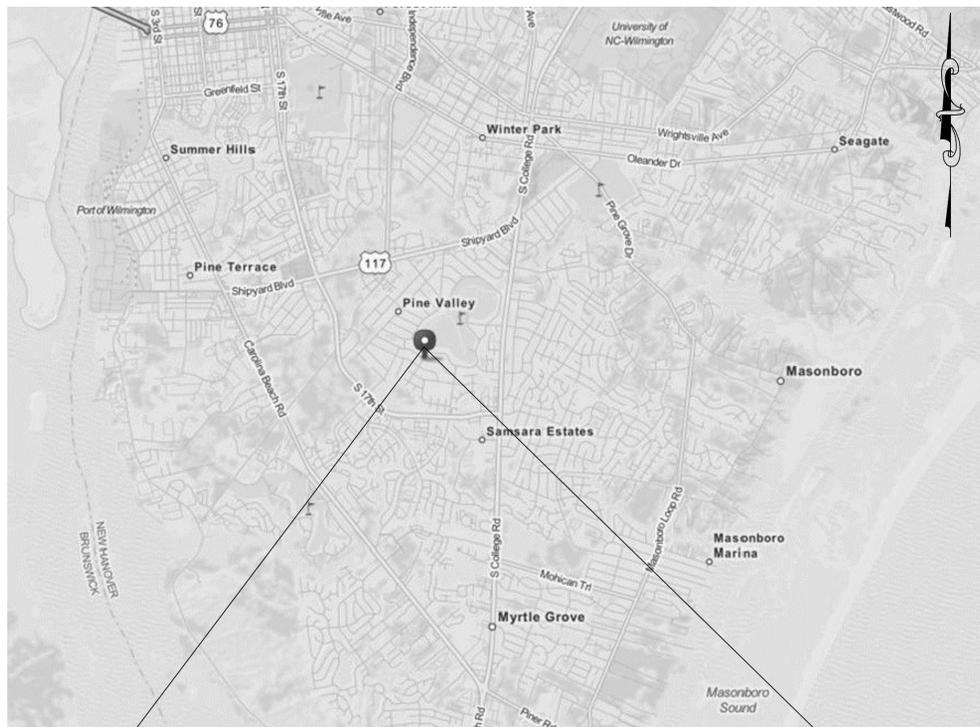
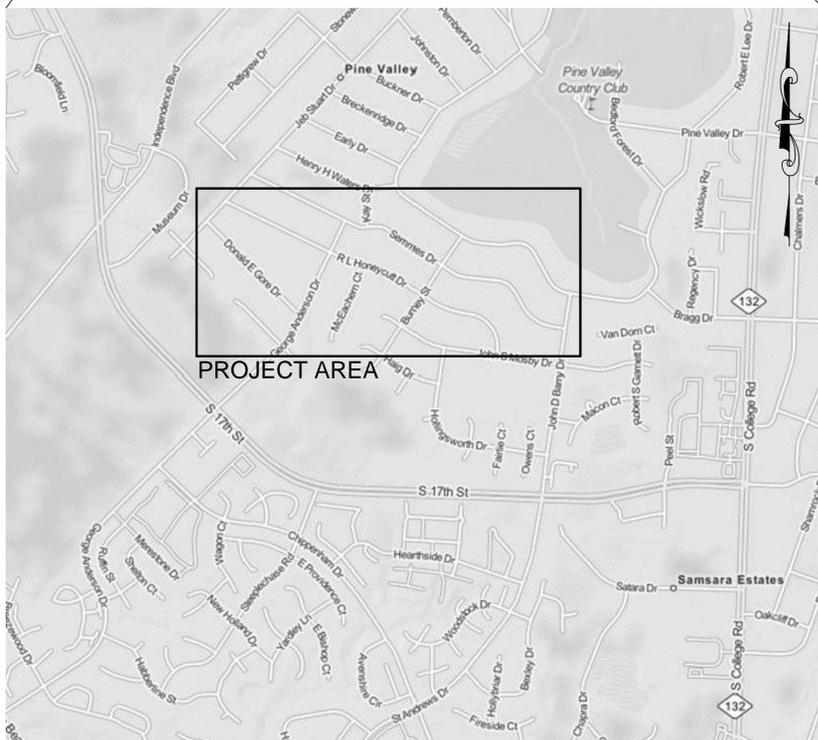


VICINITY MAP - NOT TO SCALE



PROJECT LOCATION - NOT TO SCALE



PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10

JEC PROJECT NUMBER:
11-173-006-004

MAY 17, 2016



Public Services • Stormwater Division

P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

MAYOR
Bill Saffo

MAYOR PRO-TEM
Margaret Haynes

CITY COUNCIL MEMBERS
Neil Anderson
Paul Lawler
Kevin O'Grady
Charlie Rivenbark
Earl Sheridan

CITY MANAGER
Sterling B. Cheatham

CITY ENGINEER
David E. Cowell, P.E.

PROJECT DIRECTOR
David B. Mayes, P.E.

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SHEET	DESCRIPTION
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2.0-2.4	EXISTING CONDITIONS
3.0	SEDIMENT & EROSION CONTROL PLAN
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10.0	DETAILS - RAMPS, SIGNS, MARKINGS
11.0-11.4	DETAILS - WATER & SEWER (CFPUA)

REV	REVISIONS	BY	DATE
#			

ISSUE DATE:
MAY 17, 2016
DRAWN BY: AMB/AMT
CHECKED BY: CDJ
APPROVED BY: CDJ

CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
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PREPARED BY:
JEWELL
ENGINEERING CONSULTANTS, PC
PO BOX 2294 KERNERSVILLE, NC 27284
OFFICE: (336) 996-9974
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LIC # C1842



CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Stormwater Division
P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

**PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
COVER SHEET, VICINITY MAP & PROJECT
LOCATION**

SHEET NO.
1.0

STANDARD SITE ABBREVIATIONS

ABC	AGGREGATE BASE COURSE	MAX	MAXIMUM
AC	ACRES	MB	MAIL BOX
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MED	MEDIAN
ALBC	ALUMINUM BOX CULVERT	MH	MANHOLE
APPROX	APPROXIMATE	MIN	MINIMUM
ASPH	ASPHALT	MJ	MECHANICAL JOINT
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS	MON	MONUMENT
AVC	ASPHALT VALLEY CURB	MTL	METAL
AWWA	AMERICAN WATER WORKS ASSOCIATION	MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
		MW	MONITOR WELL
B-B	BACK OF CURB TO BACK OF CURB	N/A	NOT APPLICABLE
BL	BASELINE	NAD 27	NORTH AMERICAN DATUM 1927
B/L	BASELINE	NAD 83	NORTH AMERICAN DATUM 1983
BLDG	BUILDING	NBL	NORTH BOUND LANE
BM	BENCHMARK	NC	NORMAL CROWN
BOC	BACK OF CURB	NC GRID	NORTH CAROLINA GRID
BOL	BOLLARD	NCDENR	NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
BVC	BEGIN VERTICAL CURVE	NC DOT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
BW	BARB WIRE	NC GS	NORTH CAROLINA GEODETIC SURVEY
		NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
C&G	CURB AND GUTTER	NIP	NEW IRON PIPE
CATV	CABLE TELEVISION	NO	NUMBER
CAP	CORRUGATED ALUMINUM PIPE	NTS	NOT TO SCALE
CB	CATCH BASIN	O/C	ON CENTER
CBL	CABLE	OD	OUTSIDE DIAMETER
CFS	CUBIC FEET PER SECOND	OH	OVERHEAD
CHL	CHAIN LINK	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CI	CURB INLET	OVH	OVERHANG
CIP	CAST IRON PIPE	P/A	PARKING AREA
CL	CENTERLINE	PC	POINT OF CURVATURE
C/L	CENTERLINE	PCBC	PRECAST CONCRETE BOX CULVERT
CM	CONCRETE MONUMENT	PCC	POINT OF COMPOUND CURVATURE
CMP	CORRUGATED METAL PIPE	PED	PEDESTAL
CO	CLEAN OUT	PI	POINT OF INTERSECTION
COM	COMMUNICATION	PINC	POINT OF INTERSECTION NO CURVE
CONC	CONCRETE	PIV	POST INDICATOR VALVE
CONSTR	CONSTRUCTION	PL	PROPERTY LINE
CONTR	CONTRACTOR	POC	POINT ON CURVE
COR	CORNER	POS	POINT ON SPIRAL
CULV	CULVERT	POT	POINT ON TANGENT
CW	CHILLED WATER	PP	POWER POLE
		PRC	POINT OF REVERSE CURVATURE
Δ	DELTA	PSI	POUNDS PER SQUARE INCH
DCV	DETECTOR CHECK VALVE	PT	POINT OF TANGENCY
DDCV	DOUBLE DETECTOR CHECK VALVE	PVC	POLYVINYL CHLORIDE
DI	DROP INLET	PVI	POINT OF VERTICAL INTERSECTION
DIA	DIAMETER	PVMT	PAVEMENT
Ø	DIAMETER	PZ	PIEZOMETER
DIP	DUCTILE IRON PIPE	R	RADIUS
DPC	DUKE POWER COMPANY	R/W	RIGHT OF WAY
DRW	DRIVEWAY	RCP	REINFORCED CONCRETE PIPE
DW	DOMESTIC WATER	RETW	RETAINING WALL
		REV	REVISED
EBL	EAST BOUND LANE	RJ	RESTRAINED JOINT
EG	EXISTING GRADE	RPZ	REDUCED PRESSURE ZONE
EIP	EXISTING IRON PIPE	RT	RIGHT
ELEC	ELECTRIC	RWM	RIGHT OF WAY MONUMENT
ELEV	ELEVATION	SAN	SANITARY
ELEV	ELEVATION	SB	SOIL BORING
EM	ELECTRIC METER	SBL	SOUTH BOUND LANE
EOP	EDGE OF PAVEMENT	SD	STORM DRAIN
ESMT	EASEMENT	SHT	SHEET
EVC	END VERTICAL CURVE	SIA	SIAMESE CONNECTION
EX	EXISTING	SIG	SIGNAL
EXT	EXTENSION	SIG	SIGNAL
		S	SETBACK LINE
FES	FLARED END SECTION	SP	SIGNAL POLE
FFE	FINISHED FLOOR ELEVATION	SPECS	SPECIFICATIONS
FG	FINISHED GRADE	SS	SANITARY SEWER
FH	FIRE HYDRANT	STA	STATION
FL	FLOOD LIGHT	STD	STANDARD
FNC	FENCE	STM	STORM
FOC	FACE OF CURB	SW	SIDEWALK
FPS	FEET PER SECOND	T	TANGENT
FT	FOOT (OR) FEET	TOP	TOP
		TBM	TEMPORARY BENCHMARK
GALV	GALVANIZED	TCP	TERRA COTTA PIPE
GB	GRILL BASIN	TEL	TELEPHONE
GC	GENERAL CONTRACTOR	TEMP	TEMPORARY
GL	GAS LINE	TOC	TOP OF CURB
GM	GAS METER	TOE	TOE OF SLOPE
GPM	GALLONS PER MINUTE	TOP	TOP OF SLOPE
GR	GRADE	TOW	TOP OF WALL
GRV	GRAVEL	TP	TELEPHONE POLE
GV	GATE VALVE	TRANS	TRANSFORMER
GVS	GAS VALVE	TYP	TYPICAL
GW	GUY WIRE	U/C	UNDER CONSTRUCTION
		U/G	UNDERGROUND
H	HORIZONTAL	UP	UTILITY POLE
HC	HANDICAP	V	VERTICAL
HCP	HANDICAP PARKING	VC	VERTICAL CURVE
HCR	HANDICAP RAMP	VCP	VITREOUS CLAY PIPE
HDP	HANDICAP RAMP	W/	WITH
HDP	HANDICAP RAMP	WBL	WEST BOUND LANE
HDW	HEADWALL	WL	WATER LINE
HP	HIGH POINT	WM	WATER METER
HT	HEIGHT	WV	WATER VALVE
		WW	WOVEN WIRE
ID	INSIDE DIAMETER		
IN	INCH (OR) INCHES		
IN/HR	INCHES PER HOUR		
INV	INVERT		
ISL	ISLAND		
ITL	INDEPENDENT TESTING LABORATORY		
JB	JUNCTION BOX		
L	LENGTH		
LF	LINEAR FEET		
LGT	LIGHT		
LP	LIGHT POLE		
LS	LANDSCAPED		
LT	LEFT		
LOC	LOCATION		

GENERAL NOTES:

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE CITY OF WILMINGTON'S CONSTRUCTION STANDARDS, AND IN ACCORDANCE WITH APPROVED PLANS BY THE ENGINEER. WHERE CONFLICTS ARISE, THE FINAL AUTHORITY SHALL BE THE CITY OF WILMINGTON.
- ALL COORDINATES ARE BASED ON NAD 83(2007) AND ALL ELEVATIONS ARE BASED ON NAVD 88.
- CONSTRUCTION AND/OR DEMOLITION ACTIVITY, INCLUDING LOADING AND UNLOADING OF MATERIAL, IS PROHIBITED BEFORE 7 AM AND AFTER 7 PM MONDAY THROUGH FRIDAY. NO WORK IS PERMITTED ON WEEKENDS OR HOLIDAYS. EXCEPTIONS TO THE ALLOWABLE WORK TIME REQUIREMENTS CAN BE MADE IN THE EVENT OF AN EMERGENCY OR IF REQUESTED BY THE CONTRACTOR AND APPROVED BY THE CITY'S PROJECT DIRECTOR AND/OR PROJECT MANAGER. THE CONTRACTOR MUST PROVIDE A MINIMUM OF 48 HOURS NOTICE TO THE CITY WHEN REQUESTING TO WORK OUTSIDE THE ALLOWABLE WORK TIMES.
- ALL CONTRACTORS SHALL BE PROPERLY LICENSED UNDER NC STATE LAWS GOVERNING THEIR TRADE.
- CONTRACTOR SHALL VISIT THE SITE, BECOME FAMILIAR WITH ACTUAL CONDITIONS, AND SHALL VERIFY EXISTING CONDITIONS IN THE FIELD.
- CONTRACTOR HEREBY WARRANTS HIS WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE CITY OF WILMINGTON AGAINST ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF PUBLIC SAFETY ON THE SITE DURING THE PERIOD OF CONSTRUCTION, INCLUDING WEEKENDS AND HOLIDAYS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC, AND ALL OF THE CITY FACILITIES. SHOULD DAMAGES OCCUR, THE CONTRACTOR SHALL AT HIS OWN EXPENSE REPAIR IMMEDIATELY TO THE SATISFACTION OF THE CITY AND THE ENGINEER.
- CONTRACTOR SHALL HOLD HARMLESS THE CITY AND THE ENGINEER FOR DAMAGES, INJURIES, OR OTHER ACCIDENTS WHICH OCCUR DURING THESE CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF THE CONSTRUCTION SITE, INCLUDING BUT NOT LIMITED TO: HIS EQUIPMENT, COMPLETED WORK, STAGED MATERIALS, AND SITE ACCESS BY AUTHORIZED AND UNAUTHORIZED PERSONS.
- CONTRACTOR SHALL NOT LEAVE ANY EXCAVATION OPEN OR UNPROTECTED DURING NON-WORKING HOURS. THE CONTRACTOR SHALL UTILIZE FENCES, SIGNS, BARRICADES, AND APPROPRIATE MEANS AS NECESSARY TO ENSURE THE SAFETY OF BOTH AUTHORIZED AND UN-AUTHORIZED PERSONS WHO ENTER THE SITE.
- CONTRACTOR SHALL ENSURE THAT ALL TREES AND EXISTING LANDSCAPING NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL ILLUSTRATED CONSTRUCTION ACTIVITIES AT THE JOB SITE.
- CONTRACTOR SHALL ENSURE THAT ALL WORK SHALL BE PERFORMED ACCORDING TO CURRENT OSHA SAFETY REGULATIONS. CONTRACTOR SHALL PROVIDE SAFETY TRAINING CERTIFICATION DOCUMENTATION IF REQUESTED BY THE CITY.
- CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, THE CITY, AND ADJACENT PROPERTY OWNERS AS REQUIRED FOR WORK ON PRIVATE PROPERTY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL WORK AS SHOWN ON PLANS AND SHALL VERIFY ALL DIMENSIONS AND GRADES AT THE JOB SITE. IF DIFFERENCES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT MODIFICATIONS CAN BE MADE.
- CONTRACTOR SHALL MAINTAIN A SET OF ANNOTATED DRAWINGS SHOWING ANY FIELD CHANGES TO THE PROJECT. THE CONTRACTOR IS NOT AUTHORIZED TO MAKE FIELD CHANGES WITHOUT THE APPROVAL OF THE ENGINEER.
- UTILITIES WERE LOCATED BASED ON FIELD MARKINGS PROVIDED BY 811 ONE-CALL. NO SUB-SURFACE LOCATIONS HAVE BEEN PERFORMED. ALL EXISTING SUB-SURFACE UTILITY LOCATIONS ARE APPROXIMATE.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFYING APPROPRIATE UTILITY PROVIDER OF ANY CONFLICTS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXERCISING REASONABLE EFFORTS TO PROTECT ANY KNOWN AND UNKNOWN UNDERGROUND FEATURES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY IF UTILITY INFORMATION IS DISCOVERED THAT WOULD NECESSITATE MODIFICATION TO THE ILLUSTRATED DESIGN.
- WITHIN THE WORK AREA, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION AND ELEVATION ADJUSTMENTS OF ANY EXISTING VAULTS (REGARDLESS OF FUNCTION), METER BOXES, FIRE HYDRANTS, CLEAN OUTS, MANHOLES, ETC. TO MATCH FINISHED GRADES AND SITE PLAN. ALL SUCH WORK SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO PERFORMING ADJUSTMENTS.
- CONTRACTOR SHALL CAREFULLY REMOVE AND RESET ANY MAILBOXES THAT MUST BE DISTURBED. CONTRACTOR SHALL COORDINATE WITH THE U.S. POSTAL SERVICE AND RESIDENTS TO ENSURE THAT MAIL SERVICE IS NOT INTERRUPTED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE PROJECT FROM EFFECTS OF FLOOD AND STORM EVENTS, INCLUDING BUT NOT LIMITED TO WORK IN PROGRESS, COMPLETED WORK, EQUIPMENT, MATERIALS, UTILITIES, WITHIN THE PROJECT AREA OR AFFECTED BY THE PROJECT OR DAMAGED AS A RESULT OF THE PROJECT.

CONSTRUCTION NOTES:

- CONTRACTOR SHALL ACCEPT ALL RESPONSIBILITY FOR PROTECTION, PLACEMENT, AND REPLACEMENT OF BACKFILL MATERIAL, AND SELECT BACKFILL (IF NEEDED).
- A PRE-CONSTRUCTION VIDEO (DVD) SHALL BE TAKEN OF THE ENTIRE PROJECT SITE WITHIN 1 WEEK PRIOR TO STARTING WORK. IT SHOULD INCLUDE EXISTING INFRASTRUCTURE AND ROAD, CURBING, DRAINAGE, DITCHES, DRIVEWAYS, MAILBOXES, ABOVE GROUND UTILITY STRUCTURES, AND EXISTING LANDSCAPING NEAR THE CONSTRUCTION AREAS. DVD SHALL BE OF SOUND QUALITY AND MADE AVAILABLE UPON REQUEST. THE DATE OF THE FILMING IS REQUIRED ON DVD.
- CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY OF WILMINGTON FOR PROJECT PHASES AND SEQUENCES PRIOR TO BEGINNING ANY WORK. AT LEAST 10 DAYS PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER A WRITTEN CONSTRUCTION PROCEDURE WITH APPROXIMATE TIMES/DATES. THIS PROCEDURE SHALL SPECIFY SEQUENCES OF DEMOLITION, CONSTRUCTION, EROSION CONTROL, GROUND DEWATERING, AND TRAFFIC CONTROL.
- STORM DRAIN PIPE LENGTHS ARE ALONG CENTERLINE OF PIPE AND FROM CENTER TO CENTER OF UP AND DOWNSTREAM STRUCTURES.
- A MINIMUM OF 24" CLEARANCE IS REQUIRED BETWEEN EXISTING SANITARY SEWER LINES AND ANY NEW STORM DRAIN LINES INSTALLED. IF THIS CLEARANCE IS NOT MAINTAINED, STRUCTURAL BRIDGING IS REQUIRED. SEE DETAILS ON PLANS.
- WHEN SANITARY SEWER OR WATER LINE SERVICE CONNECTIONS ARE FOUND TO EXIST IN RELOCATION AREA AND CONFLICT WITH PROPOSED STORM DRAINAGE SYSTEM, NEW SERVICE CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH CAPE FEAR PUBLIC UTILITY AUTHORITY.
- COPPER WATER LATERALS MAY BE SPLICED, ALL OTHER TYPES OF WATER LATERALS CAN NOT BE SPLICED. THEY SHALL BE COMPLETELY REPLACED FROM MAIN TO METER.
- CONTRACTOR SHALL USE 316 STAINLESS STEEL ON ALL WATER LINE FASTENERS AND BOLTS.
- IF SEWER SERVICE LATERALS REQUIRE AN INTERFERENCE BOX, A SUBMITTAL TO CAPE FEAR PUBLIC UTILITY AUTHORITY FOR APPROVAL WILL BE REQUIRED.
- ALL WATER AND SEWER WORK SHALL BE PERFORMED BY A LICENSED UTILITY CONTRACTOR APPROVED BY CAPE FEAR PUBLIC UTILITY AUTHORITY. ALL WATER AND SEWER WORK SHALL BE INSPECTED AND APPROVED BY CAPE FEAR PUBLIC UTILITY AUTHORITY AND 48 HOURS NOTICE IS REQUIRED TO SCHEDULE INSPECTIONS.

LEGEND

---	PROPERTY BOUNDARY AND PUBLIC RIGHT-OF-WAY
-----SD	STORM DRAIN PIPE
---SS---	SANITARY SEWER LINE
W	UNDERGROUND WATER LINE
P	UNDERGROUND POWER LINE
PH	UNDERGROUND PHONE LINE
CATV	UNDERGROUND CABLE LINE
	FENCE
□	SILT FENCE
-----	TREE PROTECTION
LOD	LIMITS OF DISTURBANCE
⊙	SANITARY SEWER MANHOLE
⊙SW	STORM DRAIN MANHOLE
⊙	DROP INLET
⊙WV	WATER VALVE
⊙WM	WATER METER
⊙	FIRE HYDRANT
□	CATV / PHONE PEDESTAL
↘	GUY WIRE
⊙MB	MAIL BOX
⊙PF	IRON PIPE FOUND
⊙	CONTROL POINT
⊙	SIGN
⊙PP	POWER POLE
⊙LP	LIGHT POLE
⊙	WOOD LINE
⊙	DEMOLITION AREA
⊙	RIP RAP
⊙	TREES AS NOTED



BEFORE YOU DIG!
CONTACT ONE-CALL CENTER
1-800-632-4949 OR 811

CONTACT PHONE NUMBERS:

CITY OF WILMINGTON STREETS	910-341-7879
CITY OF WILMINGTON TRAFFIC	910-341-7888
CFPUA - OPERATIONS	910-332-6738
CFPUA - EMERGENCY	910-332-6565
PROGRESS ENERGY	800-452-2777
PIEDMONT NATURAL GAS	800-752-7504
DEPT OF TRANSPORTATION	910-341-0500
ACLS LOCAL UTILITIES LOCATOR	910-392-5444

DEFINITION OF TERMS:

CITY - THE CITY OF WILMINGTON, NC
COW - THE CITY OF WILMINGTON, NC
CFPUA - CAPE FEAR PUBLIC UTILITY AUTHORITY

REV	REVISIONS	BY	DATE
1			

ISSUE DATE:	MAY 17, 2016
DRAWN BY:	AWB/AMT
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APPROVED BY:	CDJ

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	Street Rehabilitation 14SR10
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PREPARED BY:

JEWELL
ENGINEERING CONSULTANTS, PC
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OFFICE: (336) 996-9874
FAX: (336) 996-9976
LIC # C1842



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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

NOTES, ABBREVIATIONS, AND LEGEND

SHEET NO.

1.1

LEGEND

- ⊙ PP POWER POLE
- ⋄ GUY WIRE
- ⊙ LP LIGHT POLE
- CATV / PHONE PEDESTAL
- ⊙ WM WATER METER
- ⋄ WV WATER VALVE
- ⊙ FH FIRE HYDRANT
- ⊙ MB MAIL BOX
- FIBER OPTIC POST
- ⊙ SEWER MANHOLE
- ⊙ DROP INLET
- ⊙ STORM DRAIN MANHOLE
- ⊙ CLEAN OUT
- ⊙ SPOT GRADE
- ~ BREAK IN LINE
- 902 STREET ADDRESS
- ☁ TREE AS NOTED
- ☁ PAMPAS GRASS
- CONCRETE DRIVE / PAD
- LANDSCAPED AREA
- RIP RAP
- DRAINAGE EASEMENT LINE
- BACK OF CURB
- CURB FLOW LINE
- CENTERLINE OF ROADWAY
- GIS PARCEL LINES
- TOP OF DITCH
- BOTTOM OF DITCH
- SD --- SD --- SD STORM DRAIN PIPE
- SS --- SS --- SS SANITARY SEWER PIPE
- /// EDGE OF PAVEMENT
- x x x x x x x x FENCE
- ~ ~ ~ ~ ~ TREE LINE
- ◆ SURVEY MONUMENT

ABBREVIATIONS

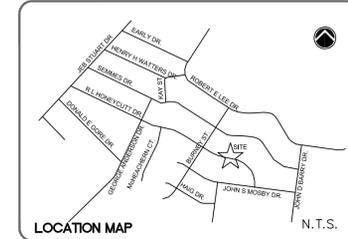
- SSMH SANITARY SEWER MANHOLE
- SDMH STORM DRAIN MANHOLE
- CATV CABLE TELEVISION PEDESTAL
- TEL. PED. TELEPHONE PEDESTAL
- MB MAIL BOX
- WM WATER METER
- WV WATER VALVE
- FH FIRE HYDRANT
- LP LIGHT POLE
- PP POWER POLE
- CO CLEAN OUT
- TYP. TYPICAL
- SS SANITARY SEWER
- SD STORM DRAIN
- ELEC. ELECTRIC
- PEDE. PEDESTAL
- AVC ASPHALT VALLEY CURB
- (N) NORTH
- (S) SOUTH
- (E) EAST
- (W) WEST
- (NW) NORTHWEST
- (SW) SOUTHWEST
- (NE) NORTHEAST
- (SE) SOUTHEAST
- MON. FD MONUMENT FOUND

EXISTING CONDITION NOTES:

1. ALL EXISTING CONDITIONS AND EXISTING UTILITY INFORMATION WAS PROVIDED BY CAPE FEAR ENGINEERING, INC.
2. CAPE FEAR ENGINEERING, INC. MAKES NO GUARANTEE THAT THE UTILITIES AND SITE FEATURES SHOWN COMPRISE ALL UTILITIES AND SITE FEATURES IN THE AREA EITHER IN SERVICE OR ABANDONED. CAPE FEAR ENGINEERING, INC. FURTHER DOES NOT WARRANT THAT THE UTILITIES AND SITE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED. CAPE FEAR ENGINEERING, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
3. ALL PROPERTY LINES SHOWN HEREON TAKEN FROM NEW HANOVER COUNTY GIS UNLESS OTHERWISE NOTED HEREON.
4. CURB INLET RIM ELEVATIONS TAKEN AT FLOW LINE.
5. NO WETLANDS WERE LOCATED OR DELINEATED DURING THIS SURVEY.
6. ONLY ABOVE GROUND UTILITY FEATURES LOCATED DURING THIS SURVEY.
7. CONCRETE DRIVES AND LANDSCAPE AREAS MAY EXTEND BEYOND SURVEY LIMITS.
8. HORIZONTAL DATUM NAD83/2011, VERTICLE DATUM NAVD 88. CONTROL WAS ESTABLISHED BY GPS OBSERVATIONS AND PROCESSED THROUGH OPUS.
9. DRAINAGE EASEMENTS MAY EXIST FOR STORM DRAINAGE PIPES EXTENDING OUTSIDE OF THE ROAD RIGHT OF WAYS.

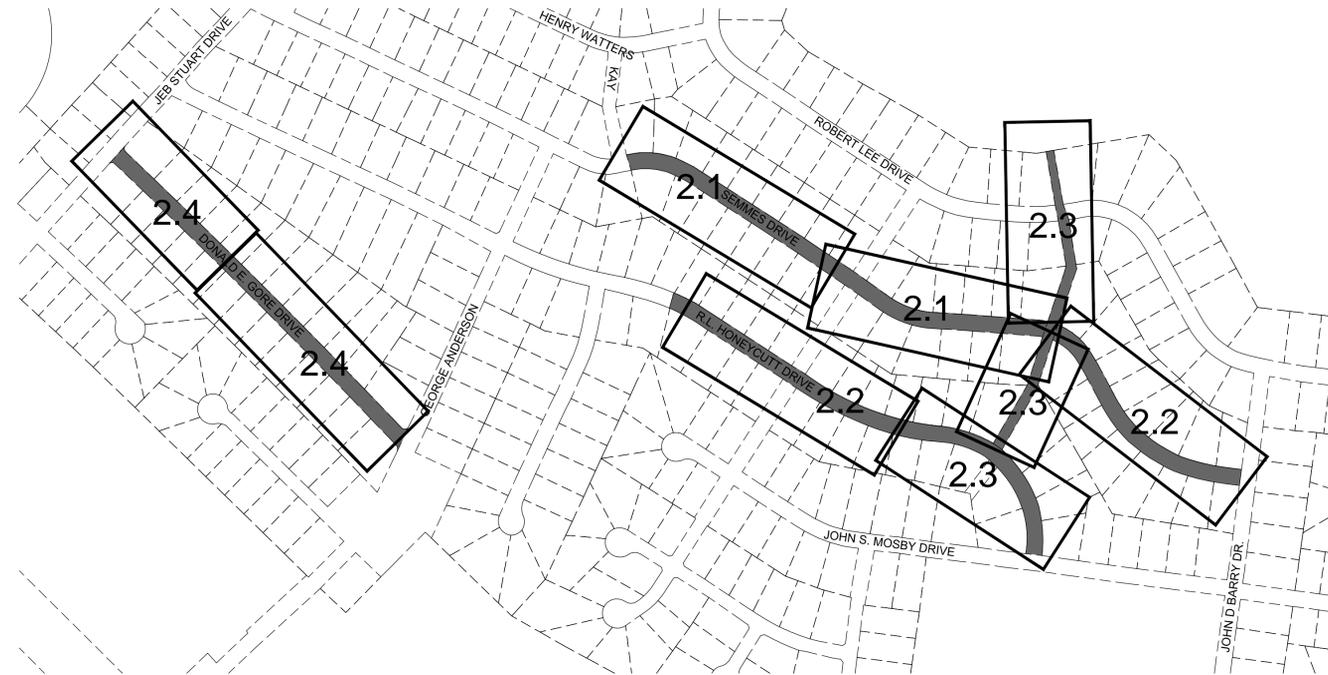
I, MICHAEL LEE TACKETT, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION. THAT THIS GROUND SURVEY WAS PERFORMED AT THE 95 PERCENT CONFIDENCE LEVEL TO MEET FEDERAL GEOGRAPHIC DATA COMMITTEE STANDARDS; THAT THE HORIZONTAL ACCURACY IS AT A MINIMUM +/- 3.33 FEET; THAT THE VERTICAL ACCURACY IS AT A MINIMUM +/- 0.25; AND THAT THE ORIGINAL DATA WAS OBTAINED ON SEP. 13 2013; AND COMPLETED ON JUNE 25, 2014; AND ALL COORDINATES ARE BASED ON NAD 83(2007); AND ALL ELEVATIONS ARE BASED ON NAVD 88. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 1ST DAY OF JULY, 2014.

THESE EXISTING CONDITIONS ARE A COPY OF A CERTIFIED DOCUMENT. CERTIFIED AND SEALED DOCUMENTS ARE AVAILABLE IN PDF FORMAT IF REQUESTED.
SIGN: MICHAEL LEE TACKETT, N.C.P.L.S. No. L-4556



NOTES:
SEE THIS SHEET FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS

REV. #	DESCRIPTION	REV. BY	DATE
2	ADDED EASEMENT INFORMATION PER COMMENTS FROM JEWELL ENG	MLT	7/1/14
1	ADDED ADDITIONAL AREAS & SEWER INVERTS	MLT	6/23/14



MAP KEY
NOT TO SCALE

CAPE FEAR ENGINEERING
151 Poole Rd., Suite 100, Belville, NC, 28451
TEL (910) 383-1044; FAX (910) 383-1045
www.capefearengineering.com
N.C. LICENSE # C-1621

PROJECT NUMBER :	PNUMBER
SCALE :	SCALE
DATE :	DDMMYY
TRACKING :	INITIALS

NOTE:

1. POWER, CATV, PHONE, AND WATER LOCATIONS WERE NOT PROVIDED BY CAPE FEAR ENGINEERING. APPROXIMATE LOCATIONS FOR THESE UTILITIES WERE PROVIDED FROM FIELD MEASUREMENTS OF LOCATE SERVICE MARKINGS BY JEWELL ENGINEERING.
2. EXISTING TOPOGRAPHIC CONTOURS ARE TAKEN FROM NEW HANOVER COUNTY GIS DATABASE AND ARE REFERENCED TO NAVD 1988.

MAY 17, 2016

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11-173-006-004

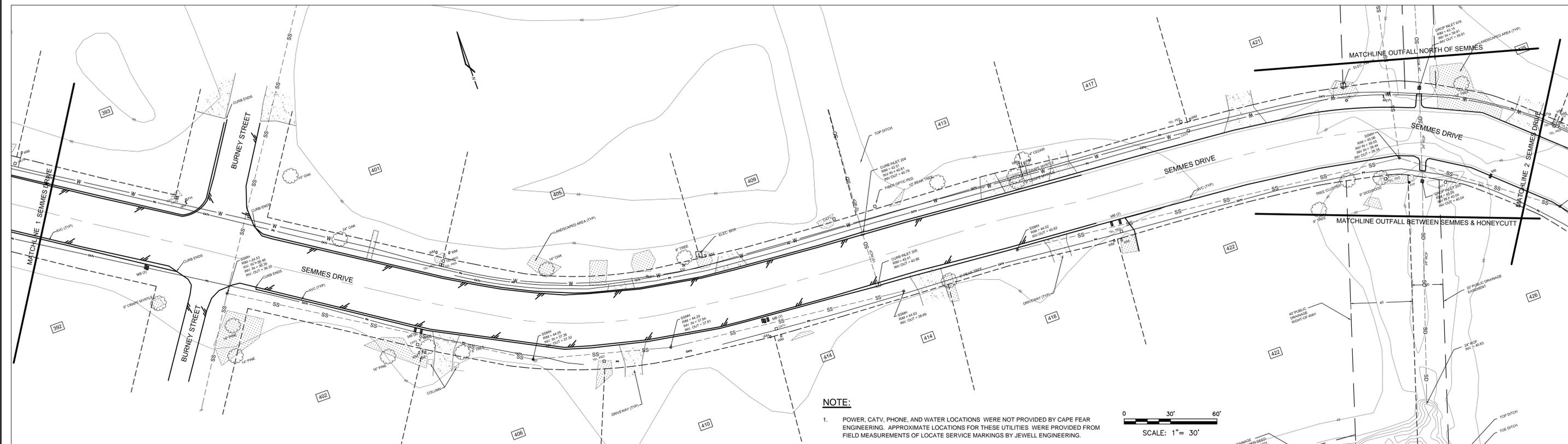
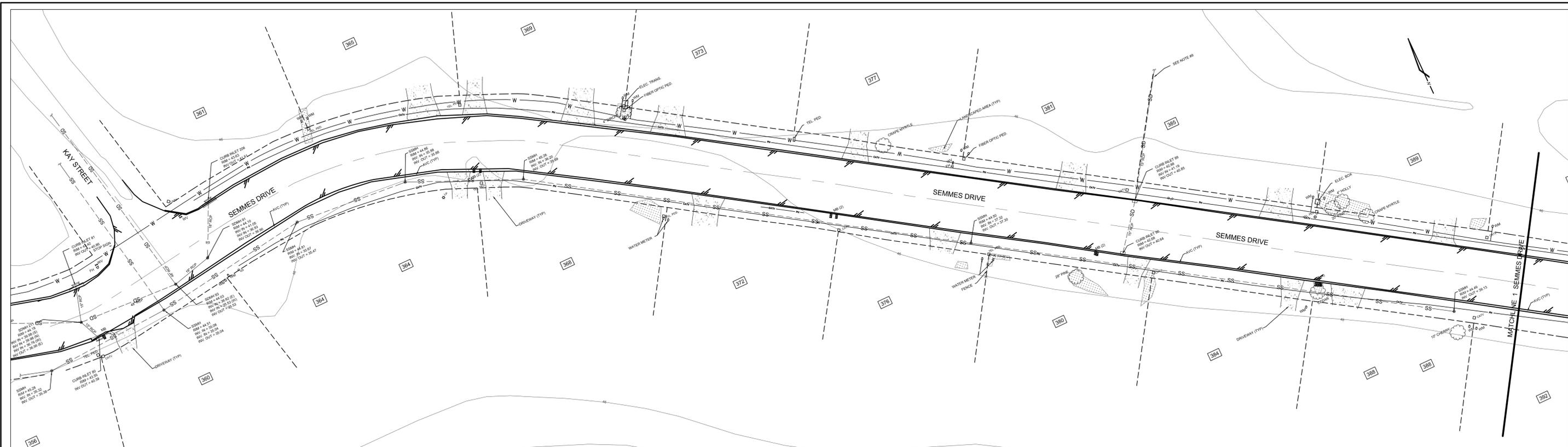
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Public Services • Stormwater Division
P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

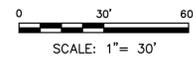
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
EXISTING CONDITIONS
MAP KEY, LEGEND, NOTES

SHEET NO.
2.0



NOTE:

1. POWER, CATV, PHONE, AND WATER LOCATIONS WERE NOT PROVIDED BY CAPE FEAR ENGINEERING. APPROXIMATE LOCATIONS FOR THESE UTILITIES WERE PROVIDED FROM FIELD MEASUREMENTS OF LOCATE SERVICE MARKINGS BY JEWELL ENGINEERING.



REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016
DRAWN BY: AWB/MWT
CHECKED BY: CDJ
APPROVED BY: CDJ

CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10
DEC PROJECT NUMBER:
11-173-006-004

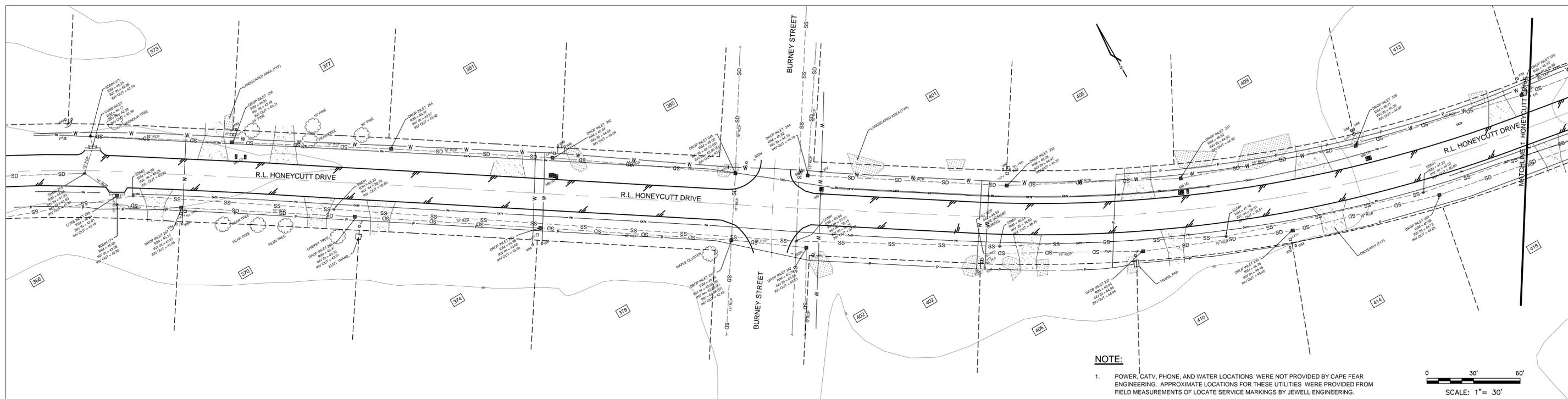
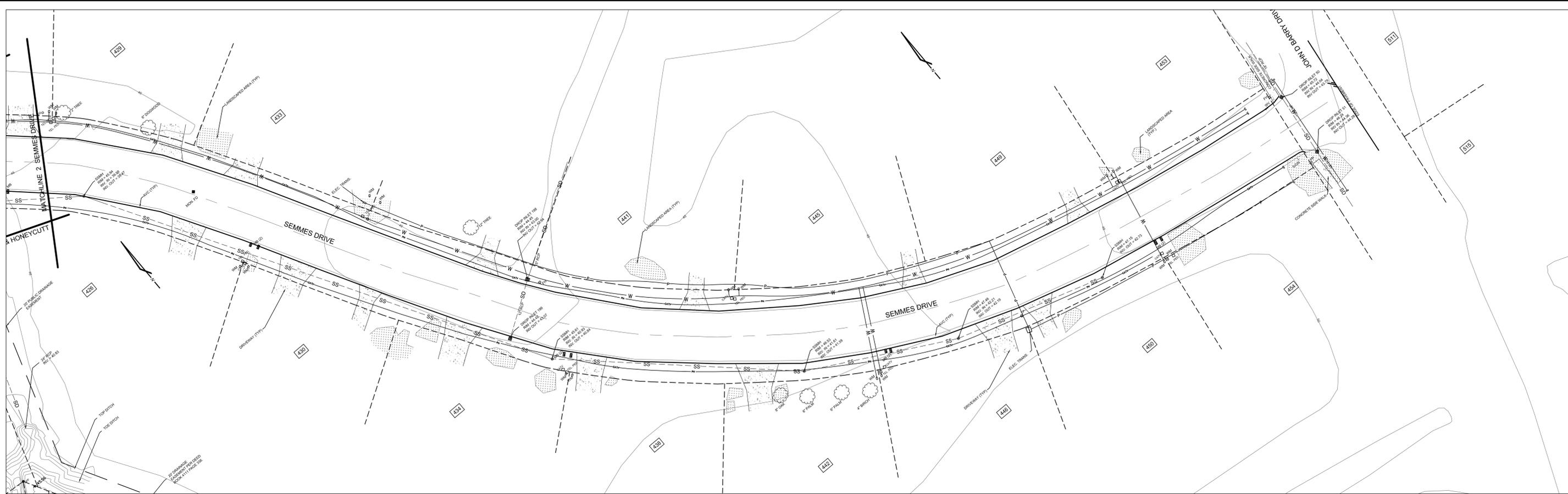
PREPARED BY:
JEWELL
ENGINEERING CONSULTANTS, PC
PO BOX 2294 LIC # C1842
KERNERSVILLE, NC 27284
OFFICE: (336) 996-9974
FAX: (336) 996-9976



CITY OF WILMINGTON
NORTH CAROLINA
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P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
EXISTING CONDITIONS - SEMMES DRIVE

SHEET NO.
2.1



NOTE:
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0 30' 60'
 SCALE: 1" = 30'

REV	REVISIONS	BY	DATE

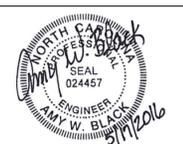
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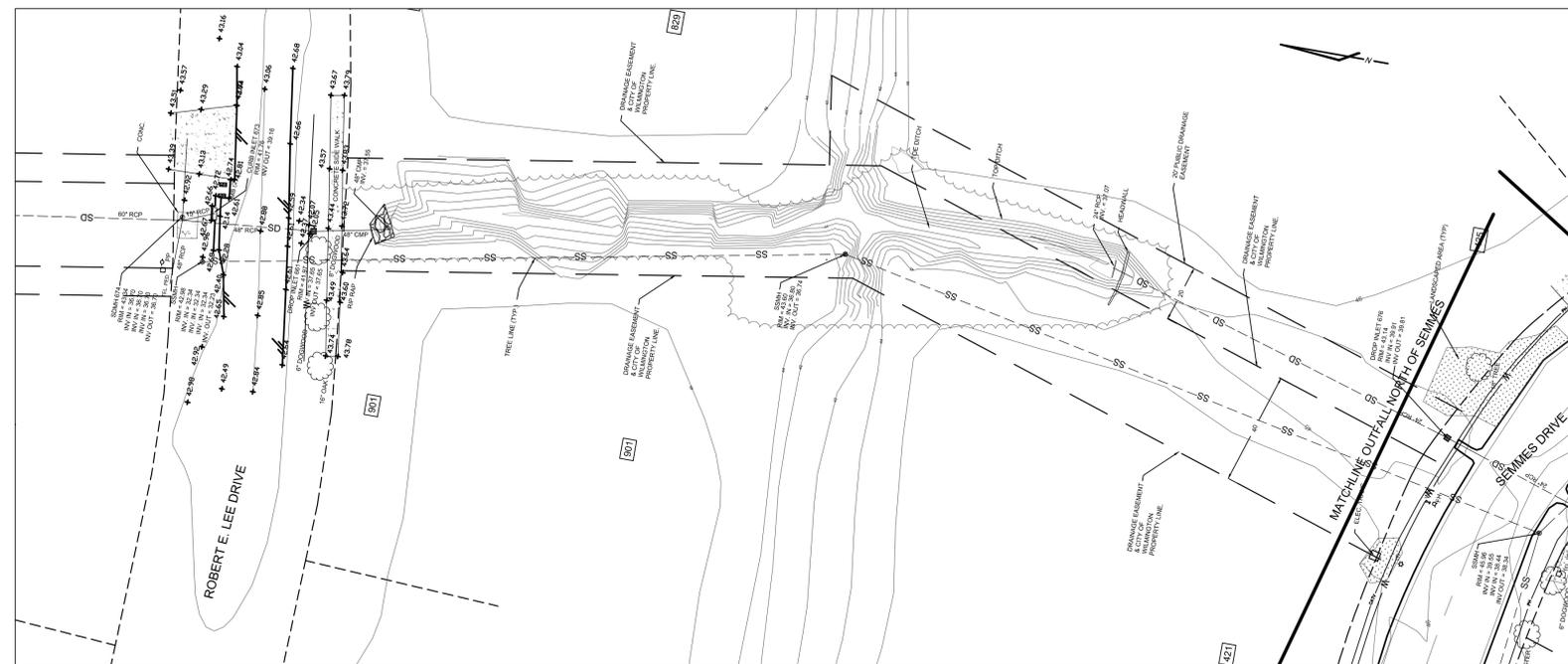
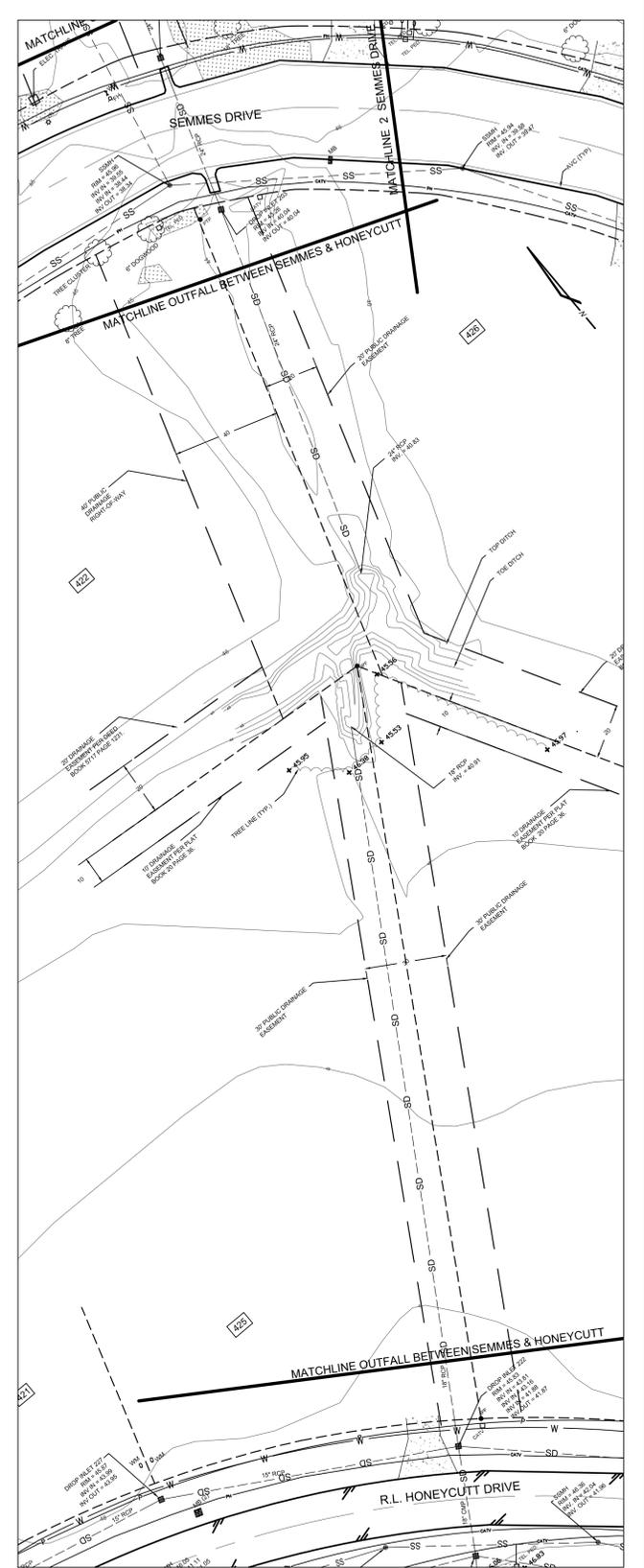
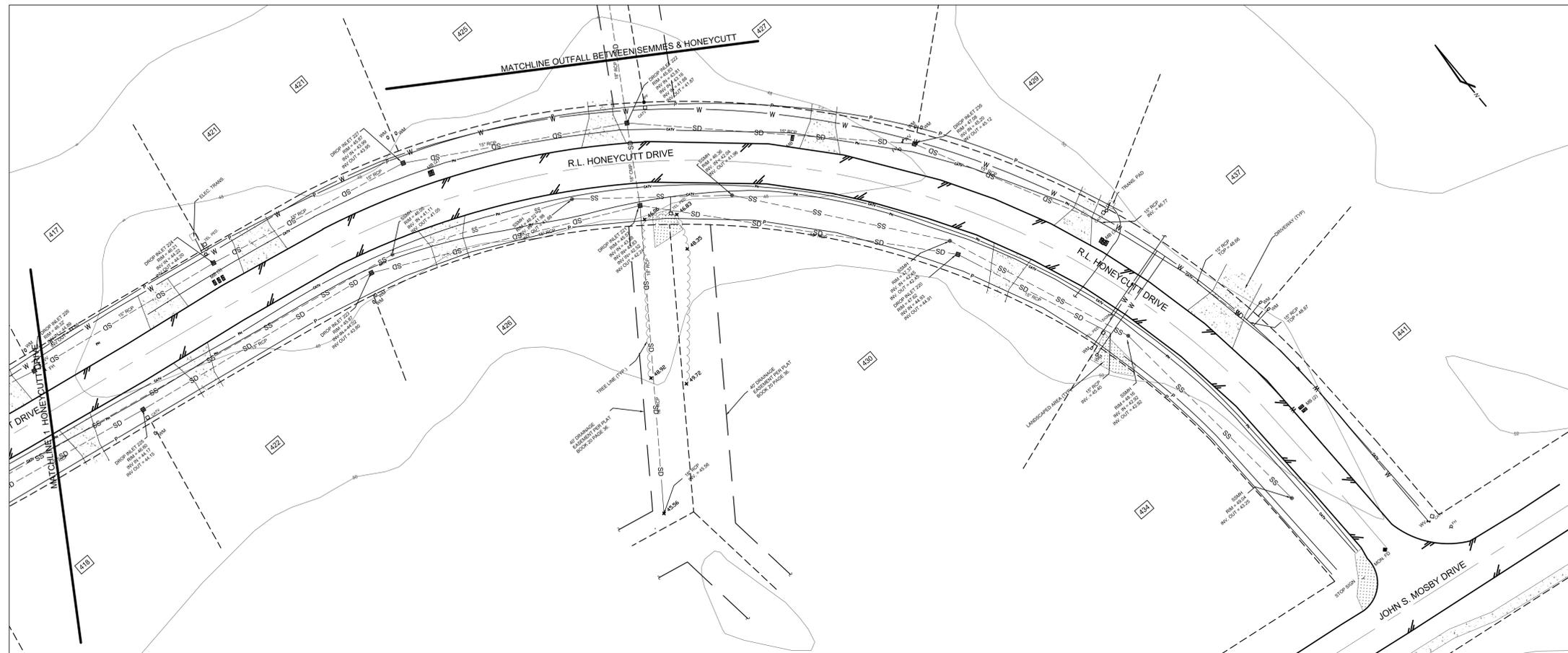
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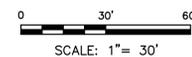
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
EXISTING CONDITIONS
SEMME DRIVE & HONEYCUTT DRIVE

SHEET NO.
2.2



NOTE:
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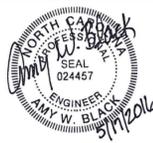


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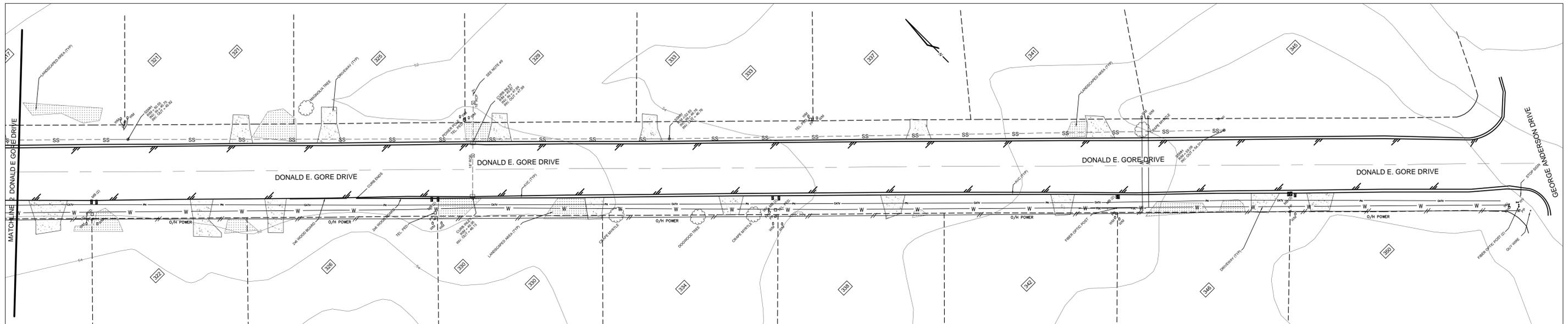
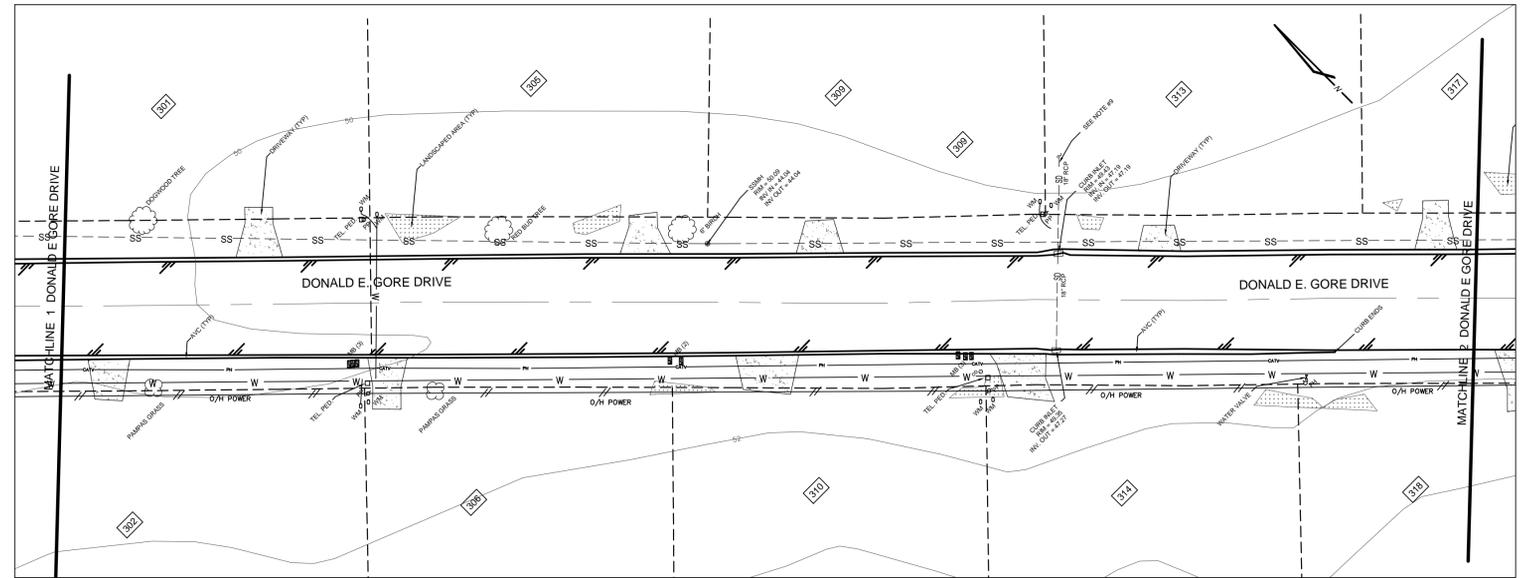
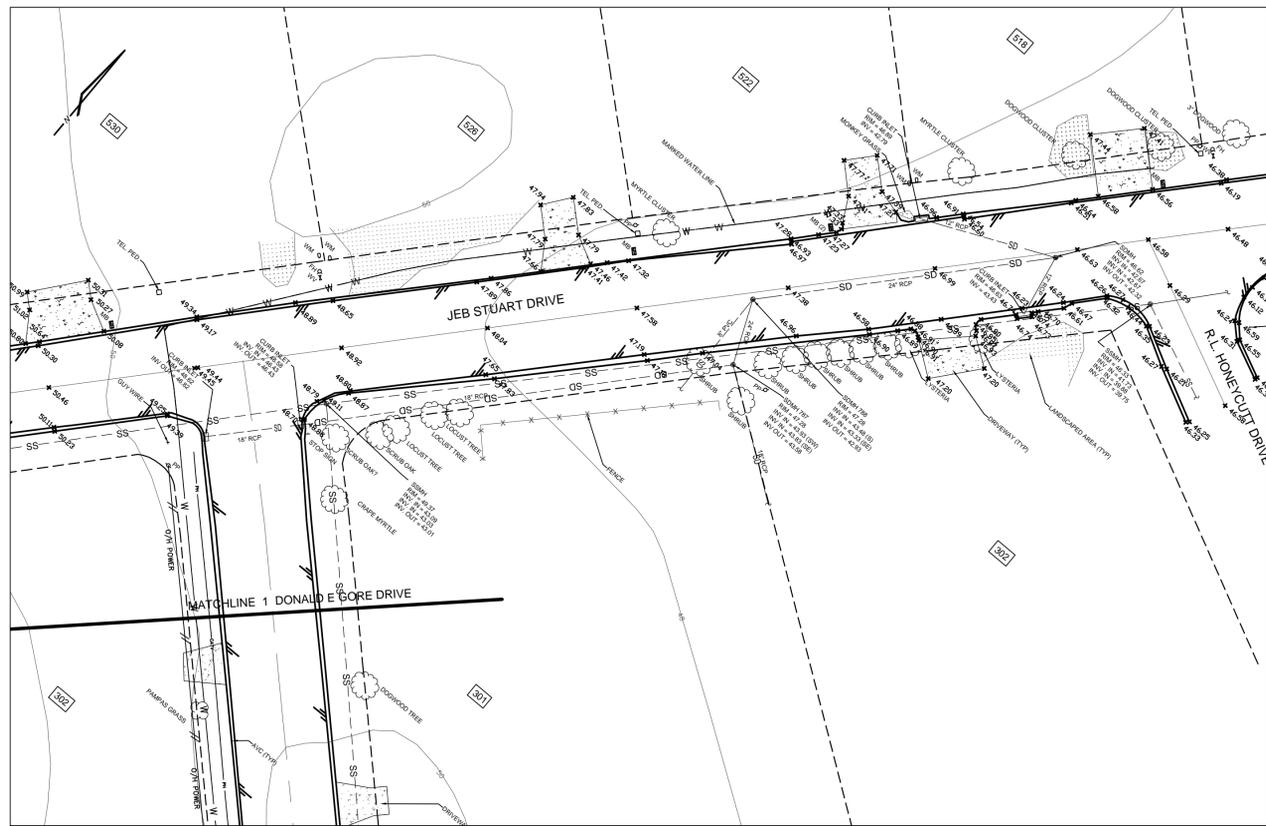
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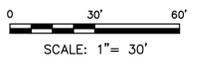
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
EXISTING CONDITIONS
HONEYCUTT DRIVE & OUTFALL

SHEET NO.
2.3



NOTE:

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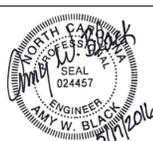
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PREPARED BY:

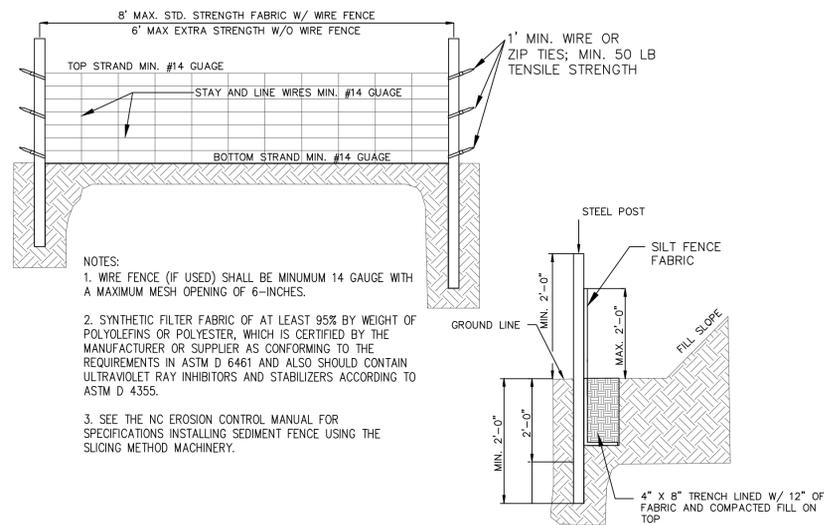
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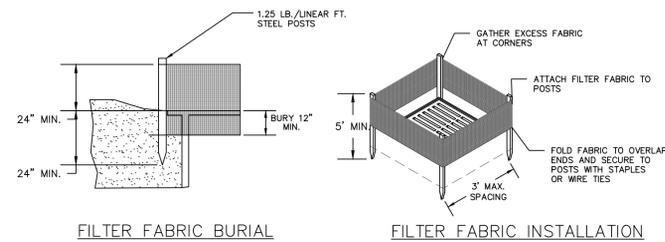
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
EXISTING CONDITIONS
JEB STUART DRIVE & DONALD E. GORE DRIVE

SHEET NO.
2.4



TEMPORARY SILT FENCE DETAIL

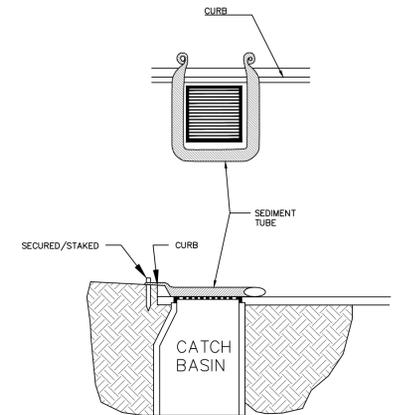
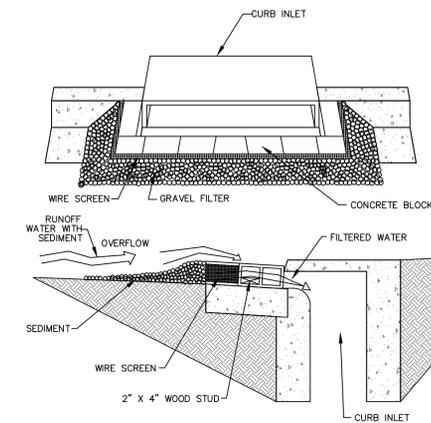
NOT TO SCALE



LOW FLOW INLET FILTERS

INLET PROTECTION DETAILS

NOT TO SCALE

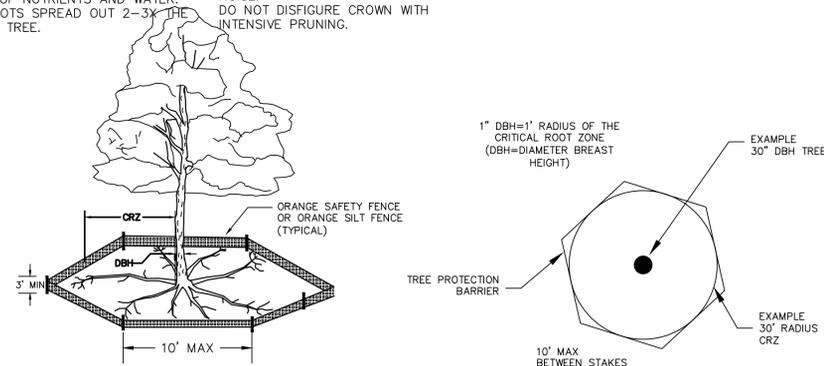


EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AND DEVICES ACCORDING TO THE STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES AND APPLICABLE STATE AND LOCAL LAWS AND ORDINANCES, AND PREVENT STANDING WATER WITHIN PROJECT LIMITS.
2. PERMITS HAVE BEEN OBTAINED FROM NCDENR AND THE US ARMY CORPS OF ENGINEERS FOR THIS PROJECT. CONTRACTOR SHALL COMPLY WITH ALL PERMIT CONDITIONS.
3. CONTRACTOR SHALL INSTALL ALL TEMPORARY EROSION CONTROL DEVICES WITHIN THE PROJECT AREA AS INDICATED ON THE PLANS PRIOR TO COMMENCING EARTHWORK. CONTRACTOR SHALL ENSURE THAT DRAINAGE IS DIRECTED INTO TEMPORARY SEDIMENT DEVICES THROUGHOUT THE CONSTRUCTION PERIOD.
4. AS EACH PORTION OF CONSTRUCTION IS COMPLETE, INSTALL PERMANENT STABILIZATION. AT END OF PROJECT, WHEN AUTHORIZED BY THE ENGINEER, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES, INSTALL PERMANENT STABILIZATION, AND RESTORE THE SITE AS CLOSELY AS POSSIBLE TO ORIGINAL CONDITIONS.
5. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION FOR ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
6. DEMOLITION SHALL INCLUDE THE REMOVAL FROM THE SITE OF TREES WHERE NOTED, STUMPS, BRUSH, VEGETATION, TRASH, DEBRIS, WASTE STONE, WASTE PIPING/STRUCTURES, AND ANY OTHER UNSUITABLE MATERIAL FROM WITHIN THE PROJECT AREA BOUNDARY AND CLEARING LIMITS, UNLESS INDICATED OTHERWISE ON THESE PLANS OR DIRECTED BY THE ENGINEER.
7. TREES ALONG THE OUTFALL AND WITHIN PORTIONS OF THE CONSTRUCTION LIMITS THAT DO NOT CONFLICT WITH CONSTRUCTION SHALL REMAIN AND BE PROTECTED FROM DAMAGE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCOMMODATION AND MAINTENANCE OF BASE AND STORM FLOWS IN ALL AREAS OF THE PROJECT SITE THROUGHOUT THE CONSTRUCTION PERIOD.
9. INSPECT SITE AFTER EACH RUNOFF PRODUCING RAINFALL AND REPAIR VISIBLE EROSION. REPAIR AND REPLACE EROSION CONTROL DEVICES AS NECESSARY.
10. DEMOLITION SHALL INCLUDE THE REMOVAL OF ALL DEBRIS AT ALL DRAINAGE DEVICES. THE REMOVAL OF DEBRIS SHALL BE MAINTAINED BY THE CONTRACTOR TO ALLOW CONSTANT DRAINING OF THE DEVICES DURING CONSTRUCTION.
11. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PREVENT SEDIMENT FROM LEAVING SITE. STREETS SHALL BE SWEEPED REGULARLY TO KEEP THE TRACKED SEDIMENT FROM ENTERING THE STORM DRAINAGE SYSTEM. CONTRACTOR SHALL NOT WASH SEDIMENT INTO STORM DRAINS.
12. ALL WORK PERFORMED IS TO BE DONE IN THE DRY. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO ENSURE THAT SUCH REQUIREMENTS ARE SATISFIED.
13. DE-WATERING OF STRUCTURES WITH SEDIMENT-LADEN WATER DIRECTLY TO STREAMS OR STORM DRAINAGE SYSTEM IS PROHIBITED. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO ENSURE THAT SUCH PROHIBITED ACTIVITIES DO NOT OCCUR.
14. PERMANENT GROUND COVER IS REQUIRED ON ALL DISTURBED AREAS OF THE CONTRACT WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS, WHICHEVER IS SHORTER, FOLLOWING CONSTRUCTION COMPLETION. MULCHING SHALL BE PROVIDED FOR ALL AREAS REQUIRING SEEDING.
15. TEMPORARY OR PERMANENT GROUND COVER STABILIZATION SHALL OCCUR WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY, WITH THE FOLLOWING EXCEPTIONS IN WHICH TEMPORARY OR PERMANENT GROUND COVER SHALL BE PROVIDED IN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY:
 - Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
 - Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
 - Slopes 4:1 or flatter
 The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.
16. WHEN VEGETATION IS ESTABLISHED, CALL FOR FINAL SITE INSPECTION BY THE CITY OF WILMINGTON.

NOTE:
 THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2-3X THE HEIGHT OF THE TREE.

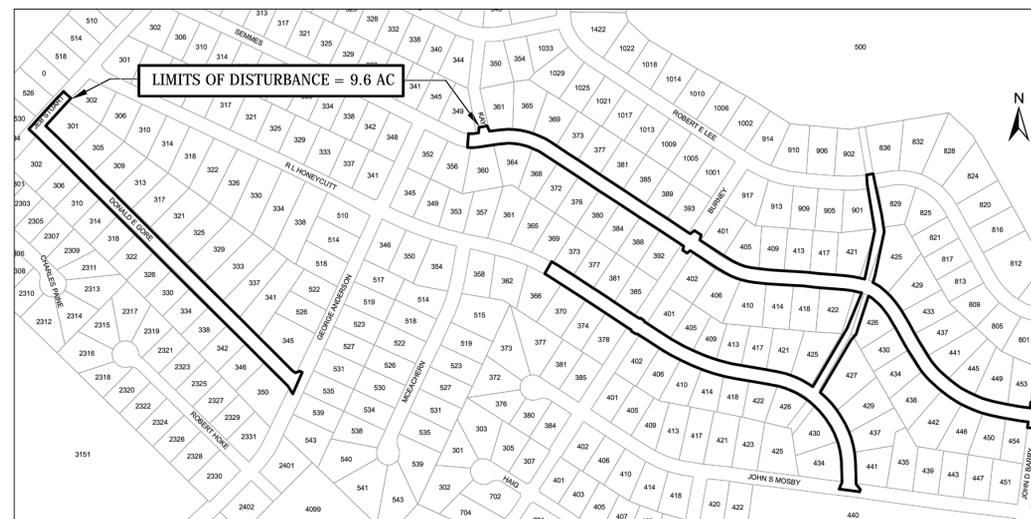
NOTE:
 CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.



- NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 3. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
 4. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO HEAVY MATERIALS SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
 5. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES MAY RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

REQUIRED TREE PROTECTION DETAIL

NOT TO SCALE



REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016

DRAWN BY: **AWB/AMT**

CHECKED BY: **CDJ**

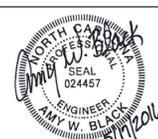
APPROVED BY: **CDJ**

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 Street Rehabilitation 14SR10

JEC PROJECT NUMBER:
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LIC # C1842



CITY OF WILMINGTON
 NORTH CAROLINA

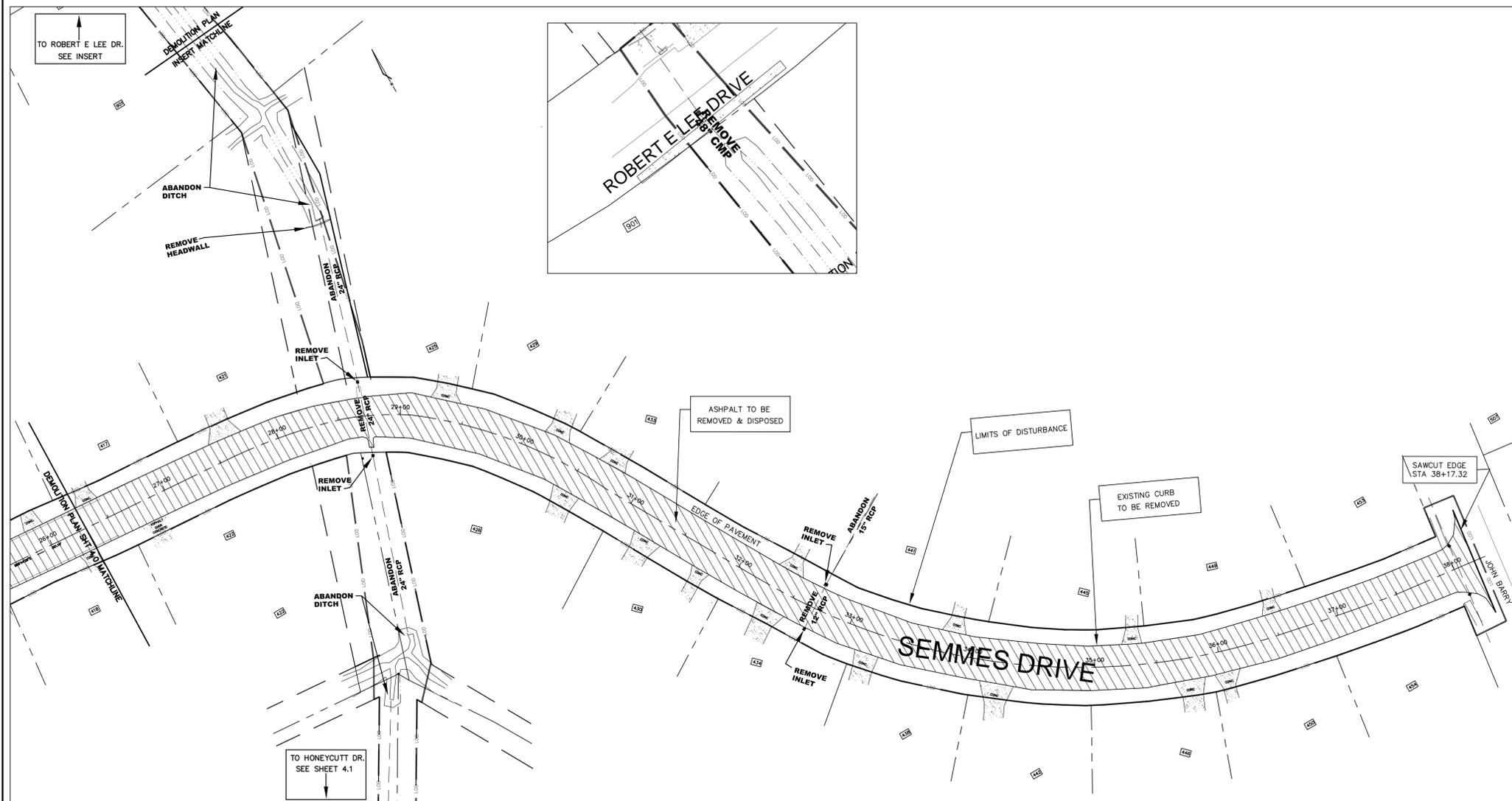
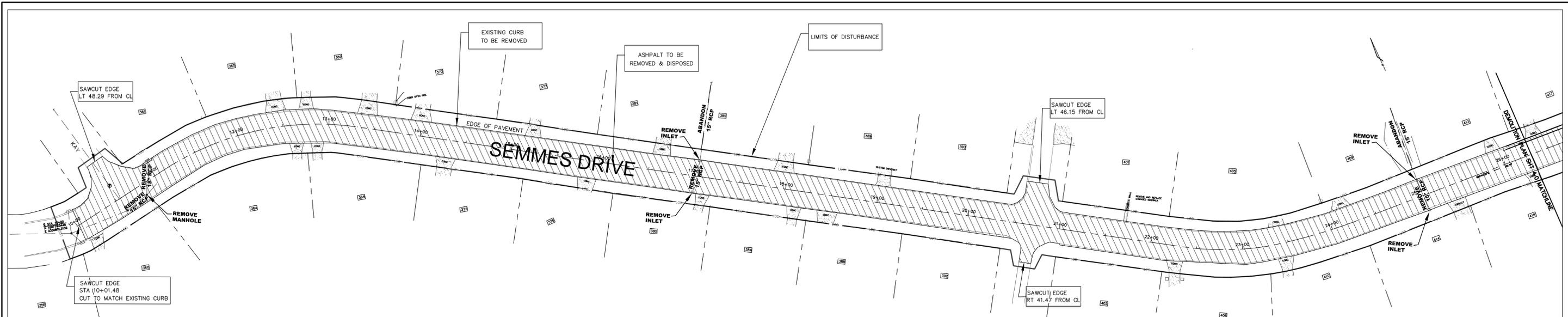
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

EROSION & SEDIMENT CONTROL

SHEET NO.

3.0



- DEMOLITION NOTES:**
- ALL WORK SHALL BE PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY AND EASEMENTS WITHIN THE PROJECT AREA AS SHOWN ON THE PLANS.
 - EXISTING STORM DRAINAGE PIPES TO BE ABANDONED SHALL BE ABANDONED IN PLACE AND GROUTED IN ACCORDANCE WITH CITY OF WILMINGTON SPECIFICATIONS (T-2.09) AND NCDOT STANDARDS (840.71), UNLESS PIPE WILL BE EXPOSED DURING PROPOSED CONSTRUCTION. EXPOSED PIPE SHALL BE REMOVED AS WASTE MATERIAL. PIPES WITHIN ROADWAY SHALL BE REMOVED AS WASTE MATERIAL. PIPE EXCAVATION TRENCHES SHALL BE BACKFILLED AND COMPACTED PER CITY STANDARDS.
 - CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS TO GAIN ACCESS TO PIPES TO BE ABANDONED OUTSIDE OF RIGHT-OF-WAY AND EASEMENTS.
 - INLETS TO BE REMOVED SHALL BE COMPLETELY EXCAVATED AND DISPOSED OF AS WASTE MATERIAL. SUITABLE FILL MATERIAL SHALL BE PLACED AND COMPACTED AS NEEDED TO RESTORE GRADE.
 - REMOVED INLET LOCATIONS OUTSIDE OF PAVEMENT AREAS SHALL HAVE AT LEAST 6 INCHES OF TOPSOIL AT FINISHED GRADE PRIOR TO SEEDING.
 - THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SAWCUT PAVEMENT SHALL BE REPLACED AS WELL AS ADDITIONAL PAVEMENT REQUIRED TO TIE-IN TO FACE OF PROPOSED CURB AND GUTTER, PAVEMENT, OR DRIVEWAY.
 - EXISTING DRIVEWAYS SHALL BE CUT AT A LOCATION TO BE DETERMINED IN THE FIELD, BASED ON THE FOLLOWING CRITERIA:
 - AT A SUITABLE CONSTRUCTION/EXPANSION JOINT LOCATED BETWEEN 5 AND 10 FEET FROM THE EDGE OF PAVEMENT.
 - IF NO CONSTRUCTION/EXPANSION JOINT EXISTS IN THIS AREA, SAWCUT SHALL BE 8 FEET FROM EDGE OF NEW PAVEMENT.
 - IN NO CASE SHALL SAWCUT BE CLOSER THAN 8 FEET FROM CENTERLINE OF ANY NEW STORM DRAIN PIPE.
 - DRIVEWAYS SHALL BE REPLACED IN ACCORDANCE WITH CITY OF WILMINGTON STANDARDS TO A WIDTH TO MATCH THE EXISTING DRIVEWAY. ALL DRIVEWAYS SHALL HAVE A FLARE IN ACCORDANCE WITH CITY STANDARDS. CITY WILL NOTIFY HOMEOWNERS FOR DRIVEWAYS THAT HAVE SPECIAL/CUSTOM CONCRETE OR ASPHALT.
 - ALL SURPLUS EXCAVATION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. DISPOSAL SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
 - CONTRACTOR SHALL SCHEDULE DEMOLITION SUCH THAT EXISTING UPSLOPE DRAINAGE STRUCTURES AND PIPE WILL REMAIN IN SERVICE AS LONG AS POSSIBLE. DEMOLITION SCHEDULE(S) SHALL BE SUBMITTED TO AND APPROVED BY THE CITY OF WILMINGTON PRIOR TO COMMENCING ANY PHASE OF WORK/DEMOLITION.

APPROXIMATE DEMOLITION QUANTITIES:
 19,757 SY OF ASPHALT
 45 DRAINAGE STRUCTURES (MANHOLES, INLETS)
 5616 LF PIPE
 538 LF - 12"
 3290 LF - 15"
 1453 LF - 18"
 359 LF - 24"
 28 LF - 48"
 85 DRIVEWAY APRONS

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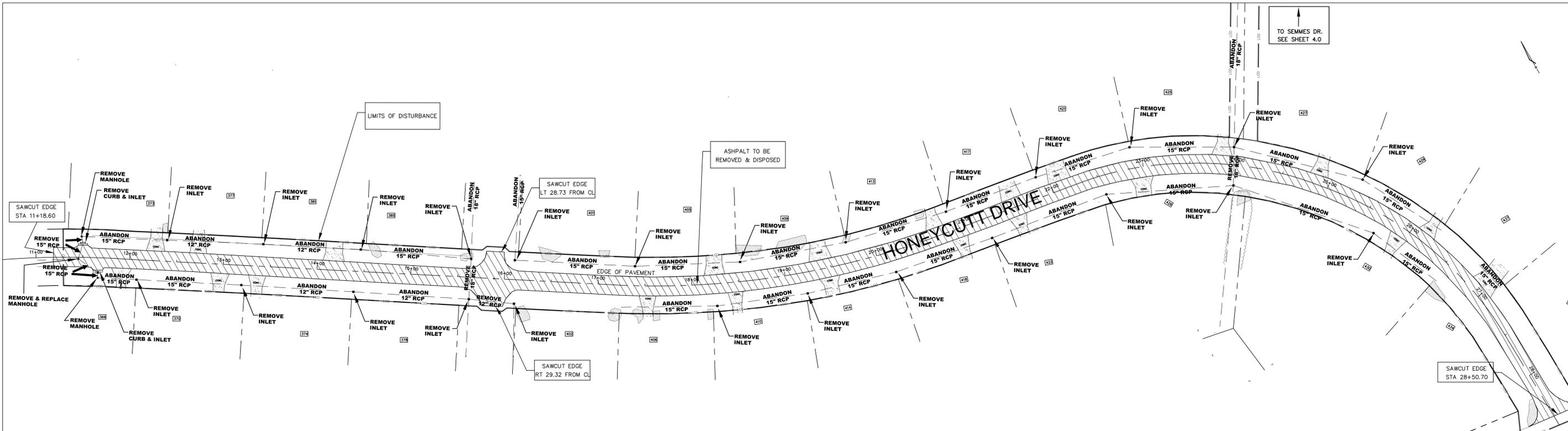
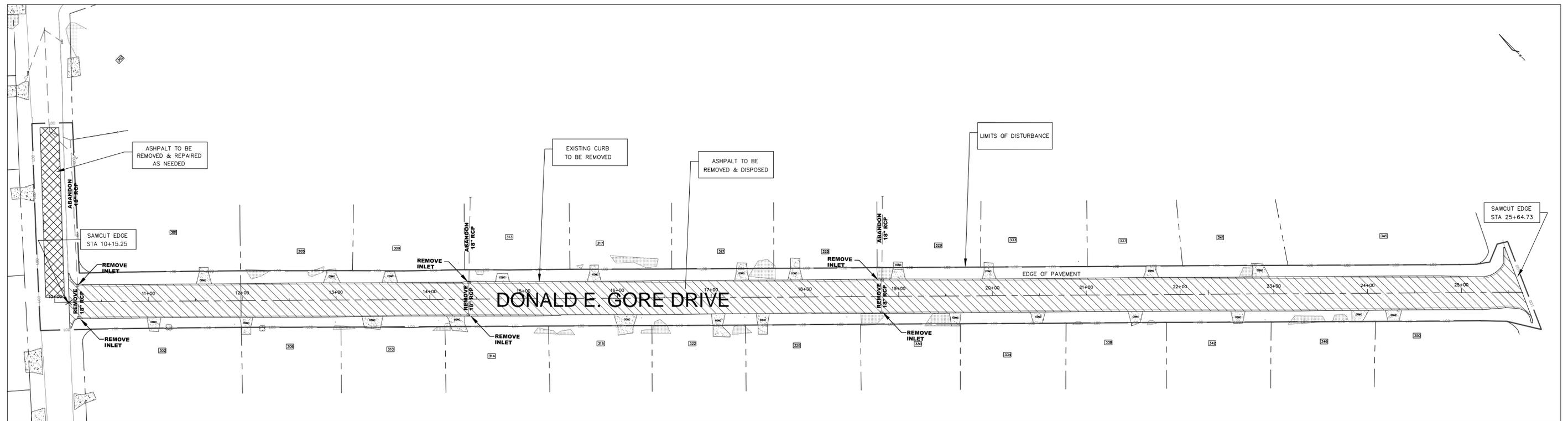
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

DEMOLITION PLAN

SHEET NO.

4.0



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 NORTH CAROLINA
 Public Services • Stormwater Division
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PLAN AND PROFILE MAP INDEX

NOT TO SCALE



PLAN & PROFILE SHEET INDEX	
SHEET	DESCRIPTION
5.0	MAP INDEX FOR PLAN & PROFILE SHEETS
5.1	SEMMES DRIVE
5.2	SEMMES DRIVE
5.3	SEMMES DRIVE
5.4	SEMMES DRIVE
5.5	SEMMES DRIVE
5.6	HONEYCUTT DRIVE
5.7	HONEYCUTT DRIVE
5.8	HONEYCUTT DRIVE
5.9	JEB STUART DRIVE
5.10	DONALD E. GORE DRIVE
5.11	DONALD E. GORE DRIVE
5.12	DONALD E. GORE DRIVE
5.13	OUTFALL (ROBERT E. LEE TO SEMMES)
5.14	OUTFALL (SEMMES TO HONEYCUTT)

PLAN AND PROFILE NOTES:

- ALL STATION INFORMATION ALONG SEMMES, HONEYCUTT, AND DONALD GORE ROADWAYS IS BASED ON ROADWAY CENTERLINE ALIGNMENTS. STATION INFORMATION ALONG THE OUTFALL AND JEB STUART IS BASED ON CENTERLINE OF PIPE.
- EXISTING AND PROPOSED FINISHED GRADES SHOWN IN PROFILE ARE CENTERLINE ELEVATIONS ALONG THE ALIGNMENT CENTERLINE.
- STORM DRAIN PIPE LENGTHS ARE ALONG CENTERLINE OF PIPE AND FROM CENTER TO CENTER OF UP AND DOWNSTREAM STRUCTURES.
- STATION OFFSETS FOR CURB INLETS ARE DISTANCES FROM CENTERLINE TO BACK OF CURB.
- STATION OFFSETS FOR DROP INLETS ARE DISTANCES FROM CENTERLINE TO CENTER OF GRATE.
- STATION OFFSETS FOR MANHOLES ARE DISTANCES FROM CENTERLINE TO CENTER OF STRUCTURE.

Drainage Structures						
ID	Structure	Structure Specification	Station	Offset	Alignment	Largest Pipe Size
Donald Gore						
MH 99	4' Manhole	COW SD 2-03	1+81.78	0	Jeb Stuart	24"
MH 100	4' Manhole	COW SD 2-03	10+00.32	17.13 LT	Donald Gore	24"
CI 101	Curb Inlet	NCDOT 840.02	10+25.09	18.45 LT	Donald Gore	24"
CI 102	Curb Inlet	NCDOT 840.02	10+25.09	18.45 RT	Donald Gore	24"
CI 103	Curb Inlet	NCDOT 840.02	11+79.29	18.45 RT	Donald Gore	24"
CI 104	Curb Inlet	NCDOT 840.02	15+04.40	18.45 RT	Donald Gore	24"
CI 105	Curb Inlet	NCDOT 840.02	18+63.14	18.45 RT	Donald Gore	24"
CI 106	Curb Inlet	NCDOT 840.02	20+67.13	18.45 RT	Donald Gore	18"
CI 107	Curb Inlet	NCDOT 840.02	11+79.29	18.45 LT	Donald Gore	12"
CI 108	Curb Inlet	NCDOT 840.02	15+04.40	18.45 LT	Donald Gore	12"
CI 109	Curb Inlet	NCDOT 840.02	18+63.14	18.45 LT	Donald Gore	12"
CI 110	Curb Inlet	NCDOT 840.02	20+67.13	18.45 LT	Donald Gore	12"
Semmes						
MH 199	MH/Junct Box	NCDOT 840.31	10+52.92	17.75 LT	Semmes	48"
CI 200	Curb Inlet	NCDOT 840.02	11+01.94	18.45 LT	Semmes	24"
CI 201	Curb Inlet	NCDOT 840.02	12+61.42	18.45 LT	Semmes	24"
CI 202	Curb Inlet	NCDOT 840.02	16+37.65	18.45 LT	Semmes	24"
CI 203	Curb Inlet	NCDOT 840.02	17+58.01	18.45 LT	Semmes	18"
CI 204	Curb Inlet	NCDOT 840.02	22+74.61	18.45 LT	Semmes	18"
CI 205	Curb Inlet	NCDOT 840.02	23+45.77	18.45 LT	Semmes	18"
CI 206	Curb Inlet	NCDOT 840.02	24+60.08	18.45 LT	Semmes	18"
CI 207	Curb Inlet	NCDOT 840.02	27+24.41	18.45 LT	Semmes	24"
MH 207-A	Interfer. MH	COW SD 2-05	28+53.91	13.88 LT	Semmes	24"
CI 208	Curb Inlet	NCDOT 840.02	28+64.94	18.45 LT	Semmes	48"
CI 209	Curb Inlet	NCDOT 840.02	30+43.32	18.45 LT	Semmes	18"
CI 210	Curb Inlet	NCDOT 840.02	32+67.97	18.45 LT	Semmes	18"
CI 211	Curb Inlet	NCDOT 840.02	16+37.65	18.45 RT	Semmes	12"
CI 212	Curb Inlet	NCDOT 840.02	17+58.01	18.45 RT	Semmes	18"
CI 214	Curb Inlet	NCDOT 840.02	22+74.62	18.45 RT	Semmes	12"
CI 215	Curb Inlet	NCDOT 840.02	24+60.08	18.45 RT	Semmes	12"
CI 216	Curb Inlet	NCDOT 840.02	27+24.41	18.45 RT	Semmes	12"
MH 217	Interfer. MH	COW SD 2-05	28+73.83	21.63 RT	Semmes	36"
CI 218	Curb Inlet	NCDOT 840.02	30+69.14	18.45 RT	Semmes	12"
CI 219	Curb Inlet	NCDOT 840.02	32+68.00	18.45 RT	Semmes	12"
CI 220	Curb Inlet	NCDOT 840.02	38+03.57	20.12 LT	Semmes	18"
CI 221	Curb Inlet	NCDOT 840.02	38+03.64	20.47 RT	Semmes	18"
Honeycutt						
MH 301	4' Manhole	COW SD 2-03	11+45.06	1.74 RT	Honeycutt	24"
MH 302	4' Manhole	COW SD 2-03	12+07.67	0	Honeycutt	24"
MH 303	4' Manhole	COW SD 2-03	12+96.94	0	Honeycutt	24"
MH 304	4' Manhole	COW SD 2-03	13+53.02	0	Honeycutt	24"
MH 305	4' Manhole	COW SD 2-03	14+46.84	0	Honeycutt	18"
MH 306	4' Manhole	COW SD 2-03	15+63.41	0	Honeycutt	18"
MH 307	4' Manhole	COW SD 2-03	16+11.64	0	Honeycutt	18"
MH 308	4' Manhole	COW SD 2-03	17+69.63	0	Honeycutt	18"
MH 309	4' Manhole	COW SD 2-03	18+55.45	0	Honeycutt	24"
MH 310	4' Manhole	COW SD 2-03	20+61.89	0	Honeycutt	24"
MH 311	4' Manhole	COW SD 2-03	21+38.48	0	Honeycutt	24"
MH 312	4' Manhole	COW SD 2-03	22+77.33	0	Honeycutt	24"
MH 313	4' Manhole	COW SD 2-03	23+67.86	0	Honeycutt	24"
MH 314	MH/Junct Box	NCDOT 840.31	23+98.82	0	Honeycutt	36"
MH 315	4' Manhole	COW SD 2-03	25+03.11	0	Honeycutt	12"
MH 316	4' Manhole	COW SD 2-03	26+20.43	0	Honeycutt	12"
DI 317	Drop Inlet	NCDOT 840.14	11+45.06	21.00 LT	Honeycutt	12"
DI 318	Drop Inlet	NCDOT 840.14	12+89.91	21.00 LT	Honeycutt	12"
DI 319	Drop Inlet	NCDOT 840.14	14+46.84	21.00 LT	Honeycutt	12"
DI 320	Drop Inlet	NCDOT 840.14	15+63.56	19.62 LT	Honeycutt	12"
DI 321	Drop Inlet	NCDOT 840.14	16+11.64	21.00 LT	Honeycutt	12"
DI 322	Drop Inlet	NCDOT 840.14	18+44.38	21.00 LT	Honeycutt	12"
DI 323	Drop Inlet	NCDOT 840.14	20+52.50	21.00 LT	Honeycutt	12"
DI 324	Drop Inlet	NCDOT 840.14	21+36.96	21.00 LT	Honeycutt	12"
DI 325	Drop Inlet	NCDOT 840.14	23+67.86	21.00 LT	Honeycutt	12"
DI 326	DI/Junct Box	NCDOT 840.31	23+98.82	21.00 LT	Honeycutt	36"
DI 327	Drop Inlet	NCDOT 840.14	25+03.11	21.00 LT	Honeycutt	12"
DI 328	Drop Inlet	NCDOT 840.14	26+29.16	21.00 LT	Honeycutt	12"
DI 329	Drop Inlet	NCDOT 840.14	27+14.26	21.00 LT	Honeycutt	12"
DI 330	Drop Inlet	NCDOT 840.14	11+60.64	21.00 RT	Honeycutt	12"
DI 331	Drop Inlet	NCDOT 840.14	12+07.67	21.00 RT	Honeycutt	12"
DI 332	Drop Inlet	NCDOT 840.14	13+53.02	21.00 RT	Honeycutt	12"
DI 333	Drop Inlet	NCDOT 840.14	15+63.20	23.26 RT	Honeycutt	18"
DI 334	Drop Inlet	NCDOT 840.14	16+11.64	25.56 RT	Honeycutt	18"
DI 335	Drop Inlet	NCDOT 840.14	17+69.63	21.00 RT	Honeycutt	12"
DI 336	Drop Inlet	NCDOT 840.14	18+61.50	21.00 RT	Honeycutt	12"
DI 337	Drop Inlet	NCDOT 840.14	20+73.81	21.00 RT	Honeycutt	12"
DI 338	Drop Inlet	NCDOT 840.14	21+40.01	21.00 RT	Honeycutt	12"
DI 339	Drop Inlet	NCDOT 840.14	22+77.33	21.00 RT	Honeycutt	12"
DI 340	Drop Inlet	NCDOT 840.14	23+98.78	17.87 RT	Honeycutt	18"
DI341	Drop Inlet	NCDOT 840.14	26+10.67	21.00 RT	Honeycutt	12"
Outfall						
DI 401	DI/Junct Box	NCDOT 840.31	0+00.00	0	Outfall	48"
MH 402	MH/Junct Box	NCDOT 840.31	1+88.27	0	Outfall	48"
MH 402-A	MH/Junct Box	NCDOT 840.31	2+53.69	0	Outfall	48"
DI 403	DI/Junct Box	NCDOT 840.31	4+19.69	0	Outfall	48"
DI 406	DI/Junct Box	NCDOT 840.31	4+79.63	0	Outfall	36"
MH 407	MH/Junct Box	NCDOT 840.31	6+43.37	0	Outfall	36"

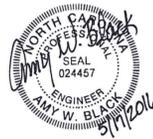
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APPROVED BY:	CDJ

CITY PROJECT NUMBERS:	Drainage Improvements 16DC11	Street Rehabilitation 14SR10
JEC PROJECT NUMBER:	11-173-006-004	

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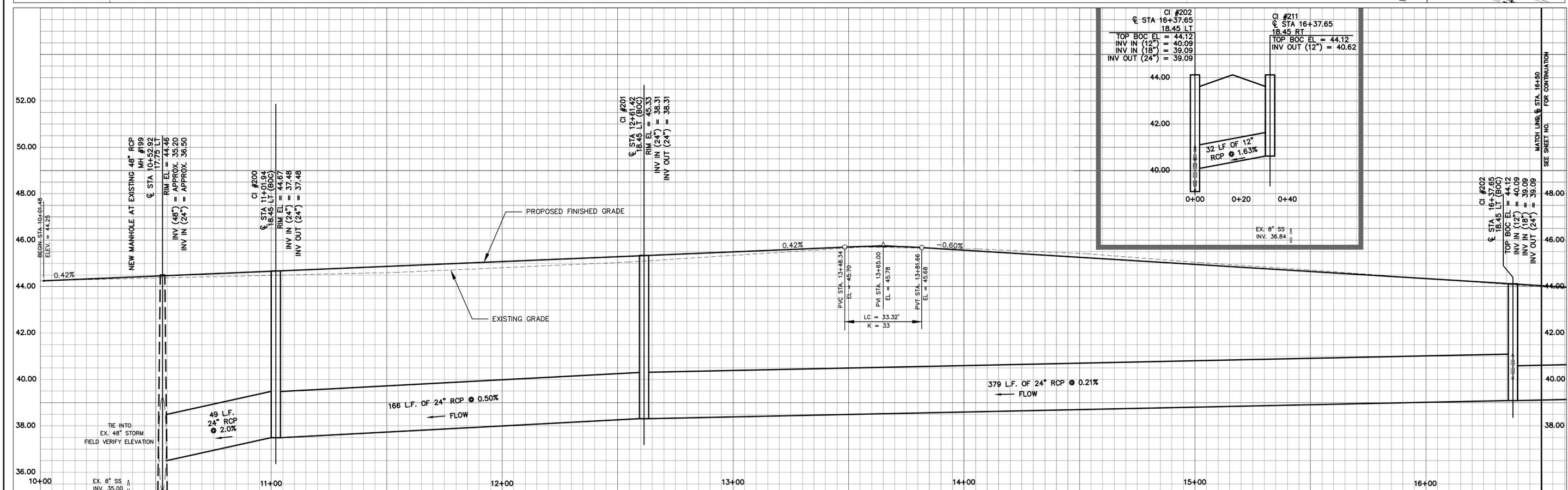
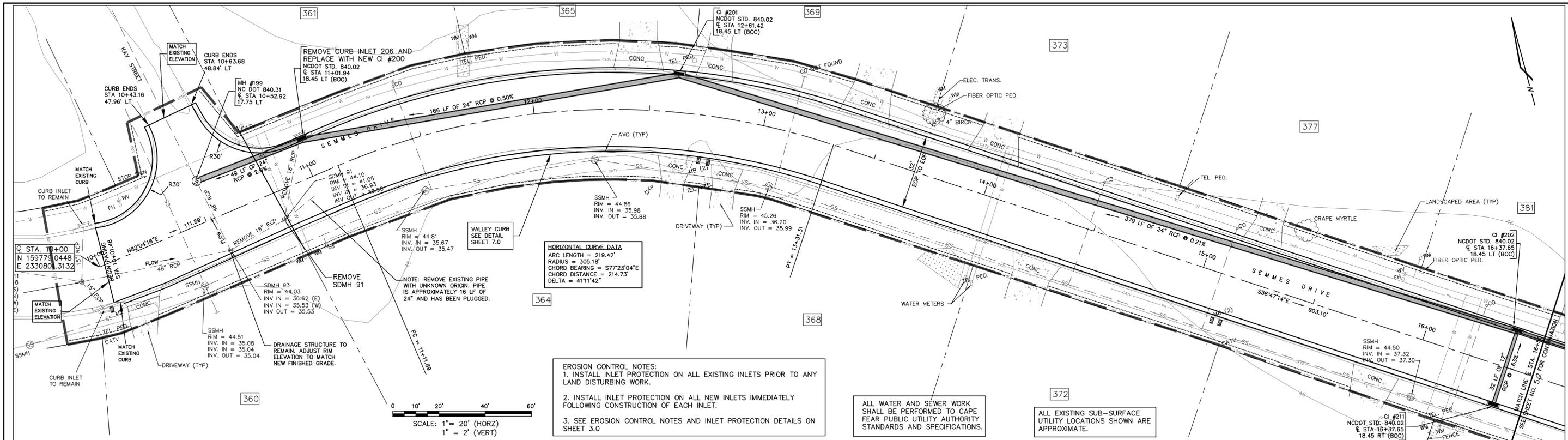


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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS PLAN & PROFILE MAP INDEX and DRAINAGE STRUCTURES TABLE

SHEET NO.

5.0



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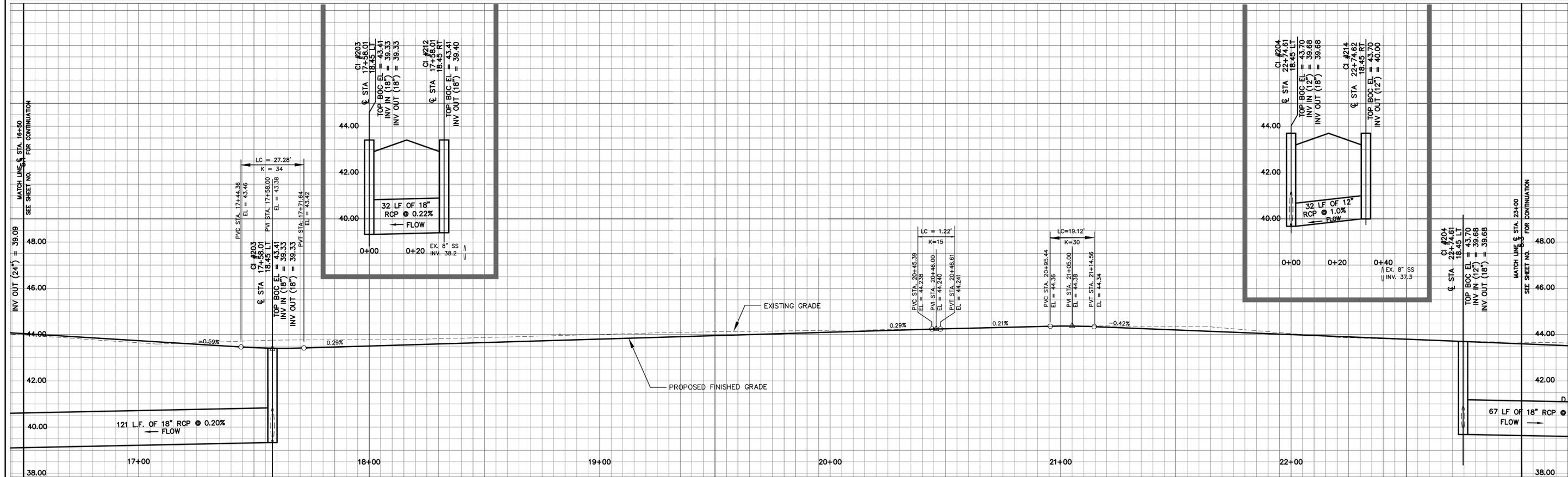
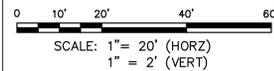
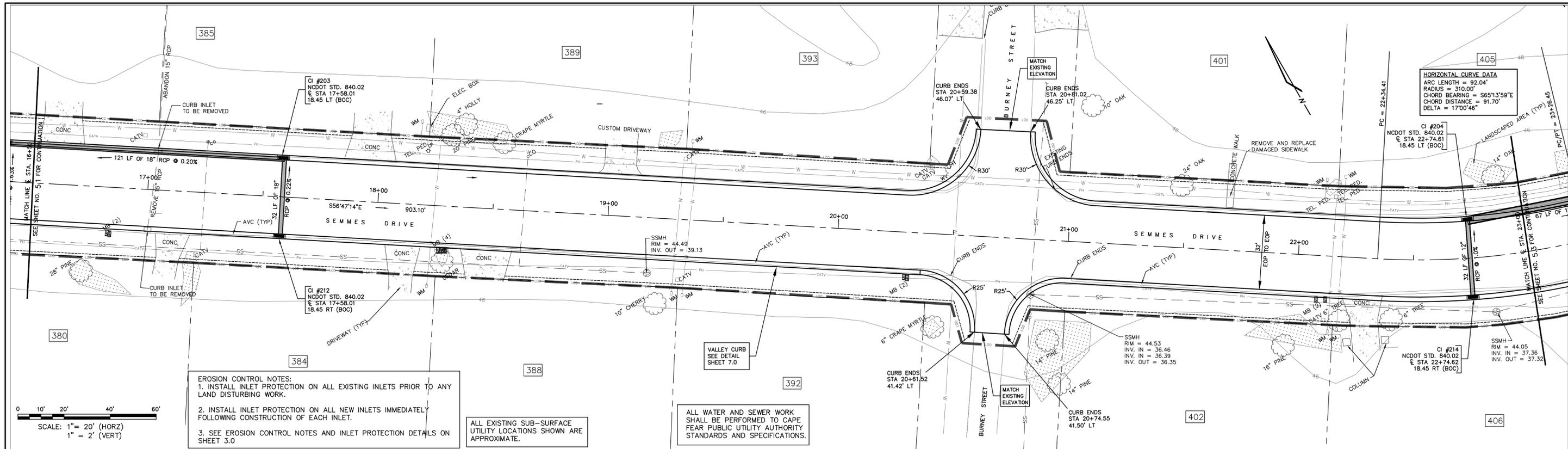
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
PLAN & PROFILE - SEMMES DRIVE

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5.1



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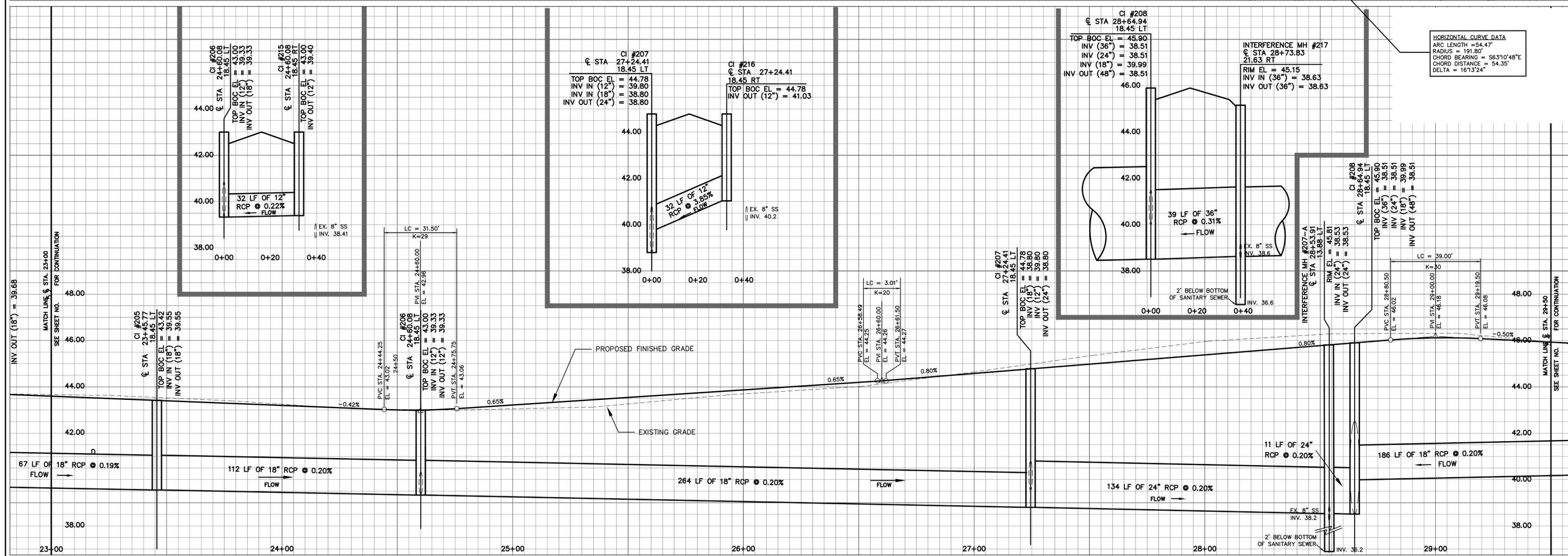
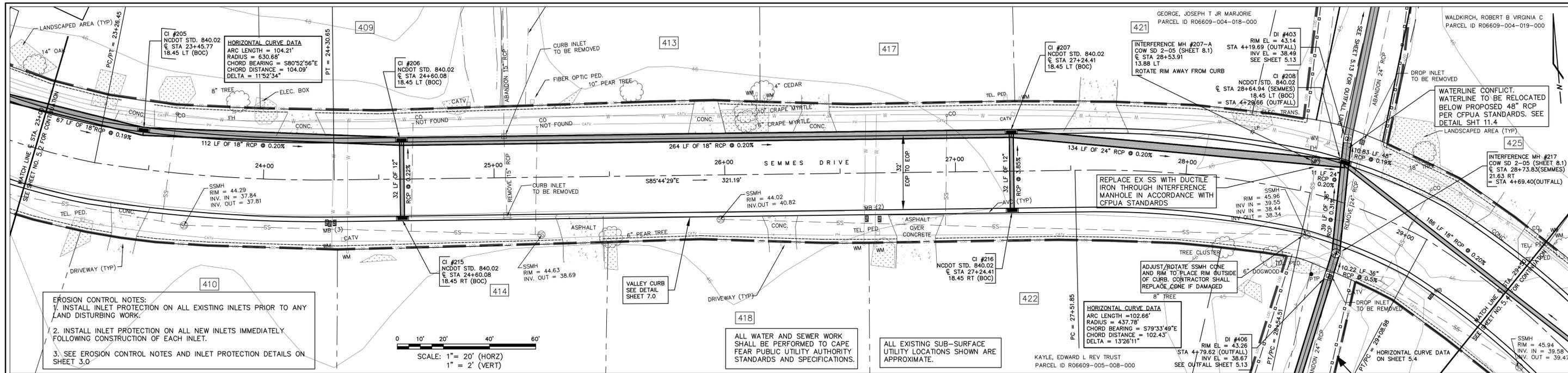


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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PLAN & PROFILE - SEMMES DRIVE

SHEET NO.
5.2



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 Drainage Improvements 16DC11
 Street Rehabilitation 14SR10

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 11-173-006-004

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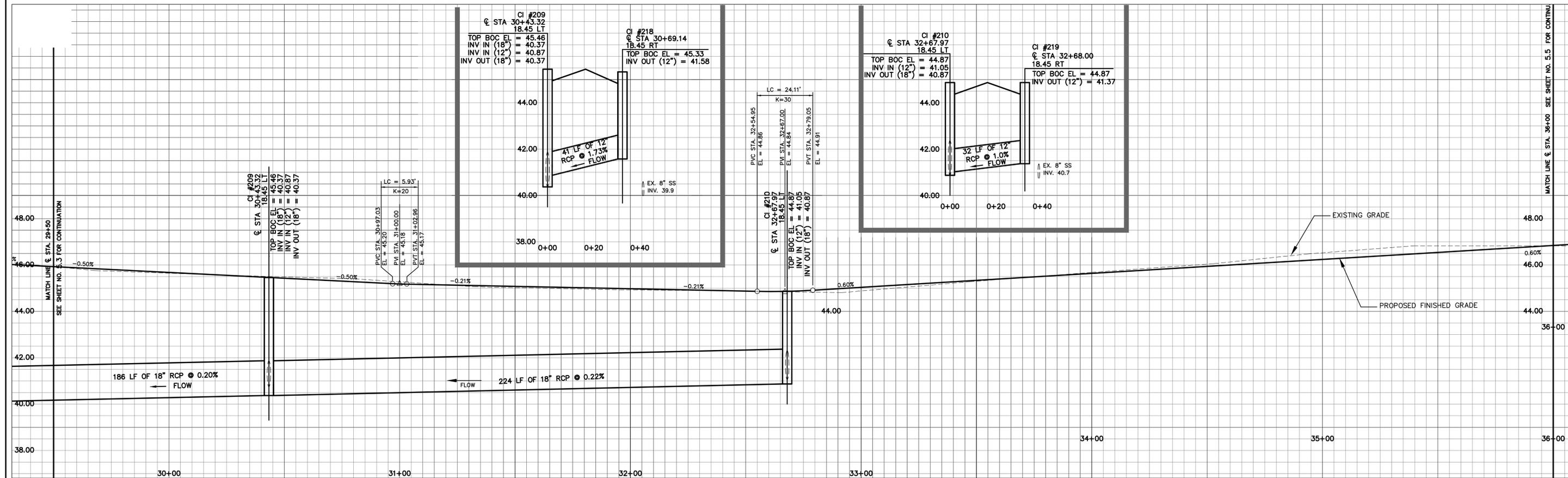
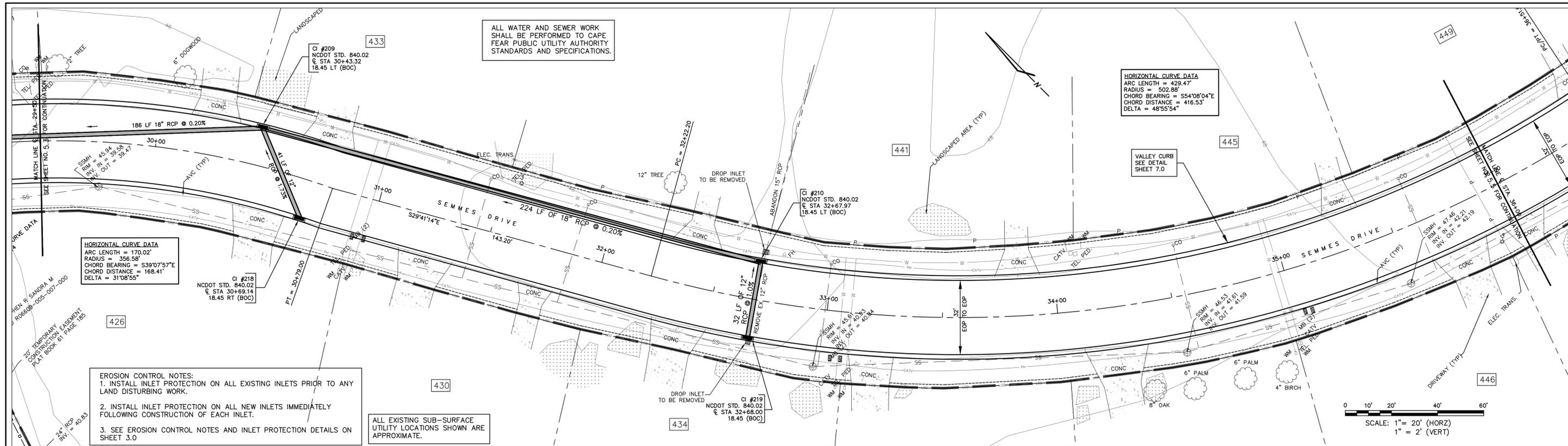
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PLAN & PROFILE - SEMMES DRIVE

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5.3



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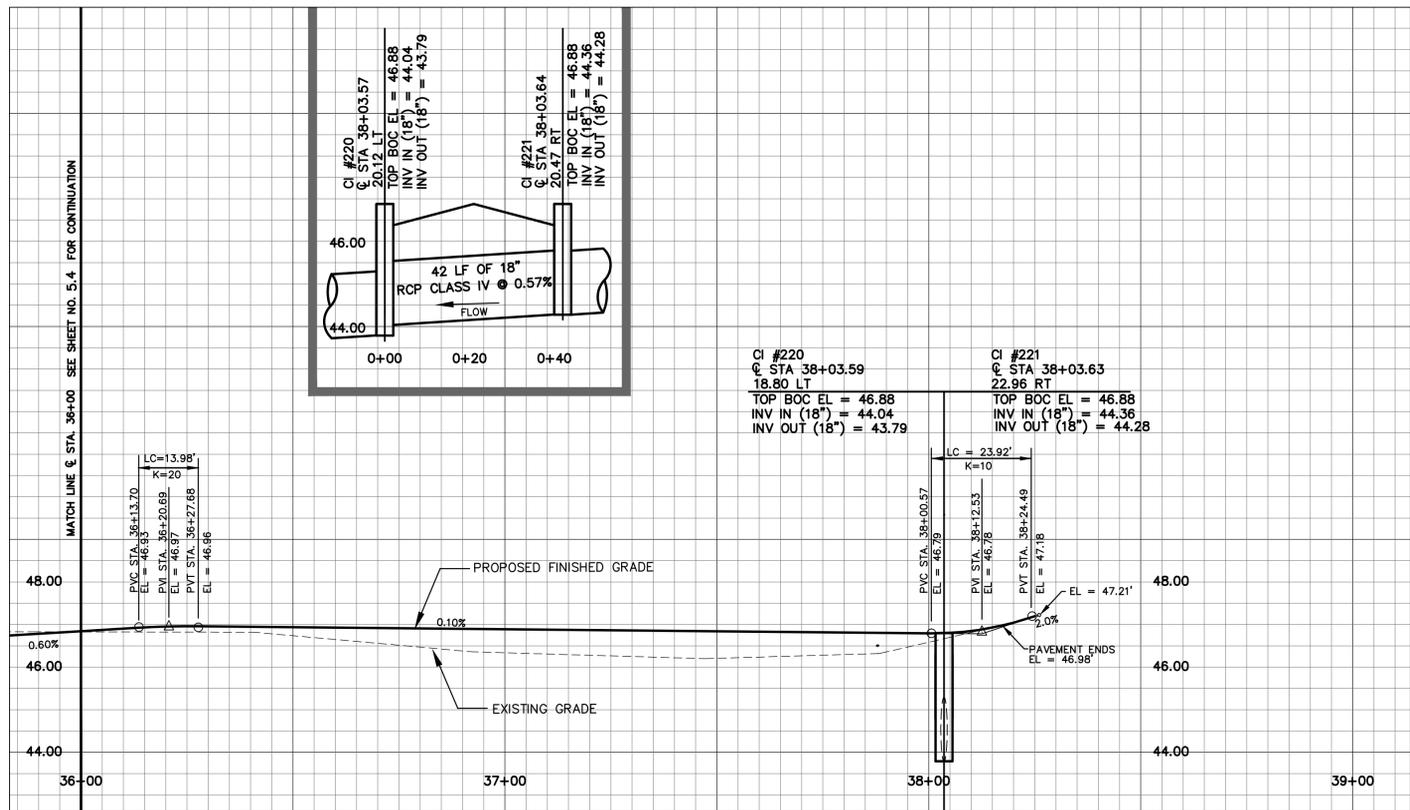
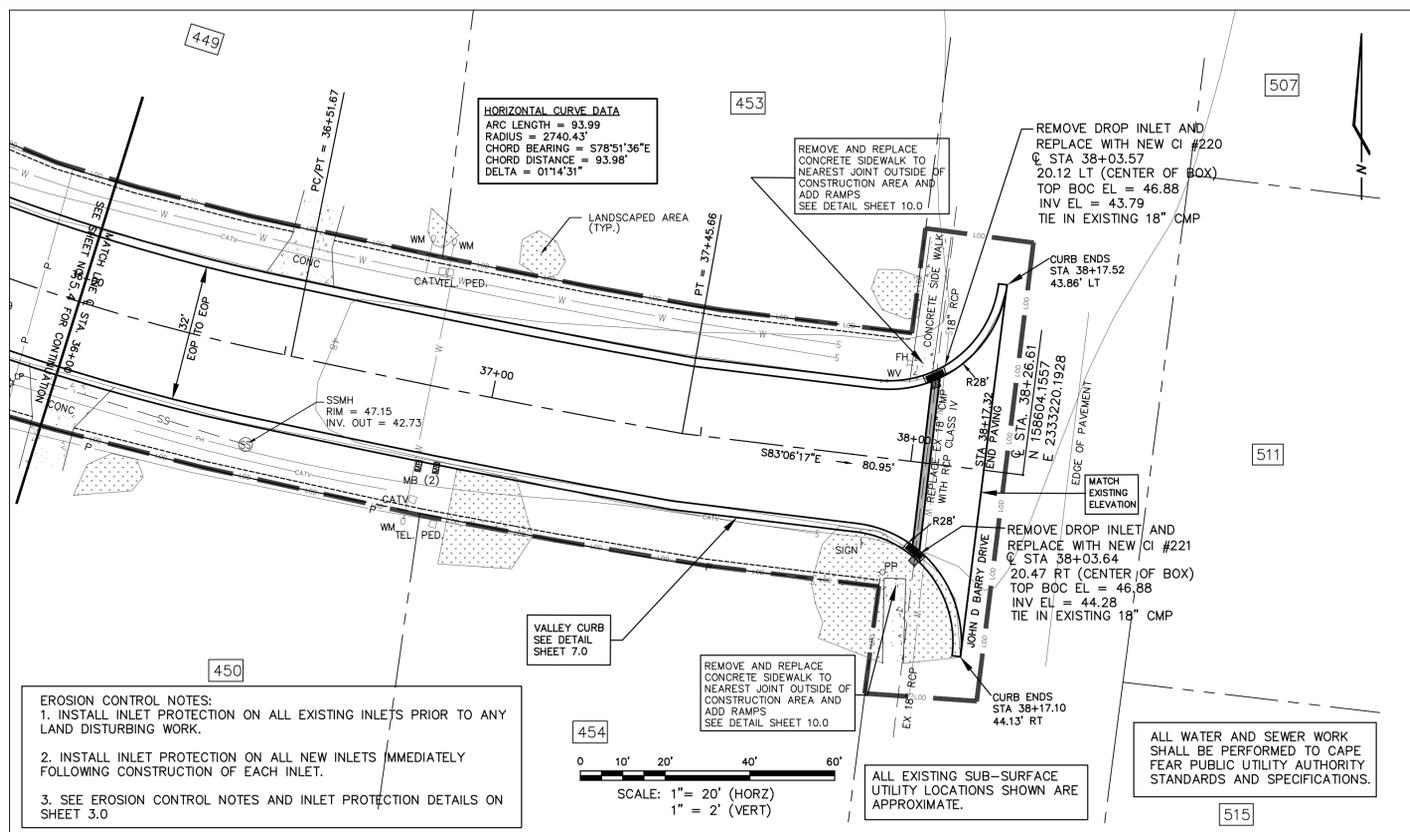
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PLAN & PROFILE - SEMMES DRIVE

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5.4



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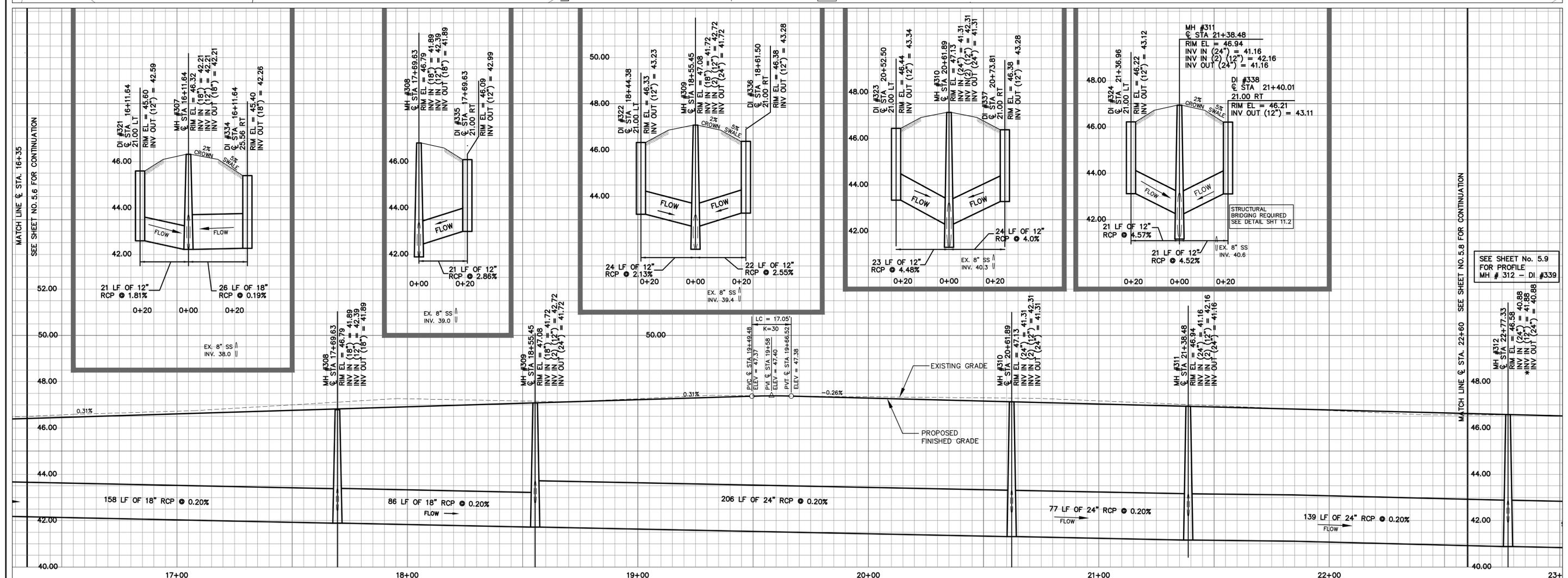
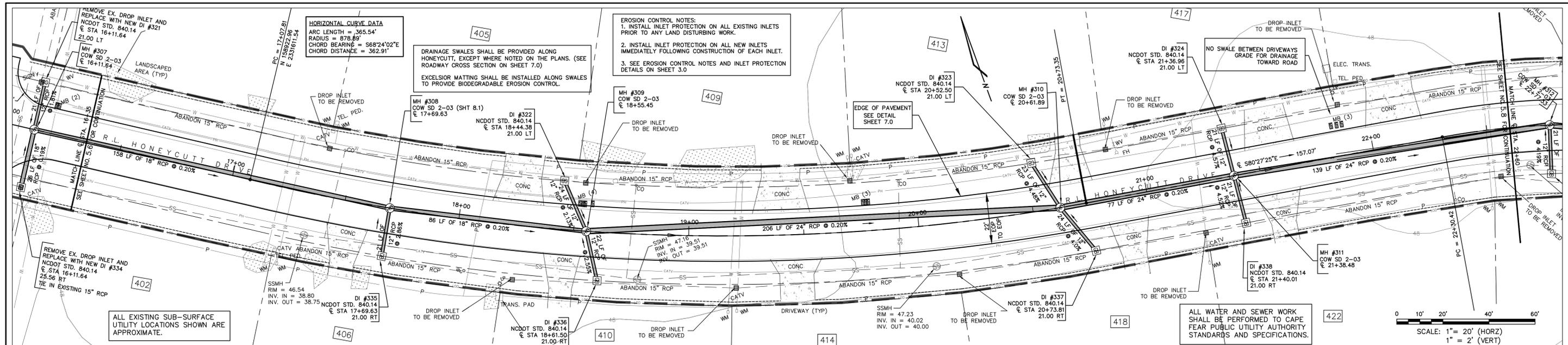


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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PLAN & PROFILE - SEMMES DRIVE

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5.5



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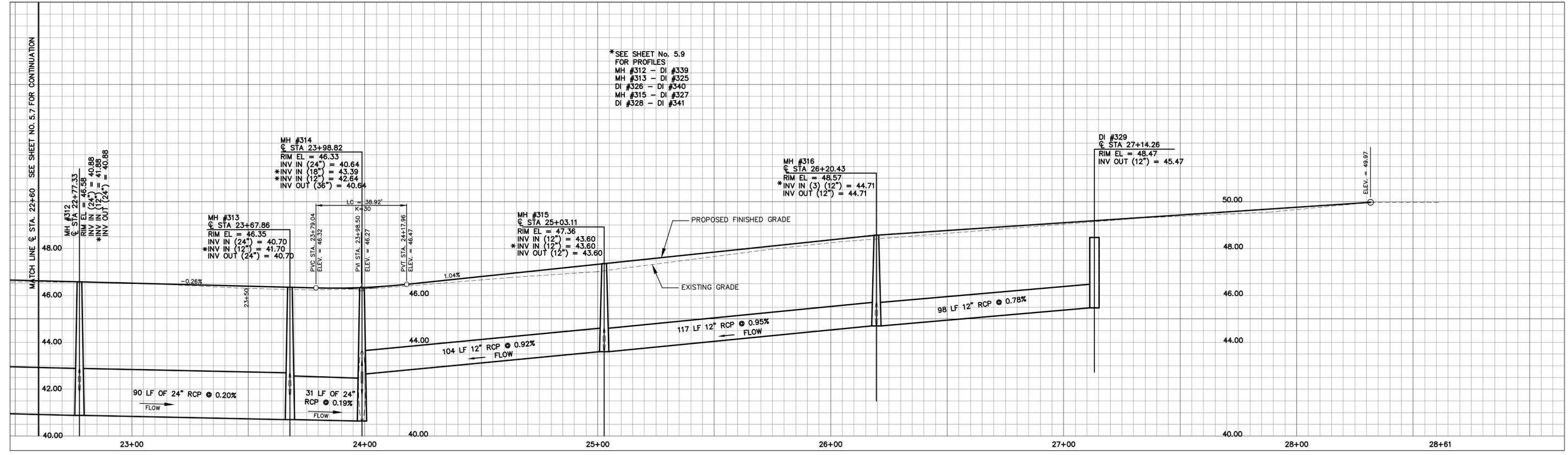
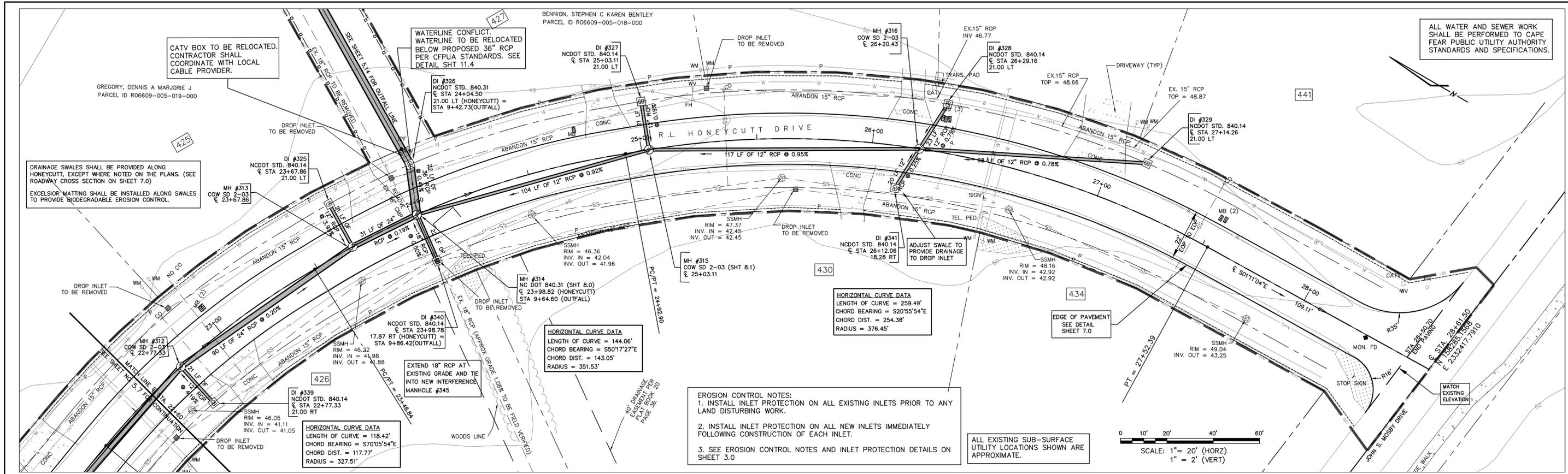
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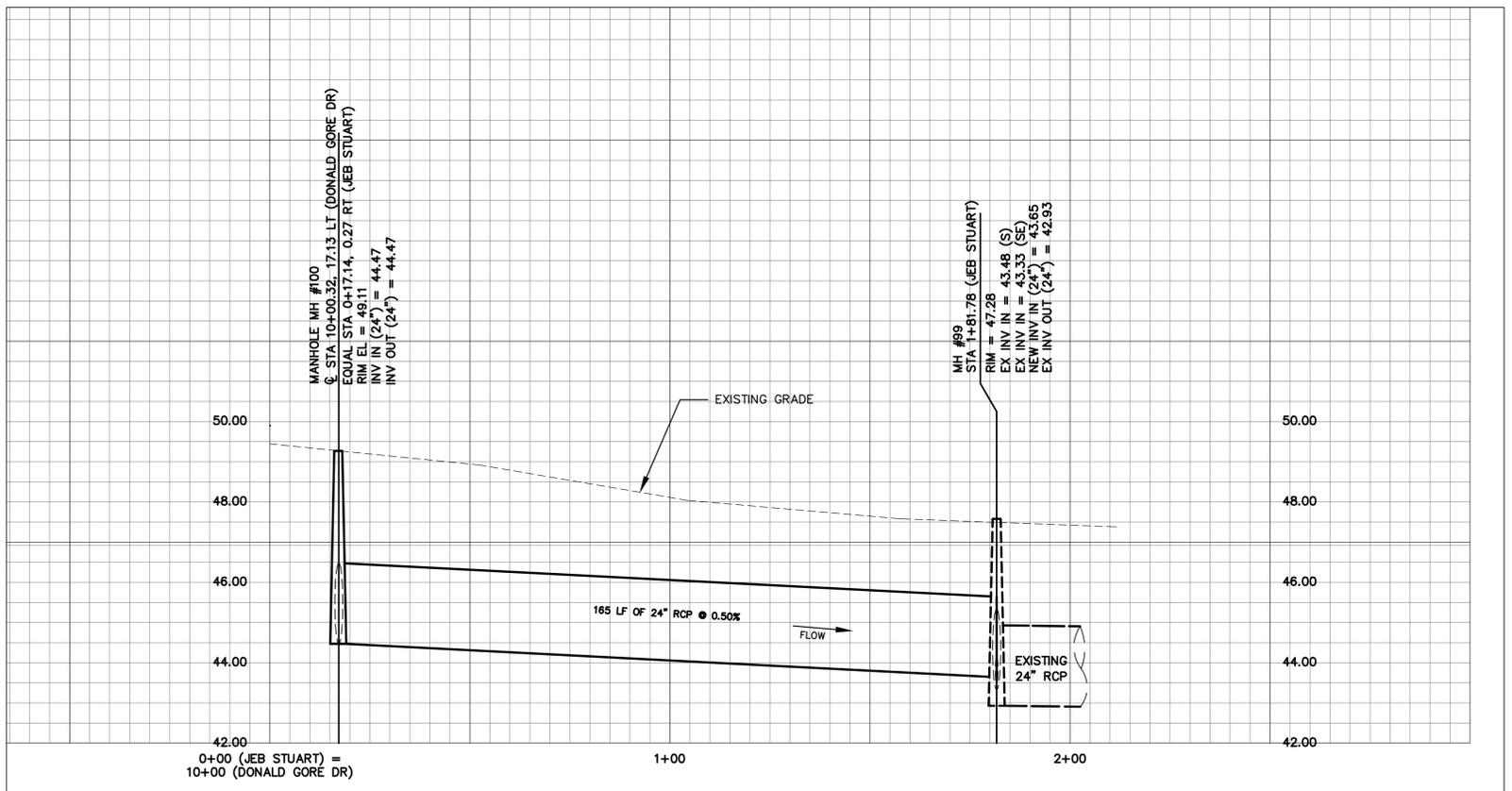
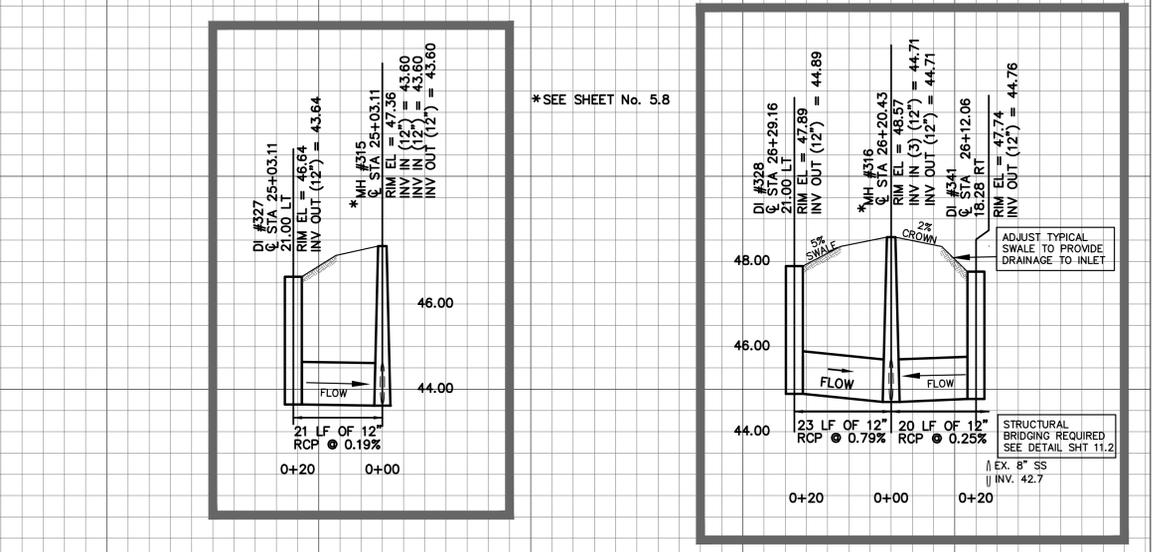
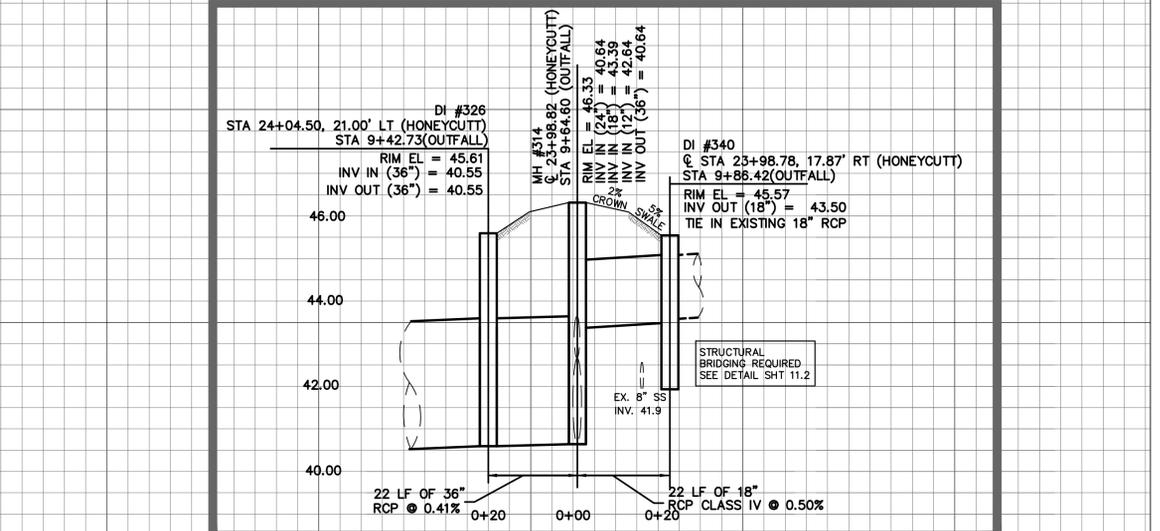
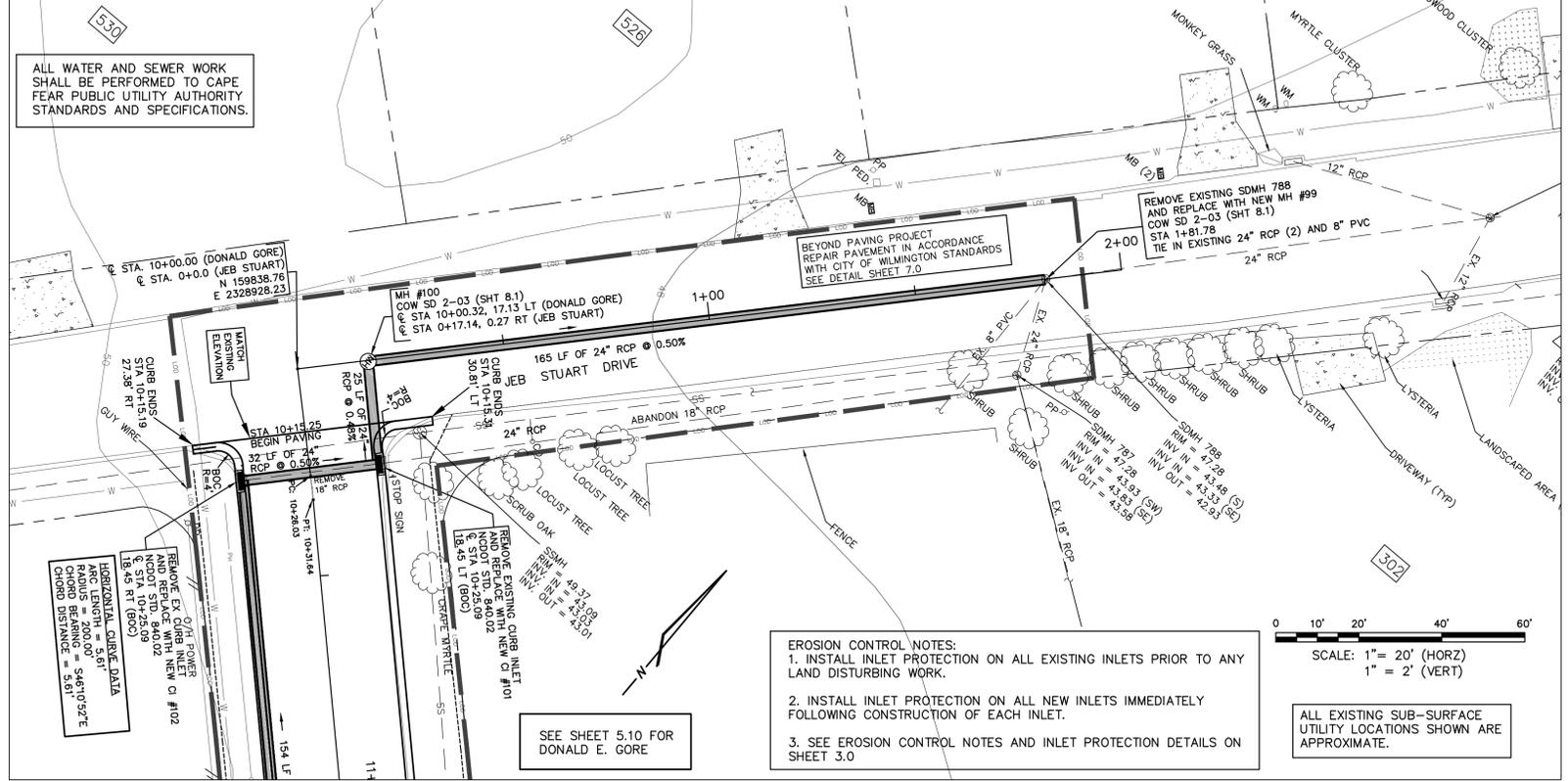
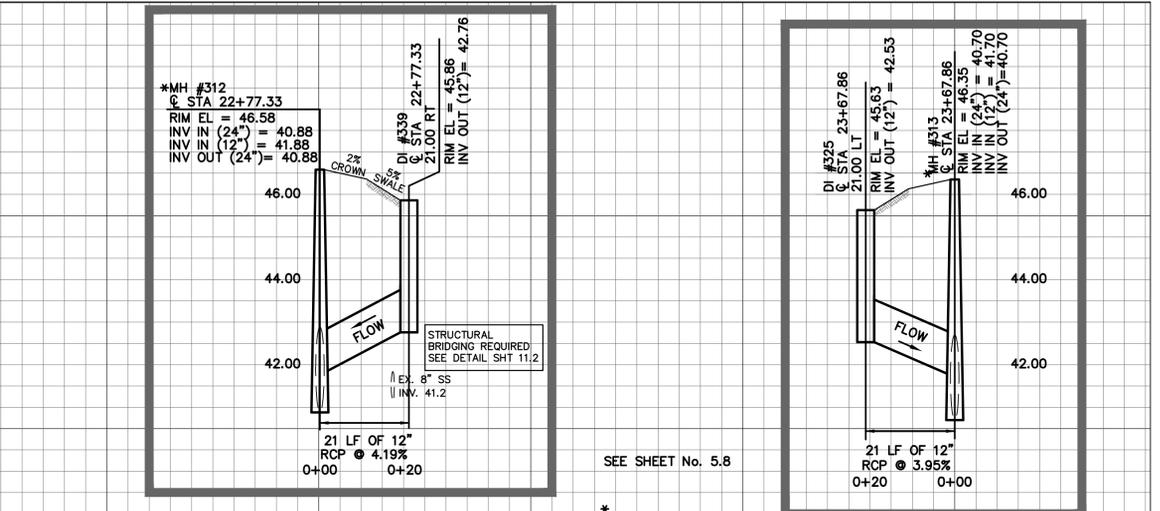


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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
PLAN & PROFILE - HONEYCUTT DRIVE

SHEET NO.
5.7





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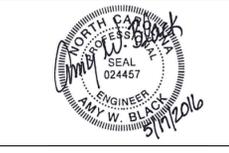
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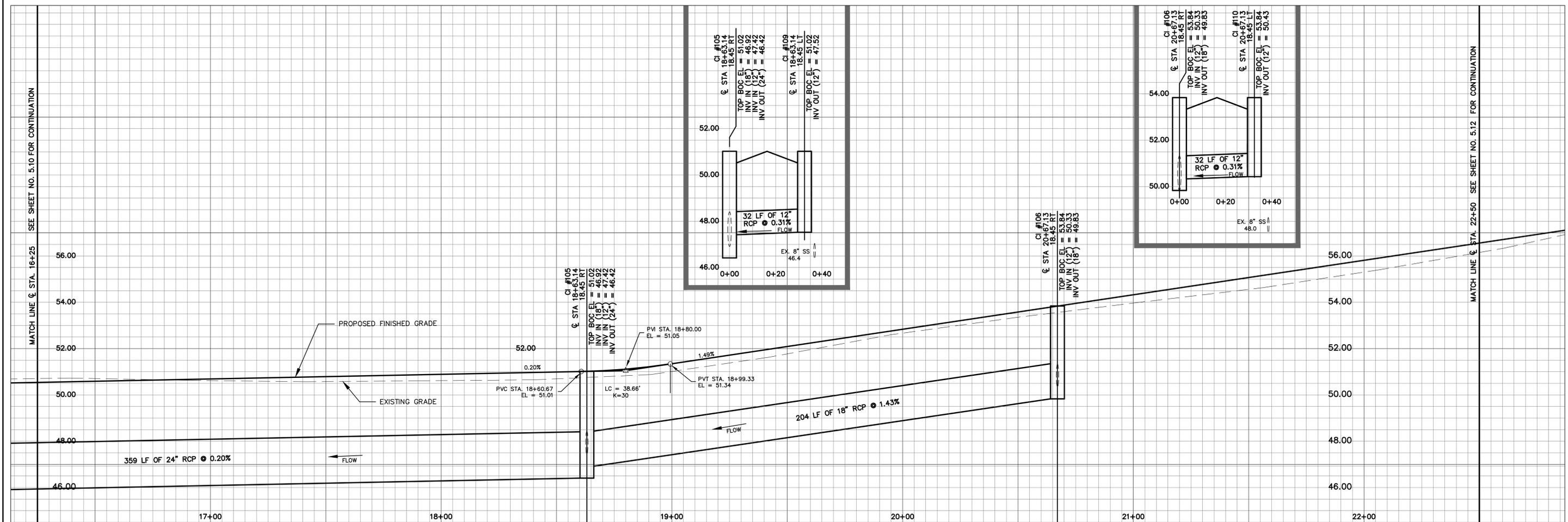
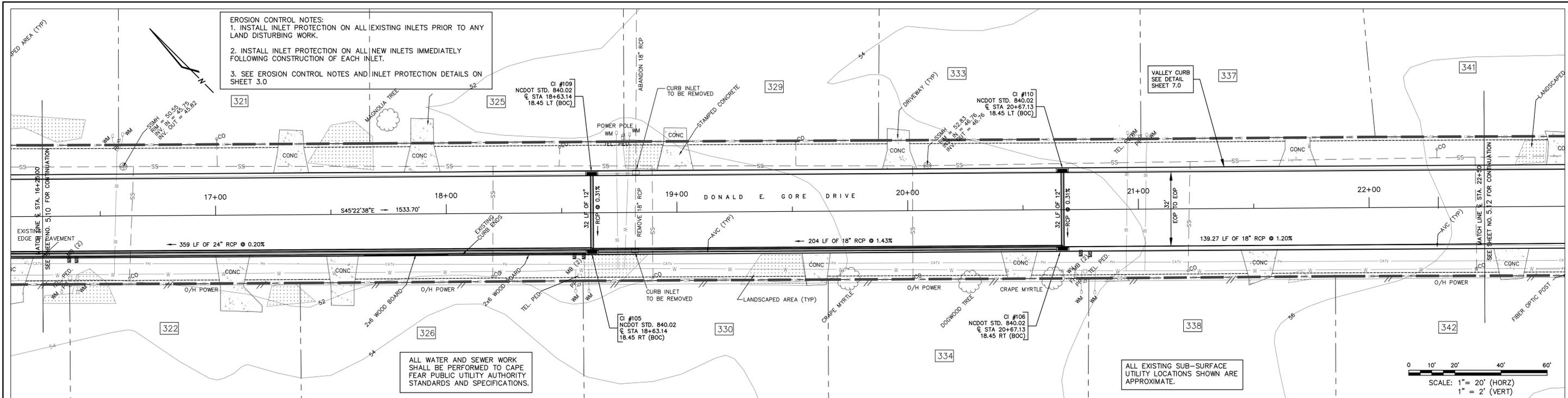
JEC PROJECT NUMBER:
 11-173-006-004

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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
PLAN & PROFILE - JEB STUART DRIVE



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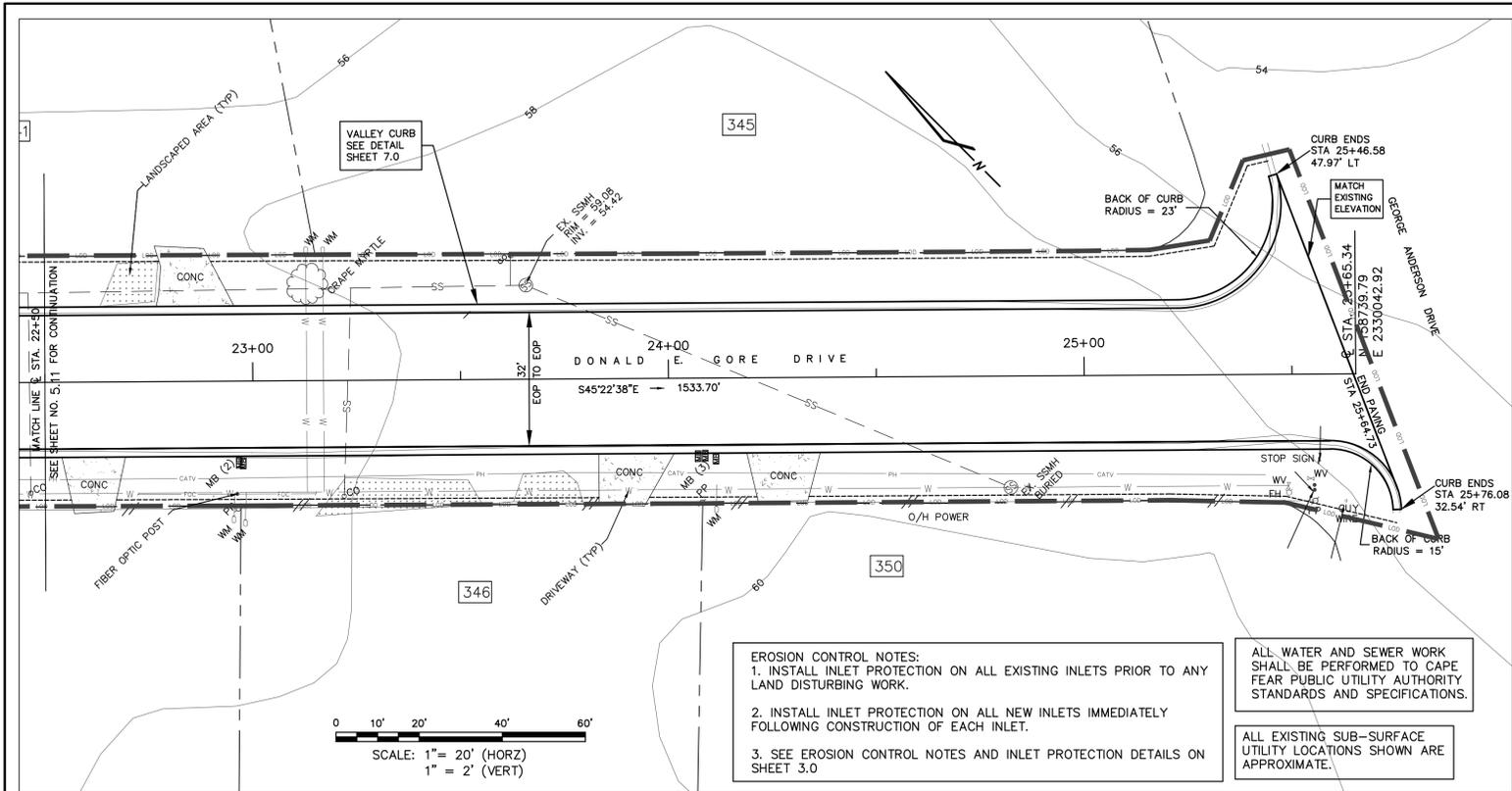
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
PLAN & PROFILE - DONALD E GORE DRIVE

SHEET NO.
5.11

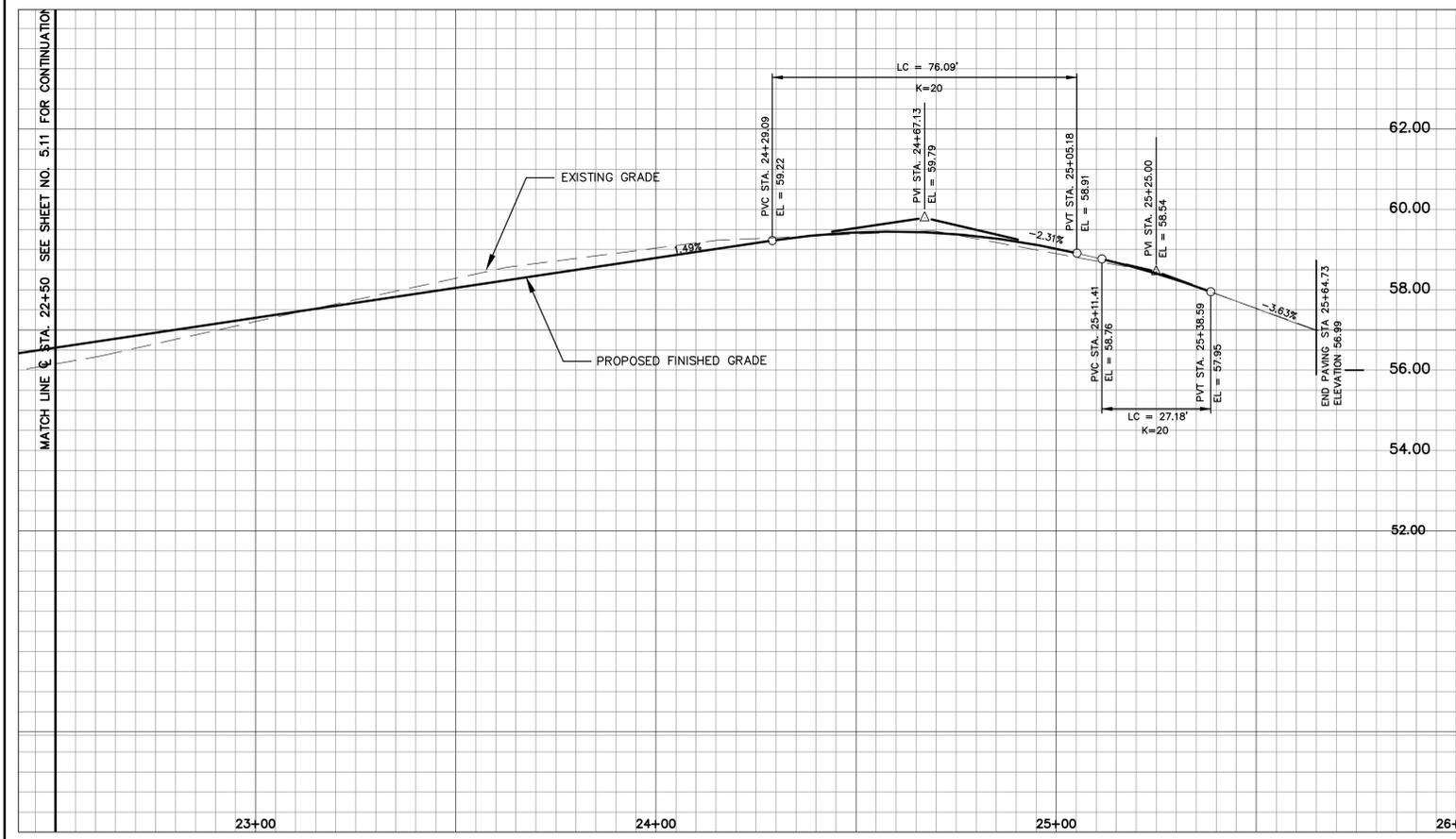


EROSION CONTROL NOTES:

1. INSTALL INLET PROTECTION ON ALL EXISTING INLETS PRIOR TO ANY LAND DISTURBING WORK.
2. INSTALL INLET PROTECTION ON ALL NEW INLETS IMMEDIATELY FOLLOWING CONSTRUCTION OF EACH INLET.
3. SEE EROSION CONTROL NOTES AND INLET PROTECTION DETAILS ON SHEET 3.0

ALL WATER AND SEWER WORK SHALL BE PERFORMED TO CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARDS AND SPECIFICATIONS.

ALL EXISTING SUB-SURFACE UTILITY LOCATIONS SHOWN ARE APPROXIMATE.



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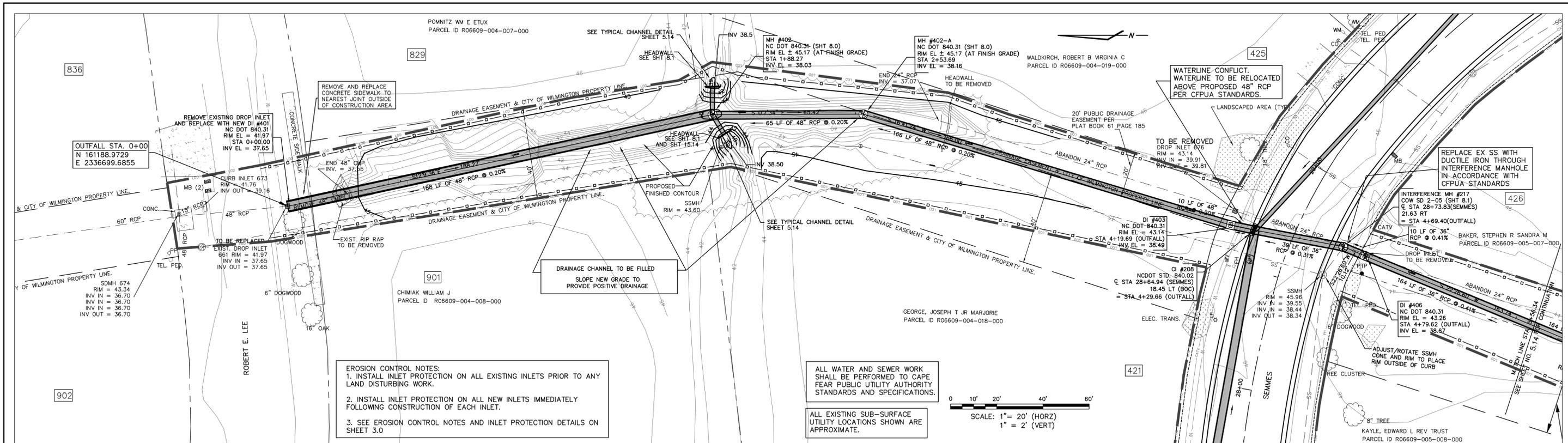
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
PLAN & PROFILE - DONALD E GORE DRIVE

SHEET NO.
5.12

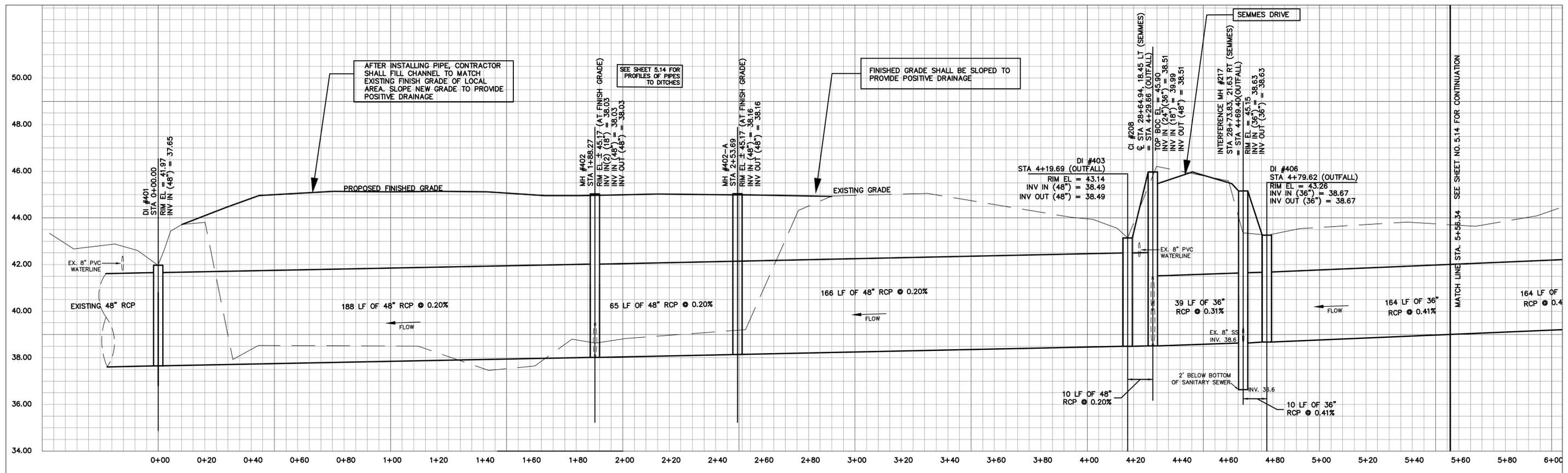


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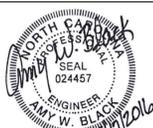
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FAX: (336) 996-9976

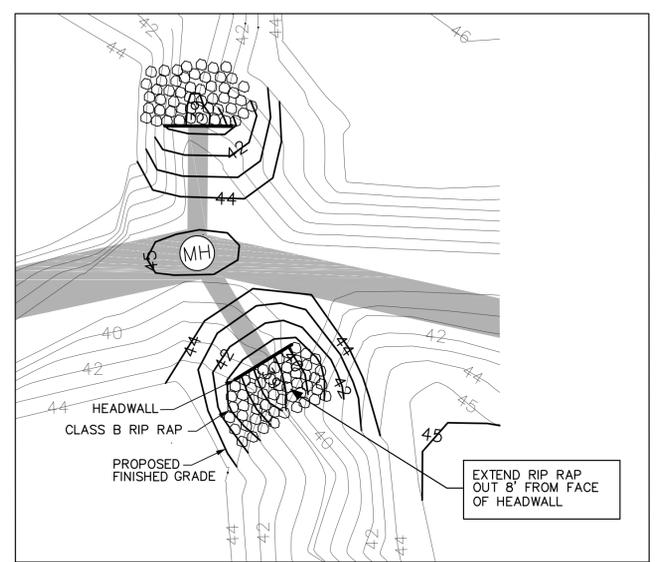
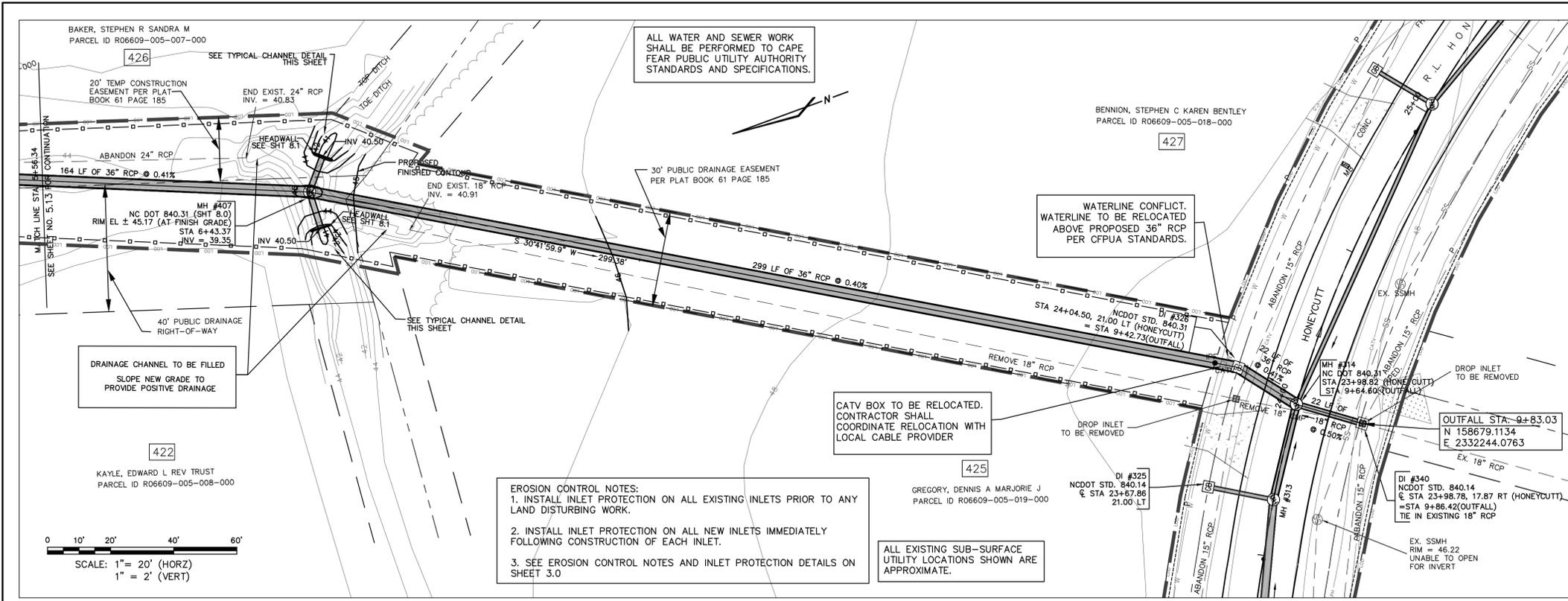


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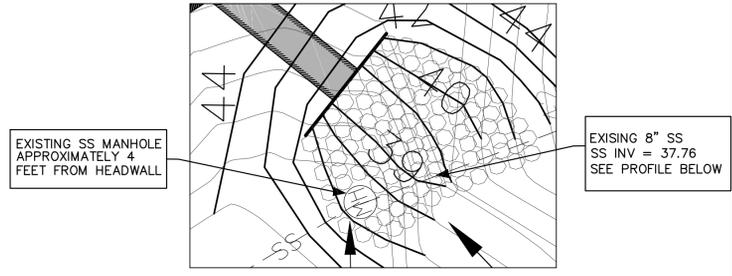
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PLAN & PROFILE - OUTFALL

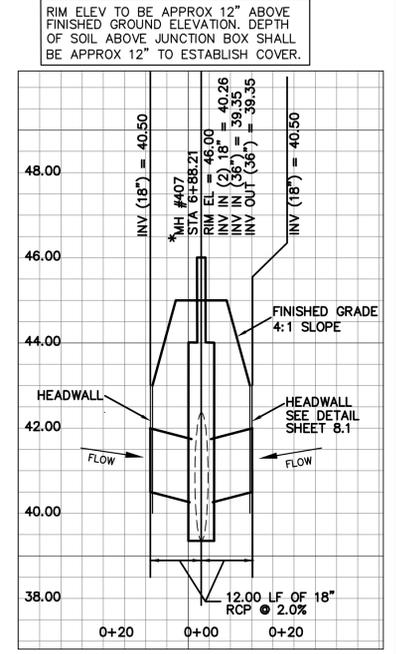
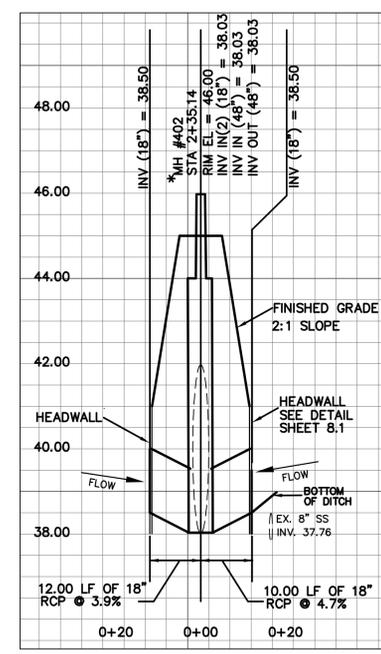
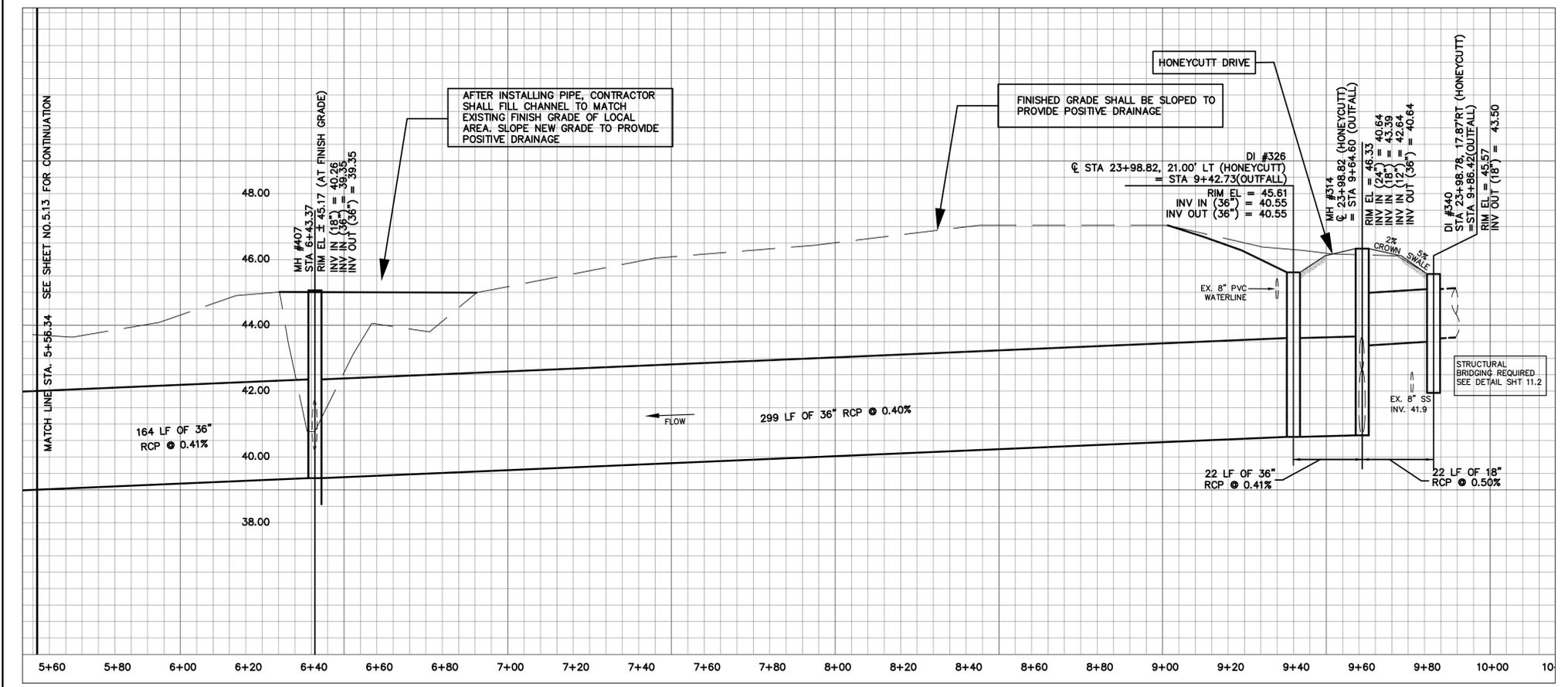
SHEET NO.
5.13



TYPICAL CHANNEL
NOT TO SCALE



HEADWALL AT EX SSMH - OUTFALL STA 1+88.27
NOT TO SCALE



RIM ELEV TO BE APPROX 12" ABOVE FINISHED GROUND ELEVATION. DEPTH OF SOIL ABOVE JUNCTION BOX SHALL BE APPROX 12" TO ESTABLISH COVER.

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016

DRAWN BY: AMB/MWT

CHECKED BY: CDJ

APPROVED BY: CDJ

CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10

PROJECT NUMBER:
11-173-006-004

PREPARED BY:
JEWELL
ENGINEERING CONSULTANTS, PC
PO BOX 2294 LIC # C1842
KERNERSVILLE, NC 27284
OFFICE: (336) 996-9974
FAX: (336) 996-9976

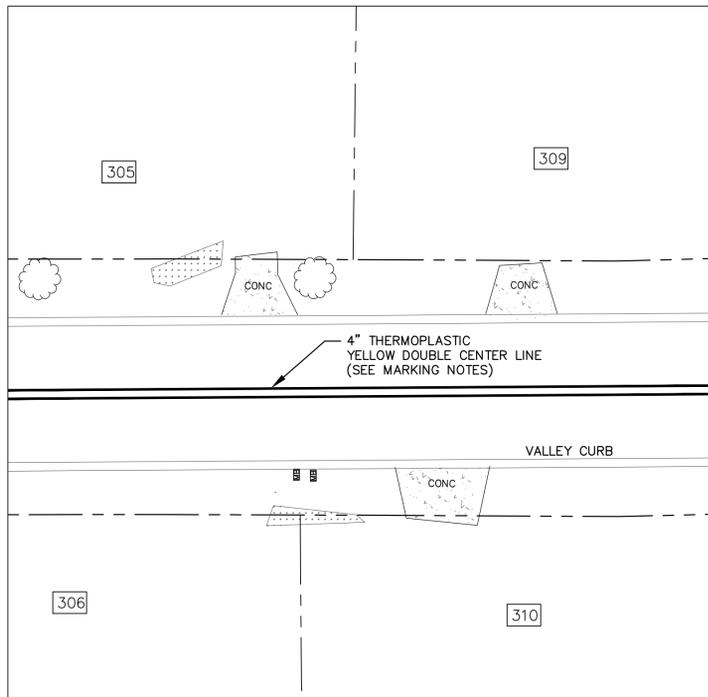


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P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

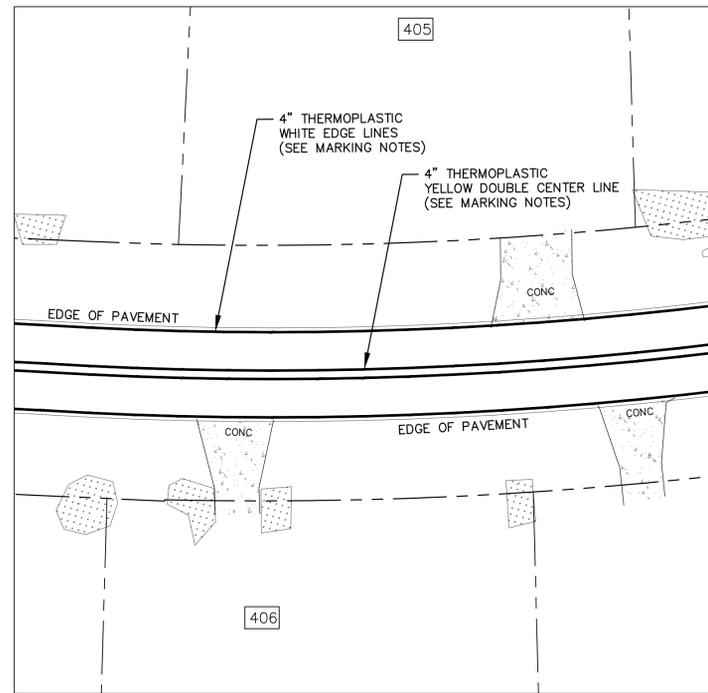
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PLAN & PROFILE - OUTFALL

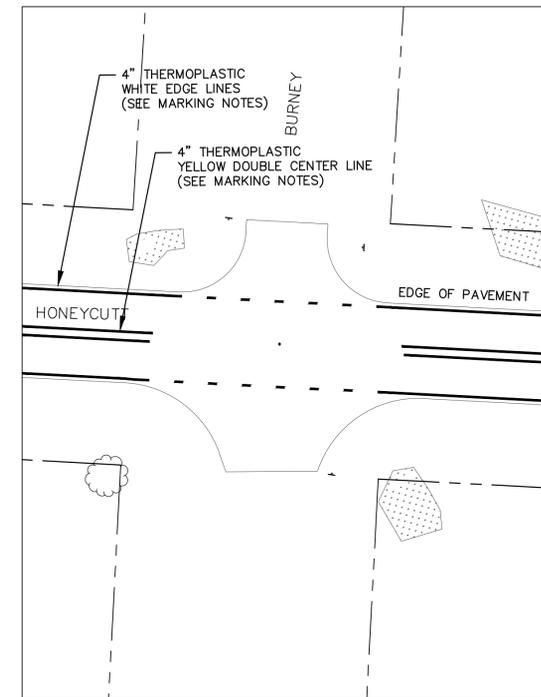
SHEET NO.
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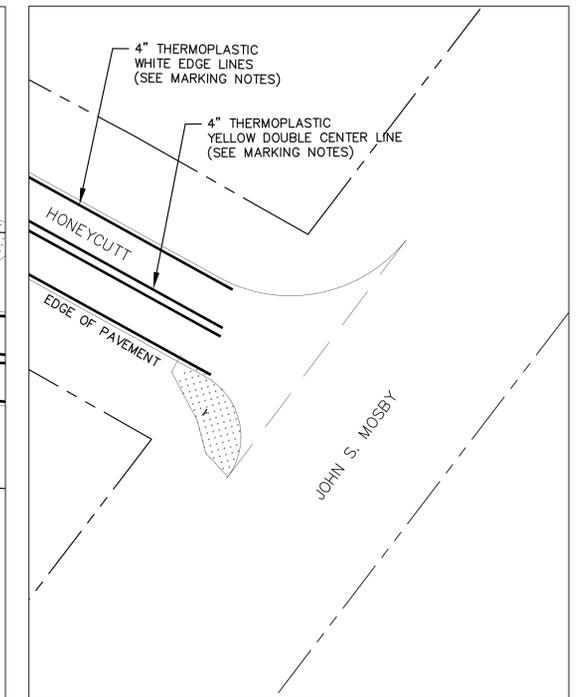
Typical Marking - Donald Gore & Semmes



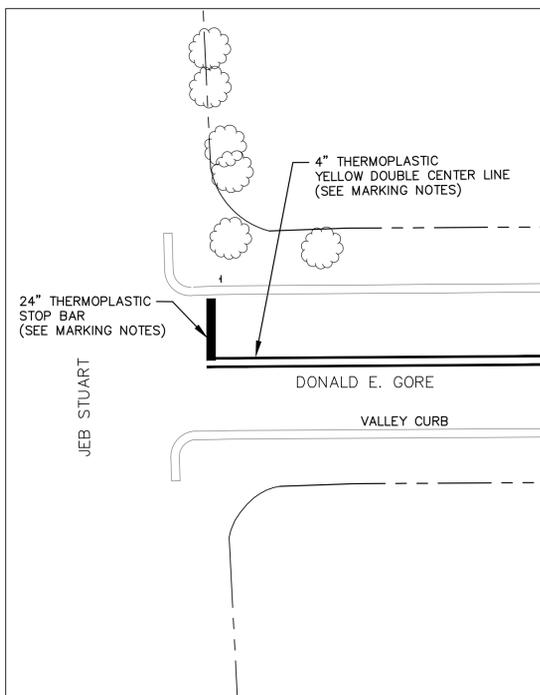
Typical Marking - Honeycutt



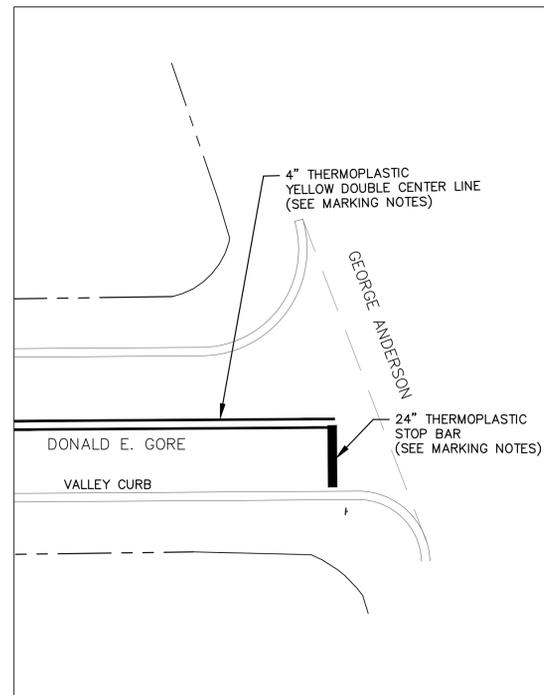
Honeycutt & Burney



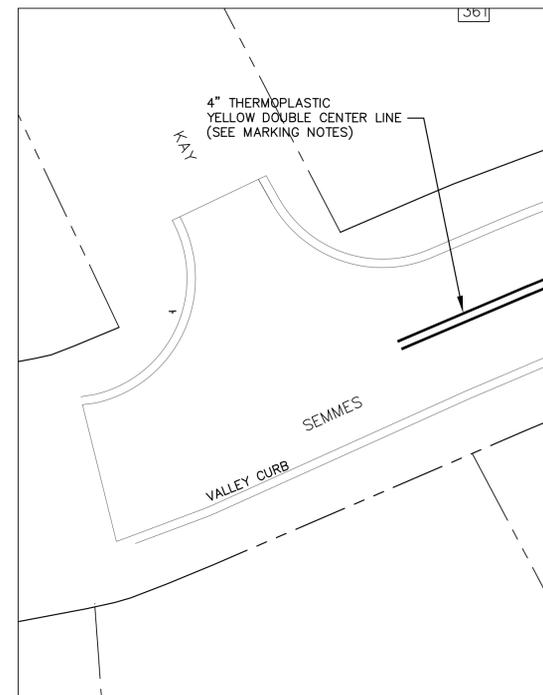
Honeycutt & John Mosby



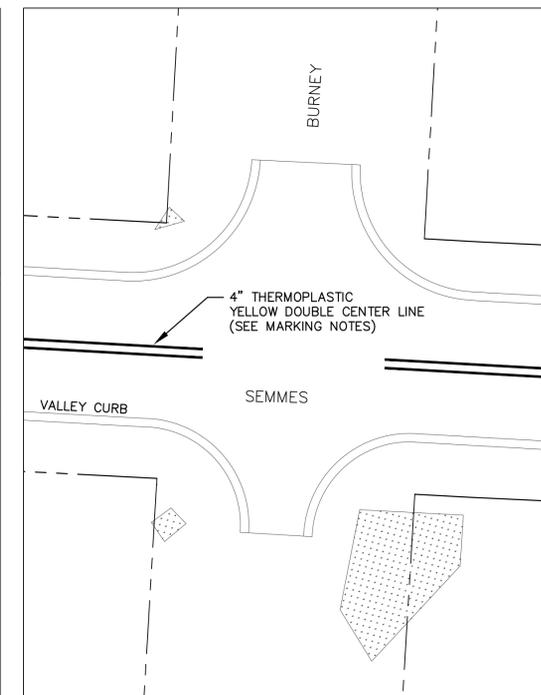
Donald Gore & Jeb Stuart



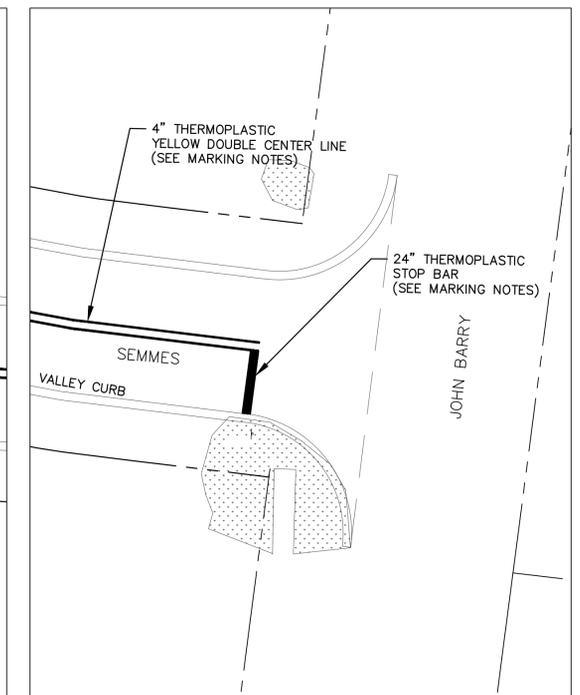
Donald Gore & George Anderson



Semmes & Kay



Semmes & Burney



Semmes & John Barry

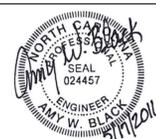
MARKING NOTES:
 1. CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS.
 2. SEE PAVEMENT MARKING DETAILS ON SHEET 10.0

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016
 DRAWN BY: AMB/AWT
 CHECKED BY: CDJ
 APPROVED BY: CDJ

CITY PROJECT NUMBERS:
 Drainage Improvements 16DC11
 Street Rehabilitation 14SR10
 JEC PROJECT NUMBER:
 11-173-006-004

PREPARED BY:
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 LIC # C1842
 PO BOX 2294
 KERNERSVILLE, NC 27284
 OFFICE: (336) 996-9974
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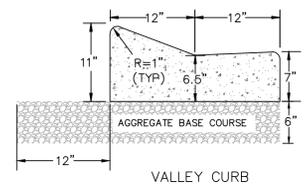
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 NORTH CAROLINA
 Public Services • Stormwater Division
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

PAVEMENT MARKING PLAN

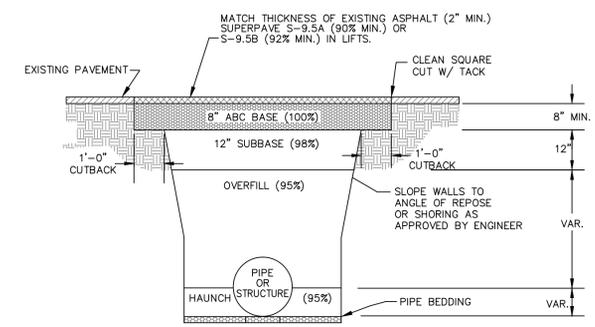
SHEET NO.

6.0



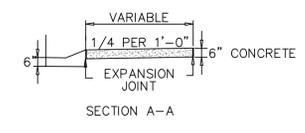
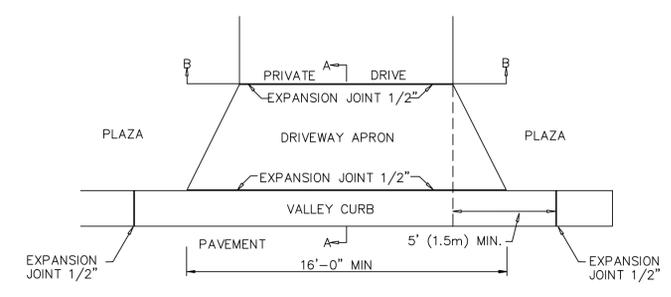
- NOTES:**
1. EXPANSION JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS
 2. 50' MAX EXPANSION JOINT SPACING, 10' MAX CONTRACTION JOINT SPACING
 3. MINIMUM INSTALLATION LENGTH IS 5 FT.
 4. CONCRETE TO BE 3000 PSI MIN
 5. VERTICAL CURB AND GUTTER BASE CAN BE SLOPED 3/4" OR USE A FLAT BASE

CURBING
NOT TO SCALE

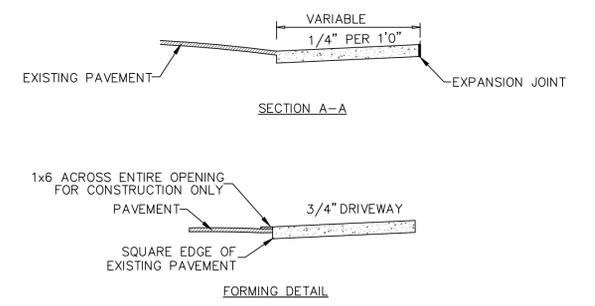
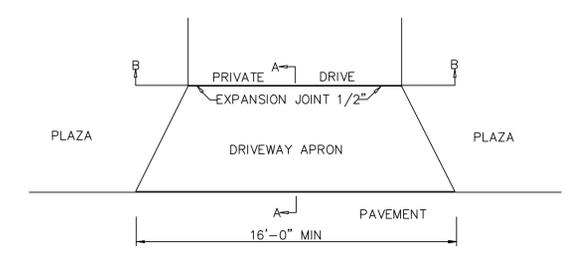


- NOTES:**
1. CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
 2. FILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
 3. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
 5. SOIL SHALL BE INSTALLED IN 6"-8" LIFTS AND COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
 6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
 7. COMPACT MATERIALS TO MINIMUM % DENSITY SHOWN IN DIAGRAM AS DETERMINED BY THE STANDARD PROCTOR METHOD ASTM D-698-A FOR SOILS; AND ASTM D-698-C FOR ABC STONE; AND BY NUCLEAR GAUGE OR CORE SAMPLE FOR ASPHALT.
 8. CUTBACKS OF ASPHALT SHALL BE PREPARED ON EDGE OF EXCAVATION OVER TOP OF UNDISTURBED SOIL.

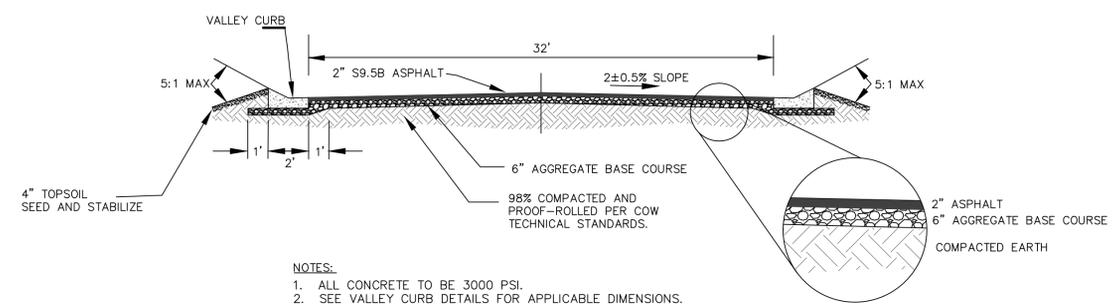
TYPICAL PAVEMENT REPAIRS (JEB STUART DRIVE)
NOT TO SCALE



STANDARD DRIVEWAY - VALLEY CURB
NOT TO SCALE

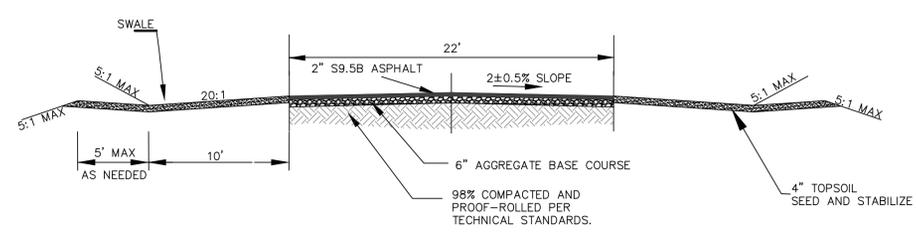


STANDARD DRIVEWAY - NO CURB
NOT TO SCALE



- NOTES:**
1. ALL CONCRETE TO BE 3000 PSI.
 2. SEE VALLEY CURB DETAILS FOR APPLICABLE DIMENSIONS.

SEMMES DRIVE AND DONALD E. GORE DRIVE
STANDARD STREET SECTION WITH VALLEY CURB
NOT TO SCALE



HONEYCUTT DRIVE
STANDARD STREET SECTION WITH SWALE
NOT TO SCALE

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>REVISIONS</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	REVISIONS	BY	DATE					<p>ISSUE DATE: MAY 17, 2016</p> <p>DRAWN BY: AWB/MWT</p> <p>CHECKED BY: CDJ</p> <p>APPROVED BY: CDJ</p>	<p>CITY PROJECT NUMBERS: Drainage Improvements 16DC11 Street Rehabilitation 14SR10</p> <p>JEC PROJECT NUMBER: 11-173-006-004</p>	<p>PREPARED BY: JEWELL ENGINEERING CONSULTANTS, PC PO BOX 2294 LIC # C1642 KERNERSVILLE, NC 27284 OFFICE: (336) 996-9974 FAX: (336) 996-9976</p>	<p>CITY OF WILMINGTON NORTH CAROLINA Public Services • Stormwater Division P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777</p>	<p>PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS</p> <p>DETAILS - ROADWAY</p>	<p>SHEET NO. 7.0</p>
REV	REVISIONS	BY	DATE											

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F", "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB, OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
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USE TYPE "E", "F", "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB, OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

DIMENSIONS OF BOX AND PIPE										COVER DIMENSION		REINFORCEMENT			TOTAL QUANTITIES		DEDUCTIONS FOR ONE PIPE	
PIPE SPAN	WIDTH	MIN. HEIGHT	MIN. HEIGHT	MIN. HEIGHT	MIN. HEIGHT	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.	CU. YDS.	LBS.	CU. YDS.	
12"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	0.772	0.015	0.026	
15"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	0.887	0.033	0.049	
18"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	
24"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	
30"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	
36"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	
42"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	
48"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	
54"	3'-0"	2'-2"	2'-2"	2'-2"	2'-2"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	0.235	1.001	0.059	0.085	

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02

ENGLISH STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02

NOTES: 1) USE TYPE "E", "F", "G" GRATE UNLESS OTHERWISE INDICATED.
2) THROAT OPENING SHALL BE SET TO 6" MINIMUM.
3) TOP OF HOOD CASTING SHALL HAVE REISED LETTERS WHICH SAY: "KEEP STORM DRAIN CLEAN: DRAINS TO CREEK"
PROVIDE PICTURE OF FISH BETWEEN TWO STATEMENTS.

30" FRAME, GRATE & HOOD
NOT TO SCALE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
USE TYPE "E", "F", "G" GRATES UNLESS OTHERWISE INDICATED.
FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB, OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.
INSTALL STONE DRAINING OF A MINIMUM OF 1 CUBIC FOOT OF NO. 7MM STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET (BASED ON MIN. HEIGHT, H)										CUBIC YARDS CONC. IN BOX		DEDUCTIONS FOR ONE PIPE	
PIPE SPAN	WIDTH	MIN. HEIGHT	MIN. HEIGHT	MIN. HEIGHT	MIN. HEIGHT	NO.	LENGTH	NO.	LENGTH	LBS.	CU. YDS.	LBS.	CU. YDS.
12"	3'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2	2'-0"	2	2'-0"	0.648	0.023	0.036	0.049
15"	3'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2	2'-0"	2	2'-0"	0.703	0.033	0.049	0.068
18"	3'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2	2'-0"	2	2'-0"	0.814	0.059	0.085	0.117
24"	3'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2	2'-0"	2	2'-0"	0.925	0.085	0.117	0.159
30"	3'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2	2'-0"	2	2'-0"	1.036	0.121	0.159	0.211

ENGLISH STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.14

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

GENERAL NOTES:
CHAMFER ALL EXPOSED CORNERS 1".
USE CLASS "B" CONCRETE THROUGHOUT.
OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB).
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

DIMENSIONS OF BOX AND PIPE										TOP SLAB DIMENSIONS		CUBIC YARDS CONC. IN BOX			TOTAL QUANTITIES		DEDUCTIONS FOR ONE PIPE	
PIPE SPAN	WIDTH	HEIGHT	HEIGHT	HEIGHT	HEIGHT	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	LBS.	CU. YDS.	LBS.	CU. YDS.	
12"	2'-0"	2'-0"	2'-3"	2'-3"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024		
15"	2'-3"	2'-3"	2'-6"	2'-6"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036		
18"	2'-6"	2'-6"	2'-9"	2'-9"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049		
24"	3'-0"	3'-0"	3'-3"	3'-3"	3'-3"	16	3'-6"	4'-0"	4'-0"	0.296	0.296	0.269	40	1.434	0.059	0.085		
30"	3'-6"	3'-6"	3'-9"	3'-9"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127		
36"	4'-0"	4'-0"	4'-3"	4'-3"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178		
42"	4'-6"	4'-6"	4'-9"	4'-9"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.190	0.243		
48"	5'-4"	5'-4"	5'-7"	5'-7"	5'-7"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317		
54"	5'-10"	5'-10"	5'-9"	5'-9"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401		
60"	6'-6"	6'-6"	6'-3"	6'-3"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495		
66"	7'-1"	7'-1"	6'-9"	6'-9"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589		

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

SHEET 1 OF 1
840.31

ENGLISH STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
(WITH OPTIONAL MANHOLE)
12" THRU 66" PIPE

SHEET 1 OF 1
840.31

30" GRATE
NOT TO SCALE

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016

DRAWN BY: AWB/MWT
CHECKED BY: CDJ
APPROVED BY: CDJ

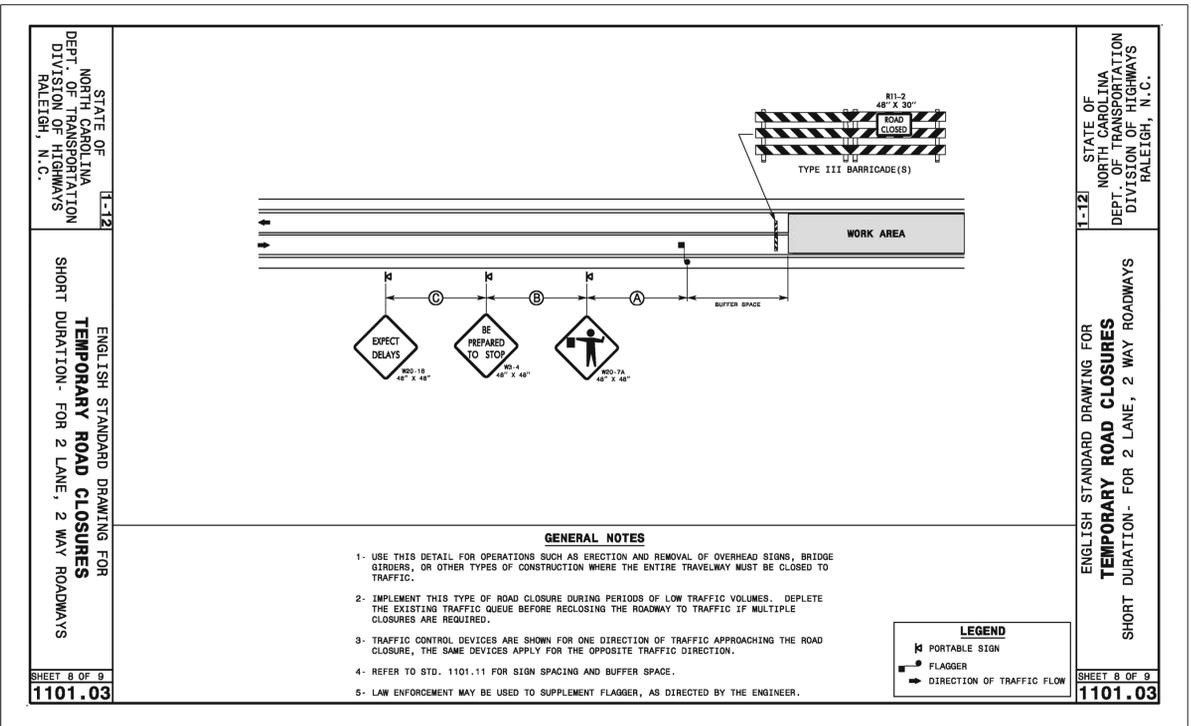
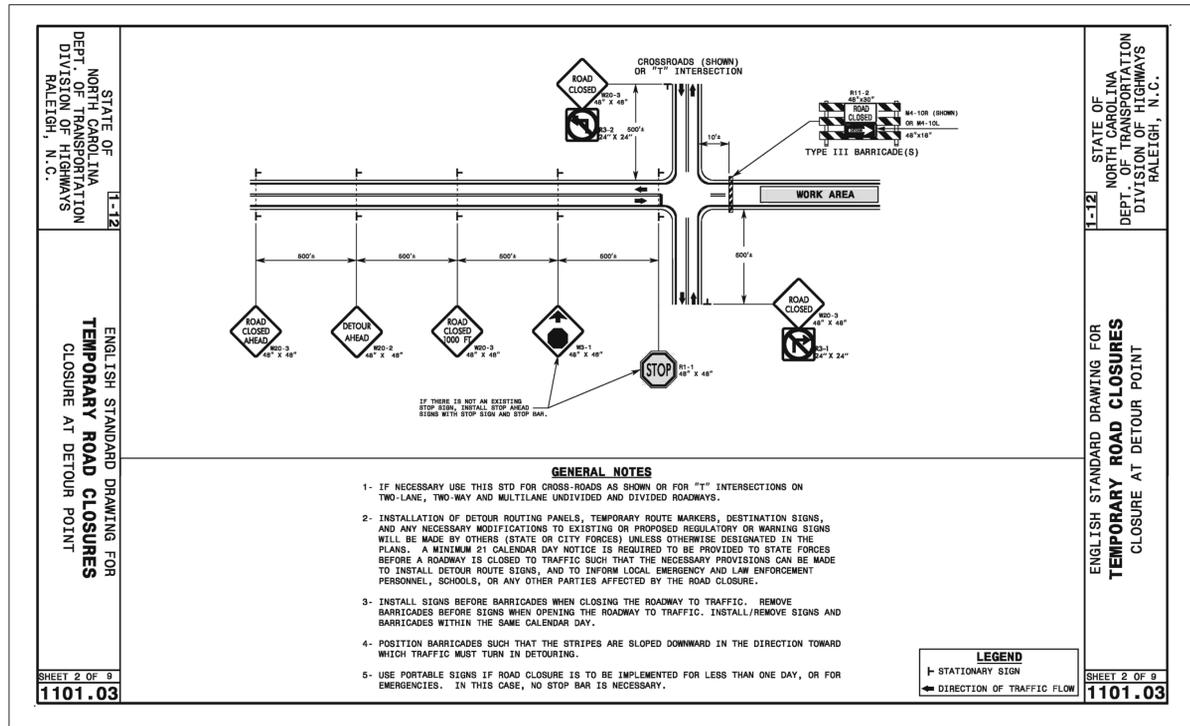
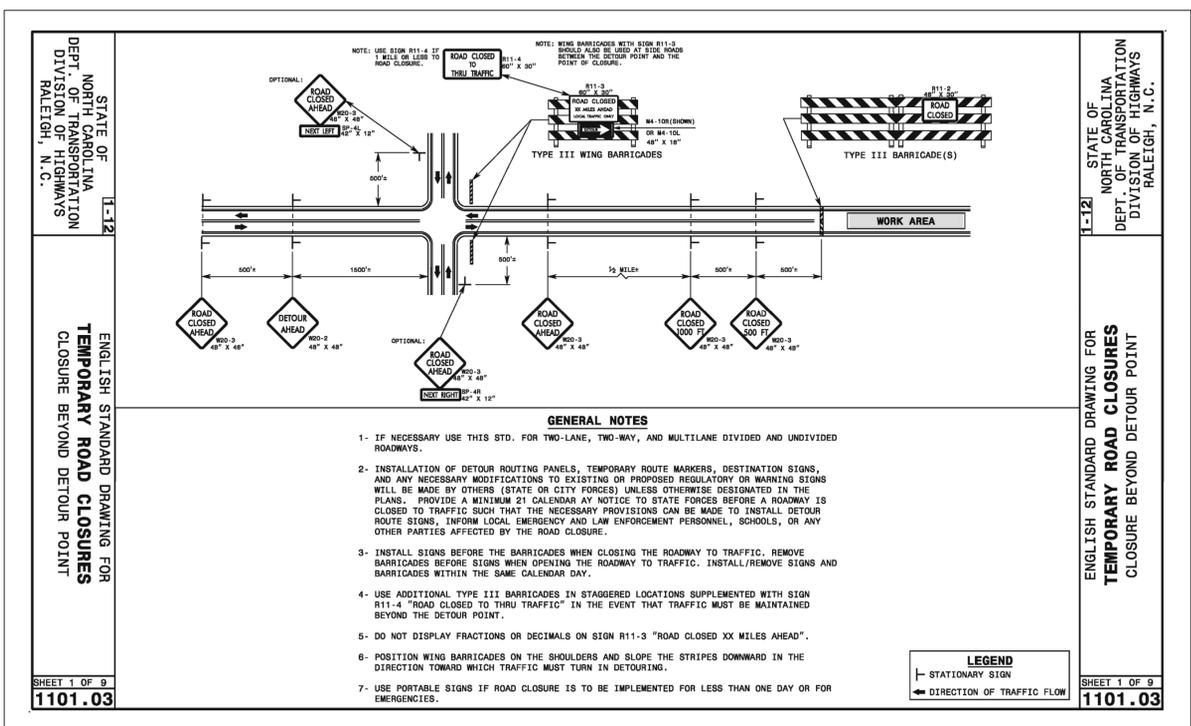
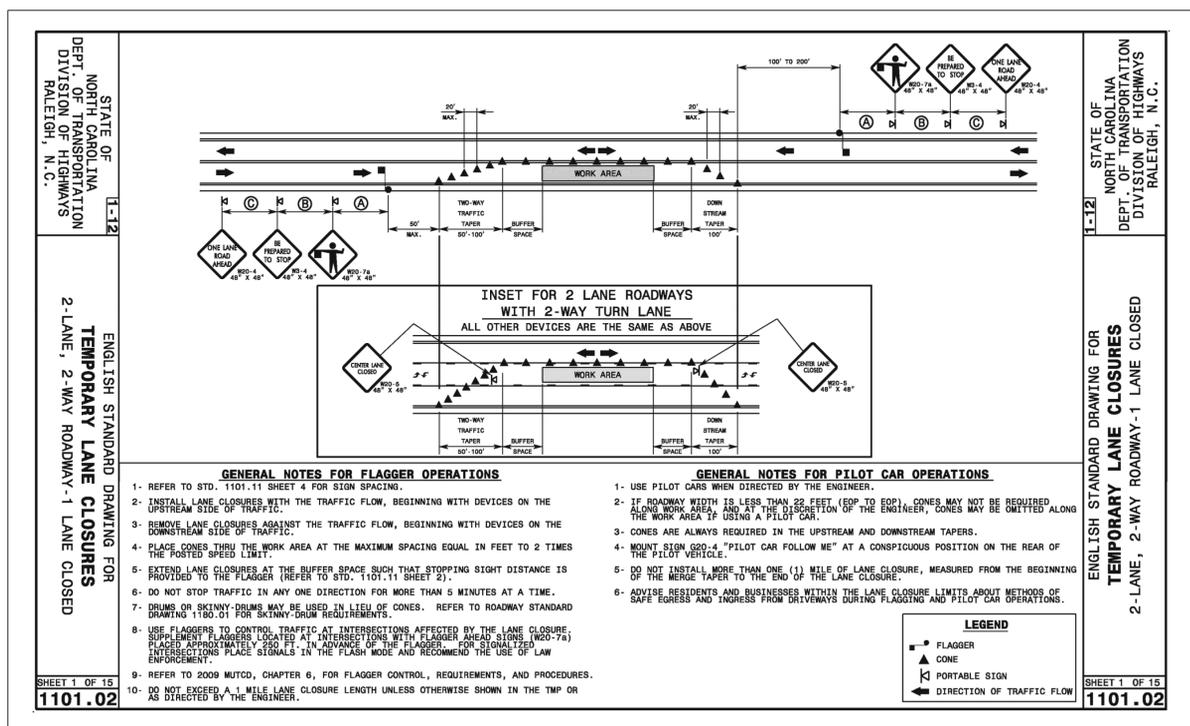
CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10

JEC PROJECT NUMBER:
11-173-006-004

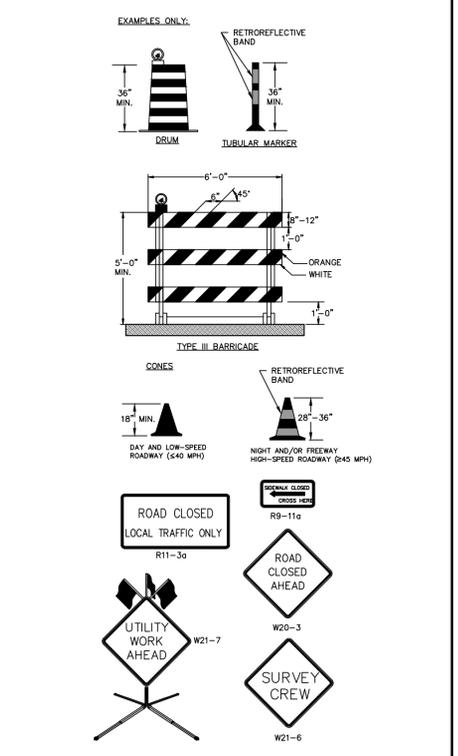
PREPARED BY:
JEWELL
ENGINEERING CONSULTANTS, PC
PO BOX 2294
KERNERSVILLE, NC 27284
OFFICE: (336) 996-9974
FAX: (336) 996-9976



CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Stormwater Division
P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777



- TRAFFIC CONTROL NOTES:**
- CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR EACH PHASE OF CONSTRUCTION FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR SHALL UTILIZE SIGNS, BARRICADES, FLAG MEN, OR GUARDS AS REQUIRED TO ENSURE THE SAFETY OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC DURING ALL CONSTRUCTION ACTIVITIES.
 - ACCESS BY HOMEOWNERS TO THEIR RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.
 - TRAFFIC CONTROL DEVICES, SIGNS, LANE CLOSURES, SIDEWALKS, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND NCDOT STANDARDS.
 - TEMPORARY TRAFFIC CONTROL SIGNS TO REROUTE TRAFFIC OR CONTROL ROAD USERS SHALL BE INSTALLED NO LESS THAN 3 DAYS IN ADVANCE AND BAGGED AS NEEDED. ANY VARIABLE MESSAGE BOARDS SHALL BE IN PLACE NO LESS THAN 5 DAYS, INCLUDING ONE WEEKEND PRIOR TO CONSTRUCTION OR AS DIRECTED.
 - THE CONTRACTOR IS REQUIRED TO FURNISH, INSTALL, RELOCATE, AND MAINTAIN ALL TRAFFIC CONTROL MEASURES (SIGNS, BARRICADES, WARNING AND/OR CHANNELIZING DEVICES) FOR WORK SITES AND DETOUR ROUTES AS REQUIRED. THE LOCATION AND POSITIONING OF THESE TRAFFIC CONTROL MEASURES SHALL BE APPROVED BY THE ENGINEER.
 - MESH SIGNS ARE NOT PERMITTED FOR OVERNIGHT CLOSURES.



1- ALL CONSTRUCTION, MAINTENANCE AND UTILITY WORK IN THE RIGHT OF WAY SHALL BE PERMITTED AND FOLLOW MUTCD (PART 6) AND/OR NCDOT GUIDELINES FOR TEMPORARY TRAFFIC CONTROL (TTC).

2- A TTC PLAN SHALL CONSIDER SAFETY AND ACCESSIBILITY OF ALL MOTORISTS, BICYCLISTS AND PEDESTRIANS AND BE PERMITTED BY THE CITY PRIOR TO PLACING SIGNS, ETC.

TEMPORARY TRAFFIC CONTROL GUIDELINES
NOT TO SCALE

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016

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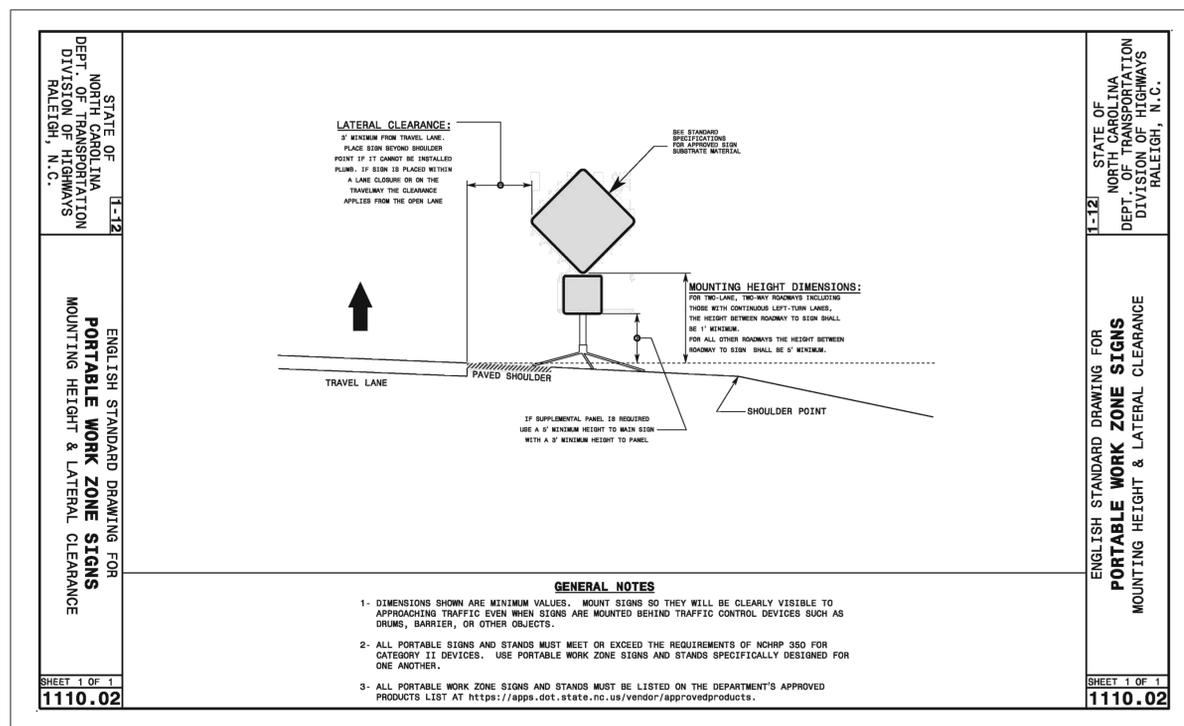
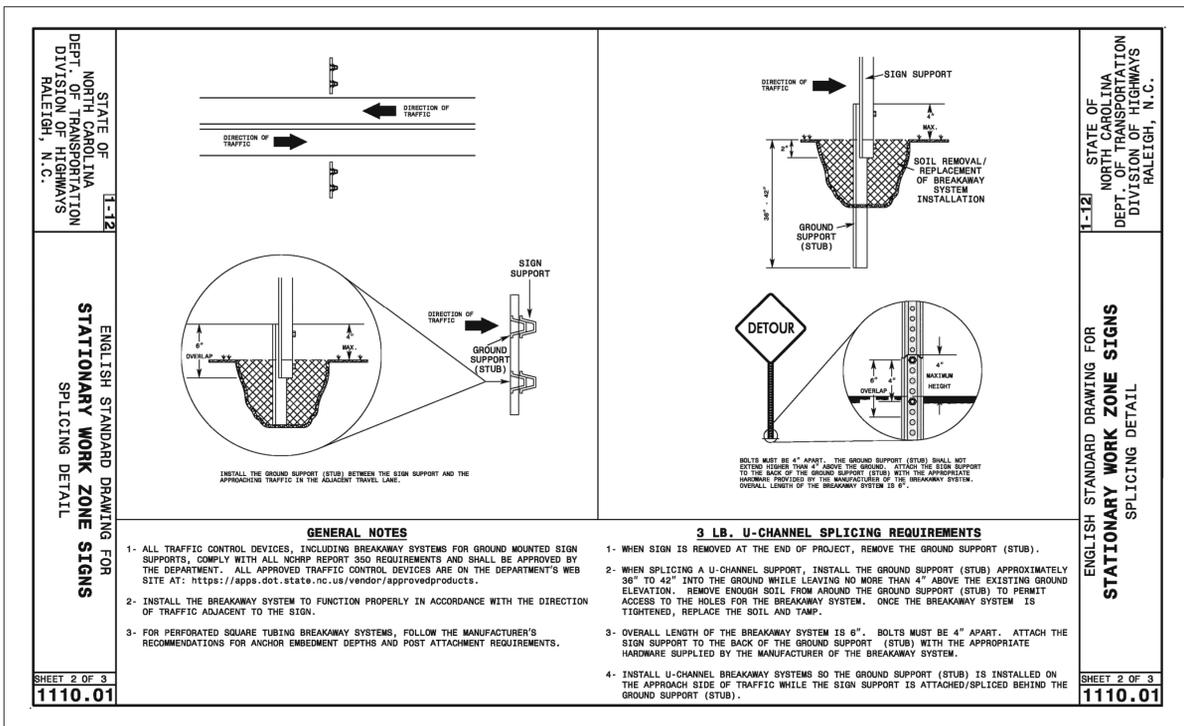
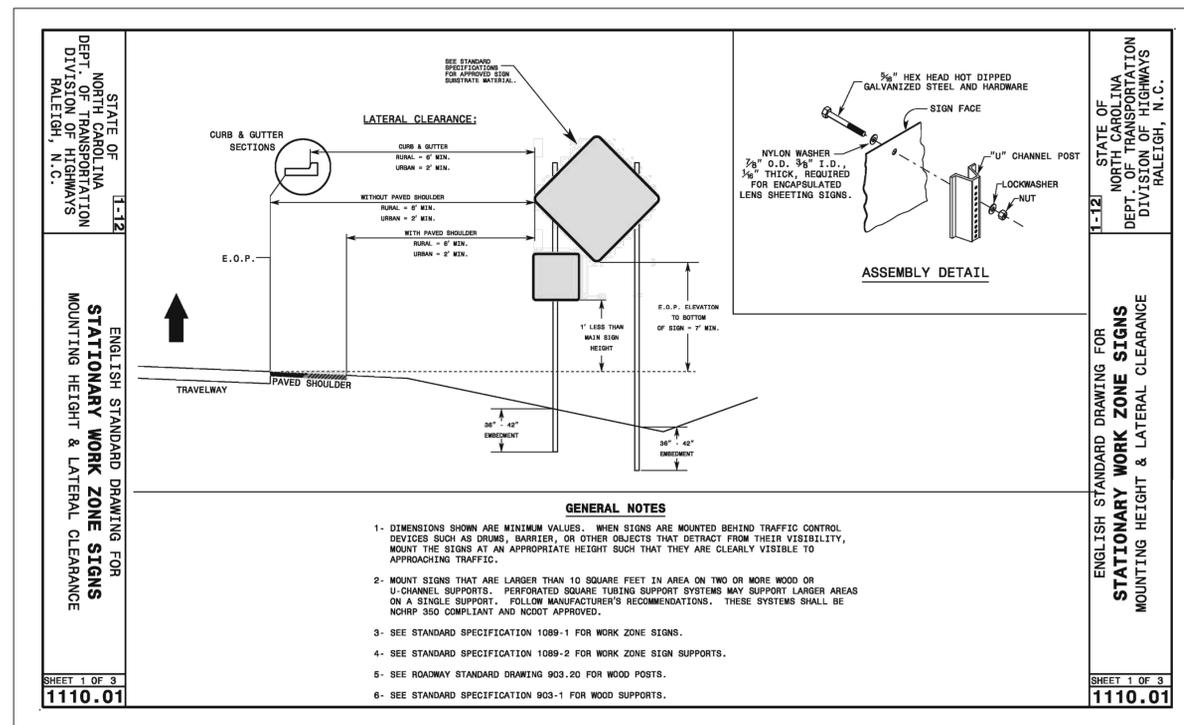
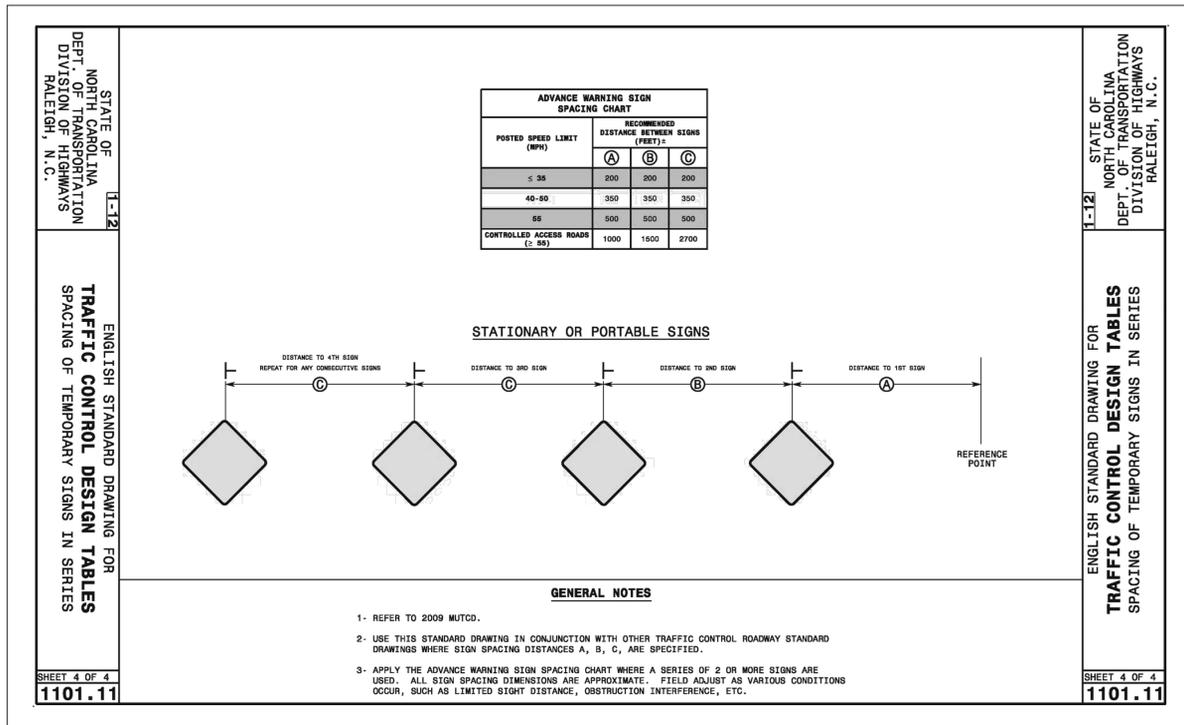
GITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10

J.C. PROJECT NUMBER:
11-173-006-004

PREPARED BY:
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NORTH CAROLINA
Public Services • Stormwater Division
P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777



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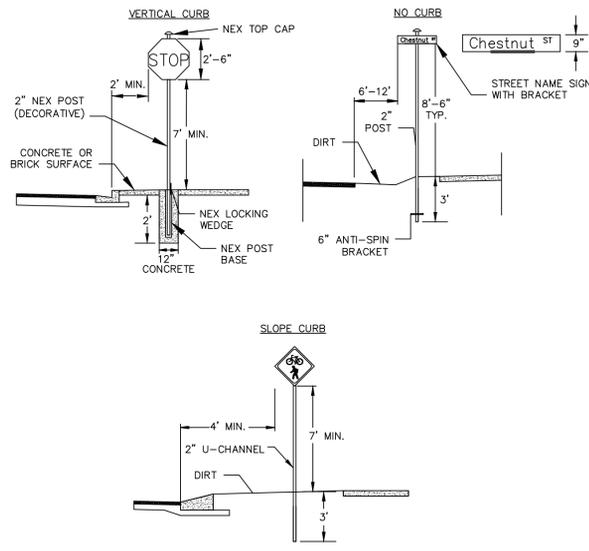
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Public Services • Stormwater Division
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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
DETAILS - TRAFFIC CONTROL

SHEET NO.
9.1



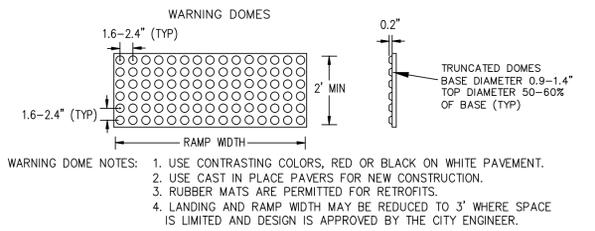
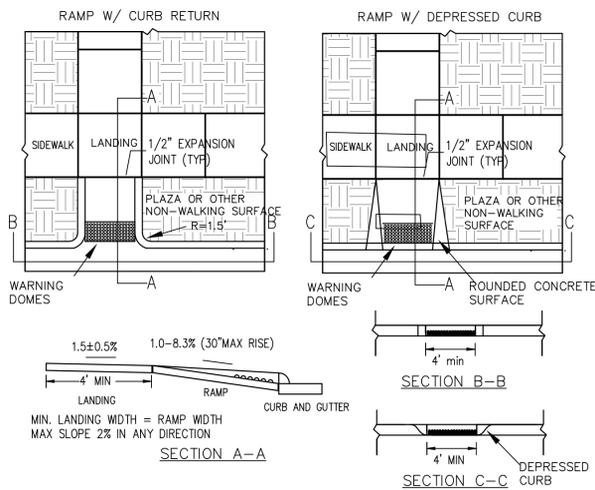
*DETAILS SHOW VARIOUS TYPES AND LOCATION, BUT NOT ALL COMBINATIONS.

SIGNS

- All signs shall meet the requirements of MUTCD and City Traffic Engineering in effect at the time of construction.
 - All Traffic Control Signs including multi-use paths shall be fabricated with 0.080 inch aluminum blanks using high intensity prismatic reflective sheeting Type IV or better. STOP signs shall be a minimum of 30"x30".
 - SPECIAL DESIGNATION signs by location and type shall adhere to City of Wilmington signage plan (ie. downtown, historic, cross-city trail, parks, riverfront, scenic by-way, parking, etc.) and all associated policies.
 - POST MOUNTED STREET NAME SIGNS shall be fabricated with 9" extruded aluminum street name sign blanks using a standard cut-out. Minimum sign length is 18" long and increasing in 6" increments to 54" maximum as dictated by the number of letters in the name. The color scheme shall be white letters on a green background without a border. Generally, in the downtown and historic areas or as designated in the City of Wilmington signage plan the background shall be blue and contain a topper.
 - Decorative sign posts shall consist of the NEX sign support system, 2" octagonal tube, 14 gauge, powder coated glossy black and include cap, post, base and wedge.
 - All other sign posts shall be u-channel posts made of galvanized steel with 8' posts 2lbs/ft or 12' posts 3lbs/ft. Galvanized NEX post may be substituted with approval from the City Signs and Markings Engineer.
 - OVERHEAD STREET NAME SIGNS shall be fabricated with 0.080 inch aluminum flat sign blanks 18" in height using a standard cut-out. Sign length will be dictated by the number of letters in the name. For mast-arm type traffic signal supports and other overhead support systems refer to the design plans for maximum sign length.
 - All sign lettering, colors and fonts shall adhere to the MUTCD in effect at the time of construction. Florescent Yellow-Green shall be used on signs, in place of Yellow, when listed as an optional color in the MUTCD. Generally, the font will be FHWA series fonts (Highway Gothic.) Other font types require prior City Signs and Markings Engineer approval.
- LOCATION**
- Sign locations depend on the edge of road condition. Generally, signs shall be a minimum 2' from face of a vertical curb, 4' from front of slope face curb, and 6' from edge of pavement without curb. Signs shall not be located more than 12' from any of these locations.
 - Sign posts installed in dirt shall be buried a minimum of 36". Octagonal posts shall utilize an anti-spin device, 6" in length minimum. Sign posts installed in concrete or brick shall utilize a base cast in concrete 24" x 12" diameter.
 - Street name signs shall be installed 8'-6" from the ground to the bottom of the sign. Street name signs co-located with STOP signs shall be installed above the STOP sign. A 6" space shall be maintained between the STOP sign and a Street name sign that is parallel to the STOP sign face. All other signs should be mounted per MUTCD guidelines for Urban Areas.

TRAFFIC SIGN INSTALLATION

NOT TO SCALE



CURB RAMP

NOT TO SCALE

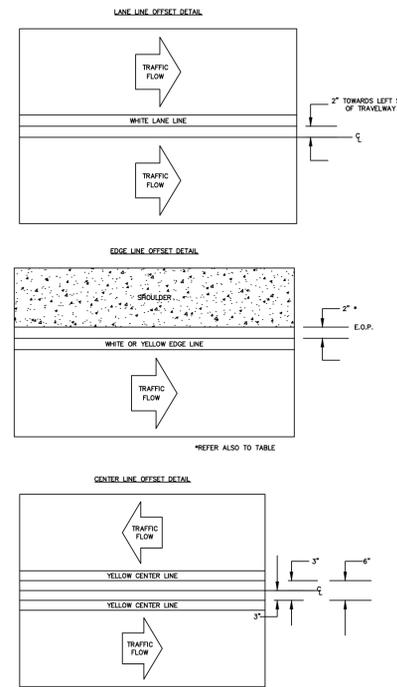
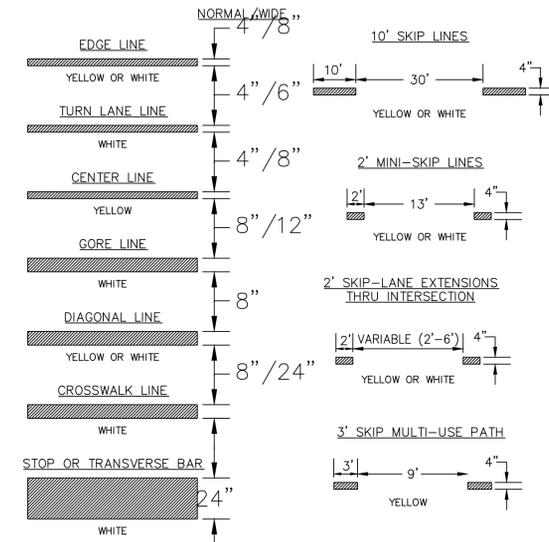


TABLE 1
EDGE LINE OFFSETS FOR 3-LANE 3-WAY ROADWAYS WITH UNPAVED SHOULDERS

WIDTH OF TRAVEL PAVEMENT	MAX. EDGE LINE OFFSET FROM E.O.P.	MINIMUM LANE WIDTH
18'-20'	2'-4"	8'-10'
22'	2'-6"	11'
24'	2'-8"	11'
26'	3'-0"	12'
28'	3'-2"	12'

PAVEMENT MARKINGS OFFSETS

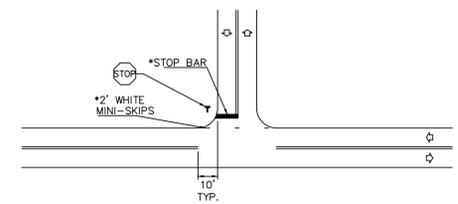
NOT TO SCALE



- PAVEMENT MARKINGS AND SYMBOLS SHALL BE DESIGNED PER MUTCD WITH APPROVAL FROM CITY TRAFFIC ENGINEERING, AND INSTALLED IN ACCORDANCE WITH NCDOT DIVISION 12 SPECIFICATIONS.
- GENERALLY, PERMANENT MARKINGS WILL BE UNIFORM AND SMOOTH AND WILL CONSIST OF 120MIL OF THERMOPLASTIC FOR ALL LINES AND SYMBOLS; TEMPORARY MARKINGS SHALL CONSISTS OF 15 MIL PAINT, EVERY 6 MONTHS.
- DURING APPLICATION THE EXISTING PAVEMENT SHALL NOT SHOW SIGNS OF MOISTURE AND BE CLEAN, FREE OF DIRT AND OIL, ETC. THERMOPLASTIC SHALL ONLY BE INSTALLED WHERE PAVEMENT IS 50' F AND RISING. PAINT SHALL ONLY BE INSTALLED WHERE PAVEMENT IS 40' F AND RISING.

PAVEMENT MARKINGS LINE TYPES

NOT TO SCALE



PAVEMENT MARKINGS

NOT TO SCALE

REV	REVISIONS	BY	DATE

ISSUE DATE: **MAY 17, 2016**

DRAWN BY: AWS/MWT
CHECKED BY: CDJ
APPROVED BY: CDJ

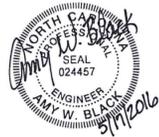
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Street Rehabilitation	14SR10

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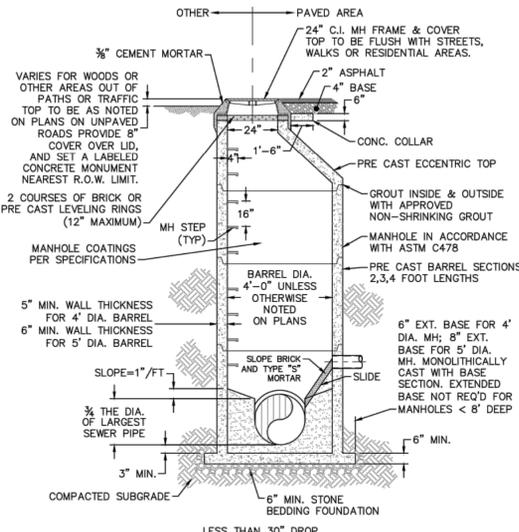
CITY OF WILMINGTON
NORTH CAROLINA

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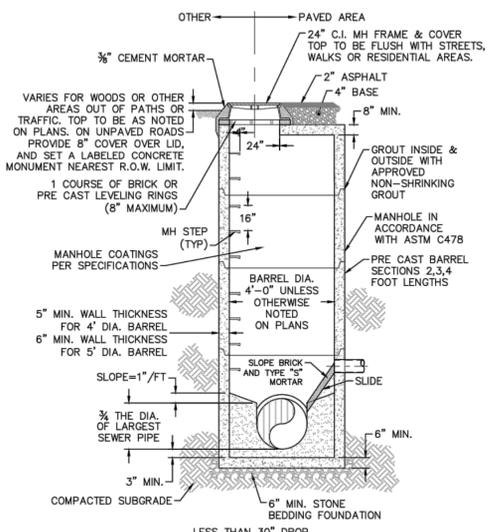
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

DETAILS - RAMPS, SIGNS, MARKINGS

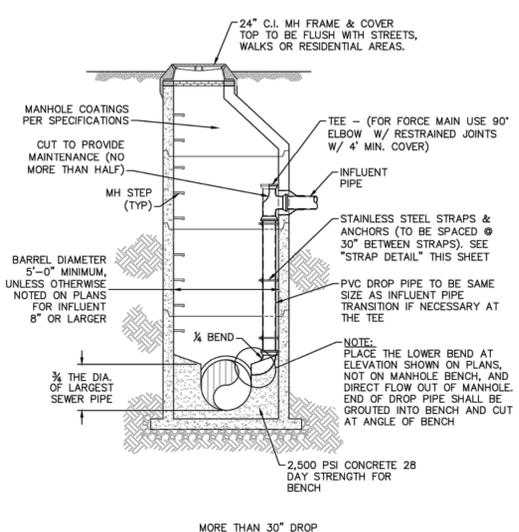
SHEET NO. **10.0**



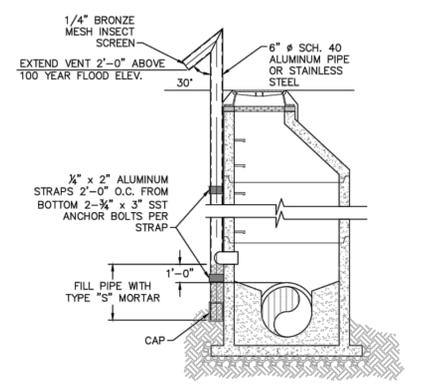
SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL
NOT TO SCALE



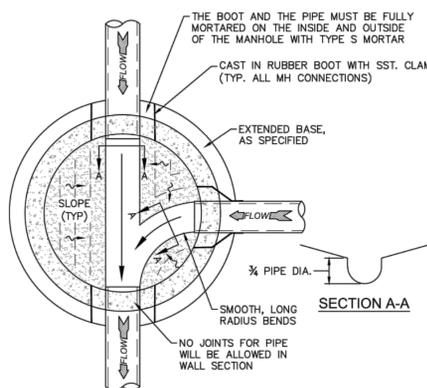
SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL
NOT TO SCALE



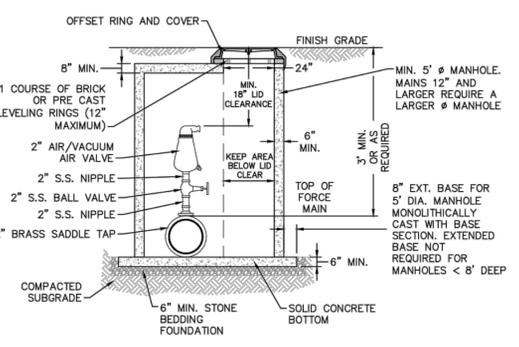
SD-3 DROP MANHOLE
NOT TO SCALE



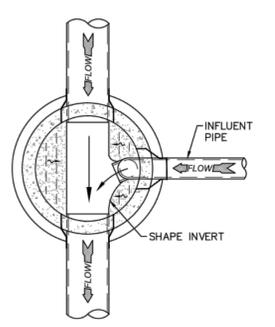
SD-4 STANDARD VENT MANHOLE
NOT TO SCALE



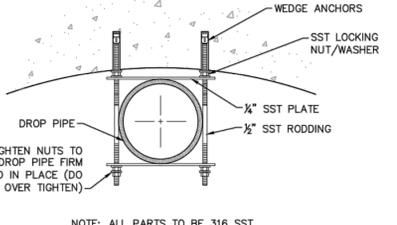
SD-5 MANHOLE FLOOR PLAN
NOT TO SCALE



SD-6 AIR / VACUUM AND AIR RELEASE COMBINATION VALVE
NOT TO SCALE



SD-7 DROP MANHOLE FLOOR PLAN
NOT TO SCALE



SD-8 STRAP DETAIL
NOT TO SCALE

- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
 - WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
 - ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
 - MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
 - NO FLEXIBLE COUPLINGS SHALL BE USED.
 - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
 - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

SD-9 STANDARD NOTES
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)

GENERAL NOTES:

- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
- THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
- THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

SOME DETAILS MAY NOT APPLY TO THIS PROJECT

REV.	DESCRIPTION:	DATE:
1	AIR / VACUUM AND AIR RELEASE COMBINATION VALVE REVISED	10/26/12
2	STANDARD SEWER NOTE #6 REVISED	12/10/12
3	REVISED STANDARD VENT MANHOLE TO EXTEND VENT 2'-0" ABOVE 100 YR FLOOD	11/20/14
4	Revised Multiple Details	02/15/16

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
 235 GOVERNMENT CENTER DRIVE
 WILMINGTON, NC 28403
 OFFICE: (910)332-6560

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:

SHEET NO:
SSD-1

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016

DRAWN BY: AWB/MWT
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APPROVED BY: CDJ

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PREPARED BY:

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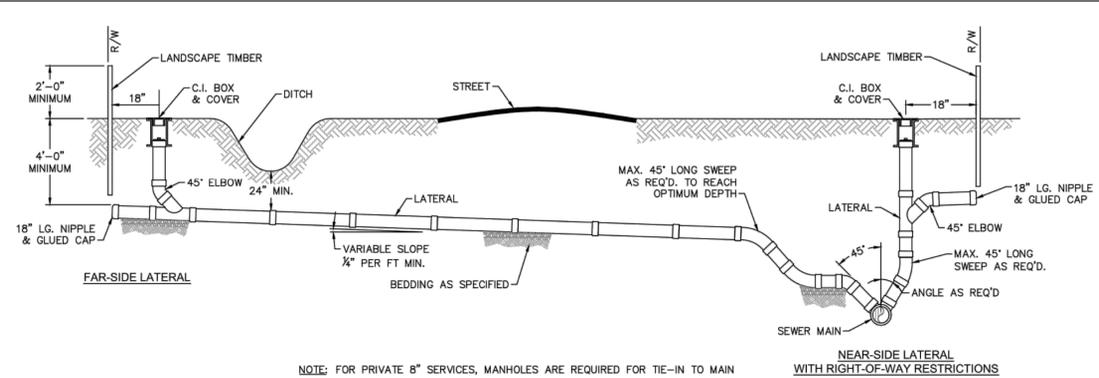
CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Stormwater Division

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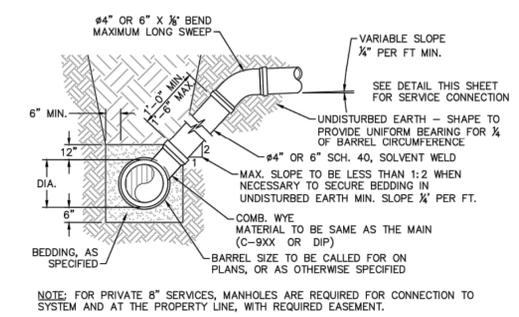
PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

DETAILS - WATER & SEWER (CFPUA)



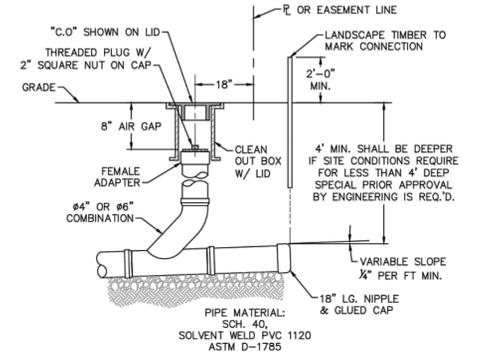
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

SD-19 NOT TO SCALE



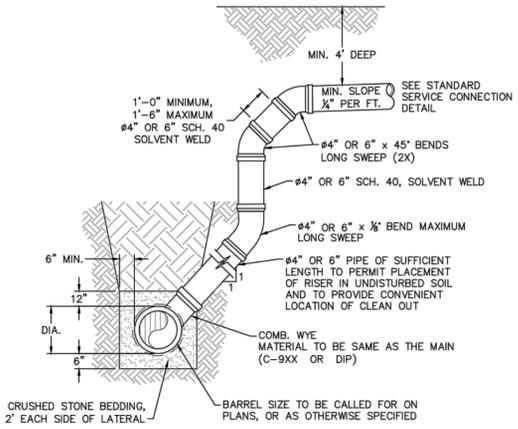
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

SD-10 NOT TO SCALE



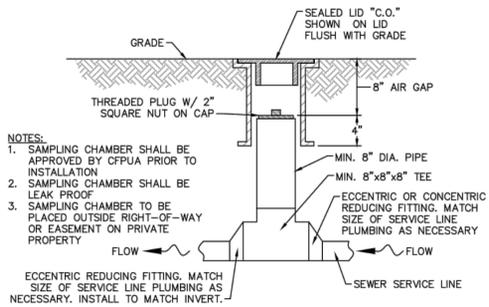
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

SD-11 NOT TO SCALE



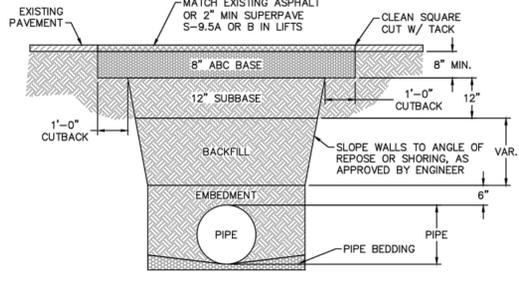
NOTES:
1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR CONNECTION TO SYSTEM AND AT THE PROPERTY LINE, WITH REQUIRED EASEMENT.

SD-12 NOT TO SCALE



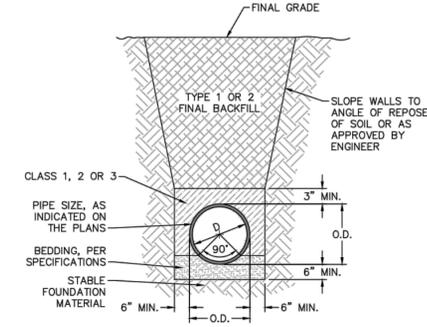
NOTES:
1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION.
2. SAMPLING CHAMBER SHALL BE LEAK PROOF.
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY.
ECCENTRIC REDUCING FITTING: MATCH SIZE OF SERVICE LINE PLUMBING AS NECESSARY. INSTALL TO MATCH INVERT.

SD-13 NOT TO SCALE

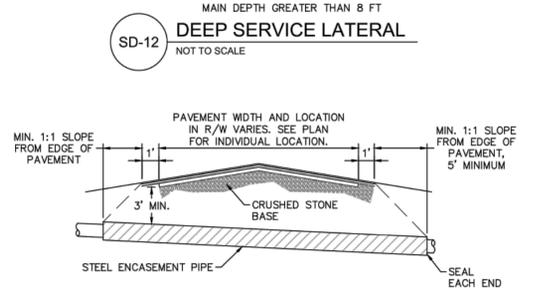


NOTES:
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION. (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS.
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

SD-14 NOT TO SCALE

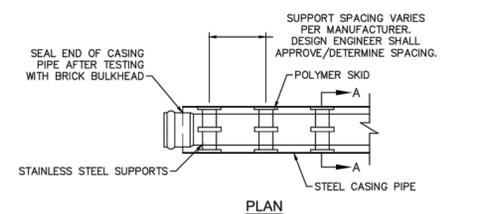


SD-15 NOT TO SCALE

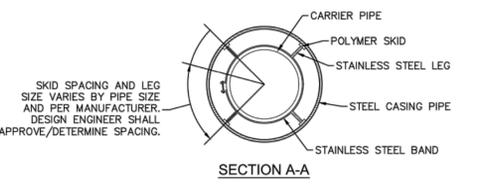


NOTES:
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

SD-16 NOT TO SCALE



NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



NOTE: ALL STAINLESS STEEL PARTS TO BE 316 SST.
SD-17 NOT TO SCALE

GENERAL NOTES:
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

SOME DETAILS MAY NOT APPLY TO THIS PROJECT

REV:	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12
2	Revised Multiple Details	02/15/16

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DATE: 1/8/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:
SHEET NO: **SSD-2**

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016
DRAWN BY: AWB/MWT
CHECKED BY: CDJ
APPROVED BY: CDJ

CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10
JEC PROJECT NUMBER:
11-173-006-004

PREPARED BY:
JEWELL
ENGINEERING CONSULTANTS, PC
PO BOX 2294 LIC # C1842
KERNERSVILLE, NC 27284
OFFICE: (336) 996-9974
FAX: (336) 996-9976

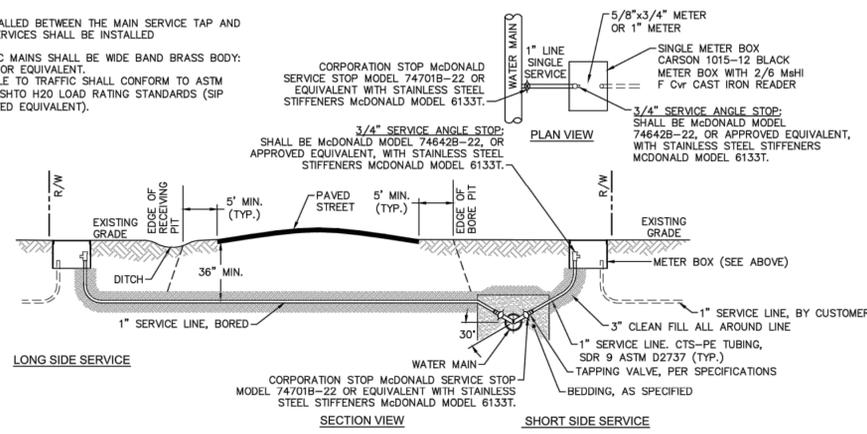


CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Stormwater Division
P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
DETAILS - WATER & SEWER (CFPUA)

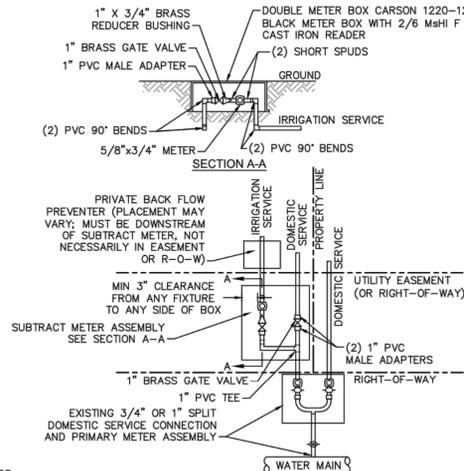
SHEET NO.
11.1

- NOTES:**
- NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
 - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4242, OR APPROVED EQUIVALENT).



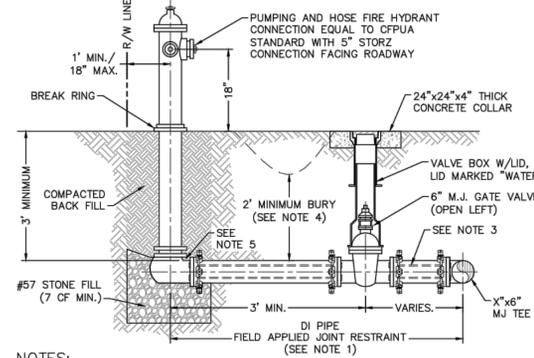
NOTE:
TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPWA WATER SYSTEM

WD-18 SINGLE SERVICE CONNECTION
NOT TO SCALE



- NOTES:**
- BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPWA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY.
 - ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1" EXCLUDING METERS.

WD-8 DOUBLE SERVICE CONNECTION USING SUBTRACT METER
NOT TO SCALE



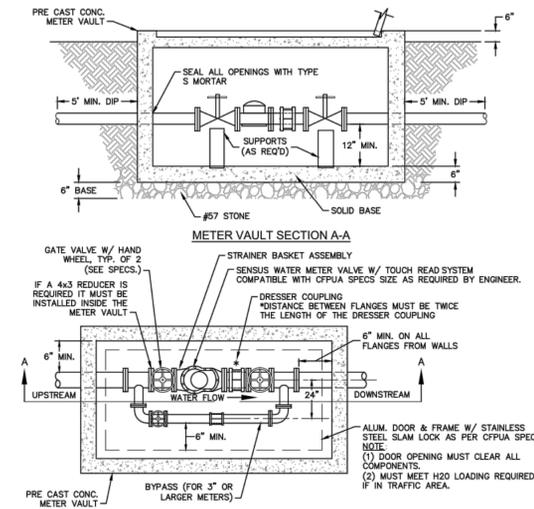
- NOTES:**
- JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
 - WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
 - CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
 - HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
 - WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

WD-10 FIRE HYDRANT ASSEMBLY
NOT TO SCALE

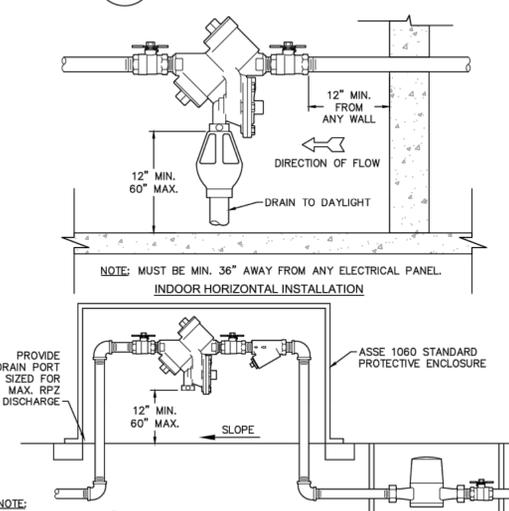
CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
- ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
- MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

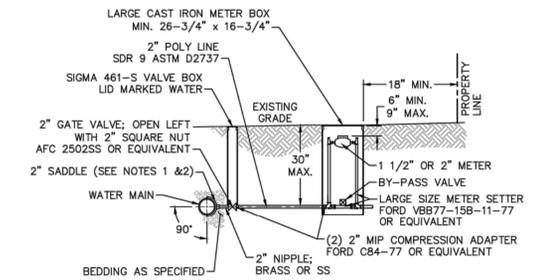
WD-19 STANDARD NOTES
(REQUIRED ON ALL PLAN AND PROFILE SHEETS)



WD-1 WATER METER VAULT
NOT TO SCALE

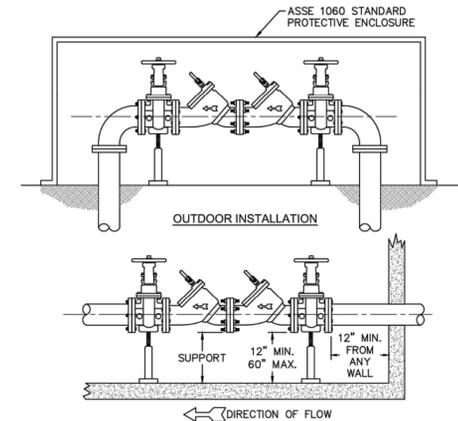


WD-12 REDUCED PRESSURE PRINCIPLE ASSEMBLY
NOT TO SCALE



- NOTES:**
- ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 - SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
 - METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
 - METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANS/SC77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
 - NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
 - 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.

WD-11 LARGE METER
NOT TO SCALE



WD-7 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE

- GENERAL NOTES:**
- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
 - THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
 - THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
 - THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
 - THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

SOME DETAILS MAY NOT APPLY TO THIS PROJECT

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPWA
CHECKED BY: CFPWA
PROJECT NO.:

SHEET NO:
WSD-1

REV.	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/28/12
2	Single Service Connection and Fire Hydrant Details Revised	7/23/13
3	Fire Hydrant Detail Revised	01/03/14
4	Revised Fire Hydrant Assembly To Show 5" STORZ Connection	04/10/15
5	Revised Fire Hydrant Assembly To Show Full Dip Hydrant Leg	01/19/16
6	Revised Water Meter Vault and Large Meter Details, Added Standard Notes	02/15/16

REV.	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016
DRAWN BY: AWB/AWT
CHECKED BY: CDJ
APPROVED BY: CDJ

CITY PROJECT NUMBERS:
Drainage Improvements 16DC11
Street Rehabilitation 14SR10
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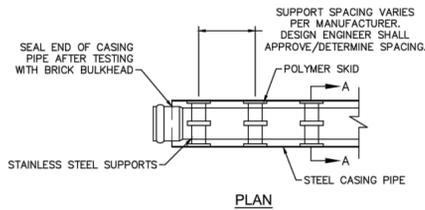
CITY OF WILMINGTON
NORTH CAROLINA
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P.O. Box 1810 209 Coleman Drive Wilmington, NC 28401 (910) 343-4777

PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS

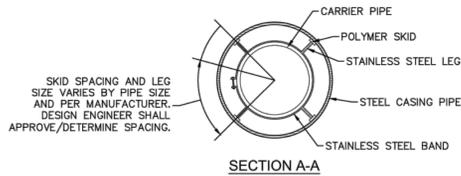
DETAILS - WATER & SEWER (CFPUA)

SHEET NO.

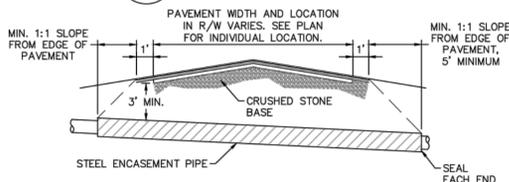
11.3



NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.

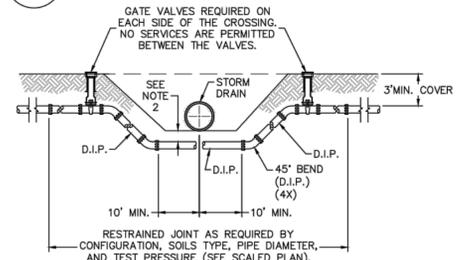


NOTE: ALL STAINLESS STEEL PARTS TO BE 316 SST.
WD-15 PIPE CASING SUPPORT DETAIL
 NOT TO SCALE



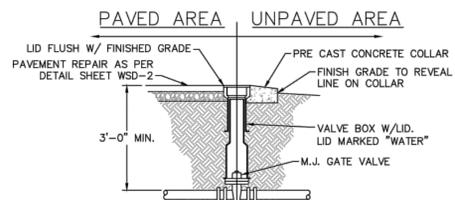
NOTE: 1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED. 2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

WD-16 TYPICAL BORING/JACKING DETAIL
 NOT TO SCALE

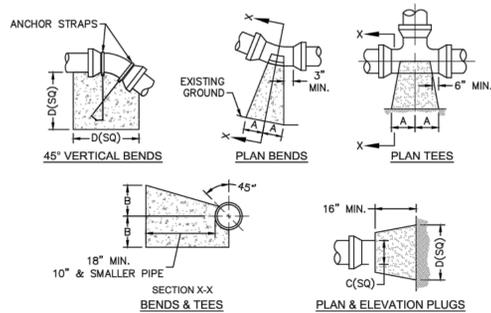


NOTE: 1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE. 2. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPUA: a. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE. b. ALL OTHER LOCATIONS, 30" MIN. c. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS, 18" MIN. CLEARANCE IS REQUIRED.

WD-2 WATER MAIN DITCH AND STORM DRAIN CROSSING
 NOT TO SCALE



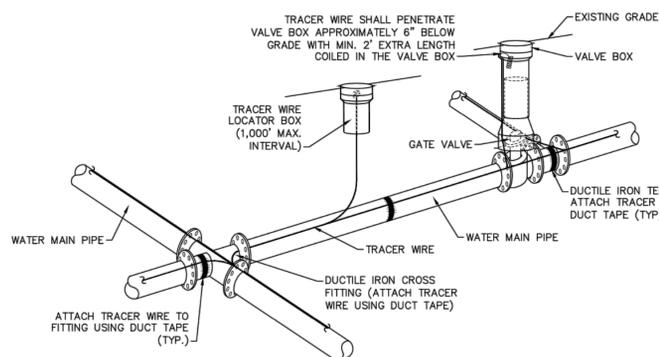
WD-3 VALVE DETAIL
 NOT TO SCALE



SIZE	90° BENDS		45° BENDS		22-1/2° BENDS		TEES/PLUGS		45 VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	18"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

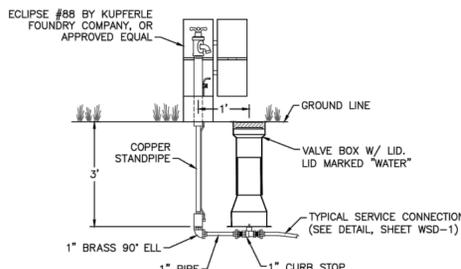
NOTE: 1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY. 2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND. 3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

WD-4 THRUST BLOCK DETAIL
 NOT TO SCALE

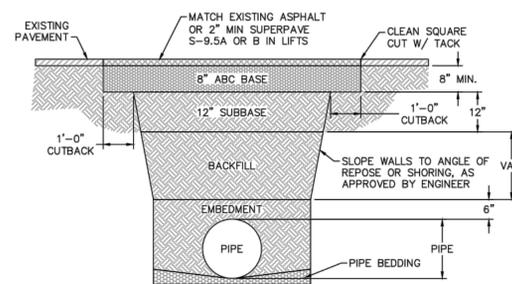


NOTE: 1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION. 2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE. 3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE. 4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KIT AN UNDERGROUND RATED, WATERTIGHT, AND APPROVED SPLICE CONNECTOR OR APPROVED EQUAL.

WD-17 TRACER WIRE DETAIL
 NOT TO SCALE

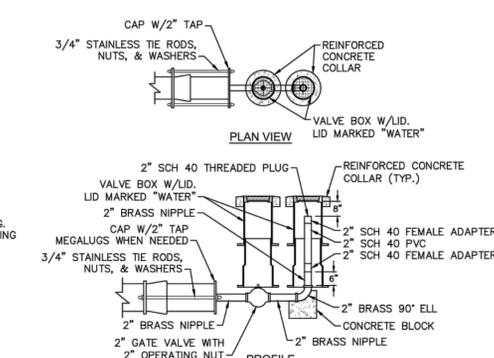


WD-6 SAMPLING STATION
 NOT TO SCALE

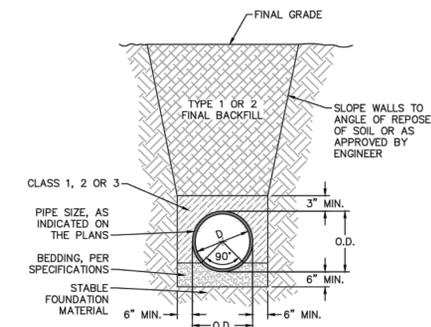


NOTE: 1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE. 2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION. (I.E. #07, ABC, CRUSHED LESTONE, CLEAN SAND, FLOWABLE FILL, ETC.) 3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS. 4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS 5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED. 6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE. 7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99. 8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

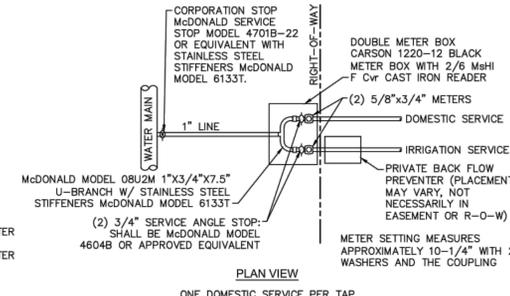
WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
 NOT TO SCALE



WD-5 2" BLOW-OFF
 NOT TO SCALE



WD-13 TYPICAL TRENCH DETAIL
 NOT TO SCALE



WD-9 DOUBLE SERVICE CONNECTION
 NOT TO SCALE

GENERAL NOTES: 1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY. 2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS. 3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS. 4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS. 5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

SOME DETAILS MAY NOT APPLY TO THIS PROJECT

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
 235 GOVERNMENT CENTER DRIVE
 WILMINGTON, NC 28403
 OFFICE: (910)332-6500

DATE: 1/9/12
 SCALE: N/A
 DRAWN BY: CFPUA
 CHECKED BY: CFPUA
 PROJECT NO.:
 SHEET NO: WSD-2

REV:	DESCRIPTION:	DATE:
1	Revised Water Main Ditch and Storm Crossing Detail	11/12/13
2	Revised Water Main Ditch and Storm Crossing Detail	05/05/14
3	Revised Tracer Wire Detail	10/20/15
4	Added Backflow Preventer to Double Service Connection Detail	02/01/16
5	Revised Sampling Station Detail	02/15/16

REV	REVISIONS	BY	DATE

ISSUE DATE:
MAY 17, 2016
 DRAWN BY: AMB/MWT
 CHECKED BY: CDJ
 APPROVED BY: CDJ

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PINE VALLEY STREET REHABILITATION AND DRAINAGE IMPROVEMENTS
DETAILS - WATER & SEWER (CFPUA)

SHEET NO.
11.4