

# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

HULL ATLANTIC AVENUE RECONSTRUCTION			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	42
PROJECT FILE NO.		601607	

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SECTION 401 WATER QUALITY CERTIFICATE

PERMITTING PLANS  
FEBRUARY 8, 2021

## PLAN AND PROFILE OF RECONSTRUCTION OF ATLANTIC AVENUE AND RELATED WORK

IN THE CITY/TOWN OF

HULL

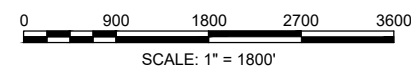
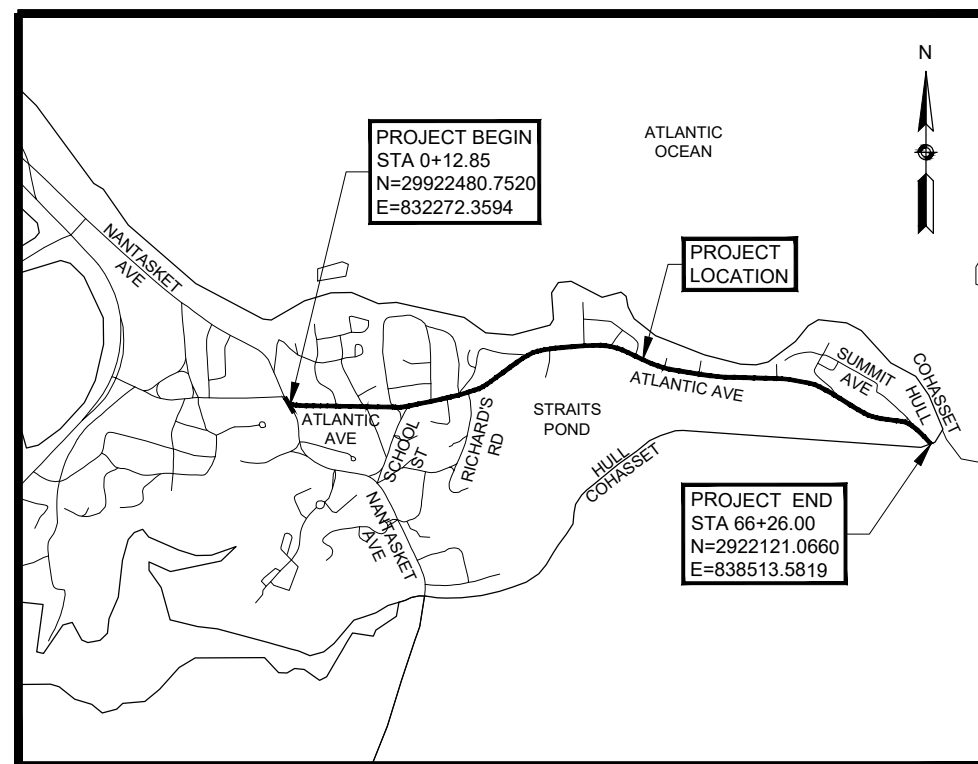
PLYMOUTH COUNTY

FEDERAL AID PROJECT NO.

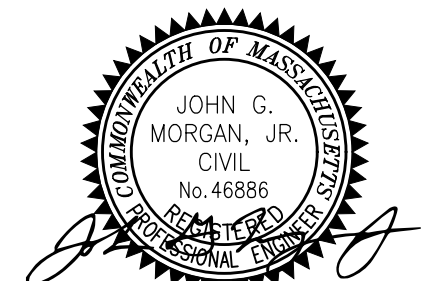
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# PERMITTING PLANS


THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2021, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.



LENGTH OF PROJECT = 6607.15 FEET = 1.251 MILES



2/8/2021

 141 Longwater Drive Norwell, MA 02061 Main: (781) 962-5400 www.chacompanies.com			
	2/8/2021	DEP 401 WQC FILING	-
	DATE	DESCRIPTION	REV #

**GENERAL SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

**TRAFFIC SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN)
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		----- TRAFFIC SIGNAL CONDUIT

**PAVEMENT MARKINGS SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

**ABBREVIATIONS**

GENERAL	
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BB	BITUMINOUS BERM
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CFT	COMPOST FILTER TUBE
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CRW	CONCRETE RETAINING WALL
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION

ABBREVIATIONS (Cont.)	
GENERAL	
PKF	PICKET FENCE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PPF	PLASTIC PICKET FENCE
PRC	POINT OF REVERSE CURVATURE
PRF	POST AND RAIL FENCE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SCB	SEDIMENT CONTROL BARRIER
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SMRW	STONE MASONRY RETAINING WALL
SRW	STONE RETAINING WALL
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VCC	VERTICAL CONCRETE CURB
WCR	WHEEL CHAIR RAMP
WDF	WOOD FENCE
WG	WATER GATE
WIF	WROUGHT IRON FENCE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
WRW	WOOD RETAINING WALL
X-SECT	CROSS SECTION

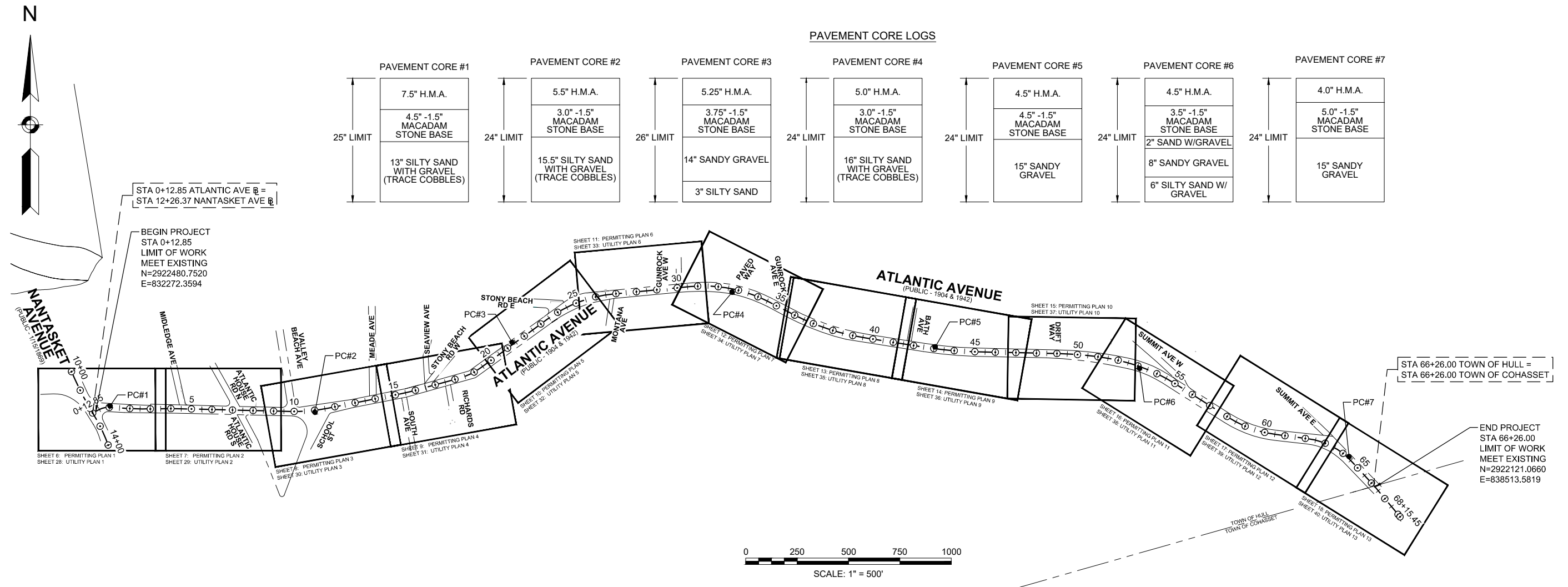
**GENERAL NOTES**

1. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH MASSDOT AND THE TOWN OF HULL STANDARD DETAILS AND SPECIFICATIONS.
2. SUBSURFACE OBSERVABLE INFORMATION SHOWN HEREON IS THE RESULT OF AN ON-THE-GROUND SURVEY PERFORMED BY CHA COMPANIES ON OR BETWEEN NOVEMBER AND DECEMBER 2009 AND SUPPLEMENTED IN JUNE 2020.
3. PROPERTY LINE INFORMATION SHOWN HERE IS COMPILED FROM VARIOUS SOURCES AND DOES NOT REPRESENT A PROPERTY LINE RETRACEMENT SURVEY. ALL DEED REFERENCES ARE TO WORCESTER COUNTY REGISTRY OF DEEDS UNLESS OTHERWISE NOTED.
4. TOPOGRAPHY, CONTOURS AND BENCHMARKS ARE BASED ON NAVD 88 VERTICAL DATUM. TEMPORARY BENCHMARKS, REFERENCED TO THE DATUM ARE INDICATED ON THE SURVEY.  
  
IN THE EVENT THAT BENCHMARKS (TBM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHOULD NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
5. LOCATIONS OF SUBSURFACE UTILITIES SHOWN HEREON ARE APPROXIMATE AND ADDITIONAL UTILITIES MAY EXIST THAT ARE NOT SHOWN ON THIS PLAN. LOCATIONS ARE COMPILED FROM UTILITY PLANS OF RECORD AND DIG-SAFE FIELD MARKINGS. RIM AND INVERT INFORMATION HAS BEEN COMPILED AND FIELD VERIFIED WHERE POSSIBLE. THIS INFORMATION IS NOT TO BE USED FOR CONSTRUCTION. PRIOR TO ANY CONSTRUCTION, CONTACT DIG-SAFE AT (1-800-344-7233) TO FIELD VERIFY LOCATION OF ALL UTILITIES.
7. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATION OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE AND GRADE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5 FEET WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
6. THE CONTRACTOR WILL COORDINATE ALL PRIVATE CASTINGS AND POLES THAT ARE TO BE ADJUSTED, RESET OR RELOCATED WITH THE APPROPRIATE UTILITY PURVEYOR. THE RELOCATION, INSTALLATION OR REMOVAL OF PRIVATE UTILITIES SHALL BE ACCOMPLISHED BY THEIR OWNER. THE CONTRACTOR SHALL COOPERATE WITH THE PRIVATE UTILITY PURVEYORS AND ALLOW THEM ADEQUATE TIME TO COMPLETE THEIR WORK IN ADVANCE OF PERFORMING ANY PAVING OPERATIONS OR OTHER FINISH WORK.
8. THE CONTRACTOR SHALL MAKE DETERMINATIONS OF SUBSURFACE CONDITIONS, INCLUDING THE LOCATION OF ROCK AND THE ACTUAL LOCATION OF UTILITIES OR OTHER FEATURES WHICH MAY AFFECT THE WORK.

9. 6' LENGTH GRANITE TRANSITION CURBS SHALL BE INSTALLED WHERE PROPOSED GRANITE CURB ENDS AND HMA BERM OR NO EDGE TREATMENT BEGINS.
10. THE CONTRACTOR SHALL CAUSE AS LITTLE INTERFERENCE AND INCONVENIENCE TO ADJACENT AS POSSIBLE. THE CONTRACTOR SHALL MAINTAIN SAFE AND CONVENIENT ACCESS TO PRIVATE PROPERTIES AT ALL TIMES.
11. THE FLOW OF TRAFFIC THROUGH CONSTRUCTION ZONES IN EXISTING PUBLIC WAYS SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE SPECIFIED ON THE PLANS AND IN THE SPECIAL PROVISIONS.
12. ALL PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
13. A MINIMUM OF 4" LOAM AND SEED SHALL BE PLACED AS NOTED ON THE PLANS AND ON DISTURBED AREAS.
14. THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF PROFESSIONAL OPINION BY THE LAND SURVEYOR THAT IS BASED ON HIS BEST KNOWLEDGE, INFORMATION, AND BELIEF, FORMULATED IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND AS SUCH IT CONSTITUTES NEITHER A GUARANTEE NOR WARRANTY, EITHER EXPRESS OR IMPLIED. THE CERTIFICATIONS SHOWN ARE NOT CERTIFICATIONS TO THE TITLE OF OWNERSHIP OF THE PROPERTIES SHOWN.
15. PLAN REFERENCES:  
PLYMOUTH COUNTY LAYOUT 1894, PLYMOUTH COUNTY LAYOUT 1904, PLYMOUTH COUNTY DECREE PLAN 1010, LAND COURT PLAN 2595G, PLAN BK 3 PAGE 197, PLAN BK 4 PAGE 979, PLAN BK N PAGE 59, PLAN BK 419 PAGE 189, PLAN BK 4 PAGE 388, PLAN BK 48 PAGE 912, PLAN BK 10 PAGE 112, PLAN BK 35 PAGE 728, PLAN BK 38 PAGE 1128, PLAN BK 15 PAGE 695, PLAN BK 3 PAGE 649, UNRECORDED PLAN ON FILE AT THE TOWN OF HULL CLERKS OFFICE.
16. WETLAND FLAGS SHOWN HERE ON ARE BASED ON A FIELD DELINEATION BY CHA CONSULTING, INC. DURING OCTOBER 2009.
17. FOR OTHER NOTES, REFER TO SPECIFIC PLANS AND DETAILS.

**PAVEMENT CORE LOGS**

PAVEMENT CORE #1	PAVEMENT CORE #2	PAVEMENT CORE #3	PAVEMENT CORE #4	PAVEMENT CORE #5	PAVEMENT CORE #6	PAVEMENT CORE #7
25" LIMIT	24" LIMIT	26" LIMIT	24" LIMIT	24" LIMIT	24" LIMIT	24" LIMIT
7.5" H.M.A.	5.5" H.M.A.	5.25" H.M.A.	5.0" H.M.A.	4.5" H.M.A.	4.5" H.M.A.	4.0" H.M.A.
4.5" -1.5" MACADAM STONE BASE	3.0" -1.5" MACADAM STONE BASE	3.75" -1.5" MACADAM STONE BASE	3.0" -1.5" MACADAM STONE BASE	4.5" -1.5" MACADAM STONE BASE	3.5" -1.5" MACADAM STONE BASE	5.0" -1.5" MACADAM STONE BASE
13" SILTY SAND WITH GRAVEL (TRACE COBBLES)	15.5" SILTY SAND WITH GRAVEL (TRACE COBBLES)	14" SANDY GRAVEL	16" SILTY SAND WITH GRAVEL (TRACE COBBLES)	15" SANDY GRAVEL	2" SAND W/GRAVEL	15" SANDY GRAVEL
		3" SILTY SAND			8" SANDY GRAVEL	
					6" SILTY SAND W/ GRAVEL	



**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	42
PROJECT FILE NO.		601607	

**TYPICAL SECTIONS - 1**

**PAVEMENT NOTES**

**PROPOSED RESURFACING MILLING & OVERLAY**

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER 1.75" PAVEMENT MICRO MILLING

ASPHALT EMULSION FOR TACK COAT 0.07 GAL/SY OVER EXISTING PAVEMENT OR MILLED SURFACE

**PROPOSED FULL DEPTH PAVEMENT RECONSTRUCTION**

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT 0.05 GAL/SY OVER

INTERMEDIATE: 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT 0.05 GAL/SY OVER

BASE: 3.5" SUPERPAVE BASE COURSE 25.0 (SBC-25.0) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW - TYPE B

**PROPOSED HOT MIX ASPHALT DRIVEWAY**

SURFACE: 3.5" HOT MIX ASPHALT PLACED IN TWO LAYERS: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 2.0 SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)

SUBBASE: 8" GRAVEL BORROW - TYPE B

**PROPOSED CEMENT CONCRETE SIDEWALK/WHEELCHAIR RAMP**

SURFACE: 4" CEMENT CONCRETE  
SUBBASE: 8" GRAVEL BORROW - TYPE B

**PROPOSED HOT MIX ASPHALT SIDEWALK**

SURFACE: 2.5" HOT MIX ASPHALT PAVEMENT PLACED IN TWO LAYERS: 1" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)

SUBBASE: 8" GRAVEL BORROW - TYPE B

**REMOVED AND RESET BRICK WALK**

SURFACE: EXISTING BRICK PAVERS HAND TIGHT JOINTS - SWEEPED W/ 6:1 STONE DUST; DRY CEMENT MIX VIBRATED AND MISTED TACK COAT - 2" NEOPRENE OXIDIZED ASPHALT OVER 3/4" - 1" HOT MIX ASPHALT LEVELING BED 7" ASPHALT - 93" SAND OVER

SUBBASE: 8" GRAVEL BORROW - TYPE B

**PROPOSED PERMANENT HMA TRENCH PATCH**

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT 0.05 GAL/SY

INTERMEDIATE: 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT 0.05 GAL/SY

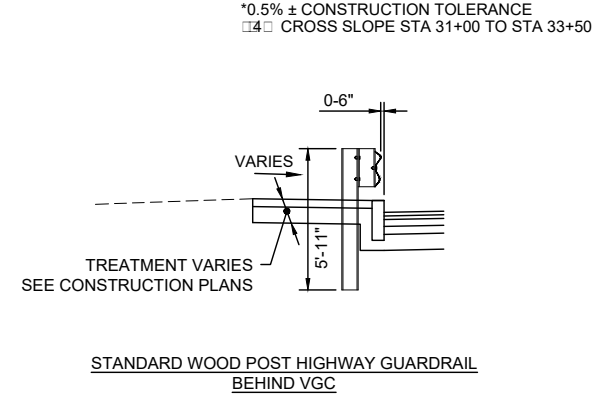
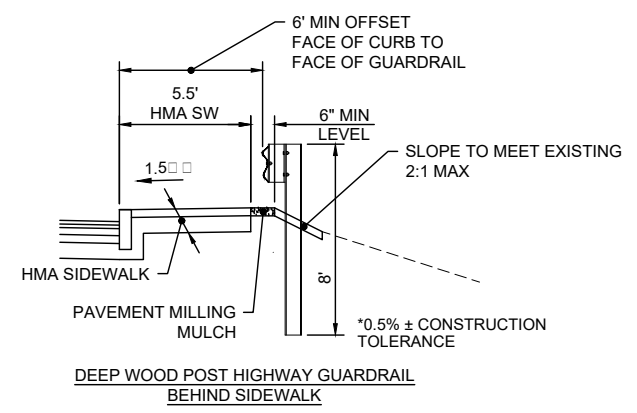
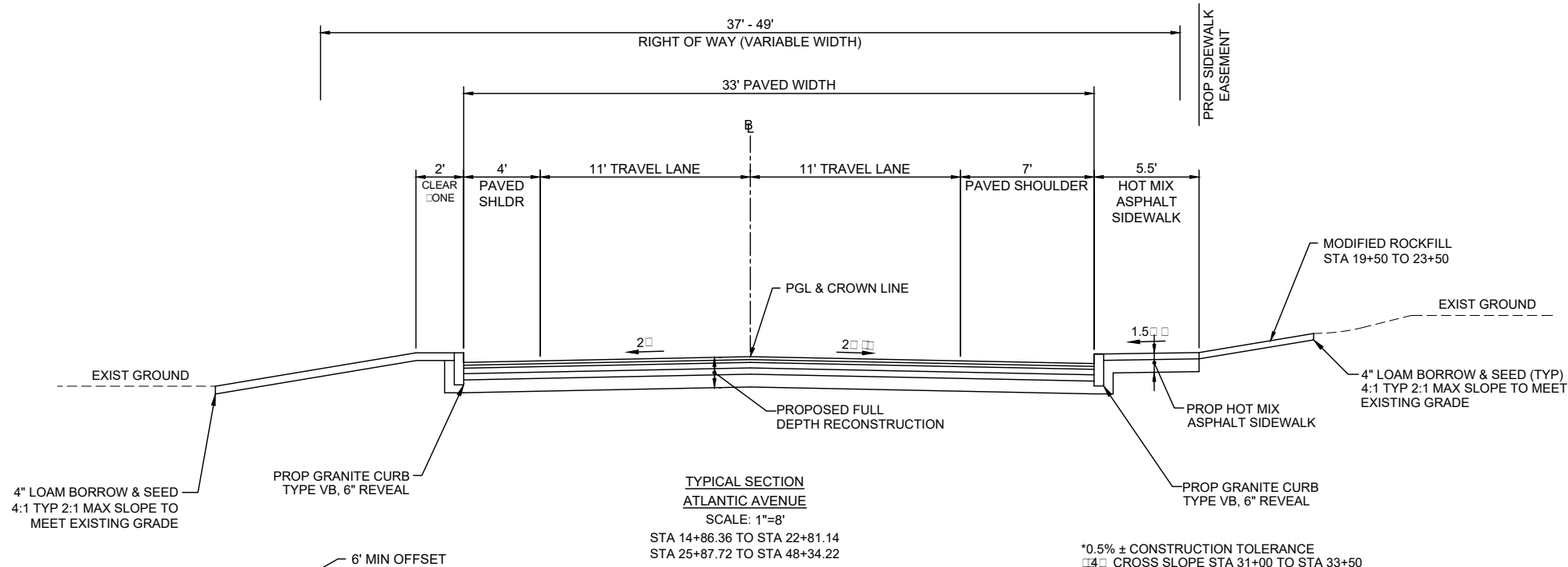
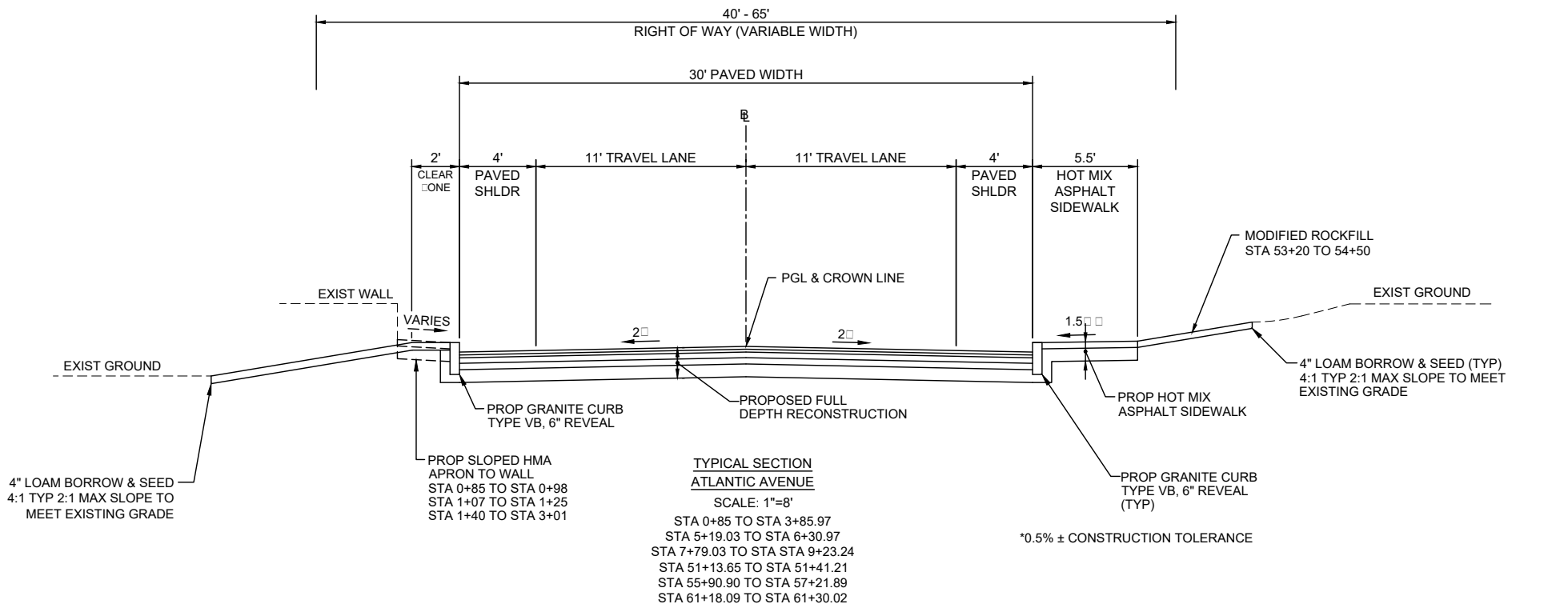
BASE: 3.50" SUPERPAVE BASE COURSE - 25.0 (SBC-25.0) OVER

SUBBASE: 12" GRAVEL BORROW - TYPE B COMPACTED

**PROPOSED TEMPORARY HMA TRENCH PATCH**

SURFACE: 2.5" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER

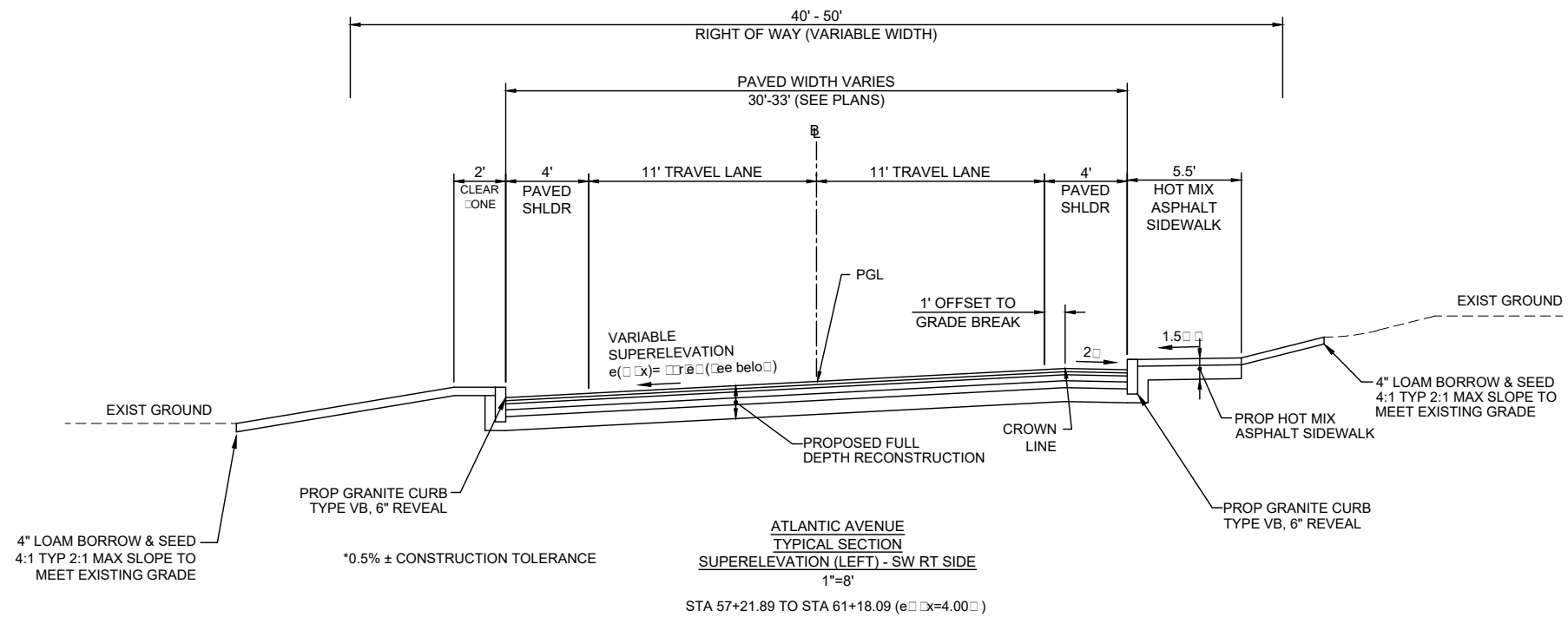
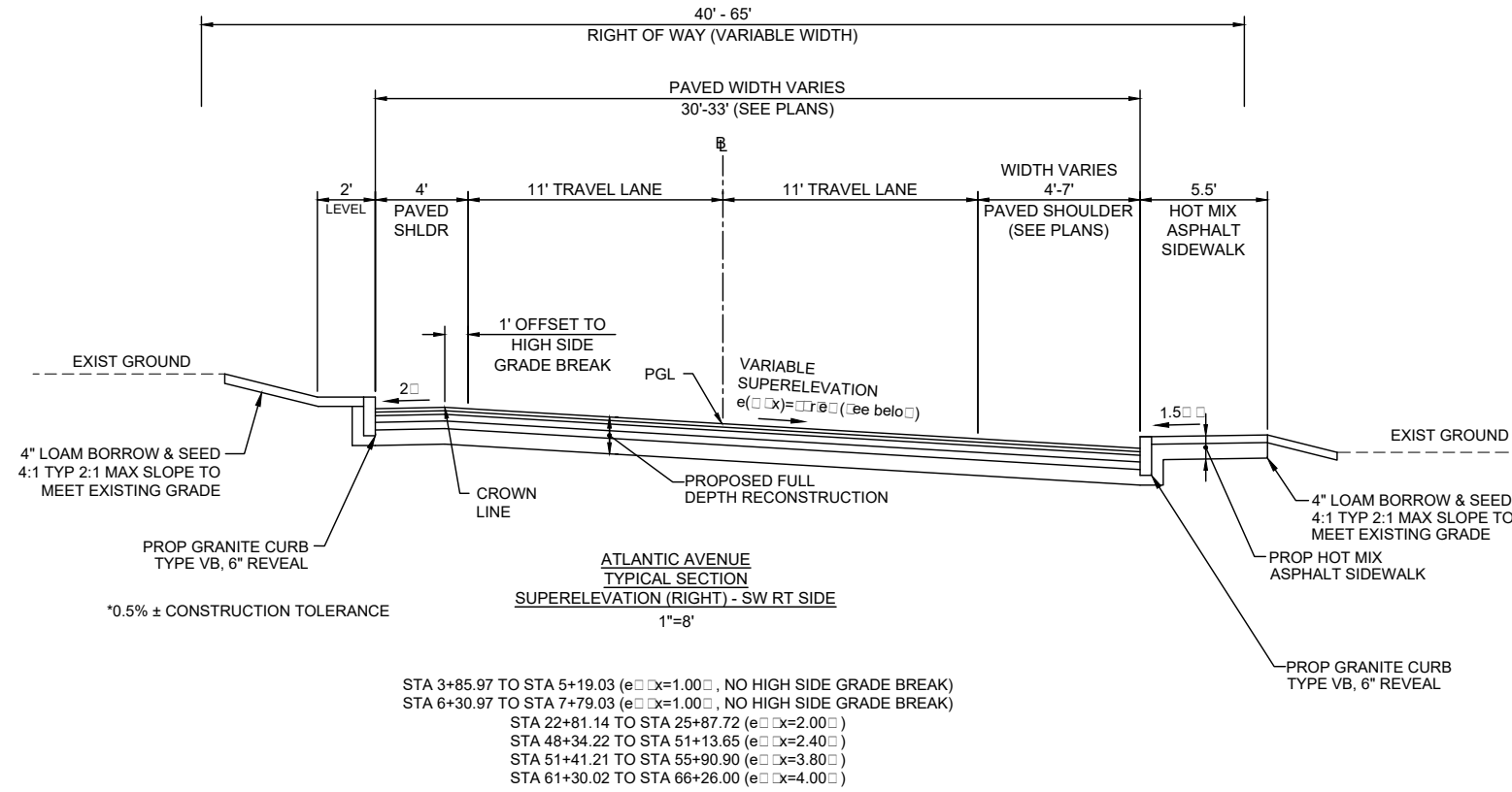
BASE: 12" GRAVEL BORROW - TYPE B COMPACTED 95% IN NOT TO EXCEED 6" LAYERS



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TYPICAL SECTIONS - 2

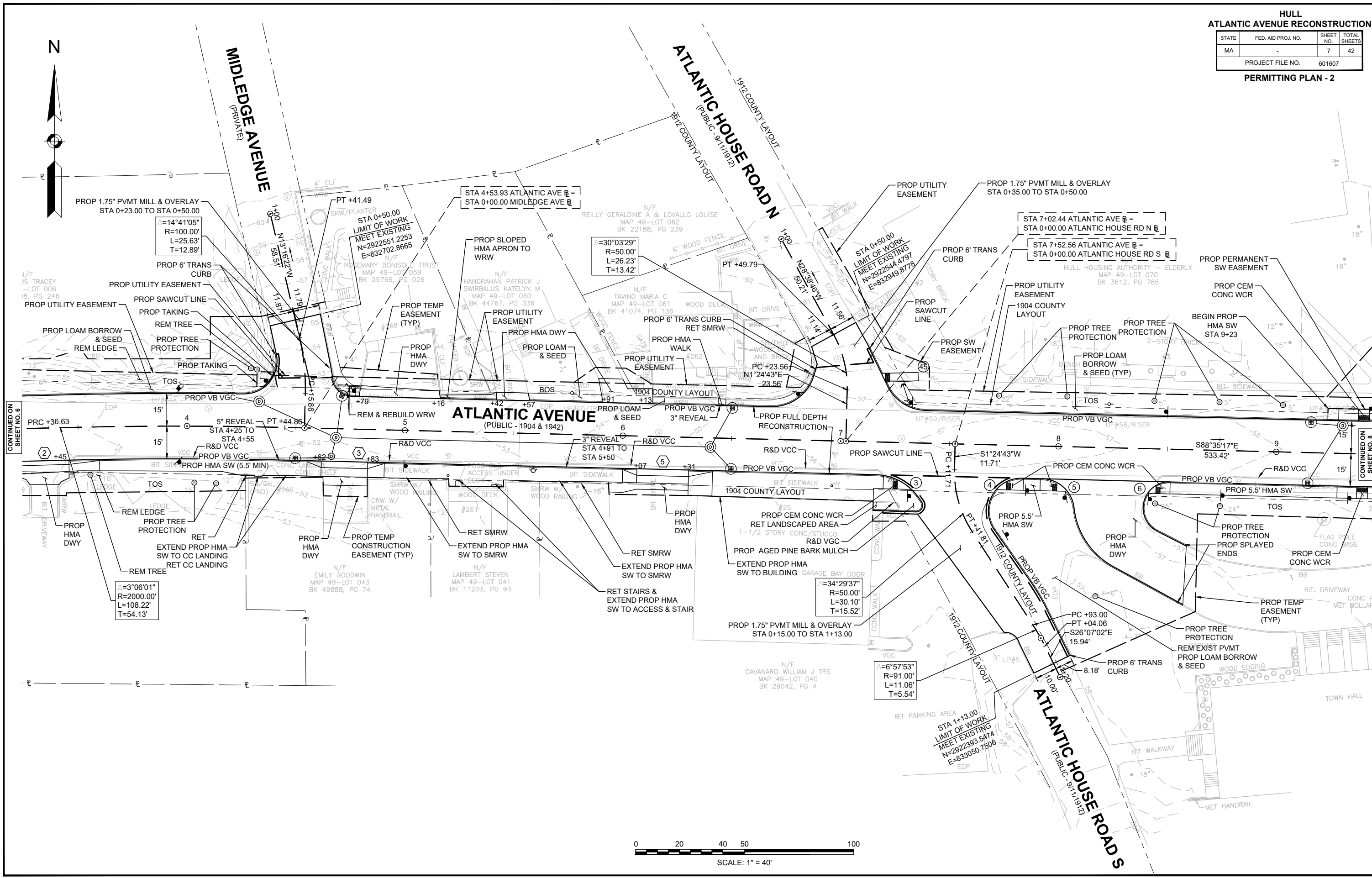
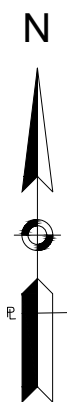




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ATLANTIC AVENUE RECONSTRUCTION**

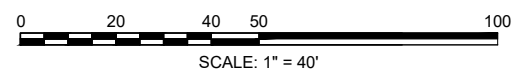
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	42
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**PERMITTING PLAN - 2**



CONTINUED ON SHEET NO. 6

CONTINUED ON SHEET NO. 8





**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

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MA	-	8	42

PROJECT FILE NO. 601607

**PERMITTING PLAN - 3**

N0°22'35"W  
69.08'

PROP 1.75" PVMT  
MILL & OVERLAY  
STA 0+60.00 TO STA 0+75.00

PROP SAWCUT  
LINE (+60)

MEET EXIST SW  
STA 0+75

PROP TREE PROTECTION  
PROP LOAM BORROW  
& SEED

PROP CC WCR

PROP UTILITY  
EASEMENT

REM LEDGE

PROP PERMANENT  
SW EASEMENT

PROP CEM  
CONC WCR

PROP FULL DEPTH  
RECONSTRUCTION

PROP TAKING

PROP PERMANENT  
SW EASEMENT

PROP CEM  
CONC WCR

RET HEDGES

PROP PERMANENT  
SW EASEMENT

RET GATE

PROP HMA  
WALK

PROP UTILITY  
EASEMENT

RET HEDGES

RET CLF

CONC STEP

RET HEDGES

RET HEDGES

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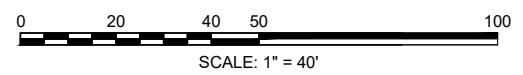
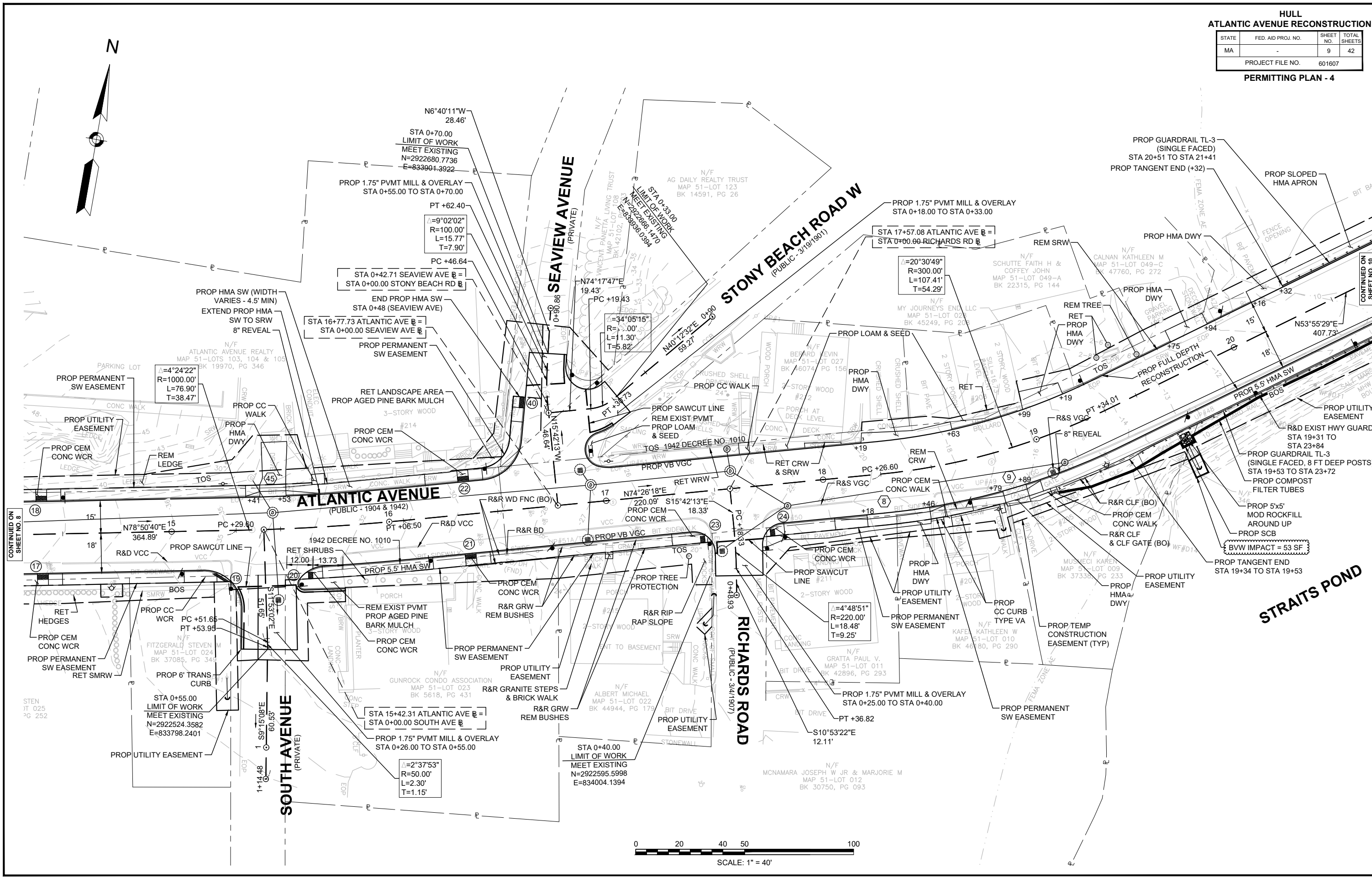


**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	42
PROJECT FILE NO.		601607	

**PERMITTING PLAN - 4**

601607\_ACOE(PLANS)DWG Plotted on 5-Feb-2021 4:13 PM

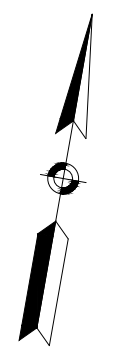


CONTINUED ON  
SHEET NO. 10

CONTINUED ON  
SHEET NO. 8

**STRAITS POND**

N



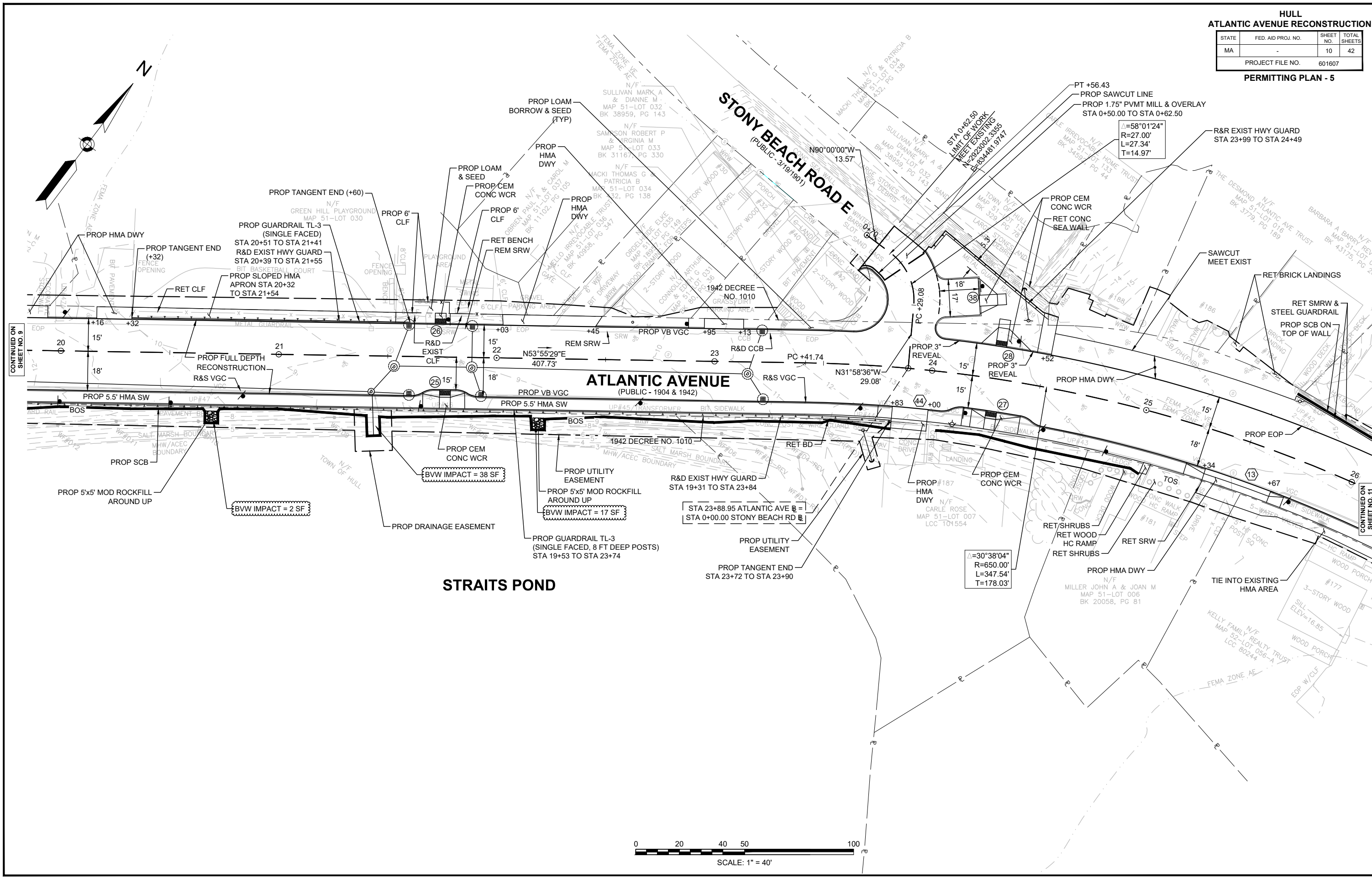
STEN  
JT 025  
PG 252

**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	42

PROJECT FILE NO. 601607

**PERMITTING PLAN - 5**



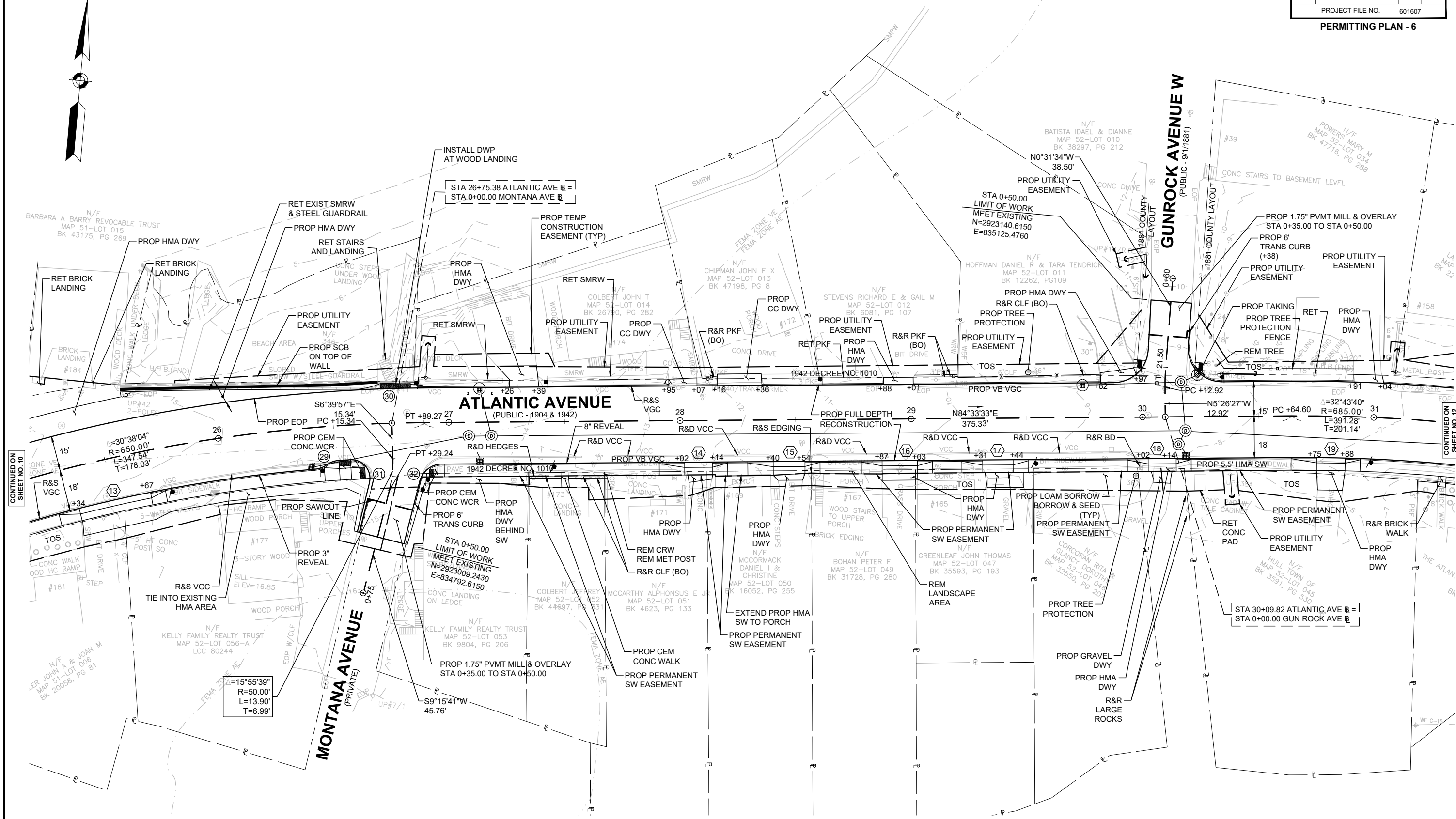
CONTINUED ON SHEET NO. 9

CONTINUED ON SHEET NO. 11

**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

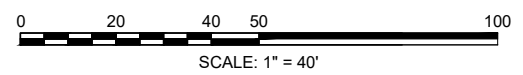
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	42
PROJECT FILE NO.		601607	

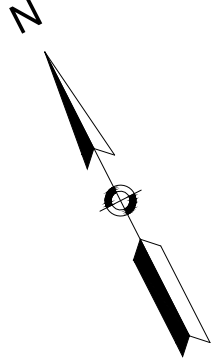
**PERMITTING PLAN - 6**



CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12



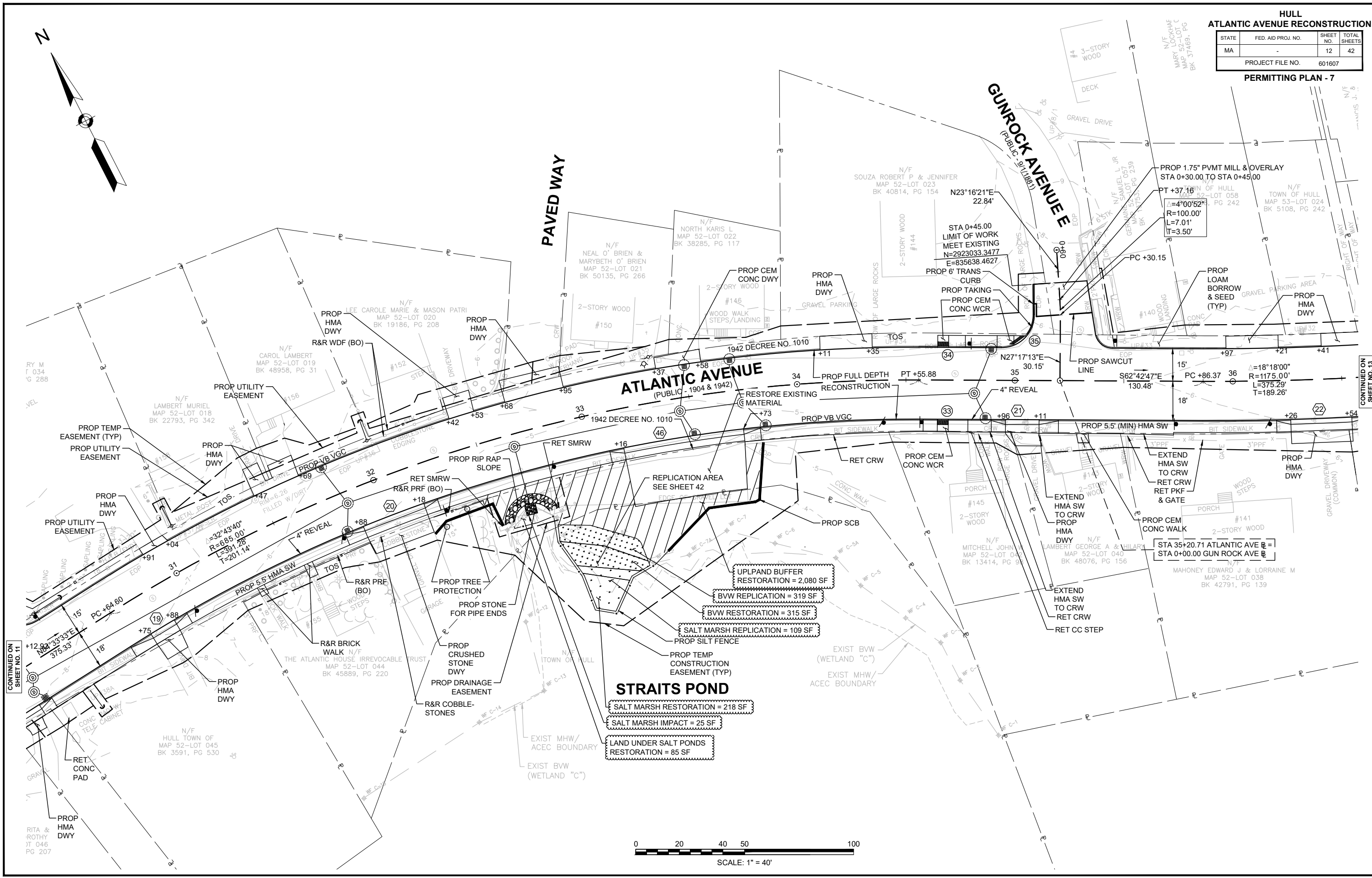


**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	42

PROJECT FILE NO. 601607

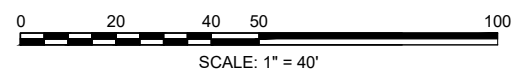
**PERMITTING PLAN - 7**



CONTINUED ON  
SHEET NO. 11

CONTINUED ON  
SHEET NO. 13

RITA &  
ROTHY  
JT 046  
PG 207







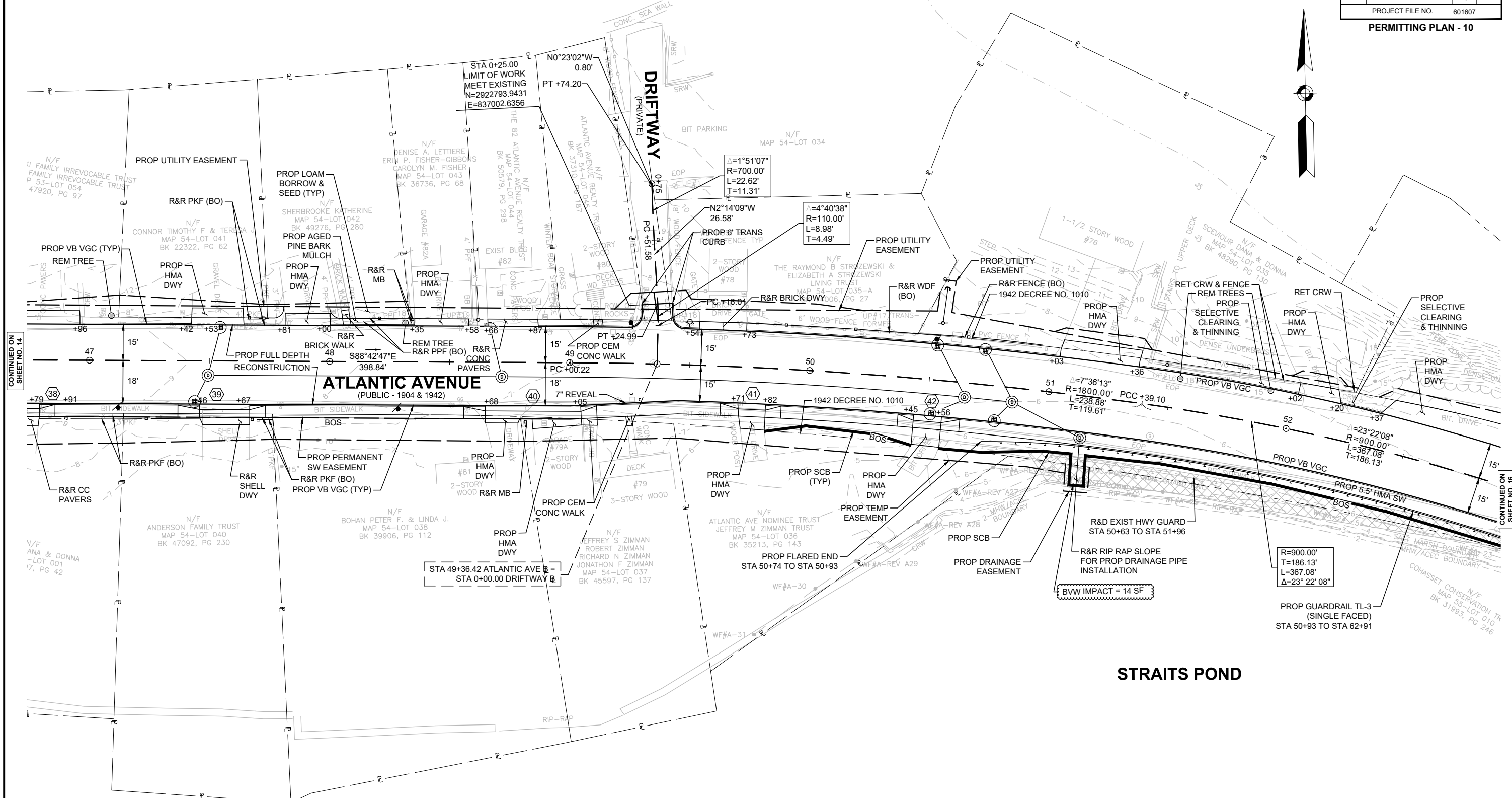




**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

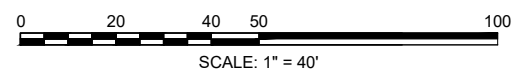
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	42
PROJECT FILE NO.		601607	

**PERMITTING PLAN - 10**



CONTINUED ON  
SHEET NO. 14

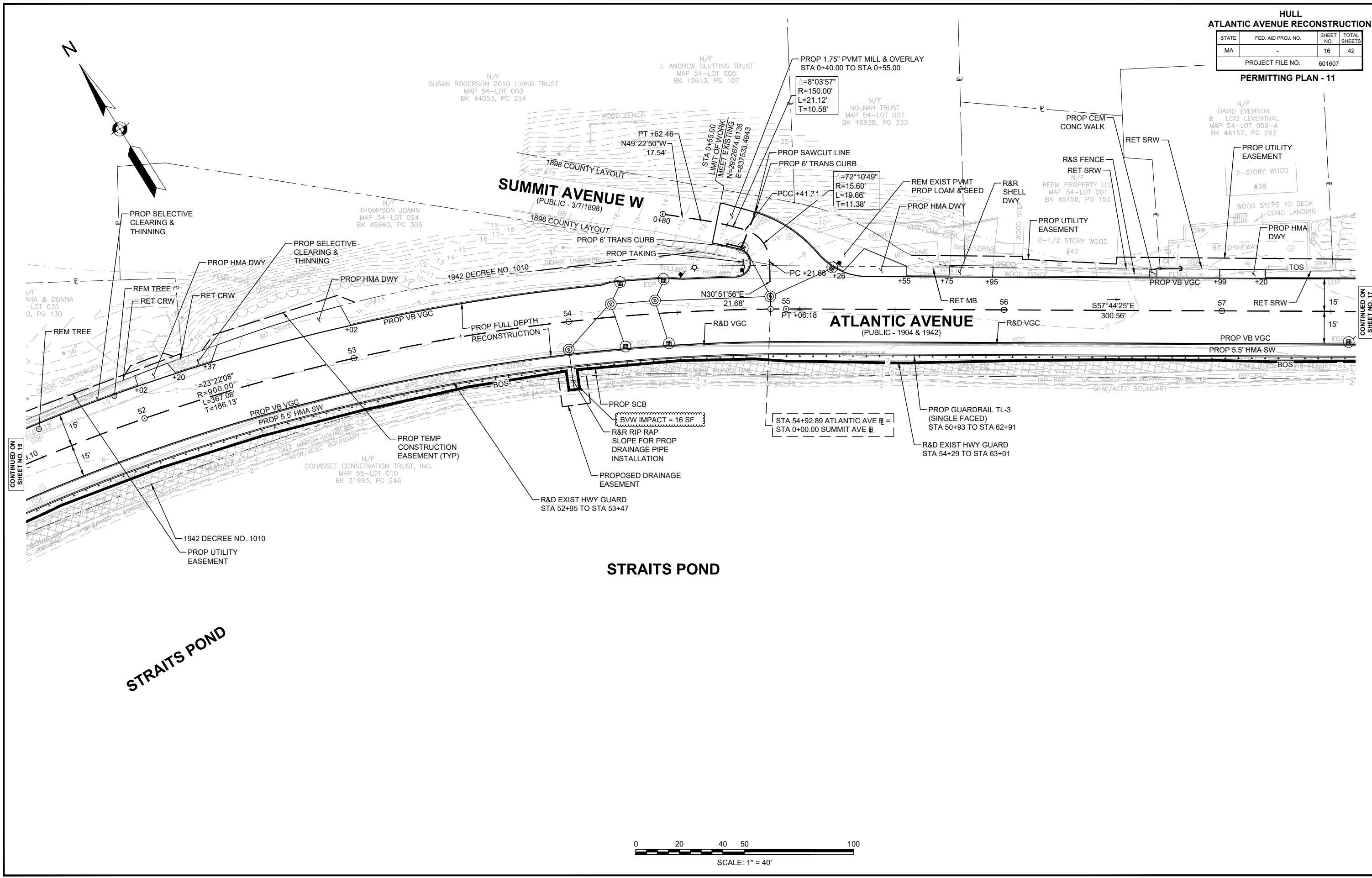
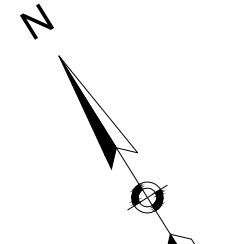
CONTINUED ON  
SHEET NO. 16



**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	42
PROJECT FILE NO.		601607	

**PERMITTING PLAN - 11**

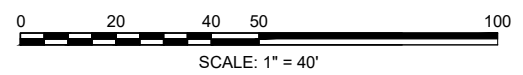


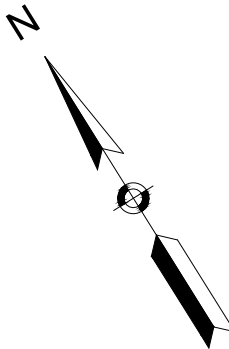
CONTINUED ON  
SHEET NO. 15

CONTINUED ON  
SHEET NO. 17

**STRAITS POND**

**STRAITS POND**



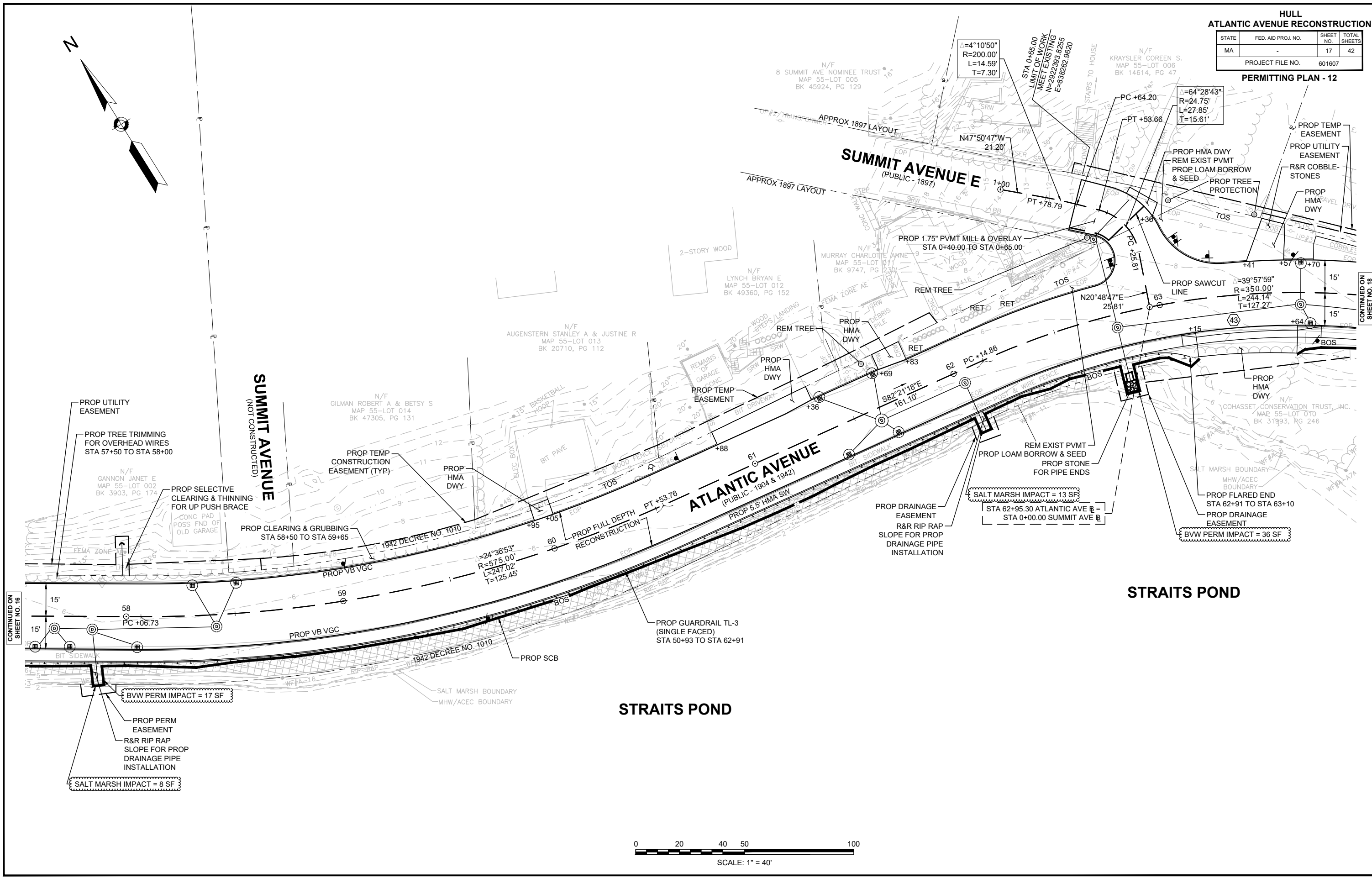


**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	42

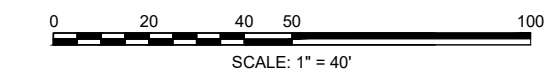
PROJECT FILE NO. 601607

**PERMITTING PLAN - 12**



CONTINUED ON  
SHEET NO. 16

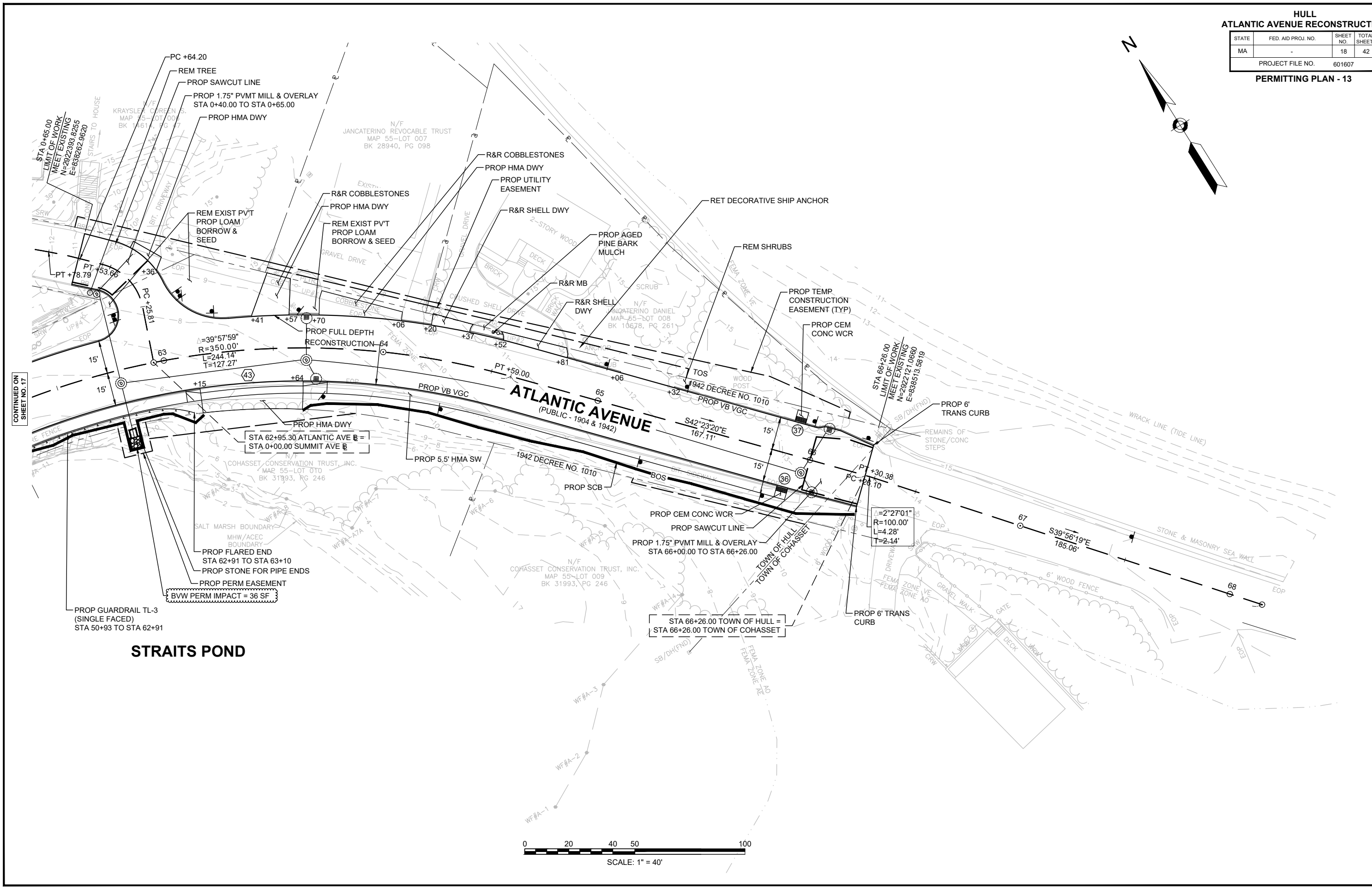
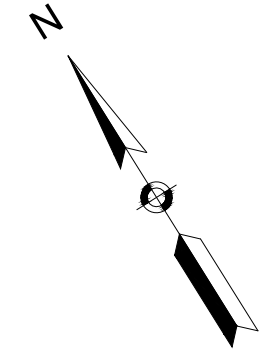
CONTINUED ON  
SHEET NO. 18



**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

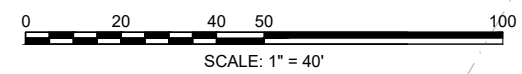
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	42
PROJECT FILE NO.		601607	

**PERMITTING PLAN - 13**



CONTINUED ON  
SHEET NO. 17

**STRAITS POND**

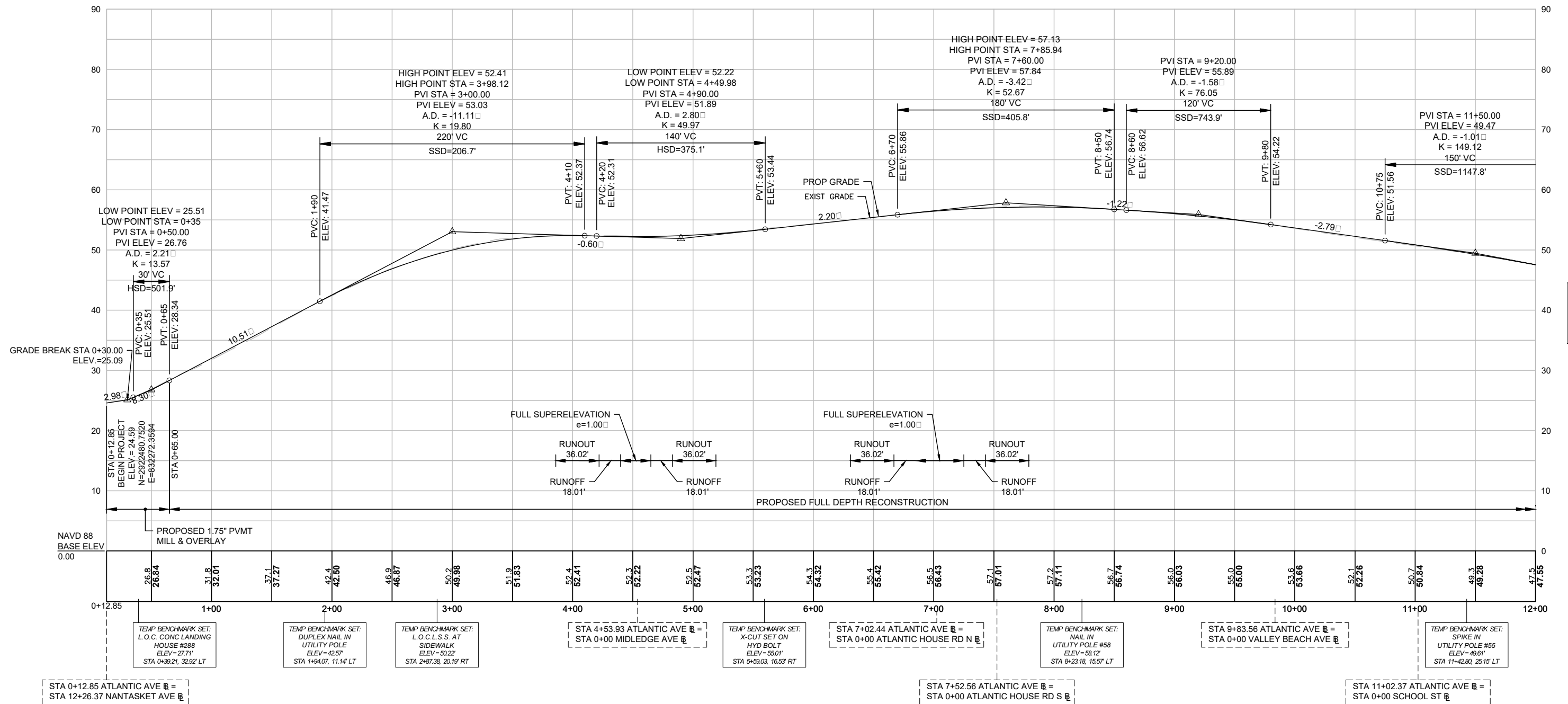


**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	42
PROJECT FILE NO.		601607	

**ATLANTIC AVENUE  
PROFILE - 1**

**ATLANTIC AVE**



CONTINUED ON  
SHEET NO. 20

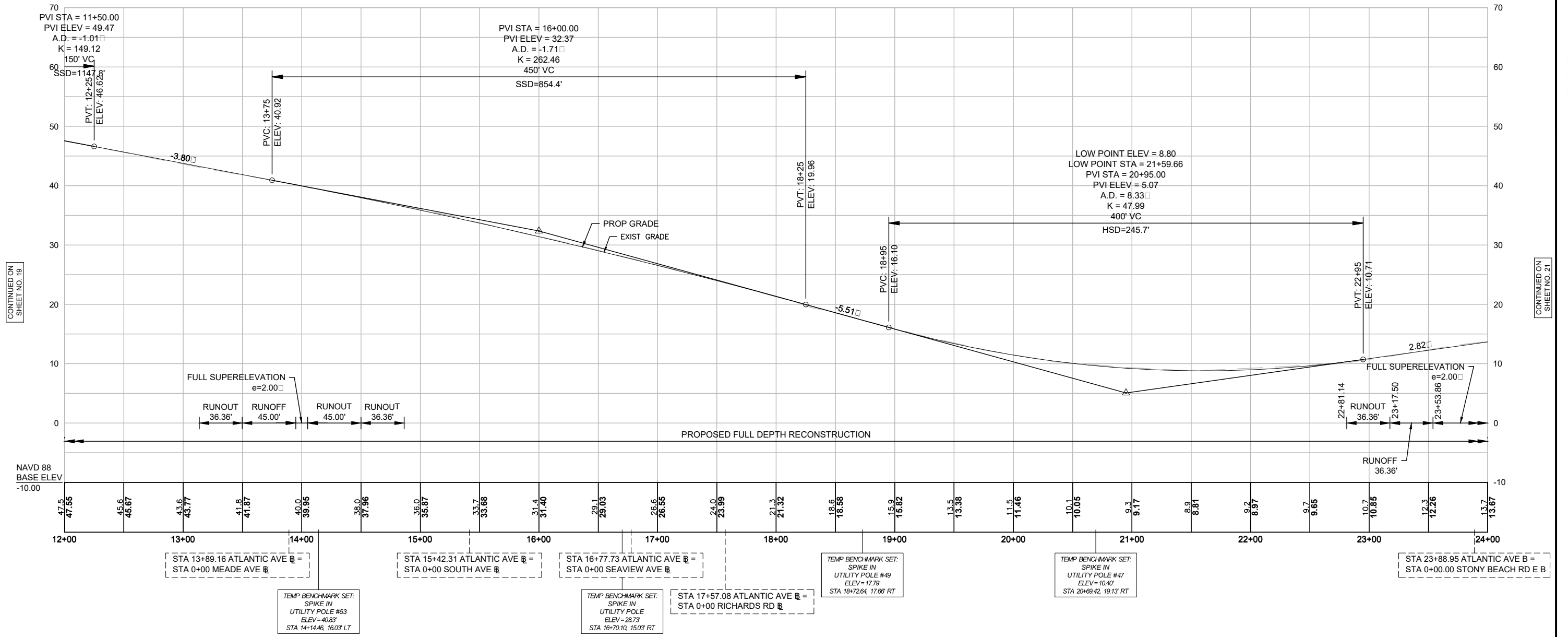
FOR CONSTRUCTION PLANS SEE SHEETS 6-8

**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	42
PROJECT FILE NO.		601607	

**ATLANTIC AVENUE  
PROFILE - 2**

**ATLANTIC AVE**



CONTINUED ON  
SHEET NO. 19

CONTINUED ON  
SHEET NO. 21

FOR CONSTRUCTION PLANS SEE SHEETS 8-10

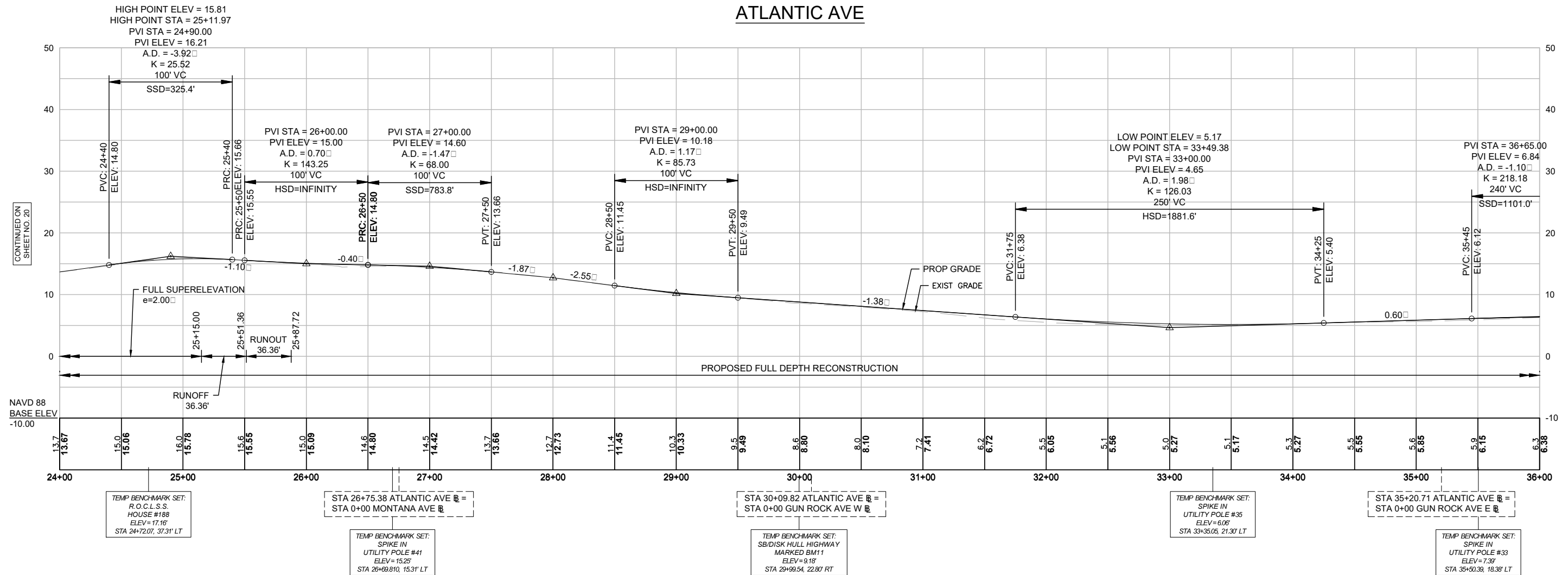


HULL  
ATLANTIC AVENUE RECONSTRUCTION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	42
PROJECT FILE NO. 601607			

ATLANTIC AVENUE  
PROFILE - 3

ATLANTIC AVE



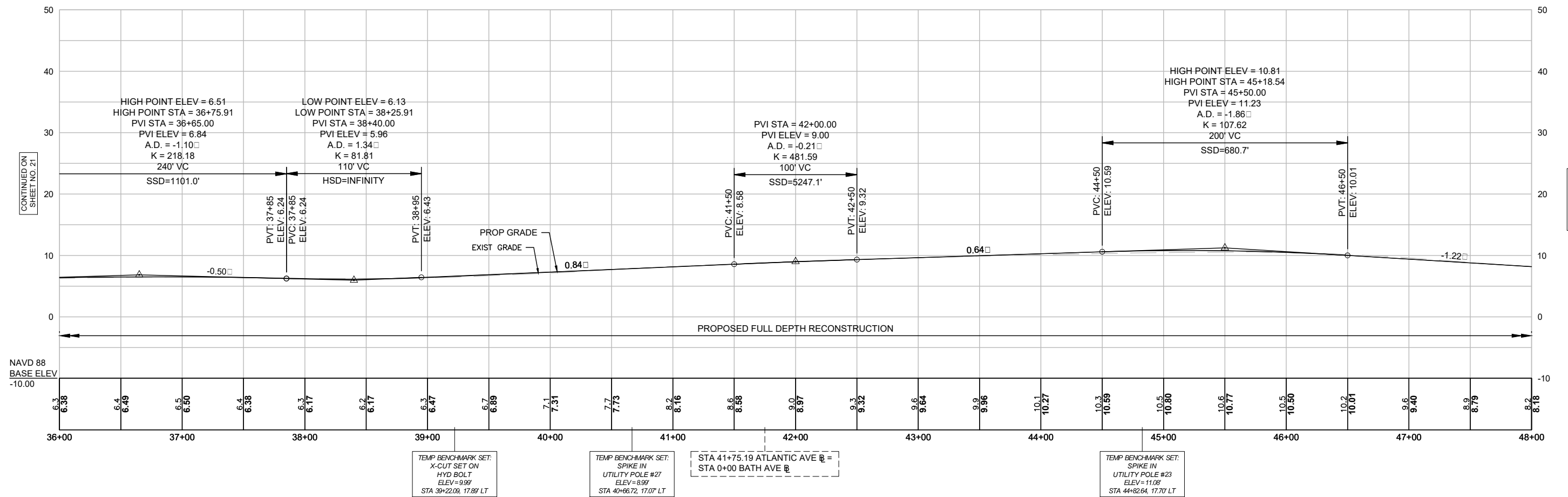
FOR CONSTRUCTION PLANS SEE SHEETS 10-12

HULL  
ATLANTIC AVENUE RECONSTRUCTION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	42
PROJECT FILE NO.		601607	

ATLANTIC AVENUE  
PROFILE - 4

ATLANTIC AVE



CONTINUED ON  
SHEET NO. 21

CONTINUED ON  
SHEET NO. 23

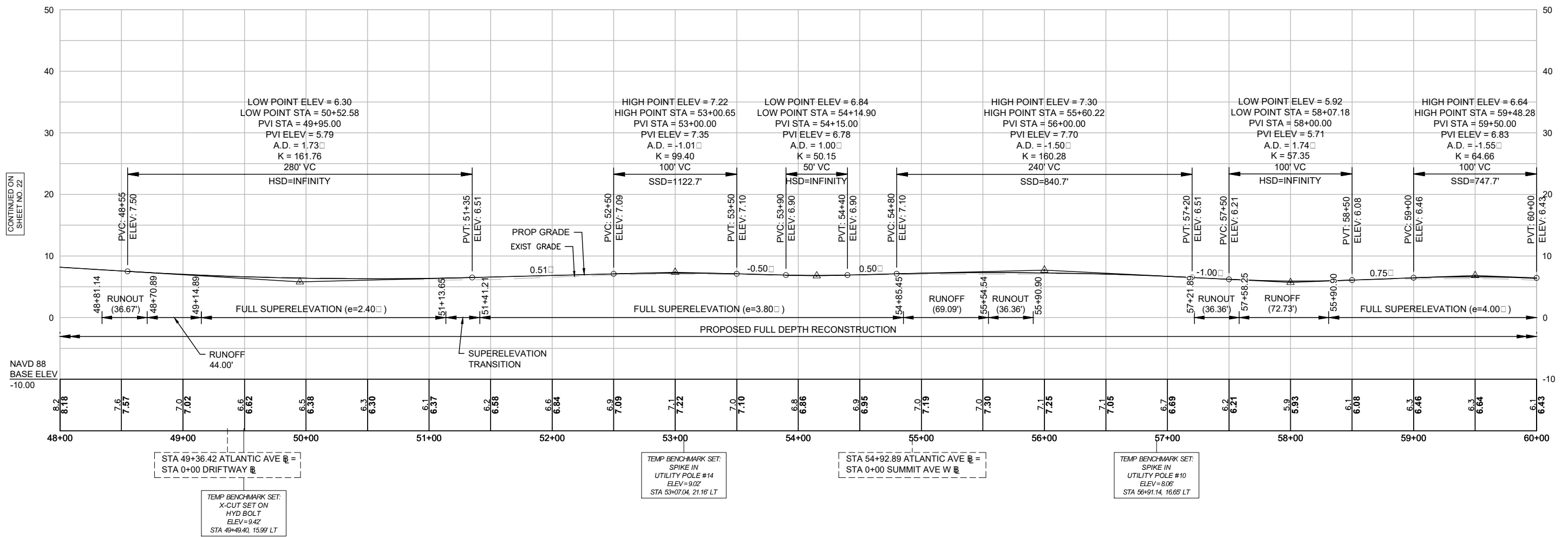
FOR CONSTRUCTION PLANS SEE SHEETS 12-14

**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	42
PROJECT FILE NO.		601607	

**ATLANTIC AVENUE  
PROFILE - 5**

**ATLANTIC AVE**



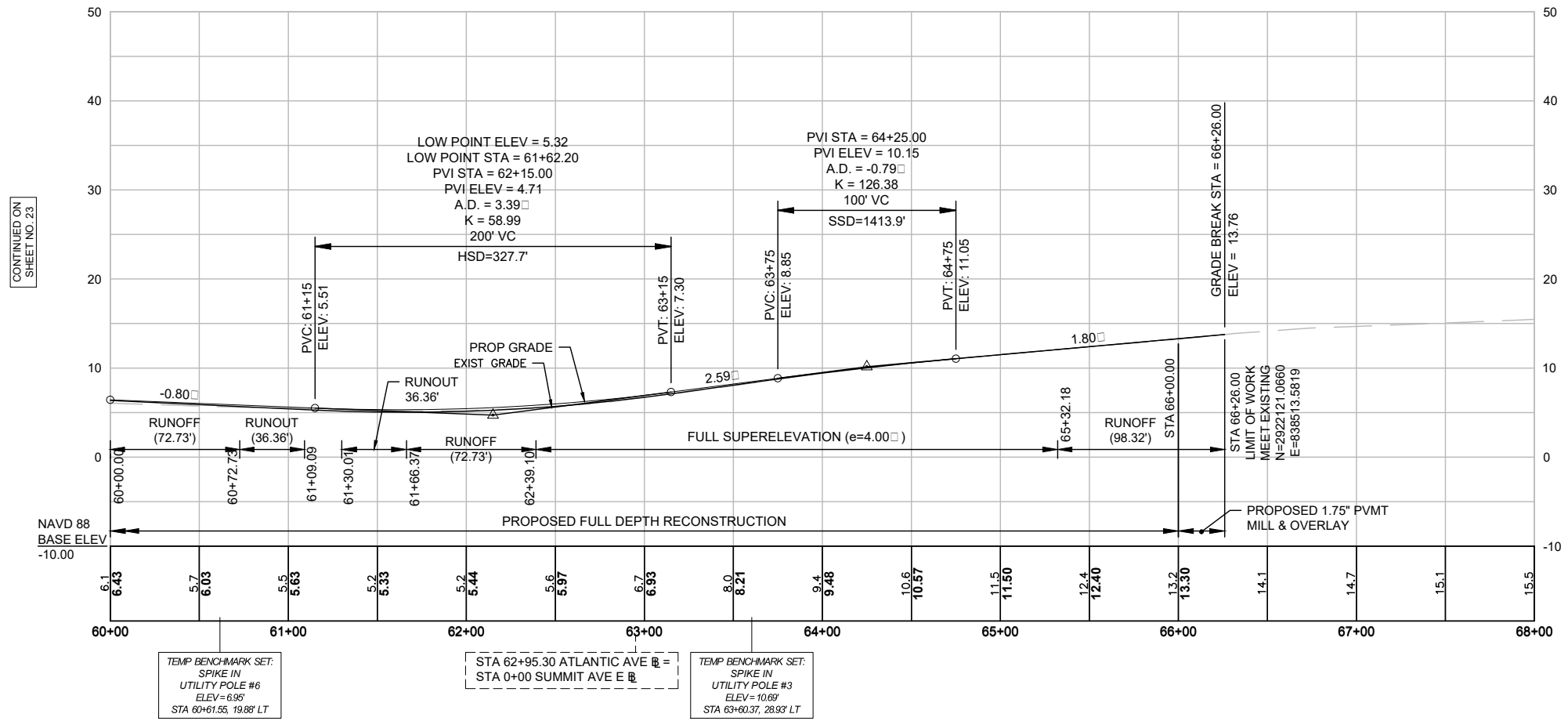
FOR CONSTRUCTION PLANS SEE SHEETS 14-16

HULL  
ATLANTIC AVENUE RECONSTRUCTION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	42
PROJECT FILE NO.		601607	

ATLANTIC AVENUE  
PROFILE - 6

ATLANTIC AVE

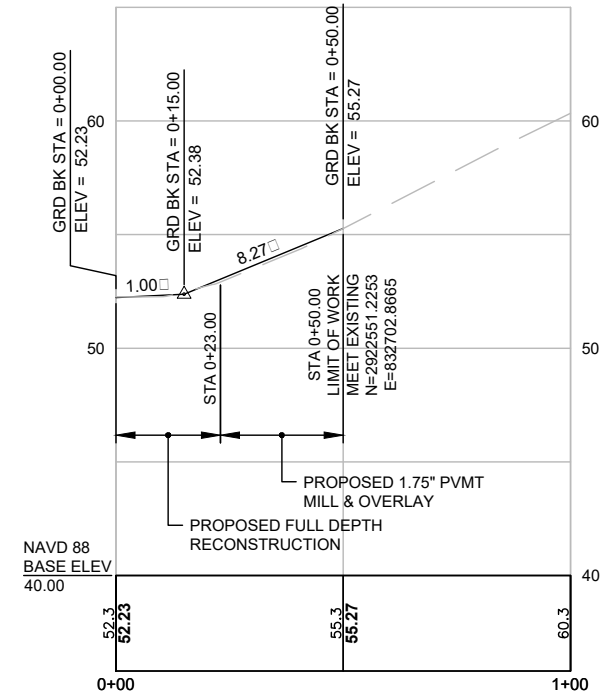


CONTINUED ON  
SHEET NO. 23

FOR CONSTRUCTION PLANS SEE SHEETS 16-18

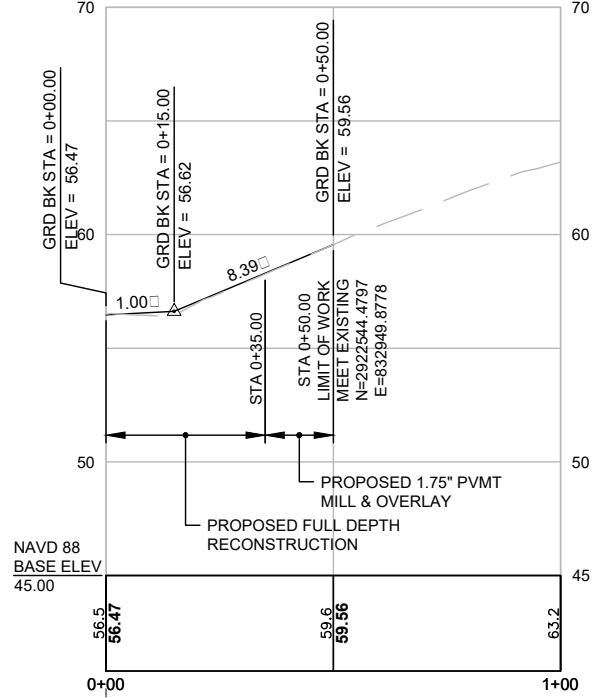
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	42
PROJECT FILE NO.		601607	

MIDLEDGE AVE



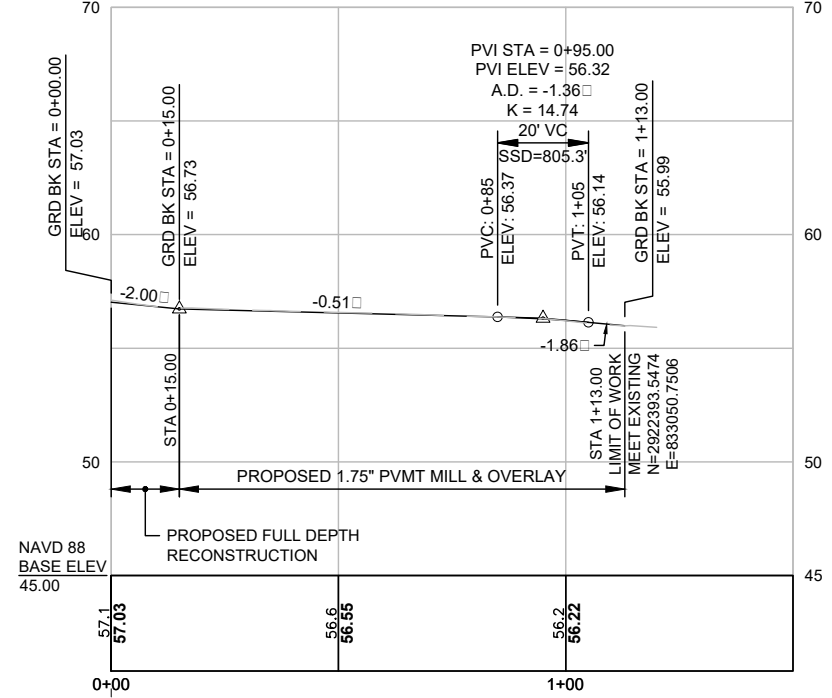
STA 4+53.93 ATLANTIC AVE @ =  
STA 0+00 MIDDLEGE AVE @

ATLANIC HOUSE RD N



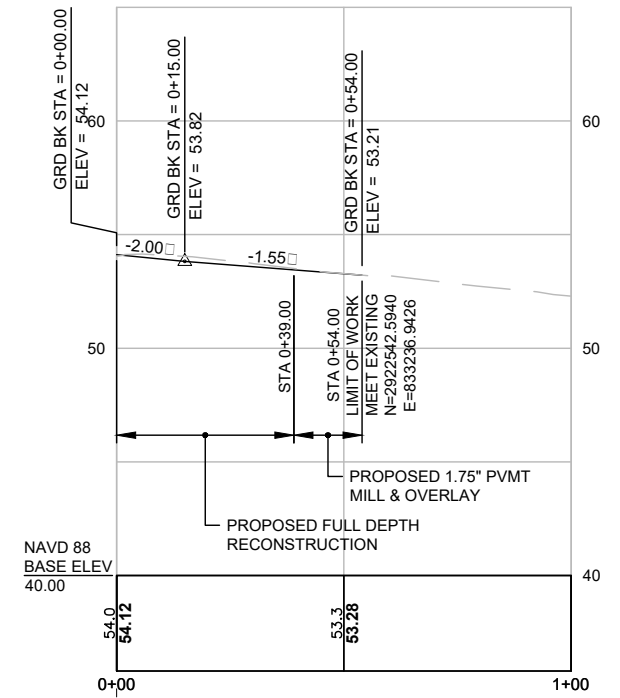
STA 7+02.44 ATLANTIC AVE @ =  
STA 0+00 ATLANTIC HOUSE RD N @

ATLANTIC HOUSE RD S



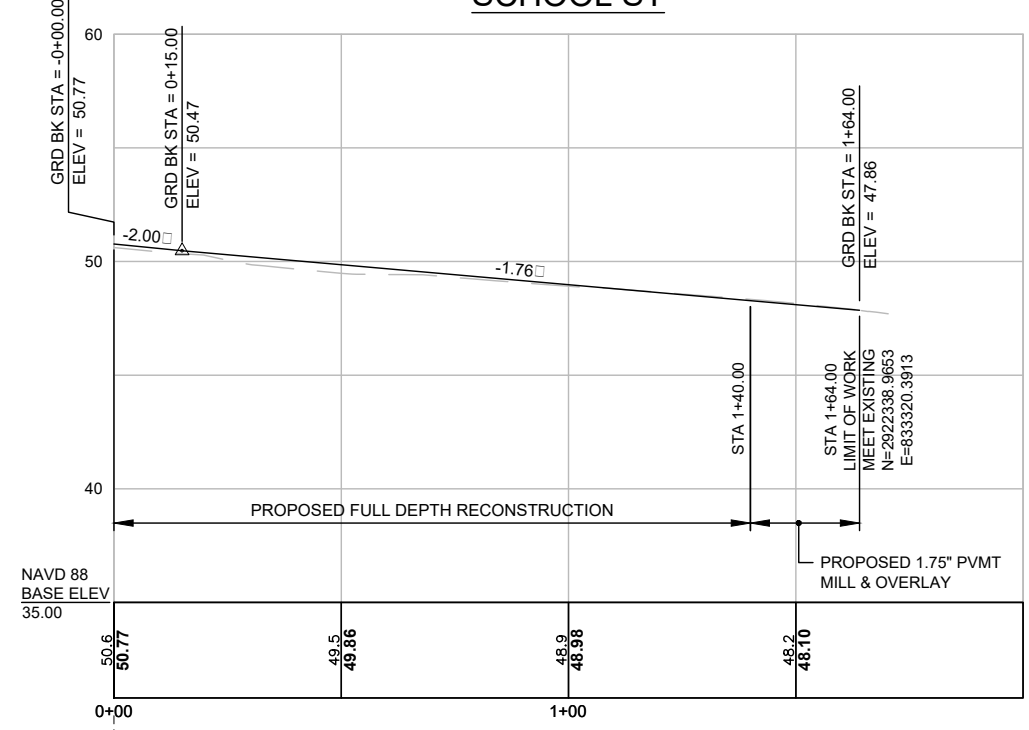
STA 7+52.56 ATLANTIC AVE @ =  
STA 0+00 ATLANTIC HOUSE RD S @

VALLEY BEACH AVE



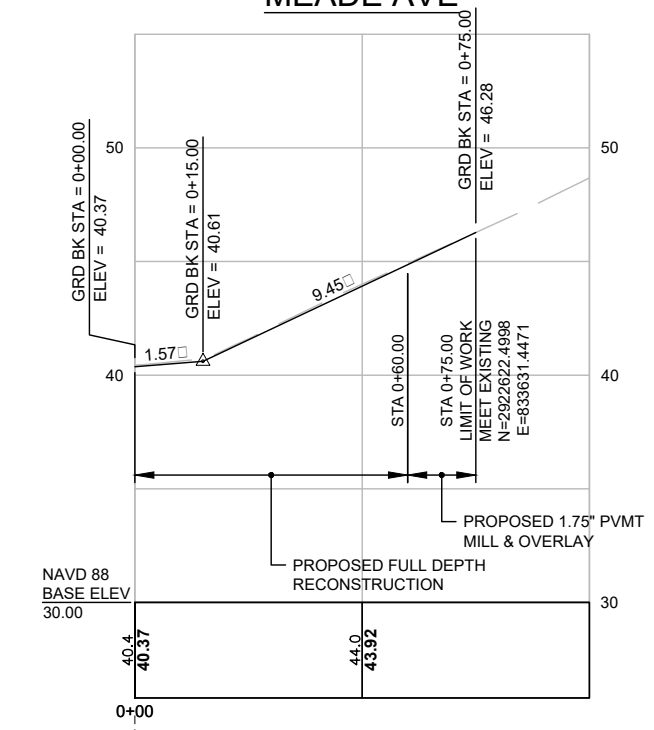
STA 9+83.56 ATLANTIC AVE @ =  
STA 0+00 VALLEY BEACH AVE @

SCHOOL ST



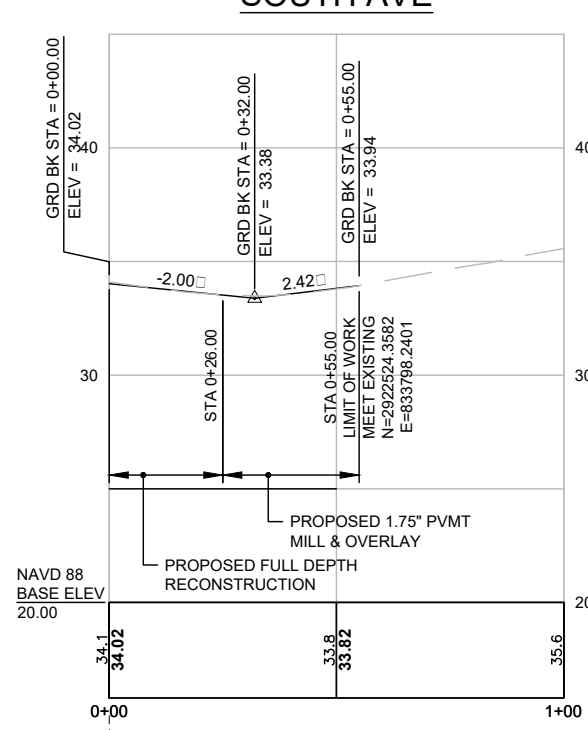
STA 11+02.37 ATLANTIC AVE @ =  
STA 0+00 SCHOOL ST @

MEADE AVE



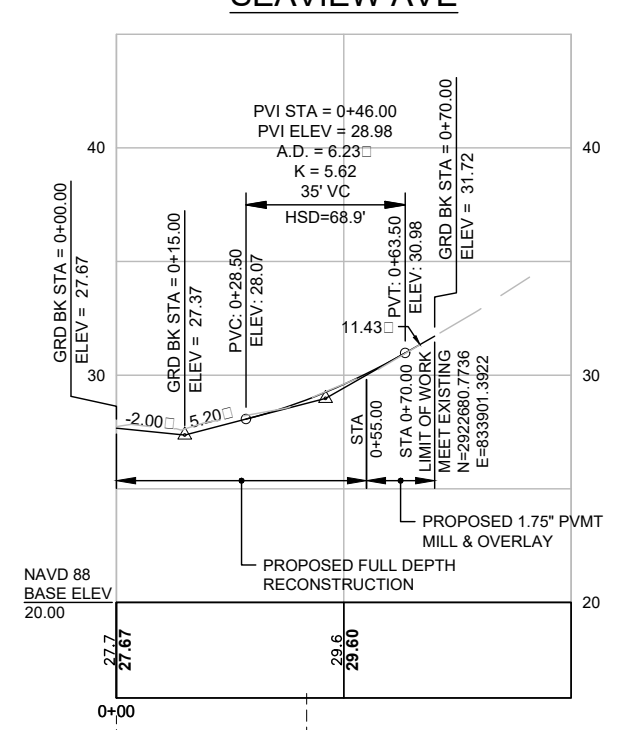
STA 13+89.16 ATLANTIC AVE @ =  
STA 0+00 MEADE AVE @

SOUTH AVE



STA 15+42.31 ATLANTIC AVE @ =  
STA 0+00 SOUTH AVE @

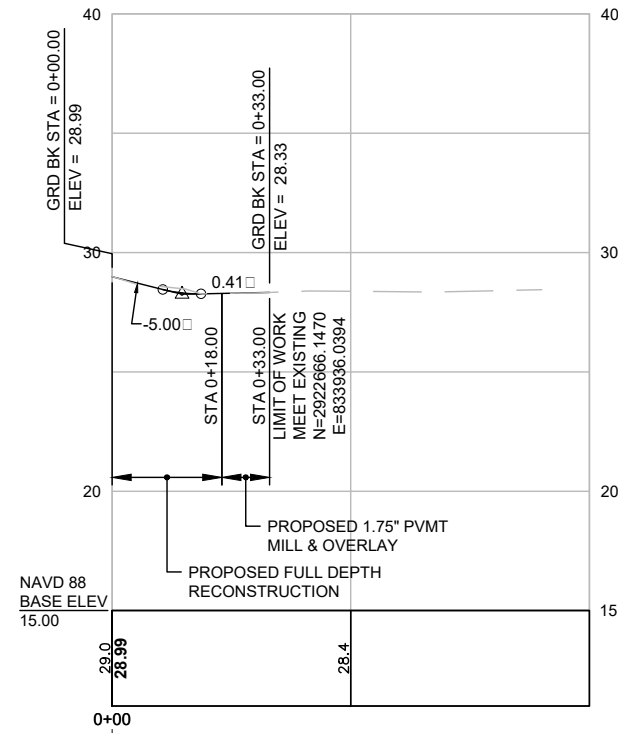
SEAVIEW AVE



STA 16+77.73 ATLANTIC AVE @ =  
STA 0+00 SEAVIEW AVE @  
STA 0+42.71 SEAVIEW AVE @ =  
STA 0+00.00 STONY BEACH RD W @

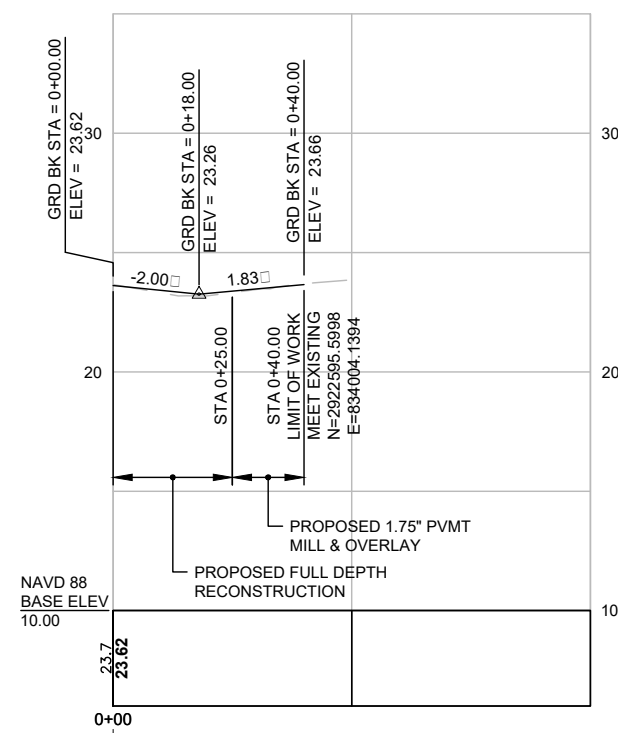
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	42
PROJECT FILE NO.		601607	

STONY BEACH RD W



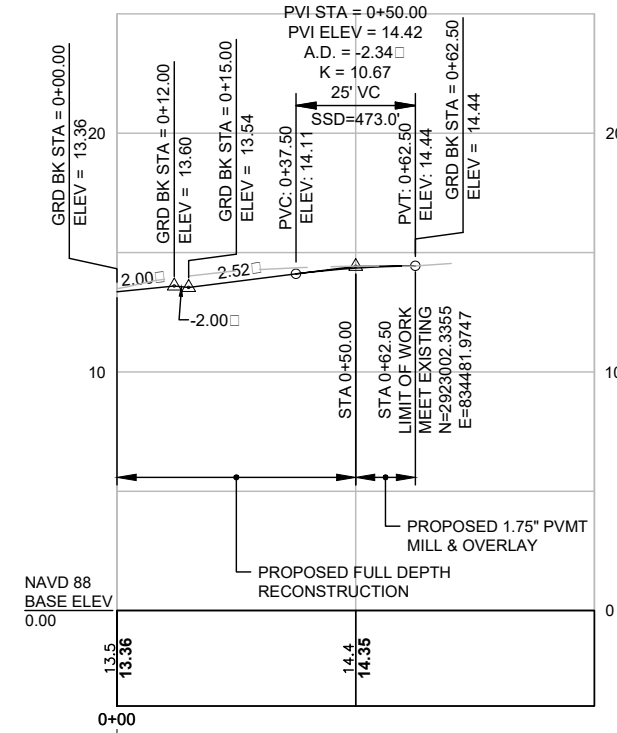
STA 0+00.00 STONY BEACH RD W @ =  
STA 0+42.71 SEAVIEW AVE @

RICHARDS RD



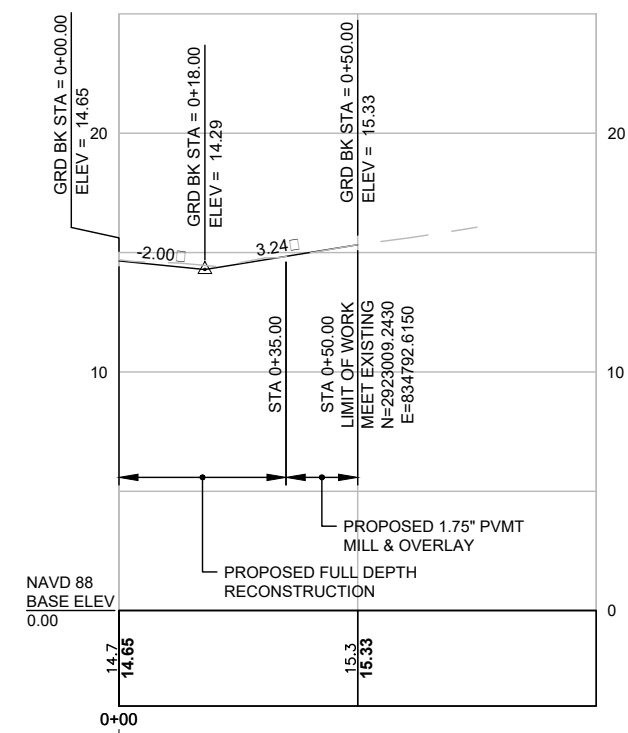
STA 17+57.08 ATLANTIC AVE @ =  
STA 0+00 RICHARDS RD @

STONY BEACH RD E



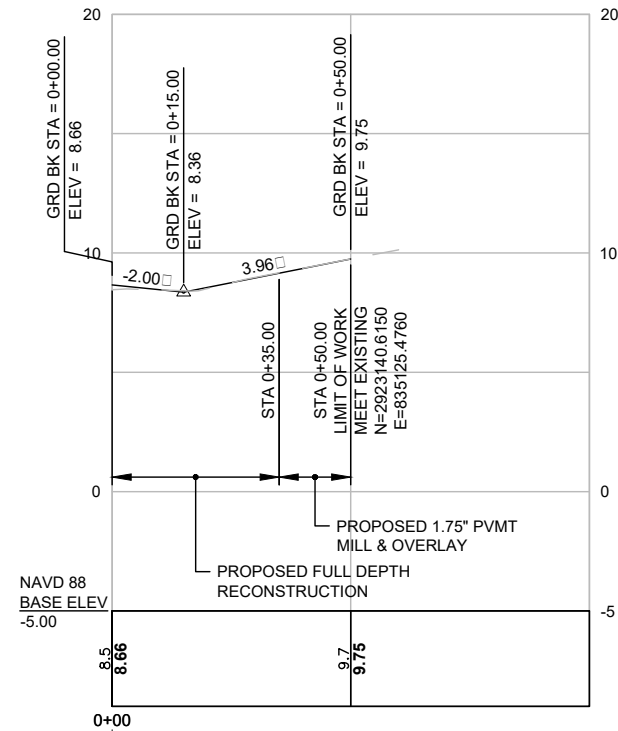
STA 23+88.95 ATLANTIC AVE @ =  
STA 0+00.00 STONY BEACH RD E @

MONTANA AVE



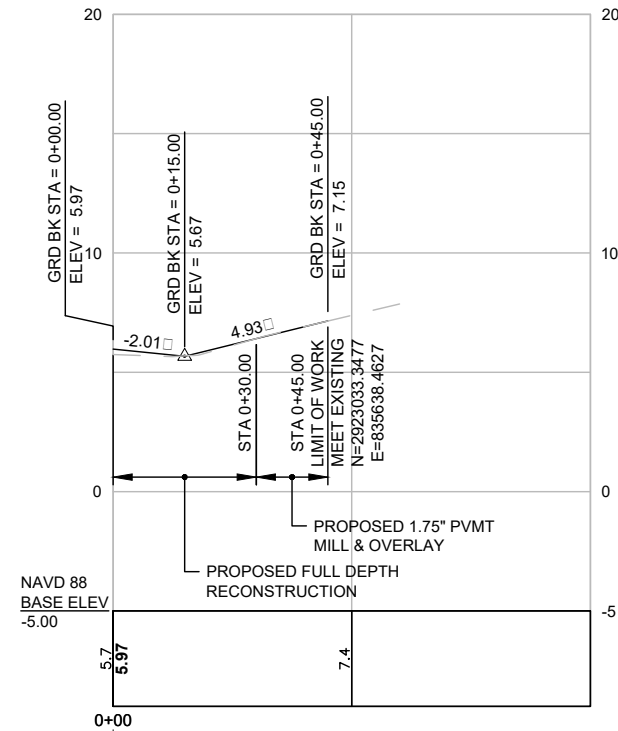
STA 26+75.38 ATLANTIC AVE @ =  
STA 0+00 MONTANA AVE @

GUNROCK AVE W



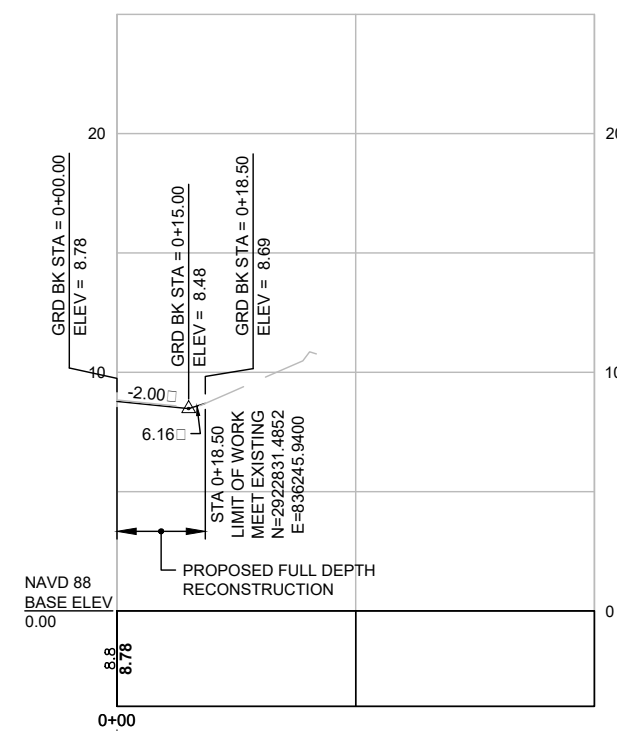
STA 30+09.82 ATLANTIC AVE @ =  
STA 0+00 GUN ROCK AVE W @

GUNROCK AVE E



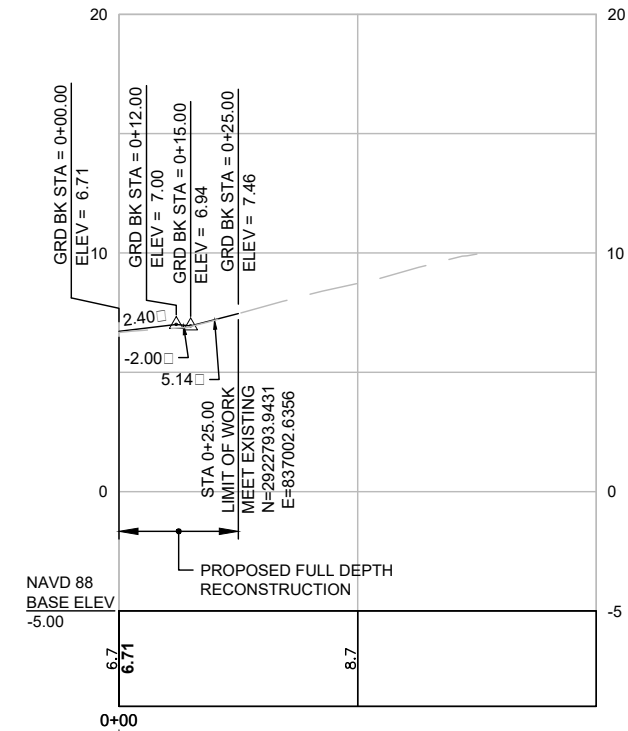
STA 35+20.71 ATLANTIC AVE @ =  
STA 0+00 GUN ROCK AVE E @

BATH AVE



STA 41+75.19 ATLANTIC AVE @ =  
STA 0+00 BATH AVE @

DRIFTWAY



STA 49+36.42 ATLANTIC AVE @ =  
STA 0+00 DRIFTWAY @

FOR CONSTRUCTION PLANS SEE SHEETS 9 - 15

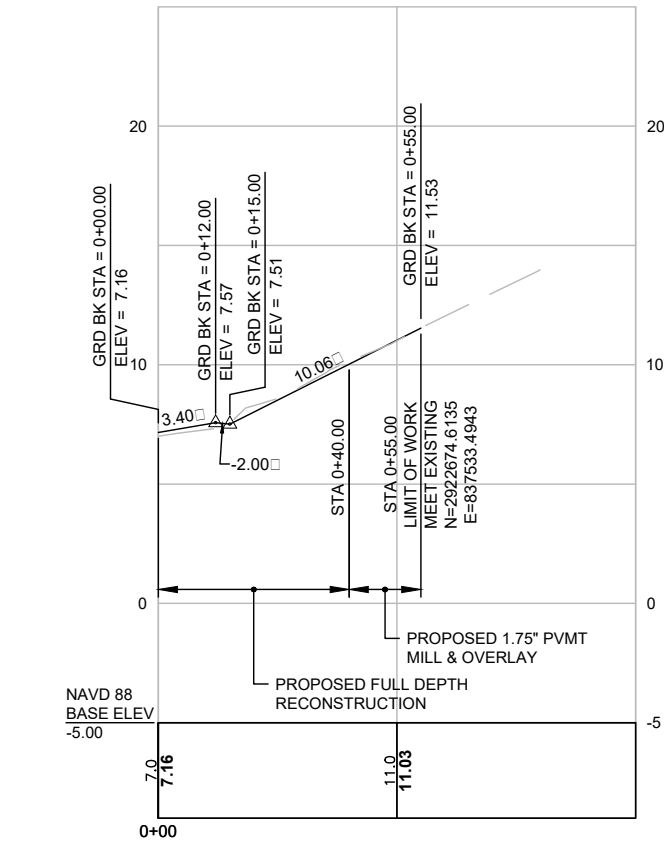


HULL  
ATLANTIC AVENUE RECONSTRUCTION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	42
PROJECT FILE NO.		601607	

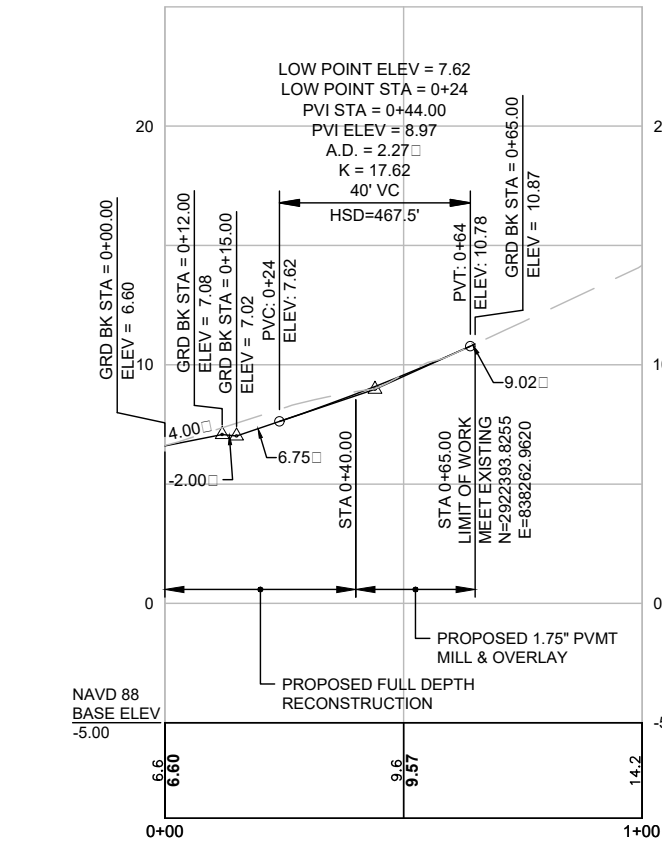
SIDE STREETS PROFILE - 9

SUMMIT AVE W



STA 54+92.89 ATLANTIC AVE @ =  
STA 0+00 SUMMIT AVE W @

SUMMIT AVE E

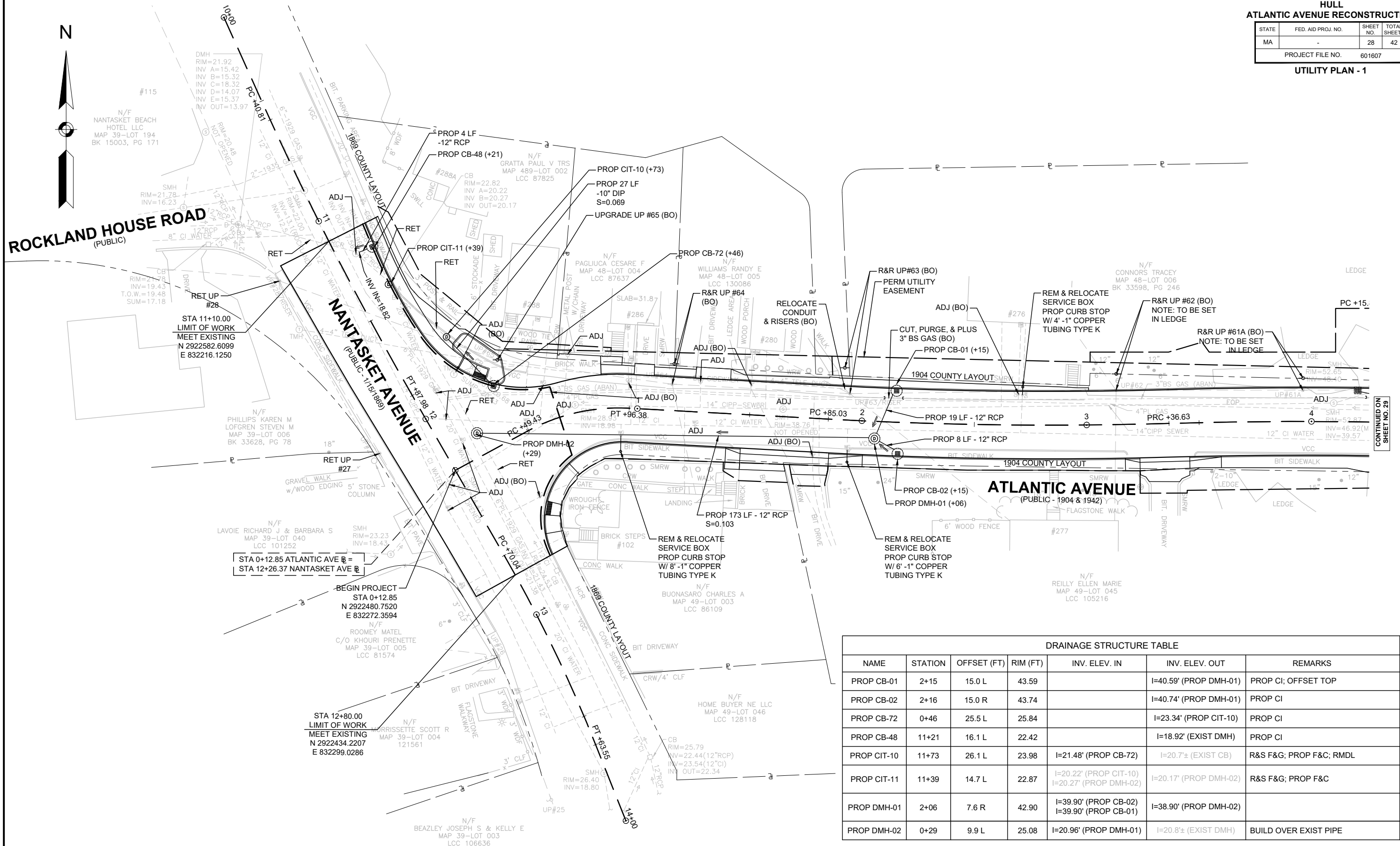


STA 62+95.30 ATLANTIC AVE @ =  
STA 0+00 SUMMIT AVE E @

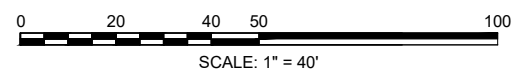
**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	42
PROJECT FILE NO.		601607	

**UTILITY PLAN - 1**



NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-01	2+15	15.0 L	43.59		I=40.59' (PROP DMH-01)	PROP CI; OFFSET TOP
PROP CB-02	2+16	15.0 R	43.74		I=40.74' (PROP DMH-01)	PROP CI
PROP CB-72	0+46	25.5 L	25.84		I=23.34' (PROP CIT-10)	PROP CI
PROP CB-48	11+21	16.1 L	22.42		I=18.92' (EXIST DMH)	PROP CI
PROP CIT-10	11+73	26.1 L	23.98	I=21.48' (PROP CB-72)	I=20.7'± (EXIST CB)	R&S F&G; PROP F&C; RMDL
PROP CIT-11	11+39	14.7 L	22.87	I=20.22' (PROP CIT-10) I=20.27' (PROP DMH-02)	I=20.17' (PROP DMH-02)	R&S F&G; PROP F&C
PROP DMH-01	2+06	7.6 R	42.90	I=39.90' (PROP CB-02) I=39.90' (PROP CB-01)	I=38.90' (PROP DMH-02)	
PROP DMH-02	0+29	9.9 L	25.08	I=20.96' (PROP DMH-01)	I=20.8'± (EXIST DMH)	BUILD OVER EXIST PIPE



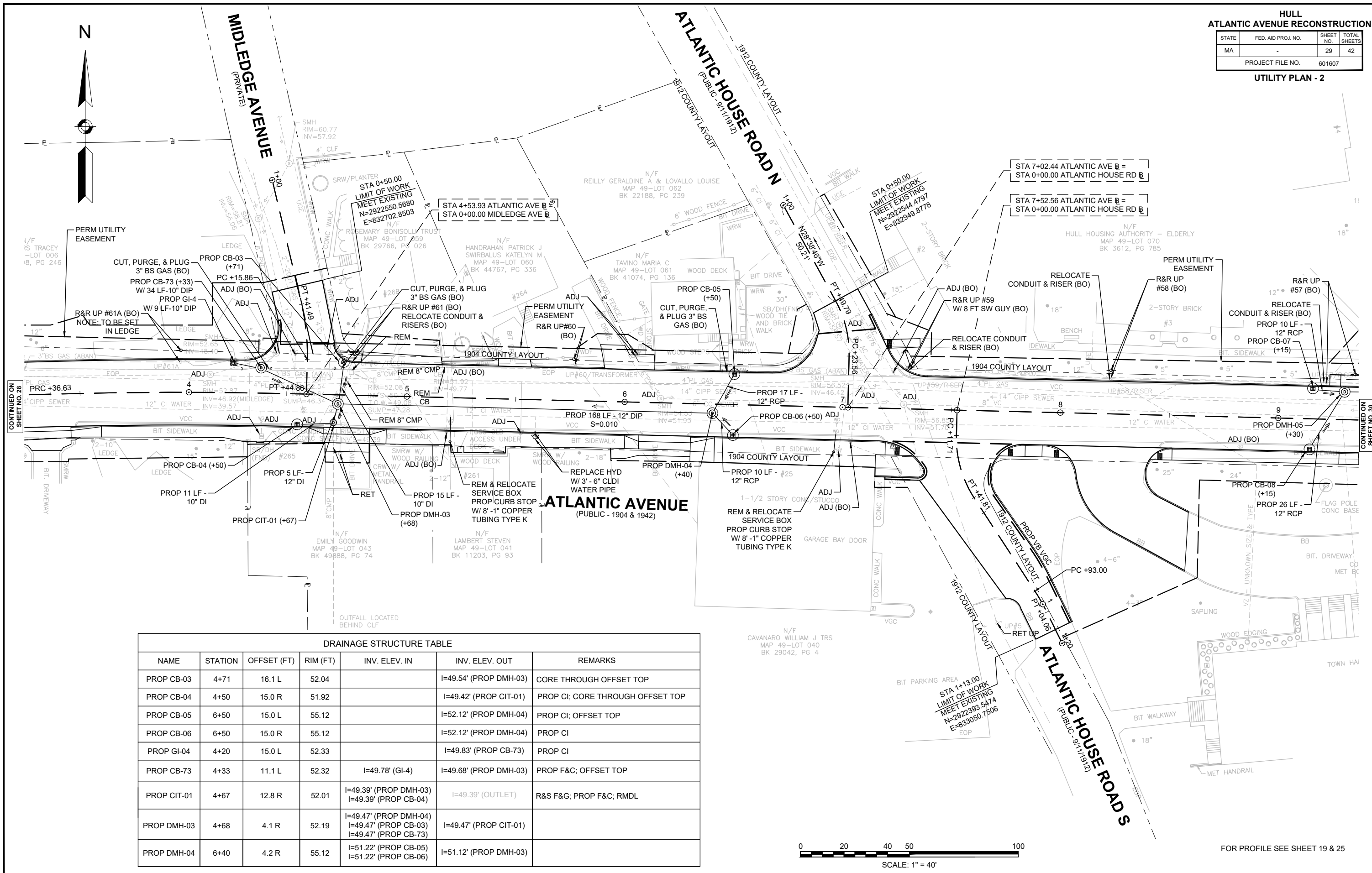
FOR PROFILE SEE SHEET 19

CONTINUED ON  
SHEET NO. 29

**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

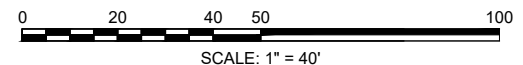
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	42
PROJECT FILE NO. 601607			

**UTILITY PLAN - 2**



**DRAINAGE STRUCTURE TABLE**

NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-03	4+71	16.1 L	52.04		I=49.54' (PROP DMH-03)	CORE THROUGH OFFSET TOP
PROP CB-04	4+50	15.0 R	51.92		I=49.42' (PROP CIT-01)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-05	6+50	15.0 L	55.12		I=52.12' (PROP DMH-04)	PROP CI; OFFSET TOP
PROP CB-06	6+50	15.0 R	55.12		I=52.12' (PROP DMH-04)	PROP CI
PROP GI-04	4+20	15.0 L	52.33		I=49.83' (PROP CB-73)	PROP CI
PROP CB-73	4+33	11.1 L	52.32	I=49.78' (GI-4)	I=49.68' (PROP DMH-03)	PROP F&C; OFFSET TOP
PROP CIT-01	4+67	12.8 R	52.01	I=49.39' (PROP DMH-03) I=49.39' (PROP CB-04)	I=49.39' (OUTLET)	R&S F&G; PROP F&C; RMDL
PROP DMH-03	4+68	4.1 R	52.19	I=49.47' (PROP DMH-04) I=49.47' (PROP CB-03) I=49.47' (PROP CB-73)	I=49.47' (PROP CIT-01)	
PROP DMH-04	6+40	4.2 R	55.12	I=51.22' (PROP CB-05) I=51.22' (PROP CB-06)	I=51.12' (PROP DMH-03)	

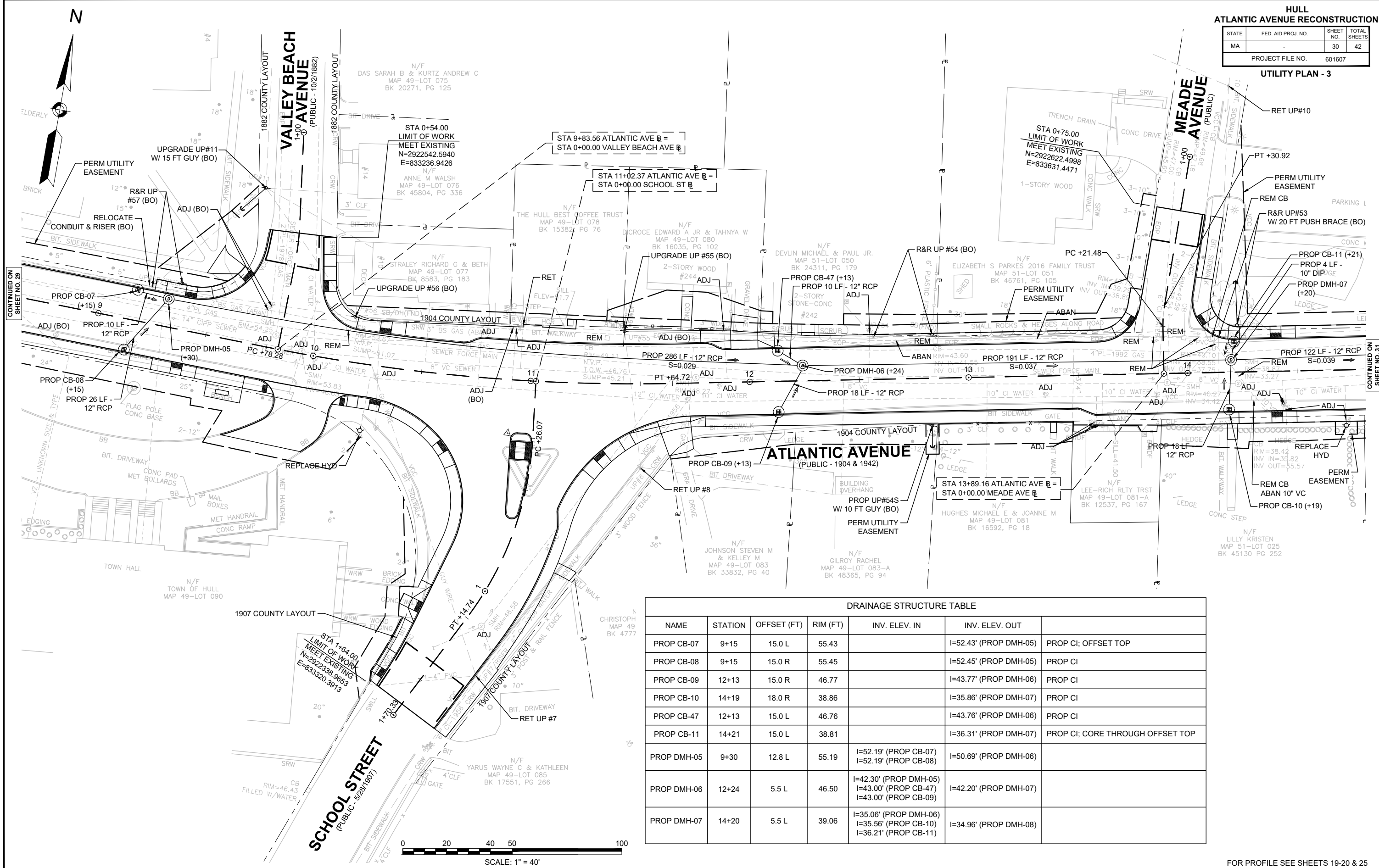


FOR PROFILE SEE SHEET 19 & 25

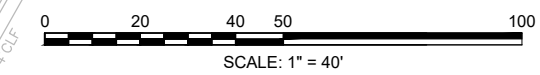
**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	42
PROJECT FILE NO.		601607	

**UTILITY PLAN - 3**



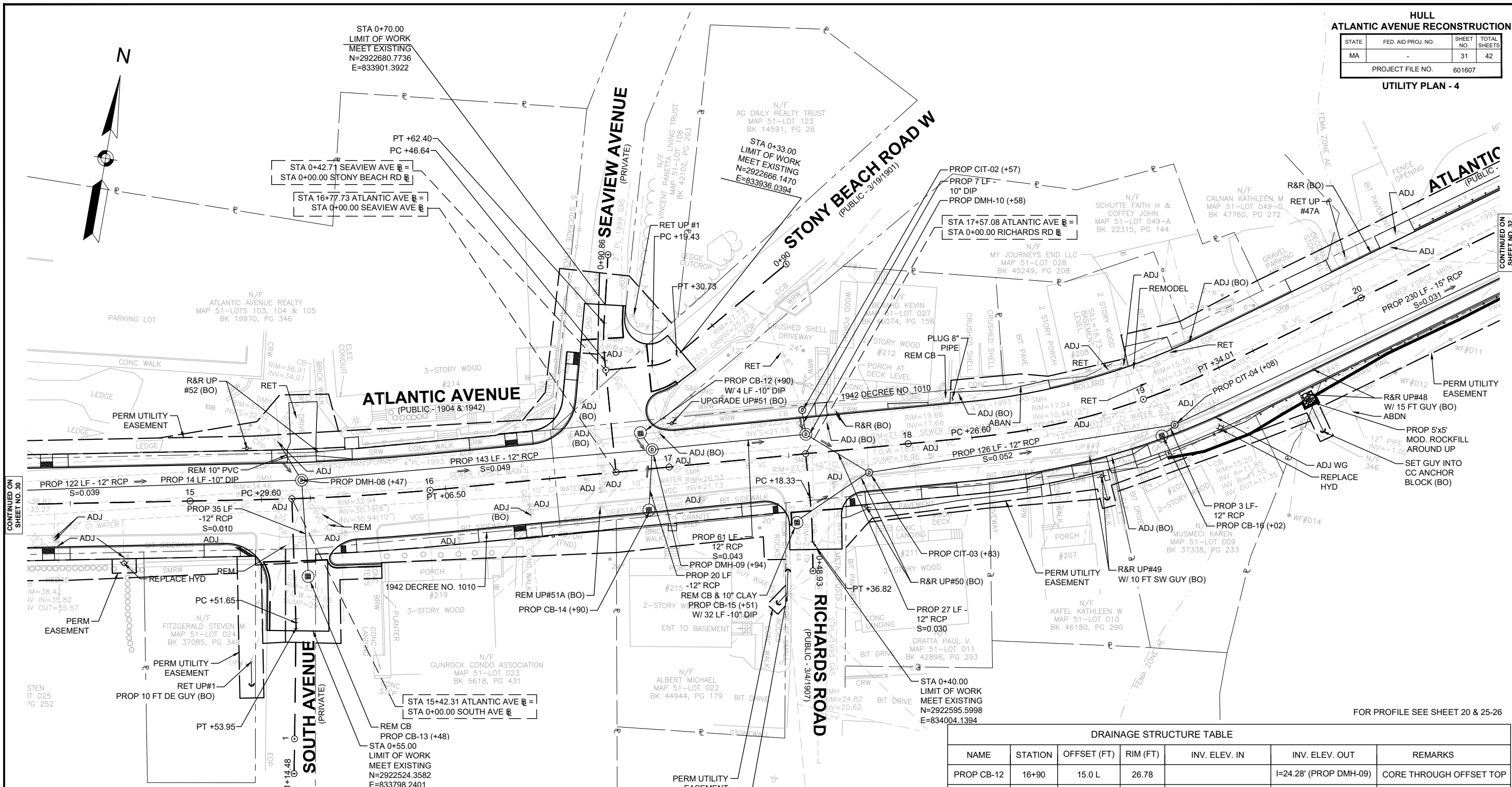
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	
PROP CB-07	9+15	15.0 L	55.43		I=52.43' (PROP DMH-05)	PROP CI; OFFSET TOP
PROP CB-08	9+15	15.0 R	55.45		I=52.45' (PROP DMH-05)	PROP CI
PROP CB-09	12+13	15.0 R	46.77		I=43.77' (PROP DMH-06)	PROP CI
PROP CB-10	14+19	18.0 R	38.86		I=35.86' (PROP DMH-07)	PROP CI
PROP CB-07	12+13	15.0 L	46.76		I=43.76' (PROP DMH-06)	PROP CI
PROP CB-11	14+21	15.0 L	38.81		I=36.31' (PROP DMH-07)	PROP CI; CORE THROUGH OFFSET TOP
PROP DMH-05	9+30	12.8 L	55.19	I=52.19' (PROP CB-07) I=52.19' (PROP CB-08)	I=50.69' (PROP DMH-06)	
PROP DMH-06	12+24	5.5 L	46.50	I=42.30' (PROP DMH-05) I=43.00' (PROP CB-07) I=43.00' (PROP CB-09)	I=42.20' (PROP DMH-07)	
PROP DMH-07	14+20	5.5 L	39.06	I=35.06' (PROP DMH-06) I=35.56' (PROP CB-10) I=36.21' (PROP CB-11)	I=34.96' (PROP DMH-08)	



FOR PROFILE SEE SHEETS 19-20 & 25

CONTINUED ON SHEET NO. 29

CONTINUED ON SHEET NO. 31

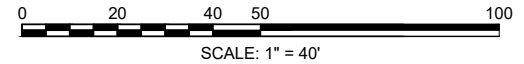


Continued on  
 SHEET NO. 30

Continued on  
 SHEET NO. 32

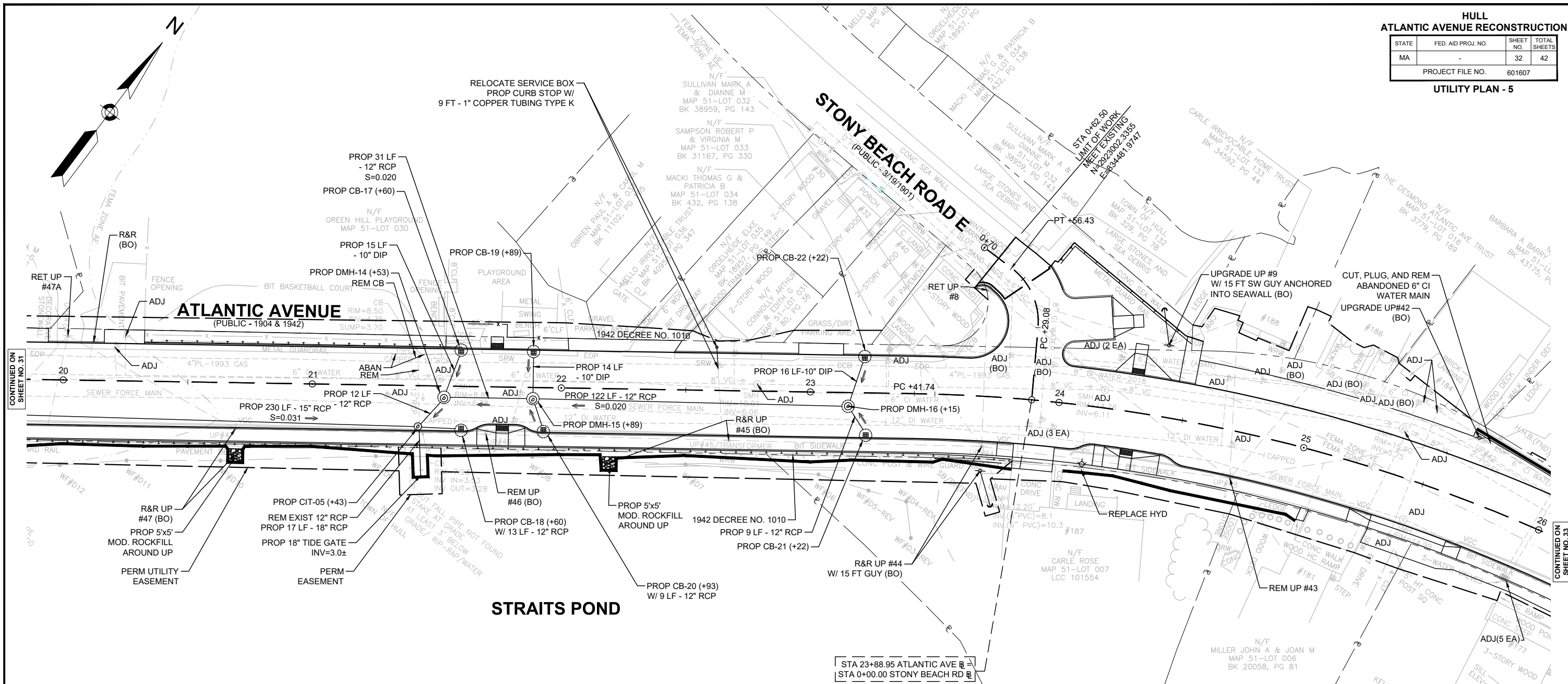
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP DMH-08	15+47	7.6 L	33.68	I=31.18' (EXIST DMH) I=29.39' (PROP CB-13) I=29.29' (PROP DMH-07)	I=29.19' (PROP DMH-09)	
PROP DMH-09	16+94	7.9 L	26.71	I=22.14' (PROP DMH-08) I=23.21' (PROP CB-14) I=24.00' (PROP CB-12)	I=22.04' (PROP DMH-10)	
PROP DMH-10	17+58	8.0 L	23.41	I=20.66' (PROP CIT-02) I=19.41' (PROP DMH-09)	I=19.31' (PROP CIT-03)	

NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-12	16+90	15.0 L	26.78		I=24.28' (PROP DMH-09)	CORE THROUGH OFFSET TOP
PROP CB-13	15+48	32.5 R	33.24		I=29.74' (PROP DMH-08)	
PROP CB-14	16+90	18.0 R	26.72		I=23.72' (PROP DMH-09)	PROP CI
PROP CB-15	17+51	27.9 R	23.50		I=21.00' (PROP CIT-03)	PROP CI; OFFSET TOP
PROP CB-16	19+02	18.0 R	15.38		I=11.88' (PROP CIT-04)	PROP CI
PROP CIT-02	17+57	18.2 L	23.67	I=21.15' (EXIST CB)	I=21.05' (PROP DMH-10)	R&S F&G; PROP F&C
PROP CIT-03	17+83	10.4 R	22.05	I=18.51' (PROP DMH-10) I=18.51' (PROP CB-15)	I=18.41' (PROP CIT-04)	R&S F&G; PROP F&C
PROP CIT-04	19+08	14.5 R	15.09	I=11.45' (PROP CIT-03) I=11.85' (PROP CB-16) I=11.55' (EXIST CB)	I=11.35' (PROP CIT-05)	R&S F&G; PROP F&C



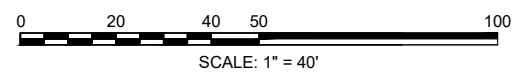
FOR PROFILE SEE SHEET 20 & 25-26





NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-17	21+60	15.0 L	8.50		I=6.00' (PROP DMH-14)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-18	21+60	18.0 R	8.44		I=4.94' (PROP DMH-14)	OFFSET TOP
PROP CB-19	21+89	15.0 L	8.59		I=6.09' (PROP DMH-15)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-20	21+93	18.0 R	8.56		I=5.56' (PROP DMH-15)	OFFSET TOP
PROP CB-21	23+22	18.0 R	11.12		I=8.12' (PROP DMH-16)	PROP CI
PROP CB-22	23+22	15.0 L	11.43		I=8.93' (PROP DMH-16)	PROP CI; CORE THROUGH OFFSET TOP

NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CIT-05	21+43	16.3 R	8.52	I=3.53' (PROP DMH-14) I=4.27' (PROP CIT-04) I=4.68' (PROP CB-18)	I=3.30' (OUTLET)	R&S F&G; PROP F&C; RMDL
PROP DMH-14	21+53	4.5 R	8.71	I=4.78' (PROP CB-17) I=3.91' (PROP DMH-15)	I=3.81' (PROP CIT-05)	OFFSET TOP
PROP DMH-15	21+89	4.5 R	8.79	I=5.24' (PROP CB-19) I=4.74' (PROP CB-20) I=4.63' (PROP DMH-16)	I=4.53' (PROP DMH-14)	OFFSET TOP
PROP DMH-16	23+15	5.5 R	11.17	I=8.17' (PROP CB-22) I=8.00' (PROP CB-21)	I=7.07' (PROP DMH-15)	



FOR PROFILE SEE SHEETS 20-21 & 26

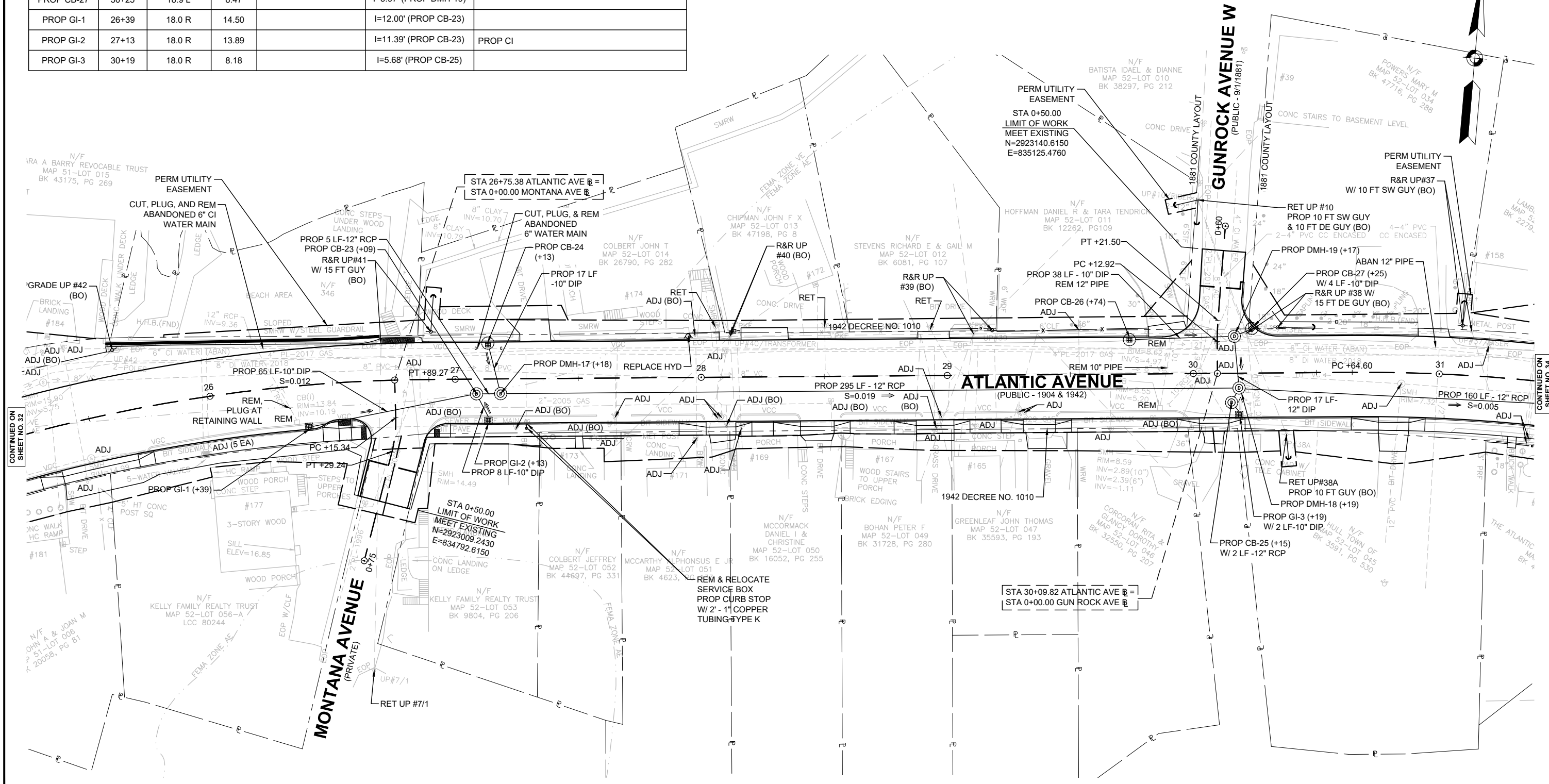


**UTILITY PLAN - 6**



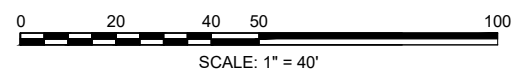
DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-23	27+09	6.0 R	14.19	I=11.19' (PROP GI-1) I=11.23' (PROP GI-2)	I=11.09' (PROP DMH-17)	WITH F&C
PROP CB-24	27+13	15.0 L	13.97		I=11.47' (PROP DMH-17)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-25	30+15	12.0 R	8.34	I=5.60' (PROP GI-3)	I=5.34' (PROP DMH-18)	WITH F&C
PROP CB-26	29+74	15.0 L	8.85		I=6.35' (PROP DMH-19)	PROP CI
PROP CB-27	30+25	18.9 L	8.47		I=5.97' (PROP DMH-19)	
PROP GI-1	26+39	18.0 R	14.50		I=12.00' (PROP CB-23)	
PROP GI-2	27+13	18.0 R	13.89		I=11.39' (PROP CB-23)	PROP CI
PROP GI-3	30+19	18.0 R	8.18		I=5.68' (PROP CB-25)	

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP DMH-17	27+18	6.0 R	14.06	I=10.99' (PROP CB-23) I=11.05' (PROP CB-24)	I=10.06' (PROP DMH-18)	
PROP DMH-18	30+19	6.0 R	8.42	I=4.42' (PROP DMH-17) I=5.26' (PROP DMH-19) I=5.00' (PROP CB-25)	I=3.56' (PROP DMH-20)	
PROP DMH-19	30+17	15.0 L	8.26	I=5.53' (PROP CB-26) I=5.63' (PROP CB-27)	I=5.43' (PROP DMH-18)	



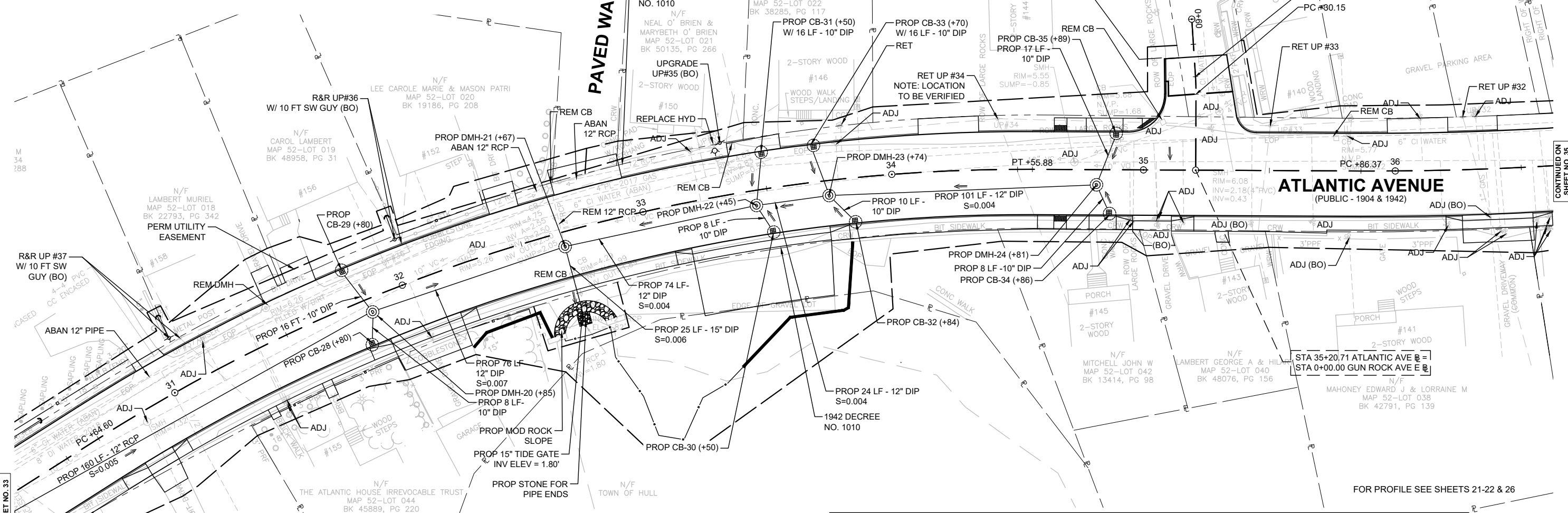
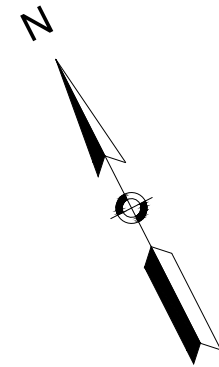
CONTINUED ON SHEET NO. 32

CONTINUED ON SHEET NO. 34



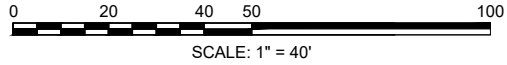
FOR PROFILE SEE SHEET 21 & 26

NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP DMH-20	31+85	5.5 R	6.03	I=2.85' (PROP CB-28) I=2.85' (PROP CB-29) I=2.69' (PROP DMH-18)	I=2.59' (PROP DMH-21)	
PROP DMH-21	32+67	5.8 R	5.22	I=2.03' (PROP DMH-20) I=2.03' (PROP DMH-22)	I=1.95' (OUTLET)	
PROP DMH-22	33+45	6.0 R	5.05	I=2.37' (PROP CB-30) I=2.37' (PROP CB-31) I=2.37' (PROP DMH-23)	I=2.32' (PROP DMH-21)	
PROP DMH-23	33+74	6.0 R	5.01	I=2.51' (PROP CB-32) I=2.51' (PROP CB-33) I=2.51' (PROP DMH-24)	I=2.46' (PROP DMH-22)	
PROP DMH-24	34+81	6.0 R	5.61	I=2.95' (PROP CB-34) I=2.95' (PROP CB-35)	I=2.90' (PROP DMH-23)	



**STRAITS POND**

NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-28	31+80	18.0 R	5.59		I=2.95' (PROP DMH-20)	CORE THROUGH OFFSET TOP
PROP CB-29	31+80	15.0 L	6.01		I=3.51' (PROP DMH-20)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-30	33+50	18.0 R	4.45		I=2.41' (PROP DMH-22)	CORE THROUGH OFFSET TOP
PROP CB-31	33+50	15.0 L	4.87		I=2.45' (PROP DMH-22)	CORE THROUGH OFFSET TOP
PROP CB-32	33+84	18.0 R	4.75		I=2.54' (PROP DMH-23)	CORE THROUGH OFFSET TOP
PROP CB-33	33+70	15.0 L	4.89		I=2.56' (PROP DMH-23)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-34	34+86	18.0 R	5.40		I=2.99' (PROP DMH-24)	CORE THROUGH OFFSET TOP
PROP CB-35	34+89	15.0 L	5.48		I=3.03' (PROP DMH-24)	CORE THROUGH OFFSET TOP



CONTINUED ON SHEET NO. 35

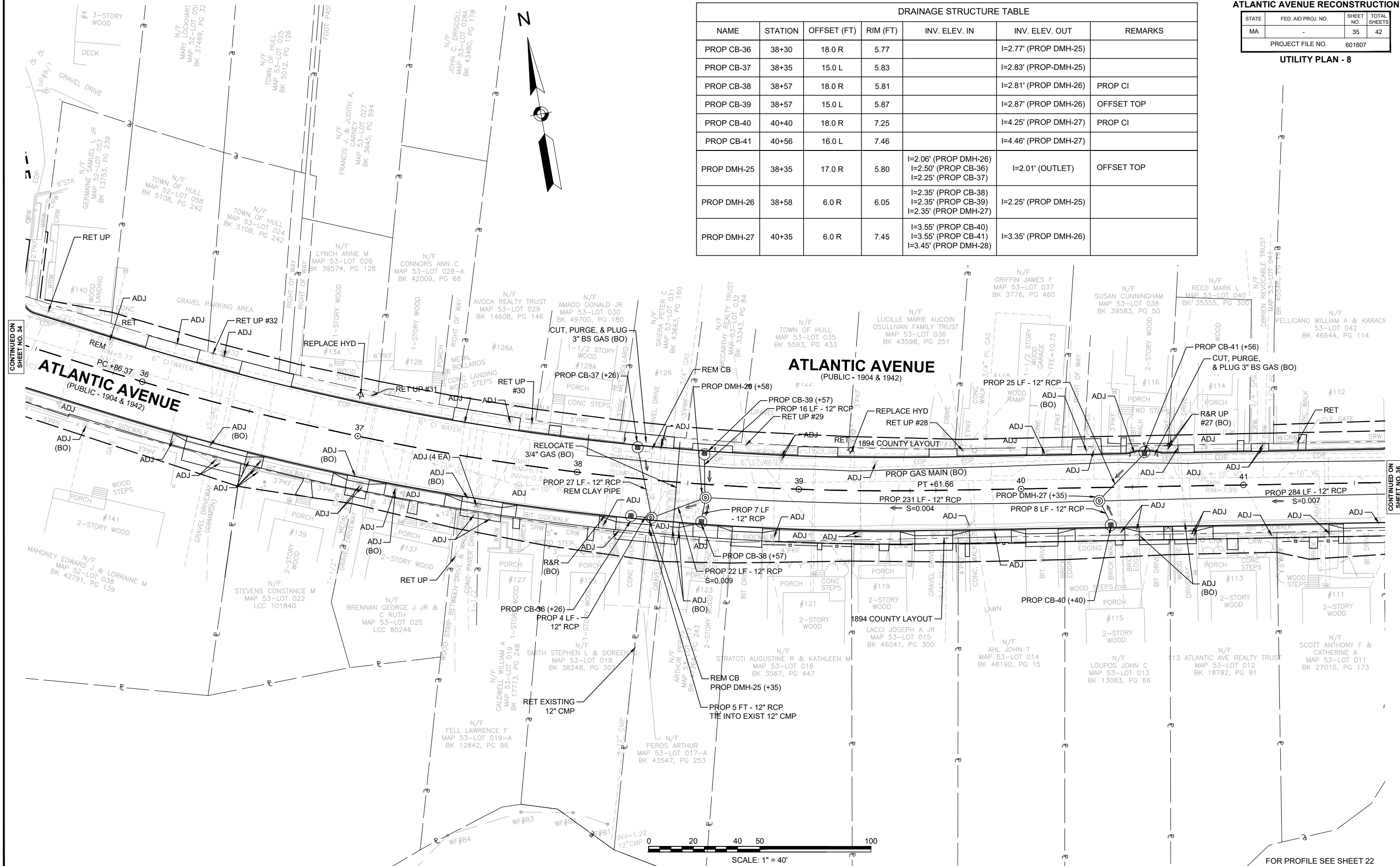
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**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	42
PROJECT FILE NO.		601607	

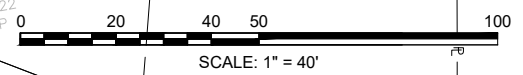
**UTILITY PLAN - 8**

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-36	38+30	18.0 R	5.77		I=2.77' (PROP DMH-25)	
PROP CB-37	38+35	15.0 L	5.83		I=2.83' (PROP DMH-25)	
PROP CB-38	38+57	18.0 R	5.81		I=2.81' (PROP DMH-26)	PROP CI
PROP CB-39	38+57	15.0 L	5.87		I=2.87' (PROP DMH-26)	OFFSET TOP
PROP CB-40	40+40	18.0 R	7.25		I=4.25' (PROP DMH-27)	PROP CI
PROP CB-41	40+56	16.0 L	7.46		I=4.46' (PROP DMH-27)	
PROP DMH-25	38+35	17.0 R	5.80	I=2.06' (PROP DMH-26) I=2.50' (PROP CB-36) I=2.25' (PROP CB-37)	I=2.01' (OUTLET)	OFFSET TOP
PROP DMH-26	38+58	6.0 R	6.05	I=2.35' (PROP CB-38) I=2.35' (PROP CB-39) I=2.35' (PROP DMH-27)	I=2.25' (PROP DMH-25)	
PROP DMH-27	40+35	6.0 R	7.45	I=3.55' (PROP CB-40) I=3.55' (PROP CB-41) I=3.45' (PROP DMH-28)	I=3.35' (PROP DMH-26)	



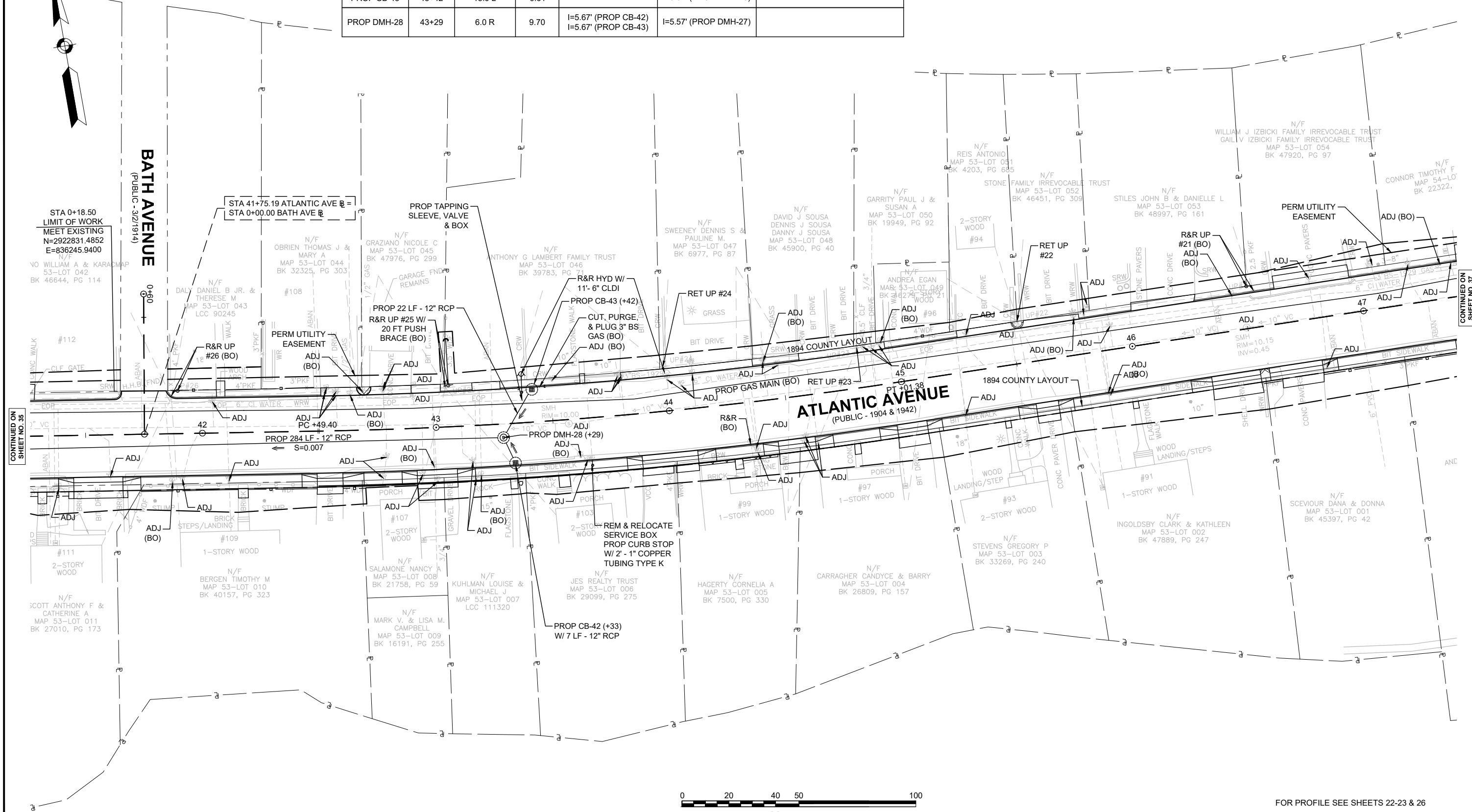
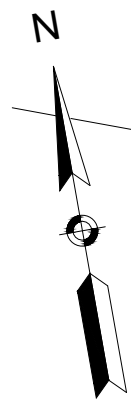
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CONTINUED ON SHEET NO. 36



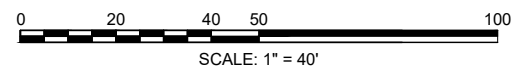
FOR PROFILE SEE SHEET 22

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-42	43+33	18.0 R	9.49		I=6.49' (PROP DMH-28)	PROP CI
PROP CB-43	43+42	15.0 L	9.61		I=6.61' (PROP DMH-28)	
PROP DMH-28	43+29	6.0 R	9.70	I=5.67' (PROP CB-42) I=5.67' (PROP CB-43)	I=5.57' (PROP DMH-27)	



CONTINUED ON SHEET NO. 35

CONTINUED ON SHEET NO. 37

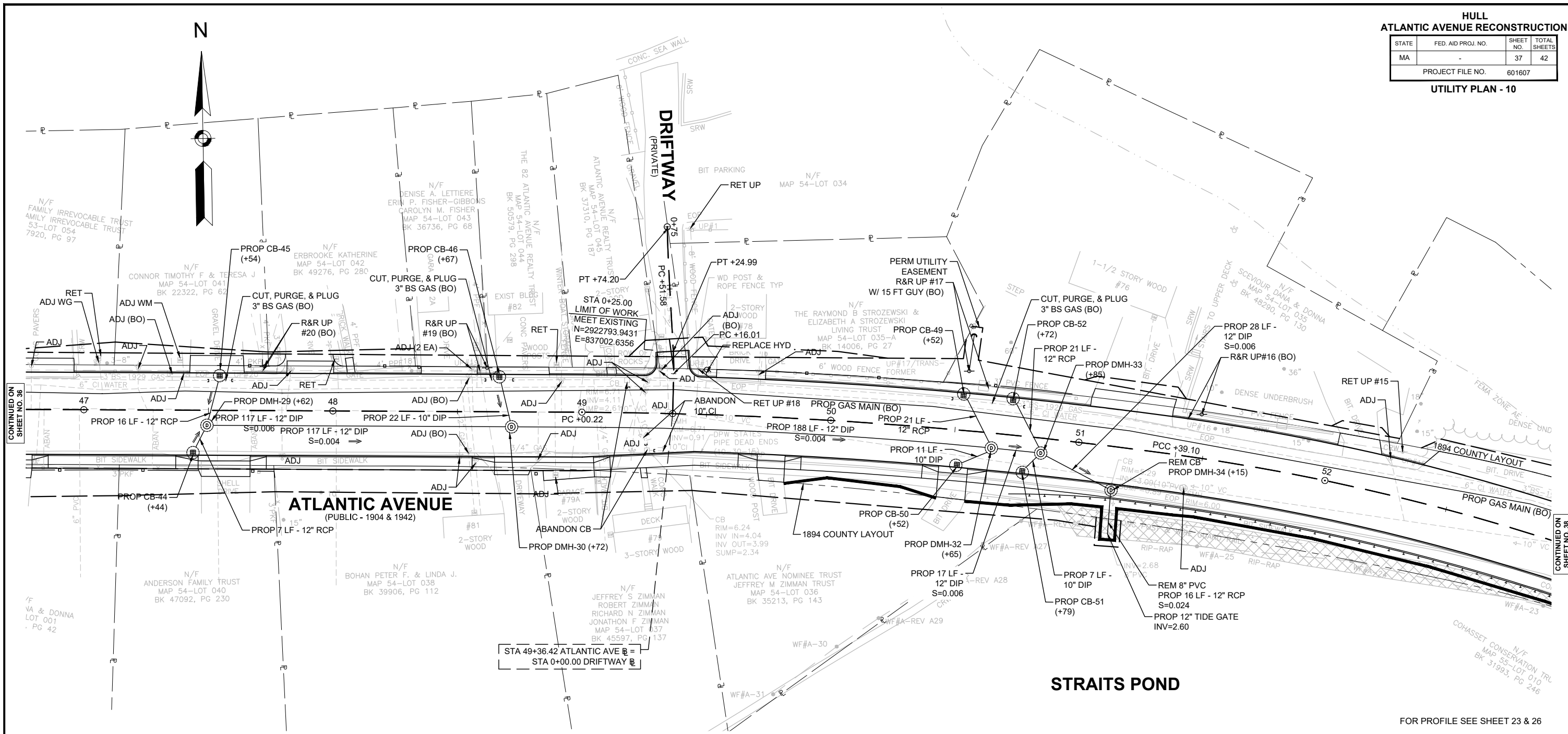


FOR PROFILE SEE SHEETS 22-23 & 26

**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	42
PROJECT FILE NO.		601607	

**UTILITY PLAN - 10**



STA 49+36.42 ATLANTIC AVE @  
STA 0+00.00 DRIFTWAY @

**STRAITS POND**

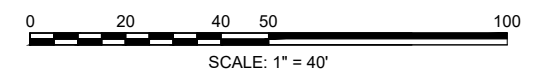
FOR PROFILE SEE SHEET 23 & 26

**DRAINAGE STRUCTURE TABLE**

NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-44	47+44	18.0 R	8.56	I=5.56' (PROP DMH-29)		
PROP CB-45	47+54	15.0 L	8.44	I=5.44' (PROP DMH-29)		
PROP CB-46	48+67	15.0 L	7.28	I=4.53' (PROP DMH-30)	PROP CI, CORE THROUGH OFFSET TOP	
PROP CB-49	50+52	15.0 L	6.53	I=3.53' (PROP DMH-32)	PROP CI; OFFSET TOP	
PROP CB-50	50+52	15.0 R	5.94	I=3.44' (PROP DMH-32)	CORE THROUGH OFFSET TOP	
PROP CB-51	50+79	15.0 R	5.96	I=3.46' (PROP DMH-33)	PROP CI, CORE THROUGH OFFSET TOP	
PROP CB-52	50+72	15.0 L	6.54	I=3.54' (PROP DMH-33)	PROP CI, OFFSET TOP	

**DRAINAGE STRUCTURE TABLE**

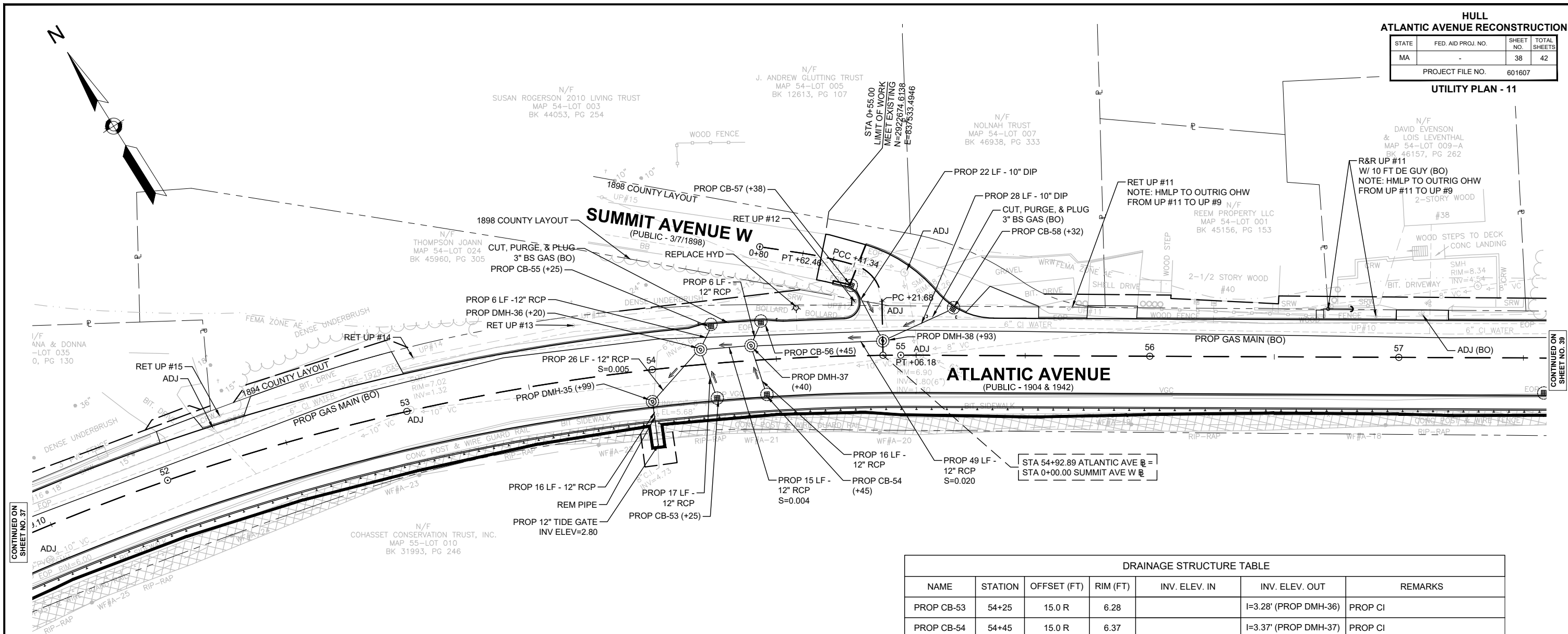
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP DMH-29	47+62	6.0 R	8.68	I=5.21' (PROP CB-44) I=5.12' (PROP CB-45)	I=4.50' (PROP DMH-30)	
PROP DMH-30	48+72	10.0 R	7.07	I=4.28' (PROP DMH-29) I=4.28' (PROP CB-46)	I=4.23' (PROP DMH-32)	
PROP DMH-32	50+65	6.0 R	6.16	I=3.40' (PROP DMH-30) I=3.40' (PROP CB-49) I=3.40' (PROP CB-50)	I=3.35' (PROP DMH-33)	
PROP DMH-33	50+85	6.0 R	6.19	I=3.25' (PROP DMH-32) I=3.25' (PROP CB-51) I=3.25' (PROP CB-52)	I=3.20' (PROP DMH-34)	
PROP DMH-34	51+15	17.5 R	6.58	I=3.03' (PROP DMH-33)	I=2.98' (OULET)	



**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	42
PROJECT FILE NO.		601607	

**UTILITY PLAN - 11**



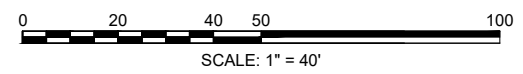
CONTINUED ON  
SHEET NO. 37

CONTINUED ON  
SHEET NO. 39

**STRAITS POND**

**STRAITS POND**

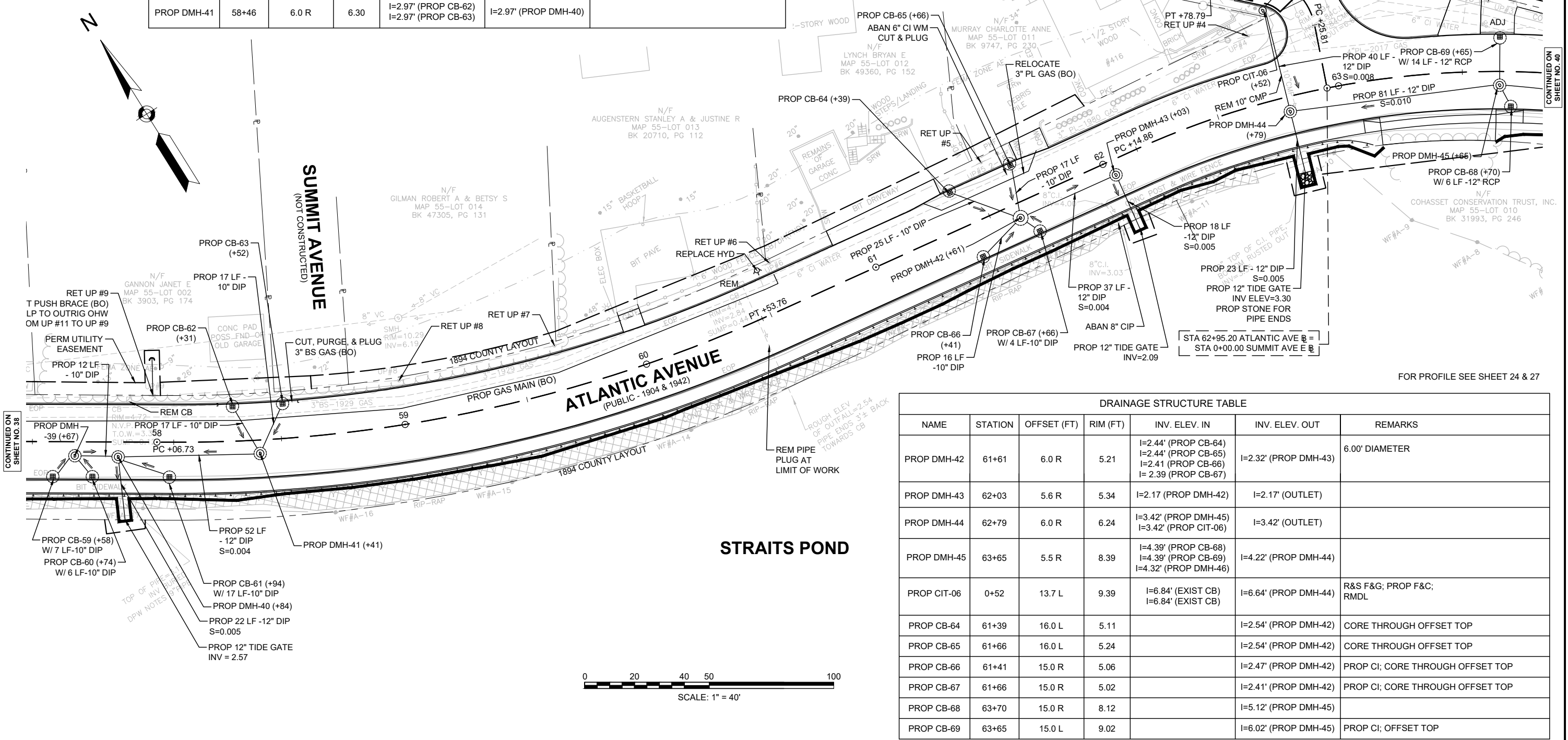
DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-53	54+25	15.0 R	6.28		I=3.28' (PROP DMH-36)	PROP CI
PROP CB-54	54+45	15.0 R	6.37		I=3.37' (PROP DMH-37)	PROP CI
PROP CB-55	54+25	16.0 L	7.23		I=4.23' (PROP DMH-36)	PROP CI; OFFSET TOP
PROP CB-56	54+45	16.0 L	7.31		I=4.31' (PROP DMH-37)	PROP CI; OFFSET TOP
PROP CB-57	0+38	9.0 L	9.61		I=7.11' (PROP DMH-38)	PROP CI
PROP CB-58	55+21	19.5 L	7.76		I=5.26' (PROP DMH-38)	PROP OFFSET TOP
PROP DMH-35	53+99	12.6 R	6.39	I=2.95' (PROP DMH-36)	I=2.95' (OUTLET)	
PROP DMH-36	54+20	6.0 L	7.08	I=3.18' (PROP DMH-37) I=3.18' (PROP CB-53) I=3.58' (PROP CB-55)	I=3.08' (PROP DMH-35)	
PROP DMH-37	54+40	6.0 L	7.14	I=3.39' (PROP DMH-38) I=3.31' (PROP CB-54) I=3.64' (PROP CB-56)	I=3.24' (PROP DMH-36)	
PROP DMH-38	54+93	6.0 L	7.37	I=4.37' (PROP CB-57) I=4.37' (PROP CB-58)	I=4.27' (PROP DMH-37)	



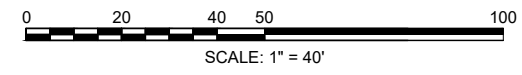
FOR PROFILE SEE SHEETS 23-24 & 27



DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-59	57+58	15.0 R	6.07		I=3.57' (PROP DMH-39)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-60	57+74	15.0 R	6.05		I=3.55' (PROP DMH-39)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-61	57+94	15.0 R	6.14		I=3.14' (PROP DMH-40)	PROP CI
PROP CB-62	58+31	15.0 L	5.37		I=3.04' (PROP DMH-41)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-63	58+52	15.0 L	5.50		I=3.08' (PROP DMH-41)	PROP CI; CORE THROUGH OFFSET TOP
PROP DMH-39	57+67	5.5 R	6.07	I=3.53' (PROP CB-59) I=3.50' (PROP CB-60)	I=3.50' (PROP DMH-40)	
PROP DMH-40	57+84	6.0 R	6.08	I=3.00' (PROP CB-61) I=3.00' (PROP DMH-39) I=2.76' (PROP DMH-41)	I=2.68' (OUTLET)	
PROP DMH-41	58+46	6.0 R	6.30	I=2.97' (PROP CB-62) I=2.97' (PROP CB-63)	I=2.97' (PROP DMH-40)	



DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP DMH-42	61+61	6.0 R	5.21	I=2.44' (PROP CB-64) I=2.44' (PROP CB-65) I=2.41' (PROP CB-66) I=2.39' (PROP CB-67)	I=2.32' (PROP DMH-43)	6.00' DIAMETER
PROP DMH-43	62+03	5.6 R	5.34	I=2.17' (PROP DMH-42)	I=2.17' (OUTLET)	
PROP DMH-44	62+79	6.0 R	6.24	I=3.42' (PROP DMH-45) I=3.42' (PROP CIT-06)	I=3.42' (OUTLET)	
PROP DMH-45	63+65	5.5 R	8.39	I=4.39' (PROP CB-68) I=4.39' (PROP CB-69) I=4.32' (PROP DMH-46)	I=4.22' (PROP DMH-44)	
PROP CIT-06	0+52	13.7 L	9.39	I=6.84' (EXIST CB) I=6.84' (EXIST CB)	I=6.64' (PROP DMH-44)	R&S F&G; PROP F&C; RMDL
PROP CB-64	61+39	16.0 L	5.11		I=2.54' (PROP DMH-42)	CORE THROUGH OFFSET TOP
PROP CB-65	61+66	16.0 L	5.24		I=2.54' (PROP DMH-42)	CORE THROUGH OFFSET TOP
PROP CB-66	61+41	15.0 R	5.06		I=2.47' (PROP DMH-42)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-67	61+66	15.0 R	5.02		I=2.41' (PROP DMH-42)	PROP CI; CORE THROUGH OFFSET TOP
PROP CB-68	63+70	15.0 R	8.12		I=5.12' (PROP DMH-45)	
PROP CB-69	63+65	15.0 L	9.02		I=6.02' (PROP DMH-45)	PROP CI; OFFSET TOP



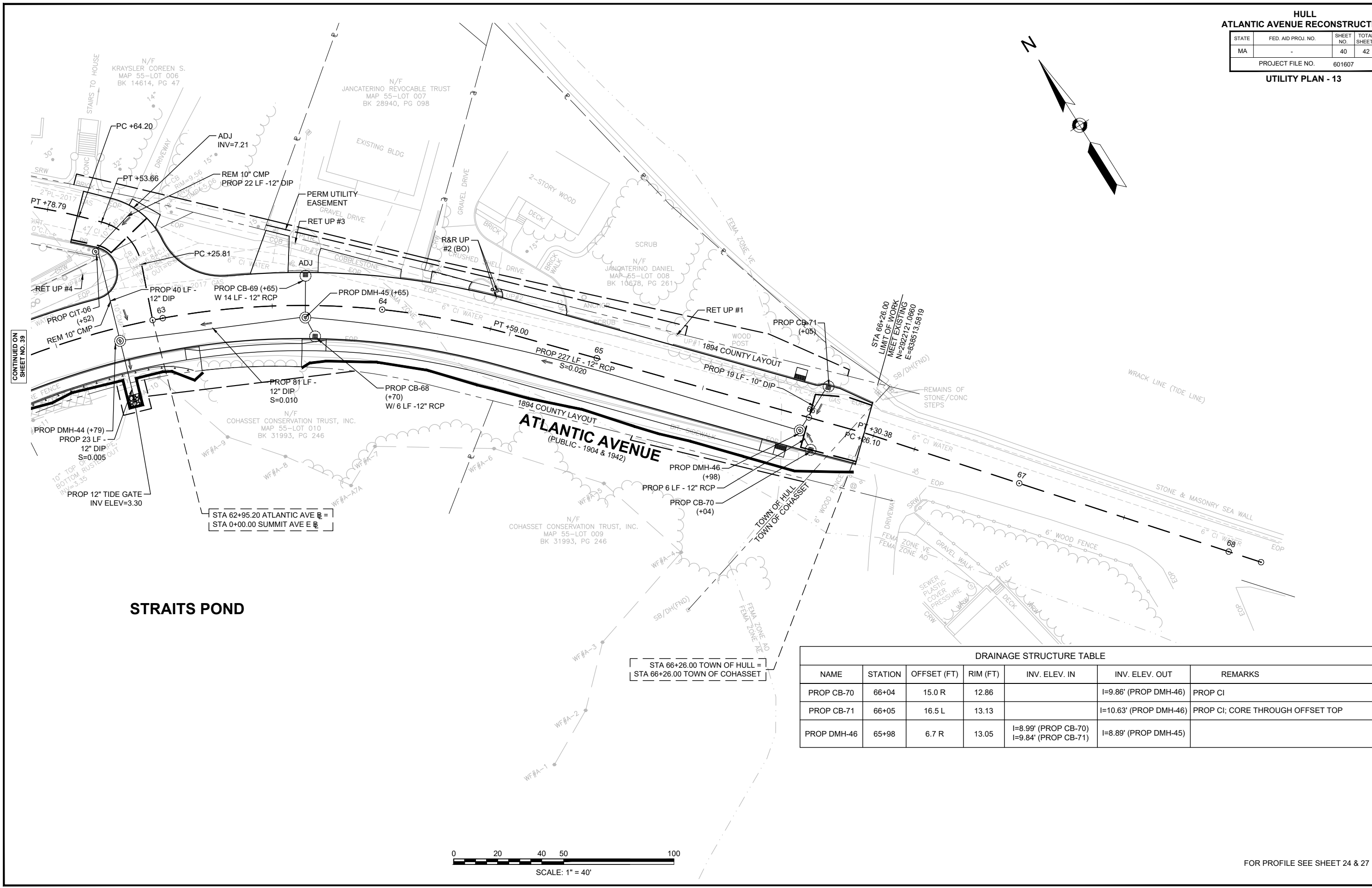
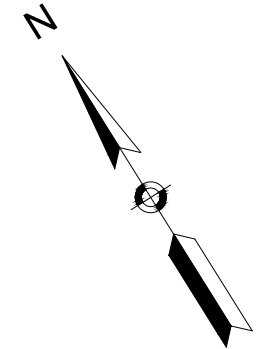
CONTINUED ON SHEET NO. 30

FOR PROFILE SEE SHEET 24 & 27

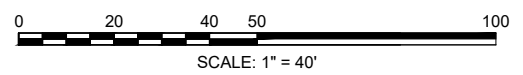
**HULL  
ATLANTIC AVENUE RECONSTRUCTION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	42
PROJECT FILE NO. 601607			

**UTILITY PLAN - 13**



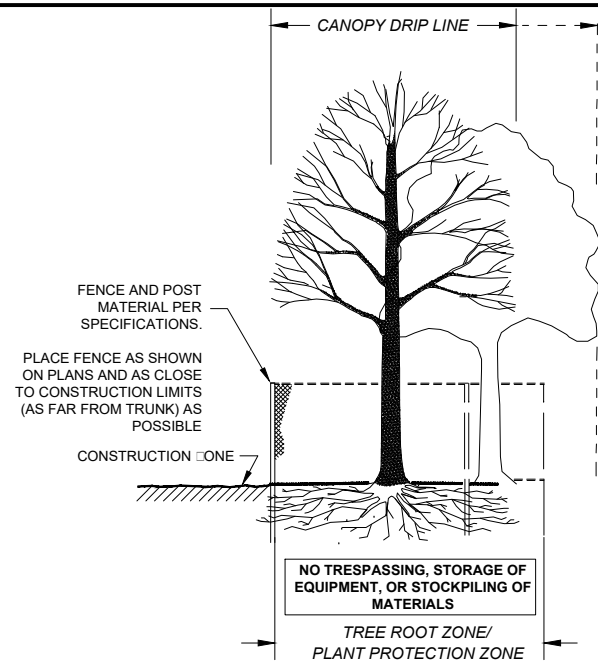
**STRAITS POND**



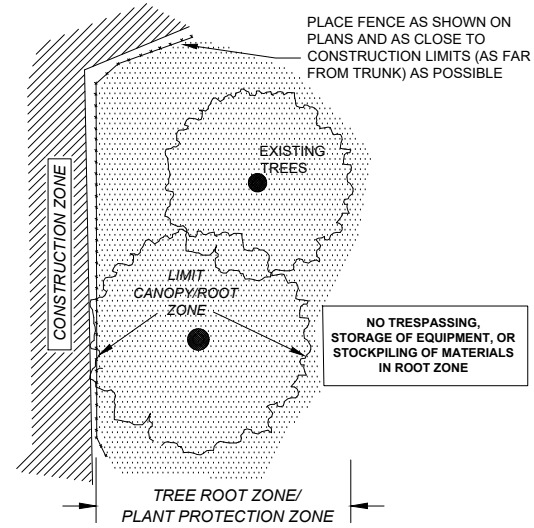
DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET (FT)	RIM (FT)	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
PROP CB-70	66+04	15.0 R	12.86		I=9.86' (PROP DMH-46)	PROP CI
PROP CB-71	66+05	16.5 L	13.13		I=10.63' (PROP DMH-46)	PROP CI; CORE THROUGH OFFSET TOP
PROP DMH-46	65+98	6.7 R	13.05	I=8.99' (PROP CB-70) I=9.84' (PROP CB-71)	I=8.89' (PROP DMH-45)	

FOR PROFILE SEE SHEET 24 & 27

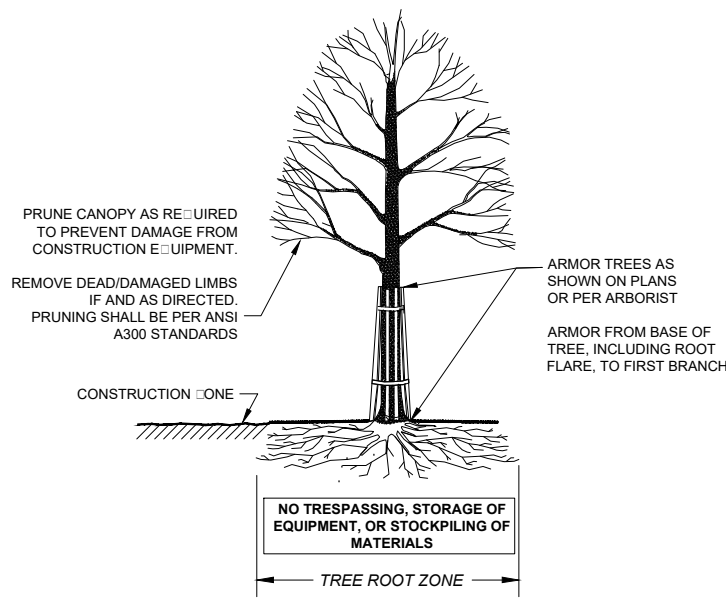




SECTION - FENCE PROTECTION OF ROOT ZONE

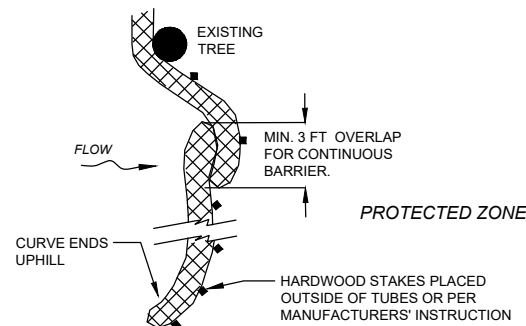


PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



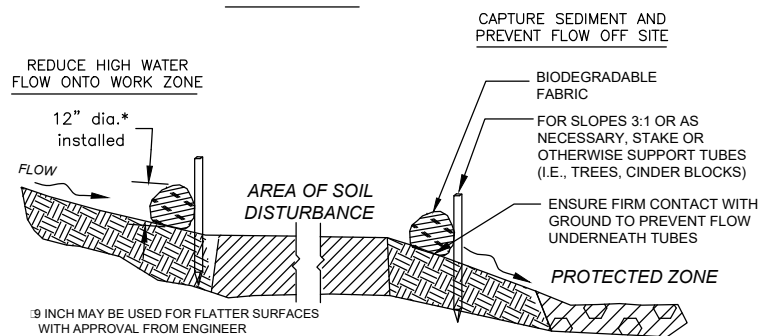
SECTION - TRUNK ARMORING & PRUNING

**TREE PROTECTION – EXISTING TREE(S)**  
NOT TO SCALE



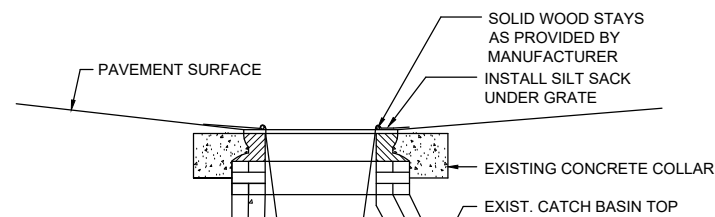
PLACE TUBE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE, ALONG CONTOURS, AND PERPENDICULAR TO FLOW.  
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLAN VIEW



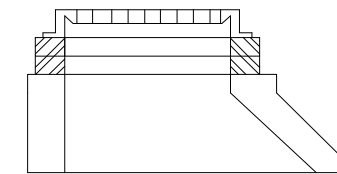
SECTION

**SEDIMENT CONTROL BARRIER – COMPOST FILTER TUBE**  
NOT TO SCALE



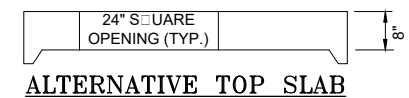
NOTES:  
1. REMOVE ACCUMULATED SEDIMENTS AS REQUIRED TO MAINTAIN DRAINAGE.  
2. INSPECT FABRIC EVERY WEEK DURING CONSTRUCTION.

**SILT SACK**  
NOT TO SCALE

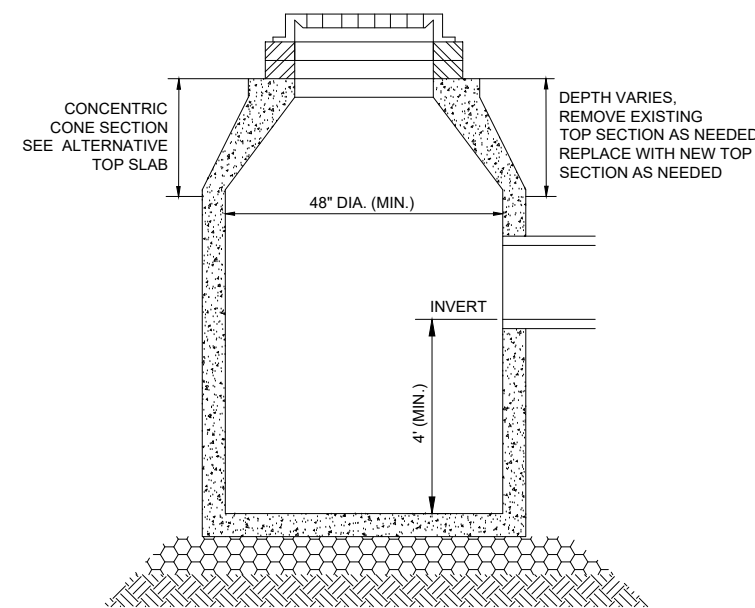


NOTES:  
1. BASED ON ACTUAL, FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED

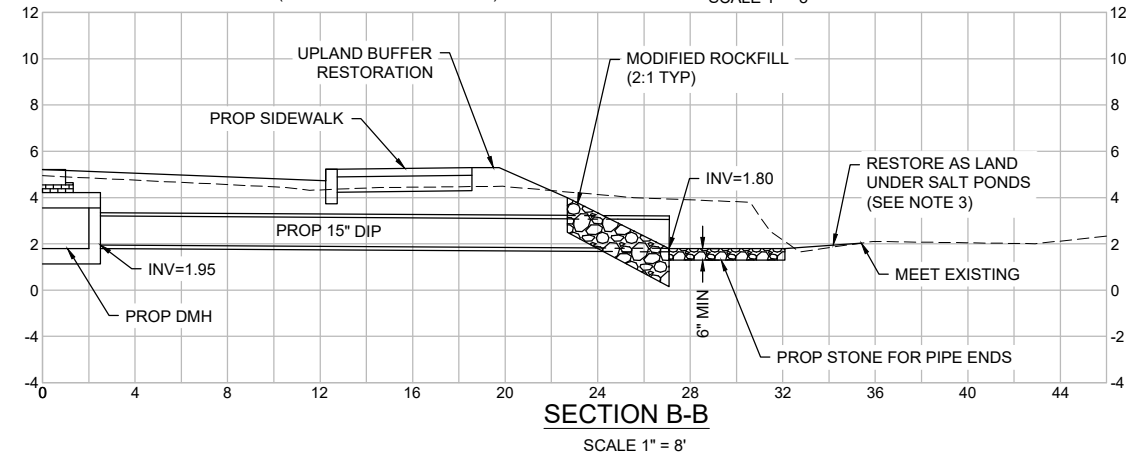
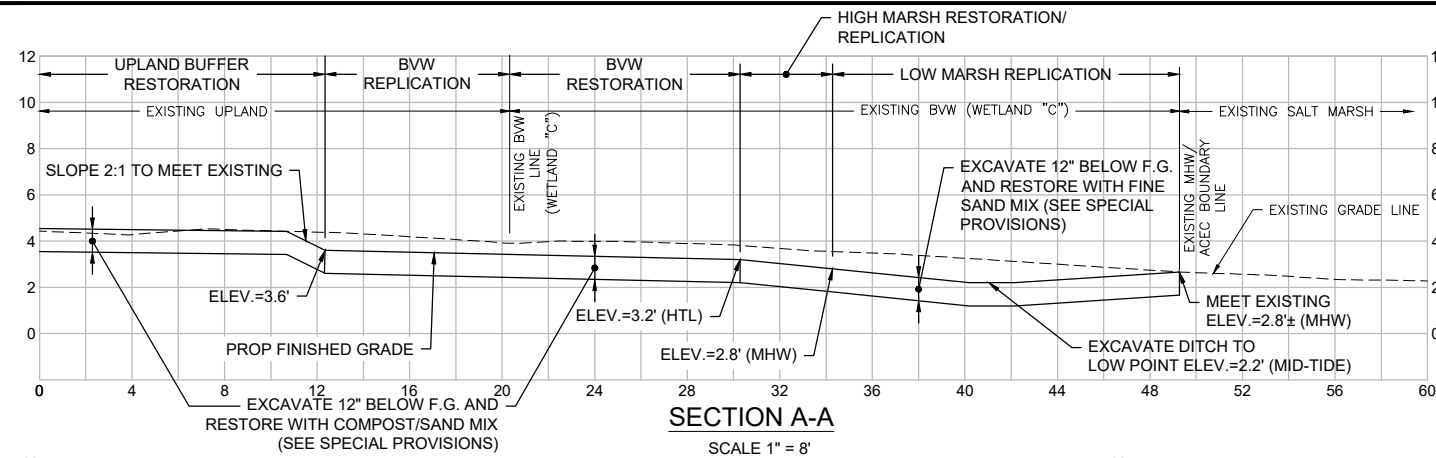
**ALTERNATIVE ECCENTRIC CONE SECTION**



**ALTERNATIVE TOP SLAB**



**CATCH BASIN DETAIL**  
NOT TO SCALE



PLANT LIST TABLE							
SYMBOL	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING	TARGET ELEV.	PLANTING AREA
<b>SALT MARSH PLANTS</b>							
SPAL	250	SMOOTH CORDGRASS	<i>Spartina alterniflora</i>	2" PEAT POT	12" O.C.	2.2' - 2.8'	227 SF
SPPA	35	SALTMEADOW CORDGRASS	<i>Spartina patens</i>	2" PEAT POT	12" O.C.	2.8' - 3.2'	100 SF
DISP	35	SEASHORE SALTGRASS	<i>Distichlis spicata</i>	2" PEAT POT	12" O.C.	2.8' - 3.2'	100 SF
JUGE	35	SALTMEADOW RUSH	<i>Juncus gerardii</i>	2" PEAT POT	12" O.C.	2.8' - 3.2'	100 SF
IVFR	15	HIGH-TIDE BUSH/ MARSH ELDER	<i>Iteadum</i>	12-18"; #1 C.G.	5' O.C.	2.8' - 3.2'	25 LF
<b>BORDERING VEGETATED WETLAND PLANTS</b>							
PAVI	35	SWITCHGRASS	<i>Panicum virgatum</i>	#1 C.G.	3' O.C.	3.2' - 3.6'	634 SF
SOSE	35	SEASIDE GOLDENROD	<i>Solidago sempervirens</i>	#1 C.G.	3' O.C.	3.2' - 3.6'	634 SF
<b>UPLAND BUFFER PLANTS</b>							
MOPE	10	NORTHERN BAYBERRY	<i>Morella pensylvanica</i>	12-18"; #1 C.G.	5' O.C.	3.6'+	250 SF
ROVI	108	VIRGINIA ROSE	<i>Rosa virginia</i>	12-18"; #1 C.G.	3' O.C.	3.6'+	980 SF
PRMA	27	BEACH PLUM	<i>Prunus maritima</i>	3-6"; #3 C.G.	5' O.C.	3.6'+	675 SF
PAVI	10	SWITCHGRASS	<i>Panicum virgatum</i>	#1 C.G.	3' O.C.	3.6'+	180 SF
SOSE	10	SEASIDE GOLDENROD	<i>Solidago sempervirens</i>	#1 C.G.	3' O.C.	3.6'+	180 SF
Seed	2 lb	N.E. COASTAL SALT TOLERANT GRASS MIX	VARIOUS SPECIES	1 lb / 1,250 SF	-	3.6'+	2,080 SF

INDIVIDUALS SHOULD BE PLANTED ALONG THE SALT MARSH REPLICATION AREA RACK LINE AT 2.8' - 3.2' ELEV.  
 BEACH PLUM SHALL NOT BE SURROUNDED BY SWITCHGRASS

- GENERAL NOTES:**
- CONTRACTOR SHALL PROVIDE INVASIVE PLANT CONTROL WITHIN AREA OF RESTORATION/REPLICATION.
  - SEE PLANTING SCHEMATIC FOR LOCATION OF UPLAND & BVW INDIVIDUAL PLANTS. LOCATION OF SALT MARSH INDIVIDUAL PLANTS SHALL BE DETERMINED IN THE FIELD BY THE WETLAND SPECIALIST AND MASSDOT. ALL POT/CONTAINER PLANTS SHALL BE PLANTED IN STAGGERED ROWS/GRID PATTERN.
  - LAND UNDER SALT POND RESTORATION SHALL CONSIST OF TYPE A SAND BORROW (M1.04.0) UP TO THE PROPOSED FINISHED GRADE. SALT MARSH, BVW, AND UPLAND BUFFER SHALL HAVE 12 INCHES COARSE SAND/ BORROW MATERIAL INSTALLED BELOW THE PROPOSED FINISHED GRADE.
  - CRITICAL ELEVATIONS ARE AS FOLLOWS:
    - BVW BOUNDARY = 3.6'±
    - SALT MARSH BOUNDARY/ HIGH TIDE LINE (TYP) = 3.2'
    - ACEC BOUNDARY/ MEAN HIGH WATER (TYP) = 2.8'
    - MID-TIDE = 2.2'
    - MEAN LOW WATER = 1.6'

**LEGEND**

- X — PROP CONTOUR
- - - - - EXIST CONTOUR
- [Symbol: Dotted pattern] PROP SALT MARSH RESTORATION/ REPLICATION AREA
- [Symbol: Downward arrows] PROP BVW RESTORATION/ REPLICATION AREA
- [Symbol: Diagonal lines] PROP UPLAND BUFFER RESTORATION AREA

