRAWN BY: M. HELLER TOWNSHIP: 32S APPROVED BY: W. JOHNSON P.E. RANGE: 39E	FIELD BOOK: DATE: 6-12-19 PROJECT NUMBER: IRC-1414	49TH STREET MILLING AND RESURFACING PAVEMENT MARKINGS STA 153+00 TO STA 165+00	SHEET 9 OF 16
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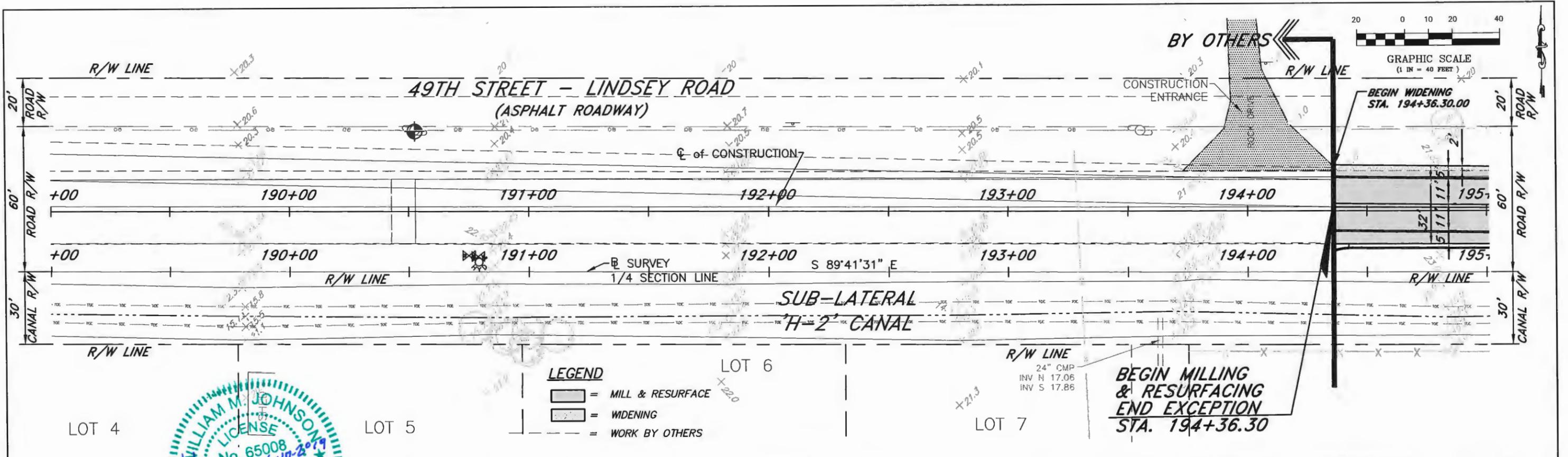
\S:\ENGINEERING DIVISION PROJECTS\1414-49th St-58th Ave to 31st Ave\3-Design\Draw\1414-MODEL.dwg, 6/12/2019 8:07:09 AM, mheller



NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000	 DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E. DRAWN BY: M. HELLER APPROVED BY: W. JOHNSON P.E.	SECTION: 20-22 TOWNSHIP: 32S RANGE: 39E	FIELD BOOK: PAGE: PROJECT NUMBER: IRC-1414	DATE: 6-12-19	49TH STREET MILLING AND RESURFACING PAVEMENT MARKINGS STA 165+00 TO STA 177+00	SHEET 10 OF 16
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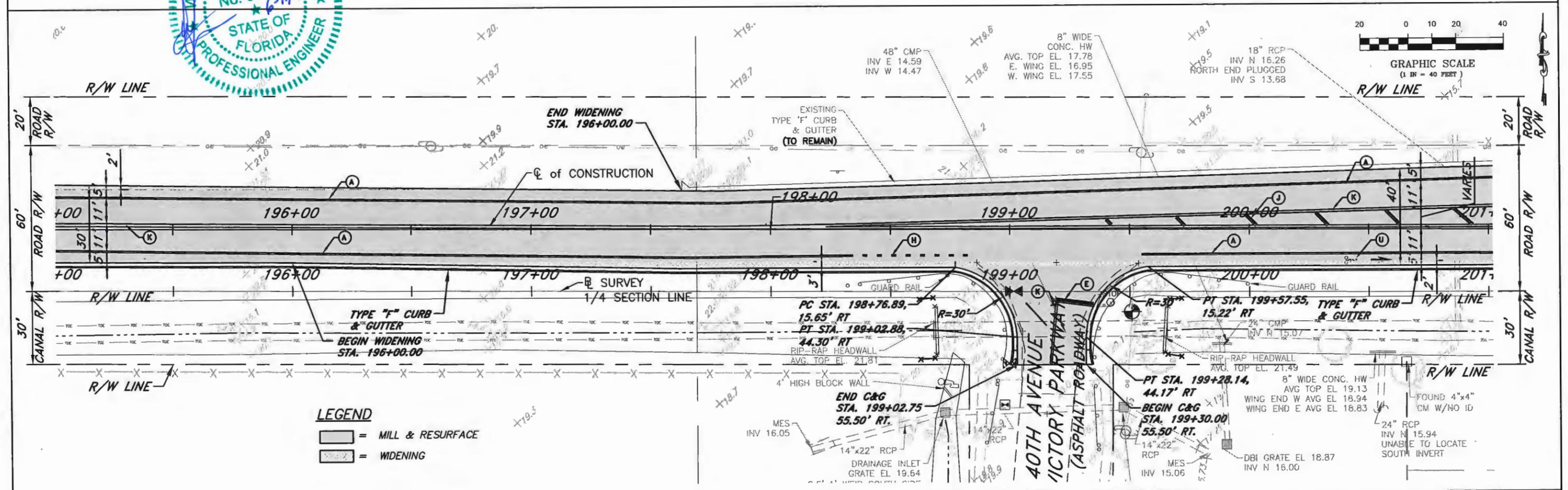
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**LEGEND**  
 [Hatched Box] = MILL & RESURFACE  
 [Dotted Box] = WIDENING  
 [Cross-hatched Box] = WORK BY OTHERS

**BEGIN MILLING & RESURFACING  
 END EXCEPTION  
 STA. 194+36.30**

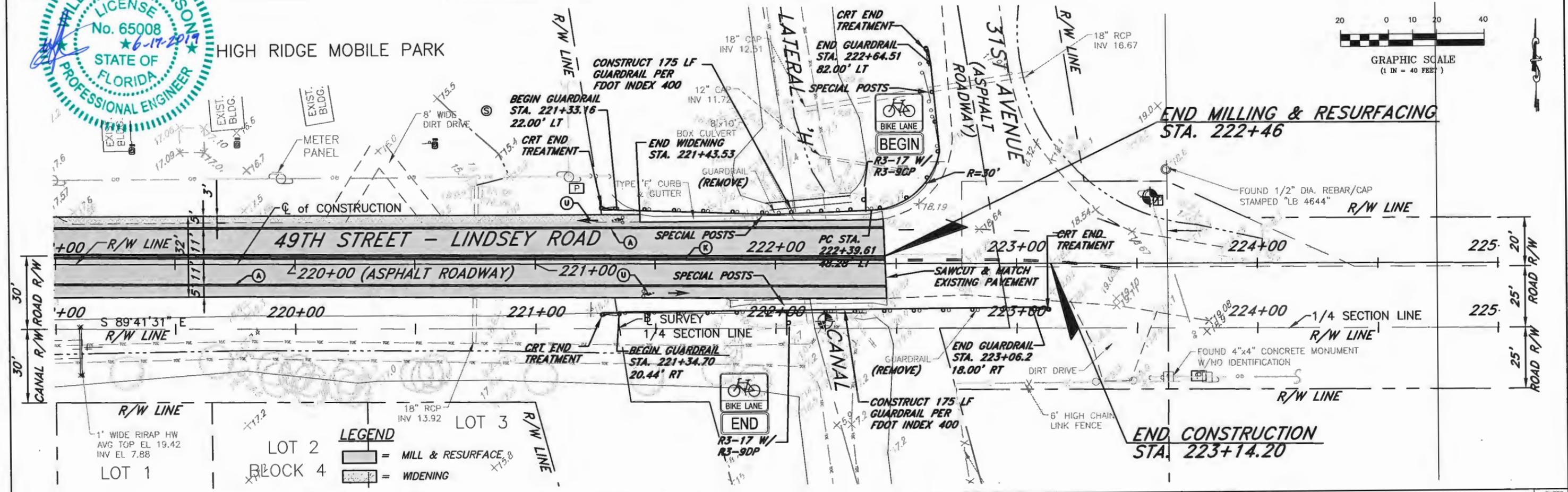
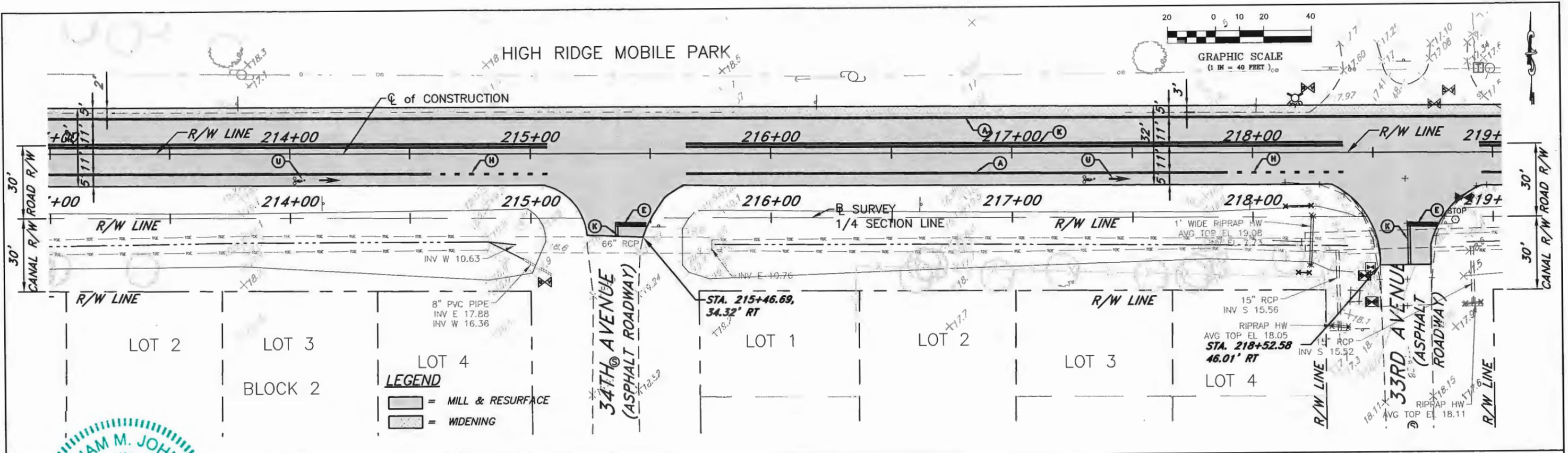


**LEGEND**  
 [Hatched Box] = MILL & RESURFACE  
 [Dotted Box] = WIDENING

NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000	DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E. SECTION: 20-22 DRAWN BY: M. HELLER TOWNSHIP: 32S APPROVED BY: W. JOHNSON P.E. RANGE: 39E	FIELD BOOK: PAGE: DATE: 6-12-19 PROJECT NUMBER: IRC-1414	49TH STREET MILLING AND RESURFACING PAVEMENT MARKINGS STA 189+00 TO STA 201+00	SHEET 12 OF 16
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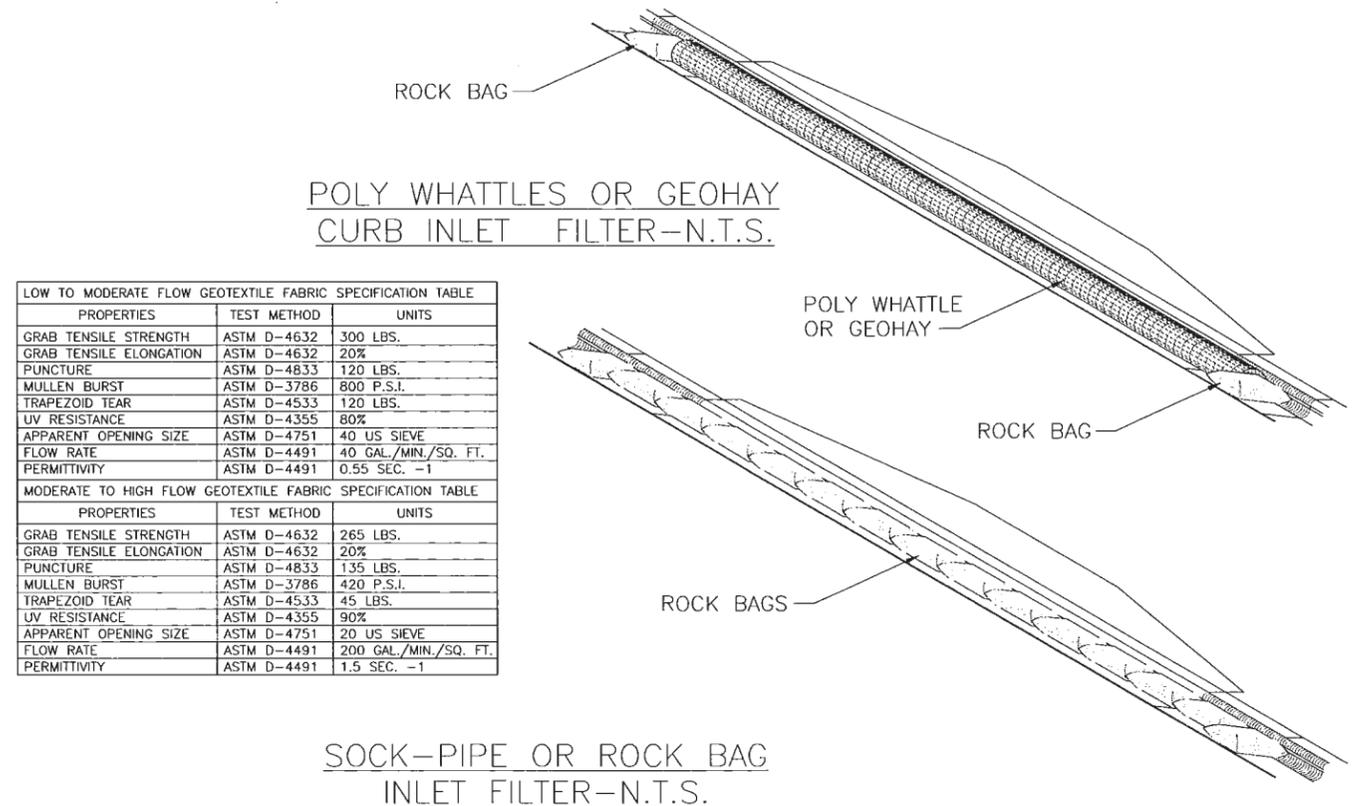
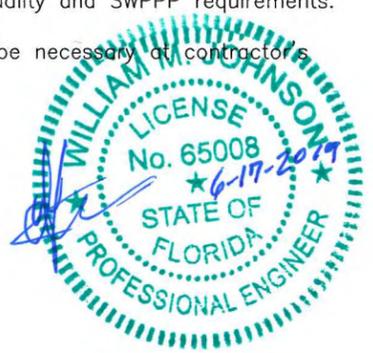


NO.	REVISION	DATE	BY	INDIAN RIVER COUNTY 1801 27TH STREET VERO BEACH, FL 32960 (772) 567-8000	DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION	DESIGNED BY: W. JOHNSON P.E. SECTION: 20-22 FIELD BOOK: DRAWN BY: M. HELLER TOWNSHIP: 32S PAGE: APPROVED BY: W. JOHNSON P.E. RANGE: 39E	DATE: 6-12-19 PROJECT NUMBER: IRC-1414	49TH STREET MILLING AND RESURFACING PAVEMENT MARKINGS STA 219+00 TO STA 225+00	SHEET 14 OF 16
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# EROSION CONTROL NOTES

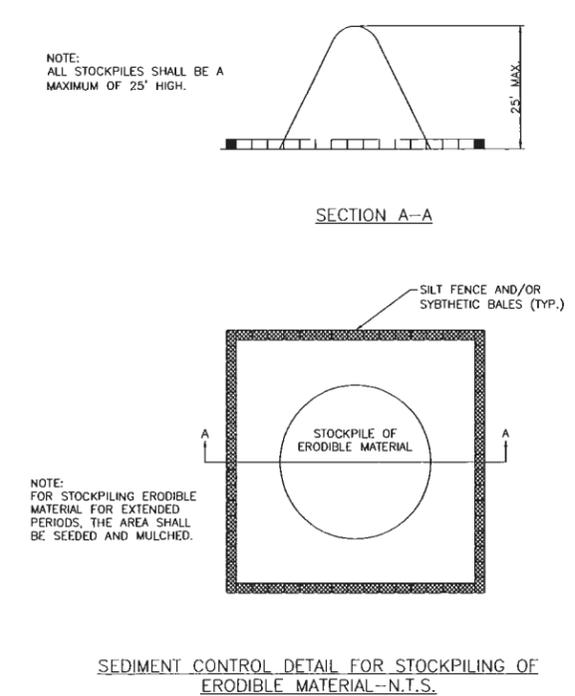
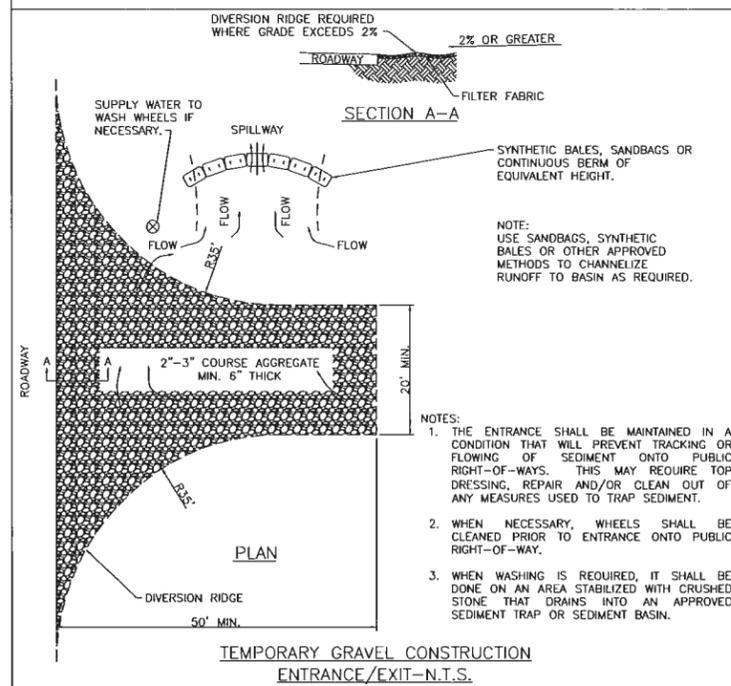
- Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land disturbing activity and shall be made functional before up-slope land disturbance takes place.
- All sediment control measures are to be adjusted to meet field conditions at the time of construction and be constructed prior to any grading or disturbance of existing surface material on balance of site. Perimeter sediment barriers shall be constructed to prevent sediment or trash from flowing or floating on to adjacent properties.
- Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven (7) days to denuded areas that may not be at final grade but will remain undisturbed for longer than 30 days. Permanent stabilization shall be applied to areas that are to be left undisturbed for more than one year.
- During construction of the project, soil stock piles shall be stabilized, covered or contained with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as soil intentionally transported from the project site.
- A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized.
- After any significant rainfall, sediment control structures will be inspected for integrity. Any damaged devices shall be corrected immediately.
- Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume, slope drain structure or approved control.
- Sediment will be prevented from entering any storm water system, ditch or channel. All storm water inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.
- When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction.
- Periodic inspection and maintenance of all sediment control structures must be provided to ensure intended purpose is accomplished. The developer, owner and/or contractor shall be continually responsible for all sediment controls. Sediment control measures shall be in working condition at the end of each working day.
- Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by tracking onto the paved surface. Where sediment is transported onto a public road surface with curbs and gutters, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual subdivision lots as well as to larger land disturbing activities.
- All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed.
- Properties and waterways downstream from construction sites shall be protected from sediment deposition and erosion at all times during construction.
- Erosion control design and construction shall follow the requirements in index numbers 101, 102 and 103 of F.D.O.T. Roadway and Traffic Design Standards and county permits.
- Contractor is responsible for all surface water discharges, rainfall run off or dewatering activities.
- Contractor must incorporate all BMP's necessary to meet or exceed state water quality and SWPPP requirements.
- The Pollution Prevention Plan is a minimum guideline only. Additional BMP's may be necessary at contractor's expense.
- NOI to be posted on site.
- Dewatering activities:
  - Discharge must not exceed state water quality standards.
  - Contractor must have a transferable SJRWMD Consumptive Use Permit known as a "Noticed General Permit For Short Term Construction De-Watering".
  - No hydraulic pumps may be used for dewatering unless approved by the water management district for that area.
  - No turbid discharge. Turbidity readings are required once a week and must be reported to the project engineer.



LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS.
MULLEN BURST	ASTM D-3786	800 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	120 LBS.
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./SQ. FT.
PERMITTIVITY	ASTM D-4491	0.55 SEC. -1

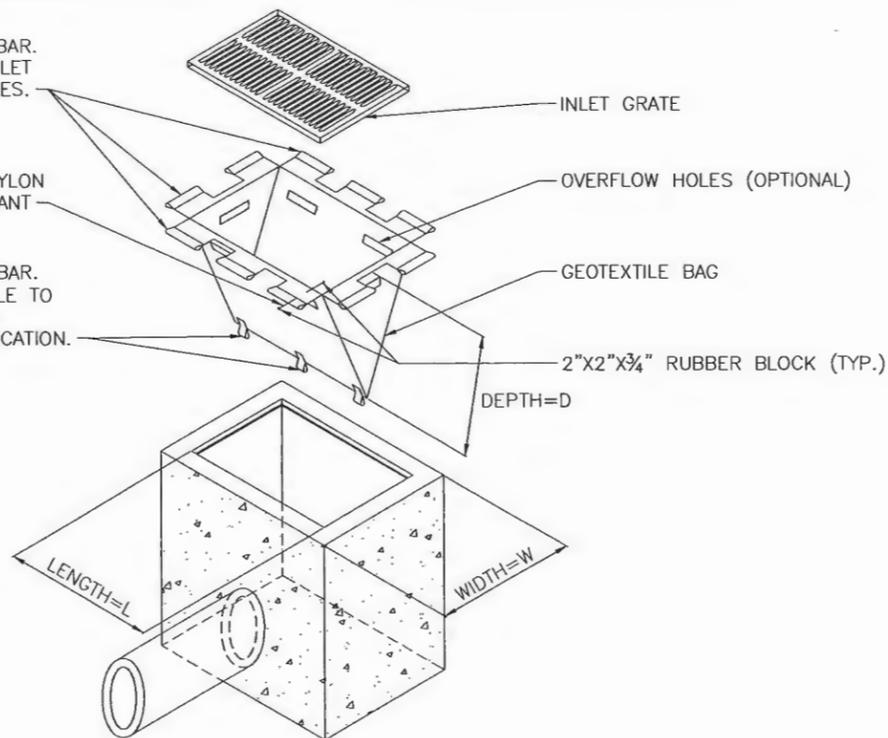
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS.
MULLEN BURST	ASTM D-3786	420 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	45 LBS.
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL./MIN./SQ. FT.
PERMITTIVITY	ASTM D-4491	1.5 SEC. -1



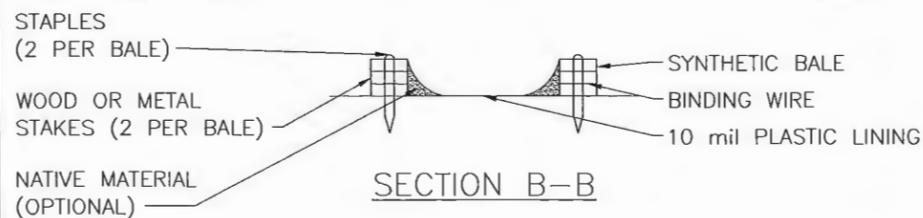
LOOPS SIZED FOR 1" REBAR.  
LIFT FILTER BAG FROM INLET  
USING REBAR FOR HANDLES.

1/4" BRIGHTLY COLORED NYLON  
ROPE, EXPANSION RESISTANT

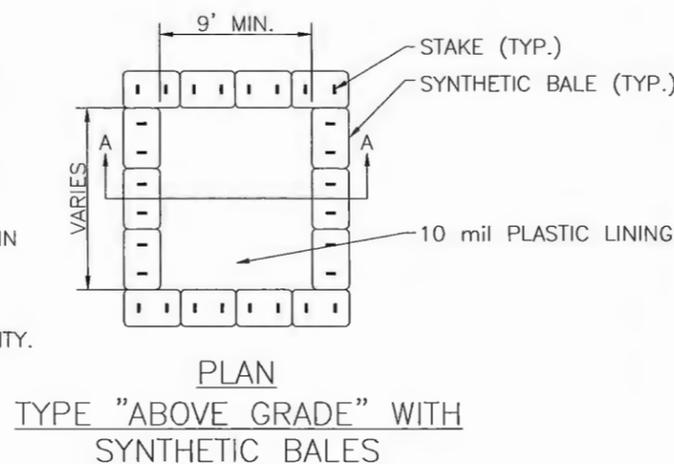
LOOPS SIZED FOR 1" REBAR.  
USE REBAR FOR A HANDLE TO  
EMPTY FILTER SACK AT A  
SEDIMENT COLLECTION LOCATION.



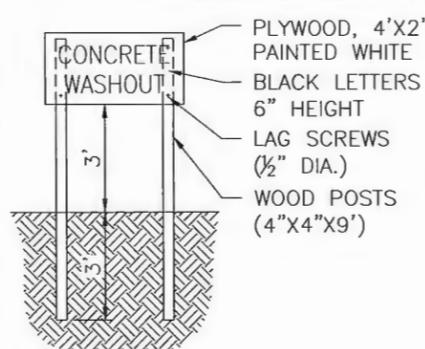
FILTER SACKS FOR GRATED INLETS  
AND STABILIZED ROADWAYS—N.T.S.



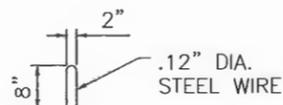
- NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
  2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.



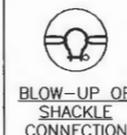
CONCRETE & STUCCO WASTE MANAGEMENT—N.T.S.



CONCRETE WASHOUT SIGN  
DETAIL (OR EQUIVALENT)



STAPLE DETAIL

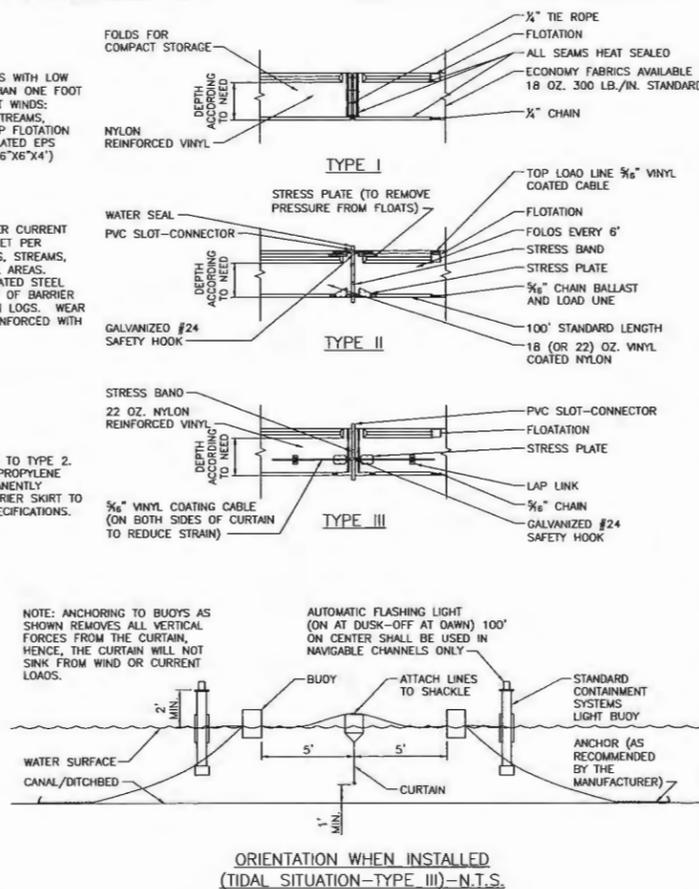


BLOW-UP OF  
SHACKLE  
CONNECTION

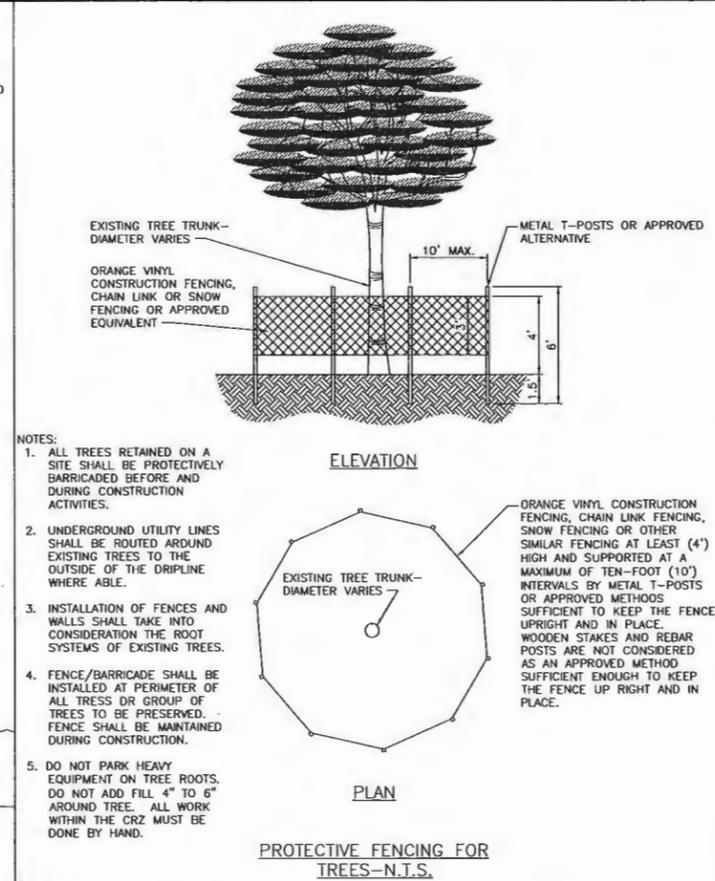
TYPE I. DOT FOR WATERS WITH LOW CURRENTS (NO MORE THAN ONE FOOT PER SECOND) AND LIGHT WINDS; LAKES, PONDS, SMALL STREAMS, MARSHES. FLEXIBLE TOP FLOTATION SECTION WITH ENCAPSULATED EPS FOAM FLOTATION LOGS (6"x6"x4")

TYPE 2. DOT FOR HIGHER CURRENT WATERS (UP TO FIVE FEET PER SECOND); DEEPER LAKES, STREAMS, INTERCOASTAL AND TIDAL AREAS. INCLUDES AN ENCAPSULATED STEEL LOAD CABLE ALONG TOP OF BARRIER AND 8"x8"x4" FLOTATION LOGS. WEAR STRESS POINTS ARE REINFORCED WITH SHIELDS.

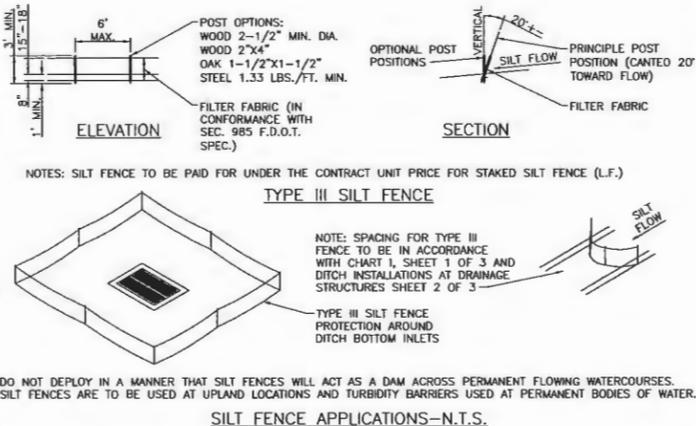
TYPE 3. DOT IS SIMILAR TO TYPE 2. DOT EXCEPT THAT POLYPROPYLENE FILTER FABRIC IS PERMANENTLY INSERTED INTO THE BARRIER SKIRT TO MEET SOME STATE'S SPECIFICATIONS.



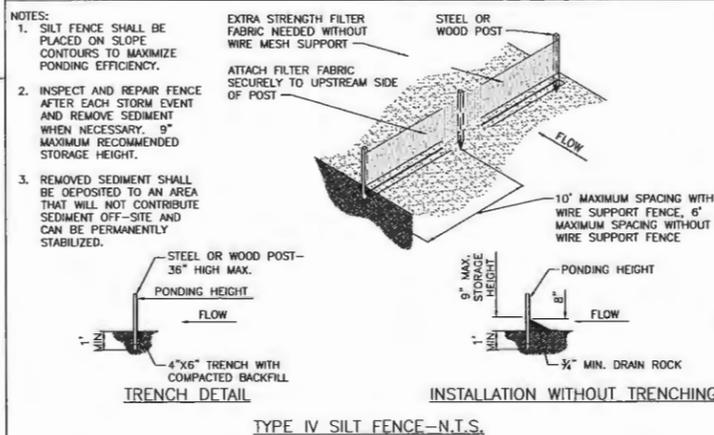
ORIENTATION WHEN INSTALLED  
(TIDAL SITUATION—TYPE III)—N.T.S.



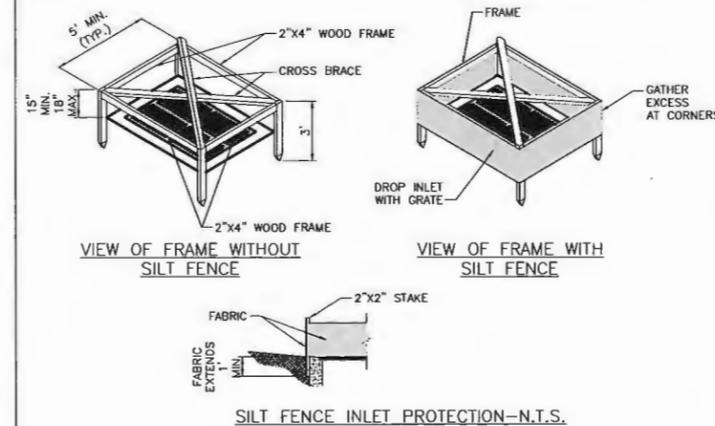
PROTECTIVE FENCING FOR  
TREES—N.T.S.



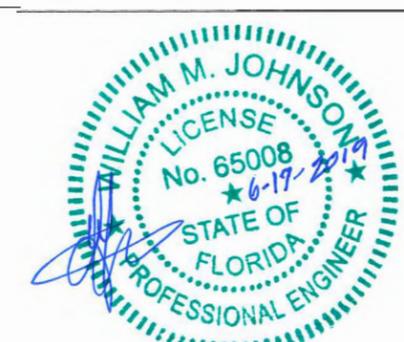
SILT FENCE APPLICATIONS—N.T.S.



TYPE IV SILT FENCE—N.T.S.



SILT FENCE INLET PROTECTION—N.T.S.



NO.	REVISION	DATE	BY
1			

INDIAN RIVER COUNTY  
1801 27TH STREET  
VERO BEACH, FL 32960  
(772) 567-8000

INDIAN RIVER COUNTY  
DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION

DESIGNED BY: W. JOHNSON P.E.	SECTION: 20-22	FIELD BOOK:	DATE: 6-12-19
DRAWN BY: M. HELLER	TOWNSHIP: 32S	PAGE:	PROJECT NUMBER: IRC-1414
APPROVED BY: W. JOHNSON, P.E.	RANGE: 39E		

49th STREET MILLING AND RESURFACING  
SWPPP DETAILS

SHEET 16 OF 16