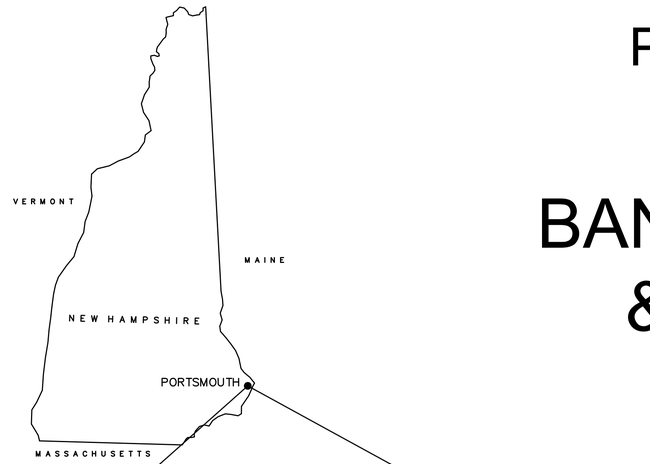
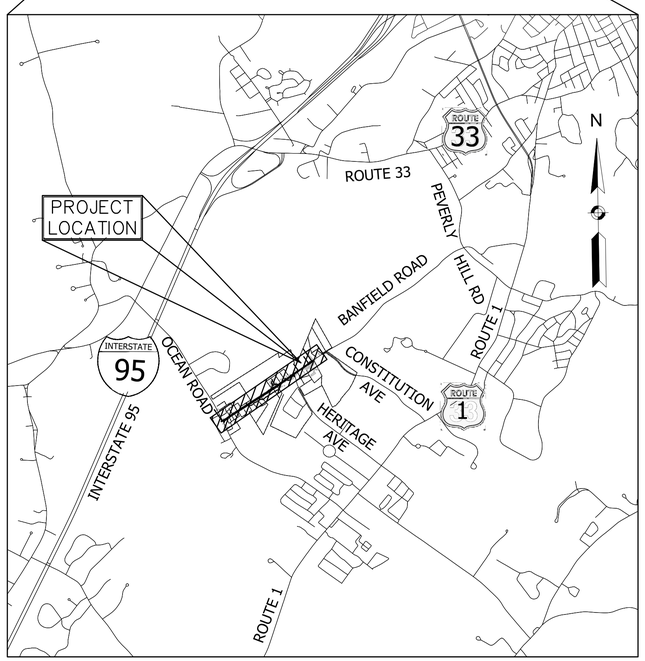
CITY OF PORTSMOUTH
PORTSMOUTH, NEW HAMPSHIRE
CONSTRUCTION DRAWINGS FOR

BANFIELD ROAD IMPROVEMENTS & CULVERT CONSTRUCTION

DESIGN DATA		
BANFIELD ROAD		
AVERAGE DAILY TRAFFIC	2020	5,950
AVERAGE DAILY TRAFFIC	2025	6,250
PERCENT TRUCKS		1.00%
DESIGN SPEED		30 MPH
LENGTH OF PROJECT		3,560 Ft





LOCATION PLAN

1000 0 1000 2000 3000

SCALE: 1" = 1000'

INDEX

THE BANFIELD ROAD IMPROVEMENT PROJECT IS BEING CONSTRUCTED IN MULTIPLE PHASES COINCIDING WITH THE AVAILABLE FUNDING WITHIN THE CITY OF PORTSMOUTH.

ALL THE INCLUDED 62 PLAN SHEETS HAVE THIS BOXED GENERAL SUMMARY NOTE THAT EXPLAINS WHAT IS INCLUDED IN EACH PHASE OF THE OVERALL PROJECT.

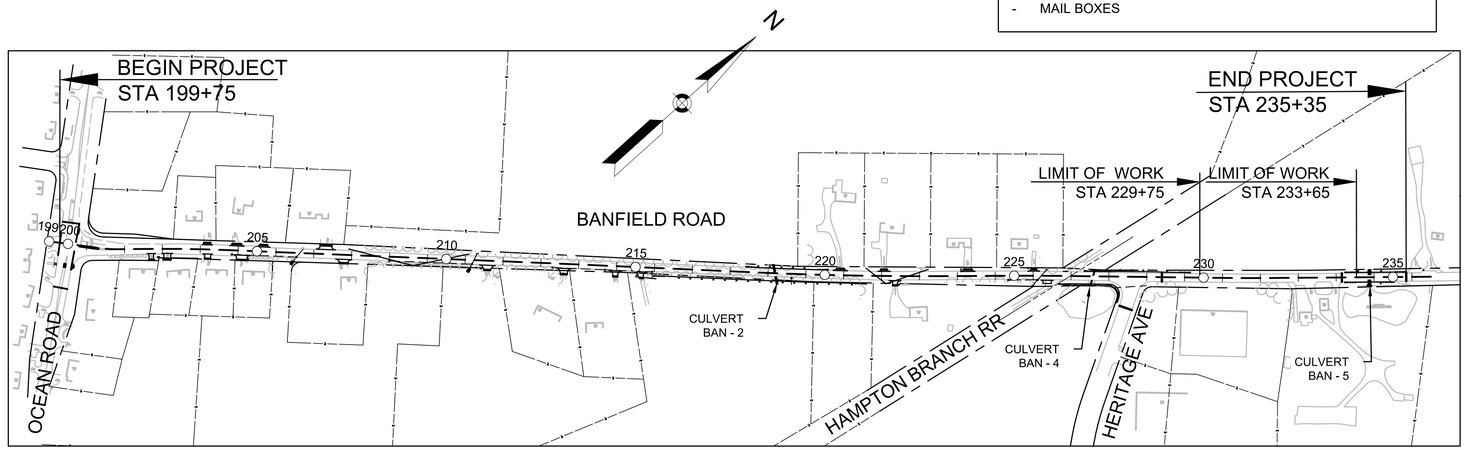
PHASE 1 : BASE PROJECT

- FULL DEPTH PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GAS LINE RELOCATION
- CULVERTS & CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- DRIVEWAY MATCHES ON NORTH SIDE
- GUARDRAIL INSTALLATION

PHASE 2 : ADD ALTERNATE

(THE CONSTRUCTION NOTES ASSOCIATED WITH PHASE 2 ARE DIFFERENTIATED IN THE PLANS WITH A TEXT FRAME.)

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE
- UTILITY POLE RELOCATION
- DRIVEWAY MATCHES ON SOUTH SIDE
- STONE WALL RELOCATIONS
- LANDSCAPING AT VARIOUS LOCATIONS
- MAIL BOXES



VICINITY MAP

0 200 400 600 800

SCALE: 1" = 200'

TEC, Inc.

146 Dascomb Road
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169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

www.TheEngineeringCorp.com

DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	AS SHOWN

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Title Sheet & Index

STATE OF NEW HAMPSHIRE
ANTHONY D CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE

DRAWING NO.
1

SHEET 1 OF 62

SURVEY NOTES

1. THESE PLANS ARE BASED ON FIELD SURVEY CONDUCTED IN NOVEMBER 2016 BY NORTH EASTERLY SURVEY INC.
2. HORIZONTAL DATUM = NAD83 NH SPC U.S. FOOT
   VERTICAL DATUM = NAVD88
3. WETLANDS WERE DELINEATED IN APRIL 2016 BY NORMANDEAU ASSOCIATES INC.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SURVEY LAYOUT. ENGINEER TO PROVIDE ALL ELECTRONIC FILES FOR LAYOUT PURPOSES.
5. ROW LINES WERE OBTAINED FROM RESEARCH AND FIELD SURVEY. PROPERTY LINES WERE OBTAINED FROM GIS DATA AND ADJUSTED TO MATCH FIELD INFORMATION.

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS.
2. CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233), GAS COMPANY, AND THE LOCAL MUNICIPAL WATER & SEWER DEPT. AT LEAST 72 HOURS BEFORE EXCAVATING.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS. CONTRACTOR SHALL LEAVE NO UNSECURED OPEN EXCAVATIONS.
4. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALK, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
5. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) (2009 OR LATER).
6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
7. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
8. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
9. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
10. ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC/TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE PAYMENT FROM PRIVATE UTILITY COMPANIES FOR ADJUSTMENT OF PRIVATE UTILITY STRUCTURES DONE BY THE CONTRACTOR.
11. CONTRACTOR SHALL BE AWARE OF OVERHEAD UTILITIES AND MAKE THE NECESSARY ARRANGEMENTS TO PERFORM ANY WORK NEAR THE OVERHEAD UTILITIES, PRIOR TO THE START OF CONSTRUCTION.
12. TAKE ALL NECESSARY MEASURES AND PROVIDE ALL NECESSARY CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE, AND STRENGTH, TO PREVENT ACCESS TO ALL OPEN EXCAVATIONS AT THE COMPLETION OF EACH DAY'S WORK.
13. PROVIDE TO THE OWNER AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES A DETAILED PLAN OF APPROACH INDICATING METHODS OF PROPOSED TRAFFIC ROUTING ON A DAILY BASIS WHEN WORKING IN THE ROAD. PROVIDE COORDINATION TO ENSURE COMMUNICATION AND COORDINATION BETWEEN OWNER, CONTRACTOR, AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
14. CONTRACTOR TO PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CONTRACTOR SHALL PAY CLOSE ATTENTION TO DRIVEWAY ENTRANCES.
15. EXISTING MANHOLES AND CATCHBASINS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE ADJUSTED TO FINISH GRADES.
16. STORM DRAIN PIPING, UNLESS OTHERWISE NOTED, SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR APPROVED EQUAL).
17. PROPOSED CATCHBASINS SHALL BE EQUIPPED WITH OIL/WATER SEPARATOR HOODS AND 2' SUMPS.
18. STORM DRAIN CONSTRUCTION BE IN ACCORDANCE WITH THE CITY OF PORTSMOUTH AND THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
19. AT ALL LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT, CURBS, AND EARTHWORK SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES, AND JOINTS.
20. THE CONTRACTOR SHALL STRICTLY ADHERE TO THE CONDITIONS OF THE APPROVED NHDES WETLANDS PERMIT, FILE NUMBER: 2019-02206

GENERAL NOTES (cont.)

21. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UNDERGROUND UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATION, SIZES, AND ELEVATION OF EXISTING UTILITIES.
22. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT. FAILURE TO PROVIDE OR PERFORM THE ABOVE PRIOR TO PERFORMING ANY WORK SHALL NOT BE GROUNDS FOR EXTRA PAYMENTS TO THE CONTRACTOR.
23. ALL UTILITY COVERS, GRATES, ETC. SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT FINISH GRADE UNLESS OTHERWISE NOTED.
24. CONTRACTOR SHALL PROTECT ALL UNDERGROUND DRAINAGE, WATER, GAS, AND OTHER UTILITY FACILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE FACILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION (AT NO ADDITIONAL COST TO THE OWNER) BY THE CONTRACTOR.
25. THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL BARRIERS AFTER REVEGETATION OF DISTURBED AREAS AND AFTER APPROVAL BY THE LOCAL APPROVING AUTHORITY.
26. STOCKPILED TOPSOIL SHALL BE PLACED NEATLY IN AN AREA APPROVED BY THE OWNER/REPRESENTATIVE.
27. THE CONTRACTOR SHALL SCHEDULE THEIR WORK TO ALLOW THE FINISHED SUBGRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PUDDLING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF THE FINISH SUBGRADE AND/OR SURFACE PAVING.
28. CONTRACTOR SHALL PERFORM TEST PITS PRIOR TO INSTALLING GUARDRAIL ADJACENT TO EXISTING GAS AND WATER UTILITY LINES WITHIN THE PROJECT LIMITS.

GENERAL SYMBOLS

EXISTING	PROPOSED	
		CATCH BASIN
		DRAIN MANHOLE
S	S	SEWER MANHOLE
E	E	ELECTRIC MANHOLE
T	T	TELEPHONE MANHOLE
		MANHOLE
HH	HH	HANDHOLE
B		BOLLARD
WG		WATER GATE
		FIRE HYDRANT
GG		GAS GATE
		STREET SIGN
		LIGHT POLE
		WALL MOUNTED LIGHT
		UTILITY POLE
		GUY POLE
		GUY WIRE
MW	MW	MONITORING WELL
TP-3		TEST PIT (W/ I.D.)
		MAIL BOX
EOP	EOP	EDGE OF PAVEMENT
MCC	MCC	MONOLITHIC CONCRETE CURB
GC	VGC	VERTICAL GRANITE CURB (TYPE VB)
SGC	SGC	SLOPED GRANITE CURB
BB	BB	BITUMINOUS BERM
		GUARD RAIL
x	x	CHAINLINK FENCE
		DRAINAGE LINE
S	S	SEWER LINE
W	W	WATER LINE
G	G	GAS LINE
E	E	UNDERGROUND ELECTRIC LINE
T	T	UNDERGROUND TELEPHONE LINE
		ELEC., TELE., CATV, CONDUIT
OW	OW	OVERHEAD WIRE
		STONE WALL
		TREE LINE
PC 10 +57.59	PC 10 +57.59	BASELINE
N00° 00' 00"E	N00° 00' 00"E	TOWN LAYOUT
N00° 00' 00"E	N00° 00' 00"E PL	PROPERTY LINE
STONE BOUND	BND	HIGHWAY/PROPERTY BOUND (TYPE NOTED)
		TREE (SIZE AND TYPE NOTED)
		WHEELCHAIR RAMP (SEE ALSO CONSTRUCTION DETAILS)
		ADA DETECTABLE WARNING PANEL

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
	CW	CROSSWALK, 12" WHITE LINE (WIDTH NOTED)
CW		
SL	SL	STOP LINE, 12" WHITE LINE 4' BEHIND CW (TYP.)
SWEL,SWLL	SWEL,SWLL	SOLID WHITE LINE-4"
SYEL, SYLL	SYEL, SYLL	SOLID YELLOW LINE-4"
DYCL	DYCL	DOUBLE YELLOW CENTER LINE- 2-4" LINES
	SWBL	SOLID WHITE BROKEN LINE- 8" (2' LONG W/ 3' GAP)
	(T)	RETROREFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS

LEGEND

PROP HBP DRIVEWAY .....

PROP 4" CEM CONC SIDEWALK (NHDOT ITEM # 608.24).....

PROP ROCK FILL SLOPE & OUTLET PROTECTION .....

DRAINAGE NOTE .....

GUARDRAIL NOTE .....

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BLDG	BUILDING
BO	BY OTHERS
BOC	BOTTOM OF CURB
BOS	BOTTOM OF SLOPE
CC	CONCRETE CURB
CEM	CEMENT
CLF	CHAIN LINK FENCE
CONC	CONCRETE
DIA	DIAMETER
ELEV	ELEVATION
EXIST	EXISTING
FDN	FOUNDATION
GC	GRANITE CURB
HBP	HOT BITUMINOUS PAVEMENT
HDWL	HEADWALL
HMA	HOT MIX ASPHALT
LA	LANDSCAPE AREA
LF	LINEAR FEET
MAX	MAXIMUM
MCC	MONOLITHIC CONCRETE CURB
MB	MAIL BOX
MIN	MINIMUM
NTS	NOT TO SCALE
PCC	PRECAST CONRETE CURB
PROP	PROPOSED
PERM	PERMANENT
PVMT	PAVEMENT
R	RADIUS
REL	RELOCATE
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RR	RAILROAD
SGC	SLOPE GRANITE CURB
SW	SIDEWALK
TEMP	TEMPORARY
TOC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VGC	VERTICAL GRANITE CURB
WCR	WHEELCHAIR RAMP
WQU	WATER QUALITY UNIT

UTILITIES

ACCMP	ASPHALT COATED CORRUGATED METAL PIPE
BC	BOTTOM OF CHANNEL
CB	CATCH BASIN
CAP	CORRUGATED ALUMINUM PIPE
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CLDI	CEMENT LINED DUCTILE IRON
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
ETC	ELECTRIC, TELEPHONE, & CABLE
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
GV	GAS VALVE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HYD	HYDRANT
INV	INVERT ELEVATION
PVC	POLYVINYL CHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE (CLASS III)
SMH	SEWER MANHOLE
TSV	TAPPING SLEEVE AND VALVE
UP	UTILITY POLE
VCP	VITRIFIED CLAY PIPE
WV	WATER VALVE

ALIGNMENT/GRADING

CC	CENTER OF CURVE
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PNT	POINT
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT

BASE PROJECT

- APPLIES TO ALL SHEETS

ADD ALTERNATE

- APPLIES TO ALL SHEETS

TEC, Inc.

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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	NTS

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

General Notes, Legend & Abbreviations

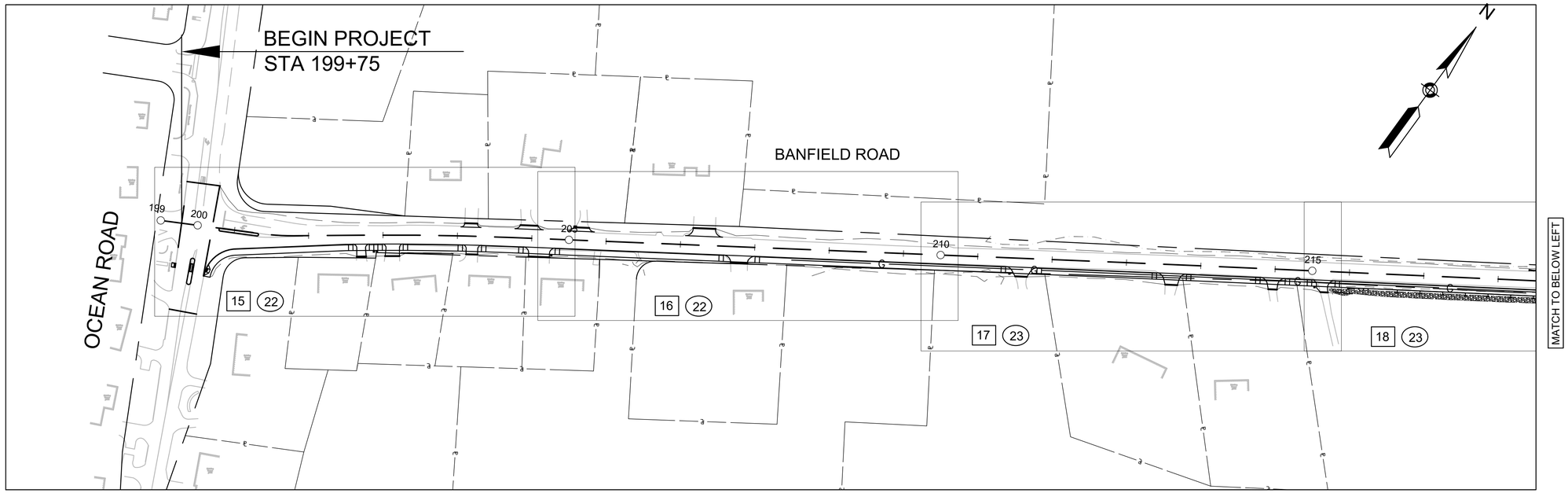
STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11660 - LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620

TEC CAD FILE

DRAWING NO. 2

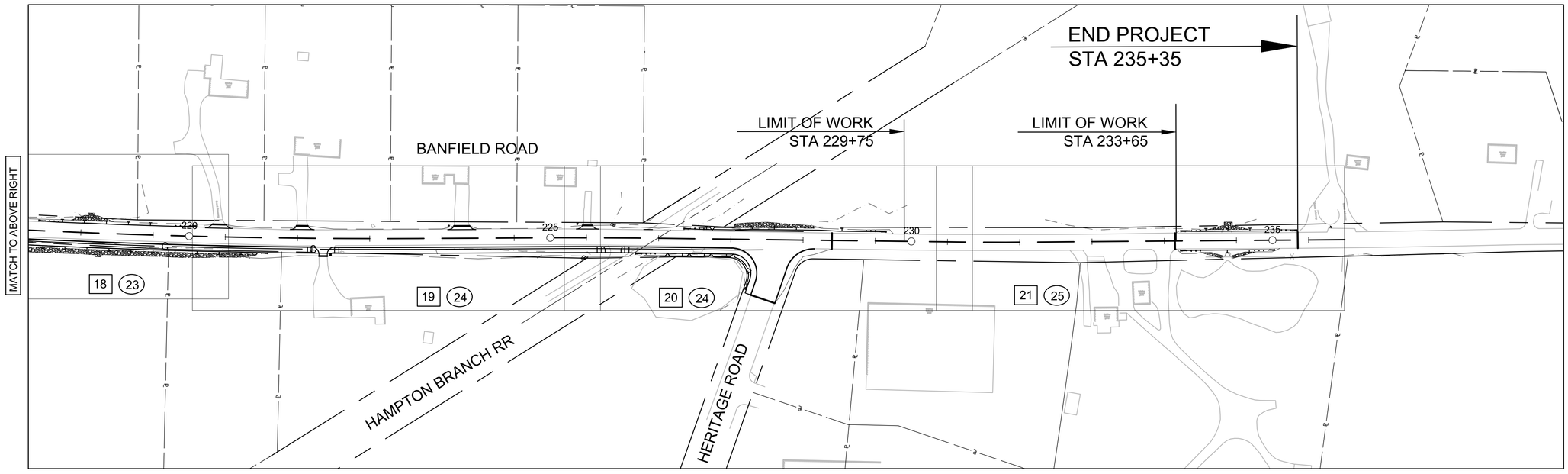
SHEET 2 OF 62



SHEET # LEGEND:

GN = GENERAL PLANS & PROFILES

PSC = PAVEMENT MARKING, SIGNING, & CURBING LAYOUT PLANS



0 80 200 300

SCALE: 1" = 80'

BASE PROJECT
- APPLIES TO ALL SHEETS

ADD ALTERNATE
- APPLIES TO ALL SHEETS

TEC, Inc.

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PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Key Plan

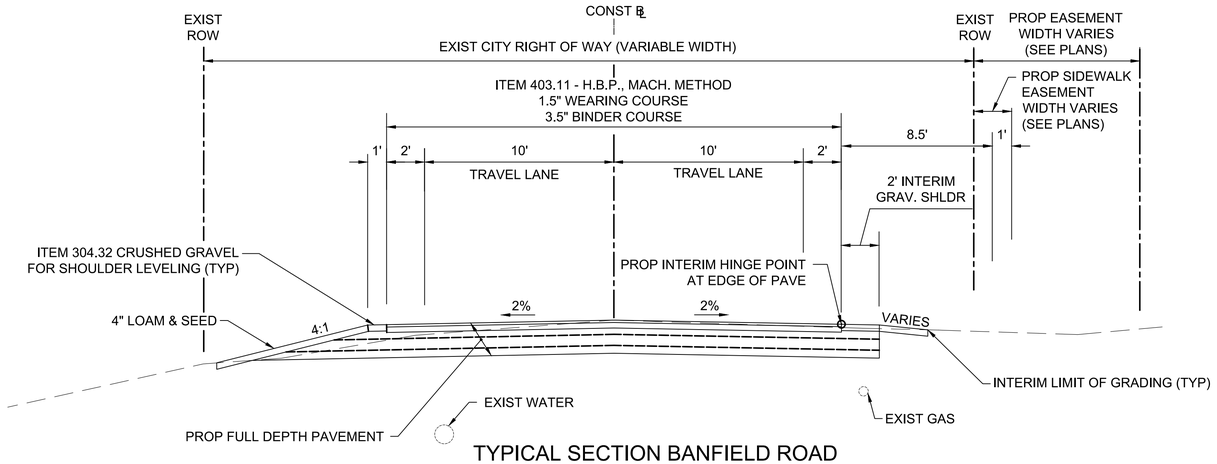
STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620

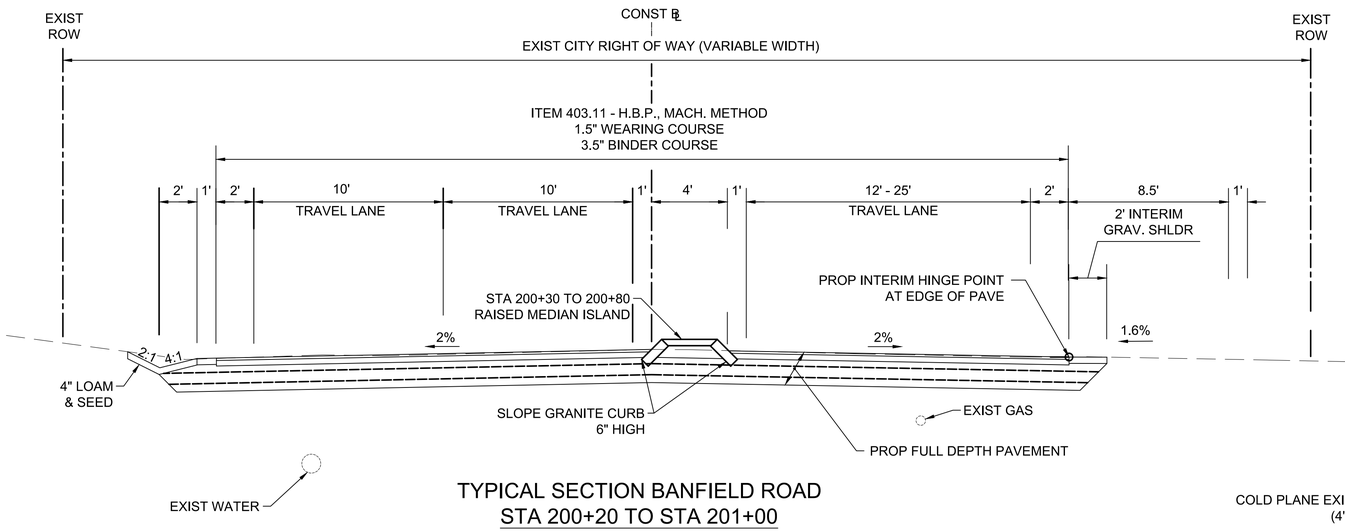
TEC CAD FILE

DRAWING NO. 3

SHEET 3 OF 62



TYPICAL SECTION BANFIELD ROAD
STA 201+00 TO STA 215+20



TYPICAL SECTION BANFIELD ROAD
STA 200+20 TO STA 201+00

PAVEMENT NOTES

PROPOSED COLD PLANE (MILL) & HBP OVERLAY

SURFACE: 1 ½" HOT BITUMINOUS PAVEMENT (NHDOT ITEM 403.11) over
1 ½" COLD PLANING OF BITUMINOUS SURFACES "

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1 ½" HBP (MACHINE METHOD) WEARING COURSE, (3/8" 75 GYRATION) (ITEM 403.11) over
3 ½" HBP (MACHINE METHOD)) BINDER COURSE, (3/4" 50 GYRATION FINE (WINTER) BINDER) IN 2 LIFTS (ITEM 403.11) over

BASE: 16" NOMINAL: 12" RECLAIMED MATERIAL (ITEM 306.112) with
4" OF CRUSHED STONE BLENDED IN PLACE

PROPOSED HBP DRIVEWAY (TO MATCH EXIST)

SURFACE: 1 ½" HBP (HAND METHOD) WEARING COURSE, (3/8" 75 GYRATION) (ITEM 403.12) over
1 ½" HBP (HAND METHOD) BINDER COURSE (3/4" 50 GYRATION) (ITEM 403.12) over

BASE: 8" CRUSHED STONE FOR DRIVES, COMPACTED (ITEM 304.5)

PROPOSED CEMENT CONCRETE SIDEWALKS / WHEELCHAIR RAMPS / WALKWAYS

SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED, 4000 PSI, 5-7% AIR ENTRAINED, FIBER REIFORCED WITH CONTROL JOINTS EVERY 5' AND EXPANSION JOINTS EVERY 25'. ALL CONTROL JOINTS WILL BE MADE WITH A JOINTING TOOL TO A DEPTH OF 1/4 THE SIDEWALK DEPTH. EXPANSION MATERIAL WILL ALSO BE USED AROUND UTILITY STRUCTURES.) OVER

BASE: 12" CRUSHED STONE FOR DRIVES, COMPACTED (ITEM 304.45)

GENERAL PAVEMENT NOTES:

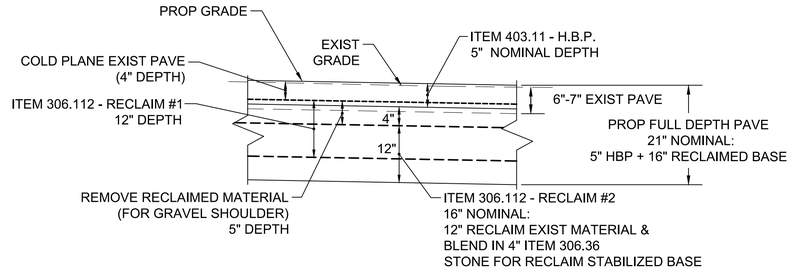
1. ASPHALT EMULSION FOR TACK COAT (ITEM 410.22) SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING TO BOND PAVEMENT LAYERS. PAVEMENT JOINT ADHESIVE (ITEM 403.6) SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY, EXCEPT OVER MILLED AND CEMENT CONCRETE SURFACES, WHERE THE APPLICATION RATE SHALL BE 0.07 GAL/SY. ALL SURFACES SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
2. EXISTING PAVEMENT DEPTH AS SHOWN WAS OBTAINED FROM GEOTECHNICAL REPORT.

BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER

ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE



FULL DEPTH PAVEMENT DETAIL

TEC, Inc.
146 Dascomb Road
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DATE	3/3/2020
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PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

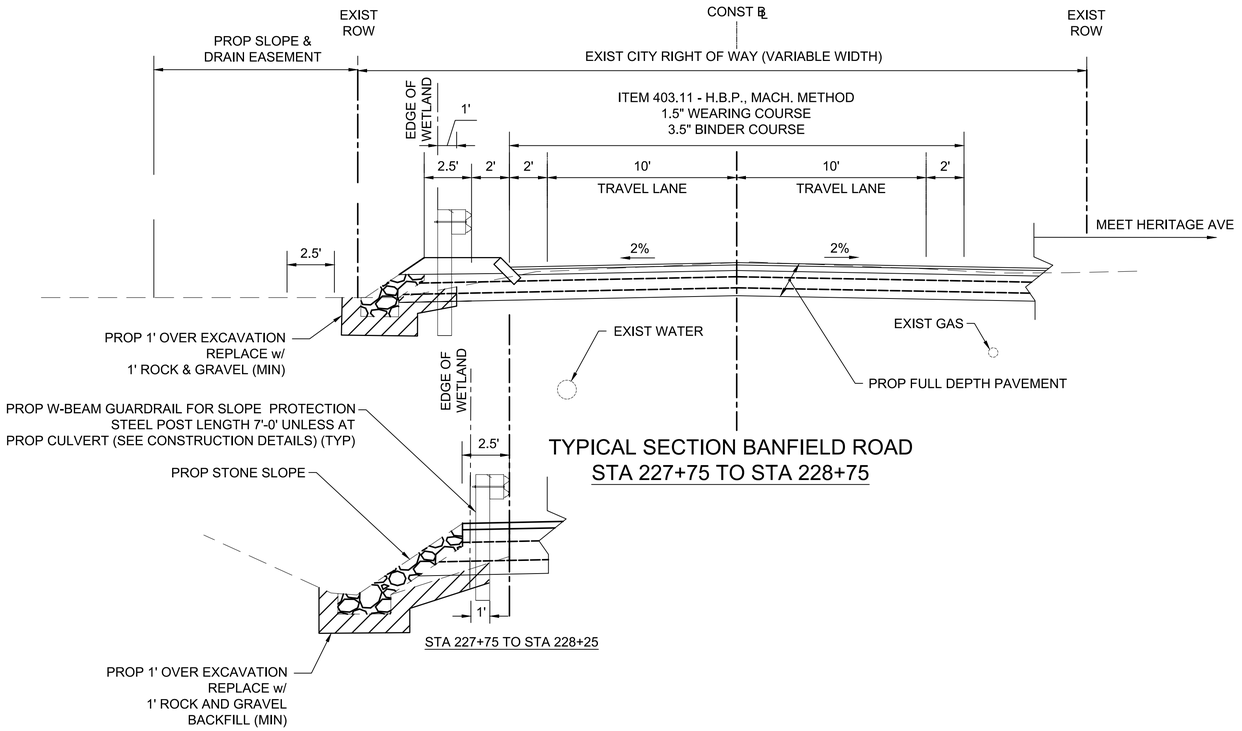
PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Typical Sections
Base Project

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620
TEC CAD FILE N0620_(TypSects)
DRAWING NO. 4
SHEET 4 OF 62



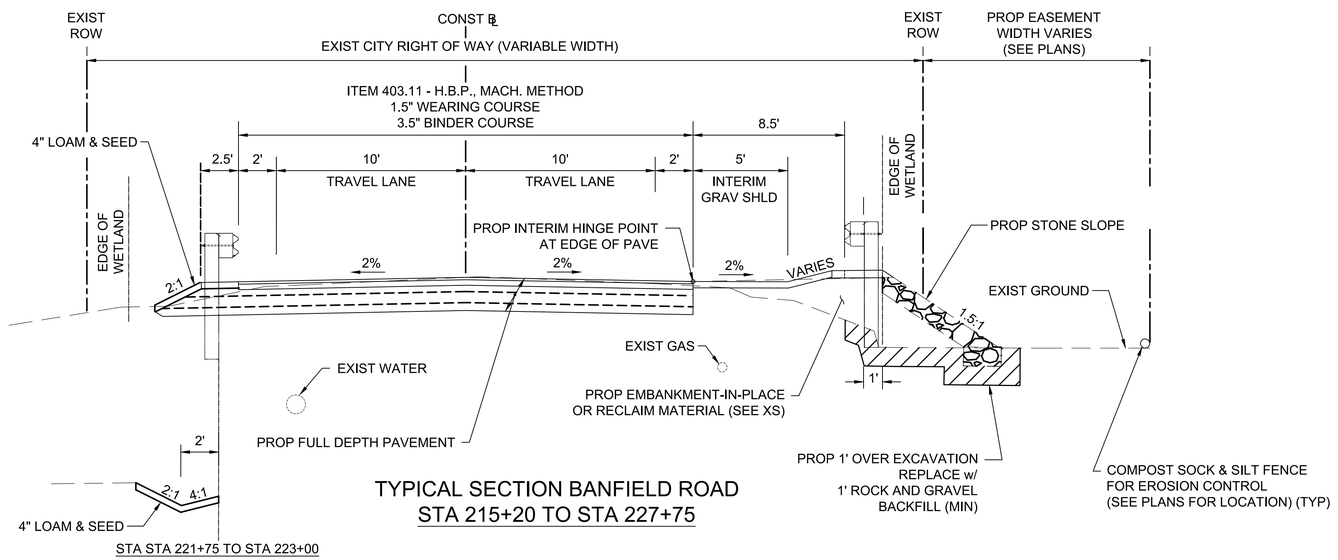
TYPICAL SECTION BANFIELD ROAD
STA 227+75 TO STA 228+75

BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GUARDRAIL INSTALLATION

ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE



TYPICAL SECTION BANFIELD ROAD
STA 215+20 TO STA 227+75

STA STA 221+75 TO STA 223+00

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SCALE	NTS

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

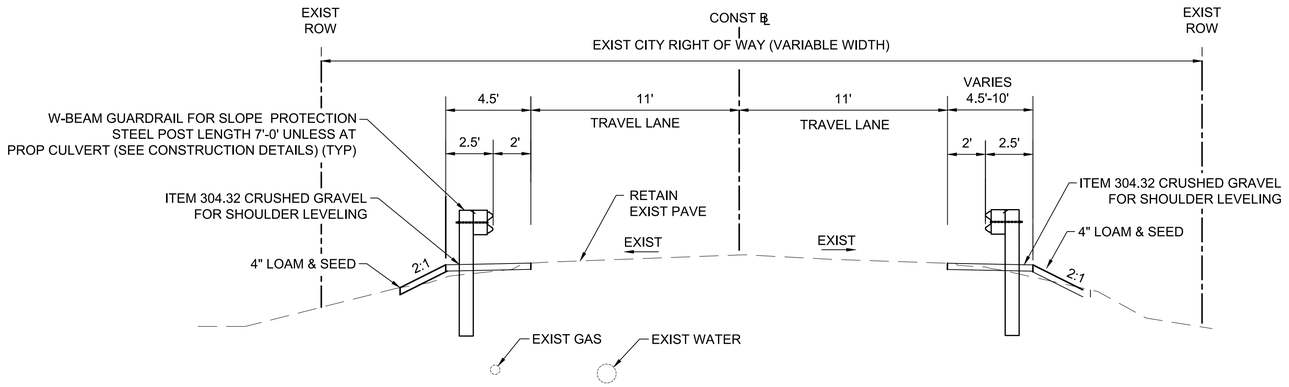
PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

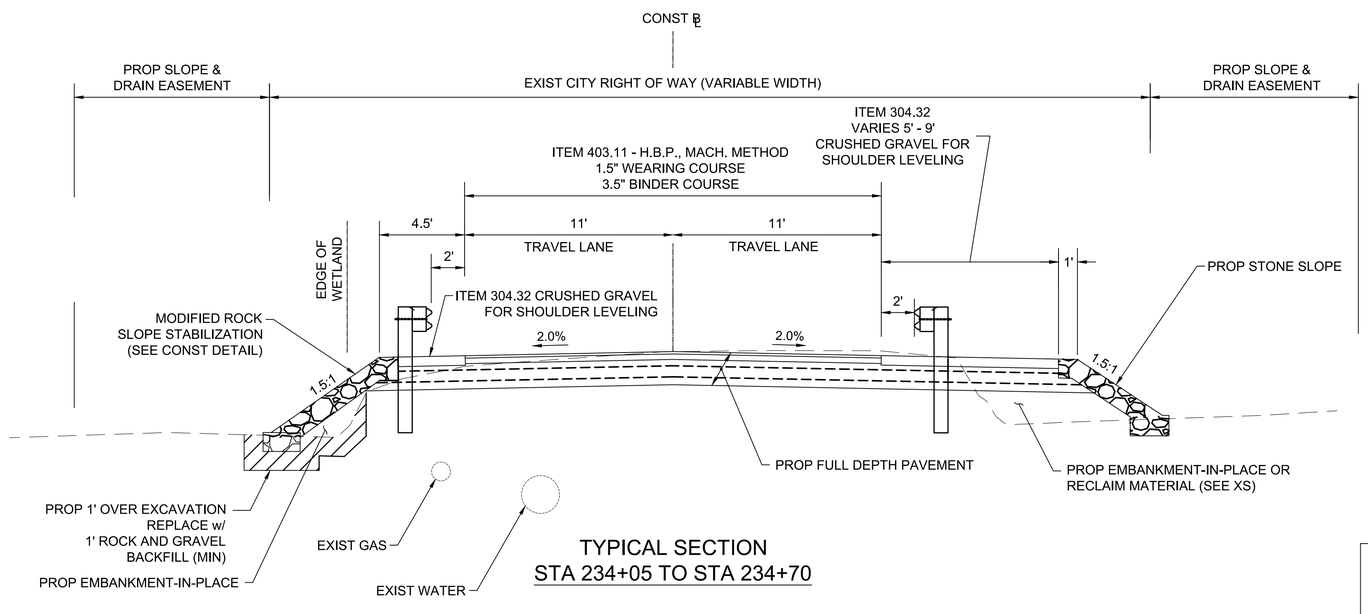
DRAWING TITLE
Typical Sections
Base Project

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620
TEC CAD FILE N0620_(TypSects)
DRAWING NO. 5
SHEET 5 OF 62



TYPICAL SECTION BANFIELD ROAD
BAN-5 APROACHES NORTH AND SOUTH
STA 233+65 TO 234+05 &
STA 234+70 TO 235+35



TYPICAL SECTION
STA 234+05 TO STA 234+70

BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- STONE SLOPE CONSTRUCTION IN
- GUARDRAIL INSTALLATION

ADD ALTERNATE

- N/A

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
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DATE	3/3/2020
SCALE	NTS

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1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements
& Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Typical Sections
Base Project

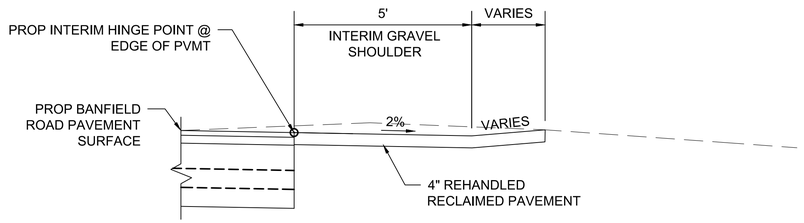
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

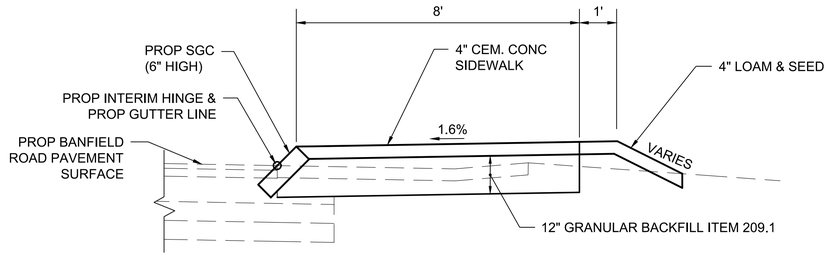
TEC CAD FILE
N0620_(TypSects)

DRAWING NO.
6

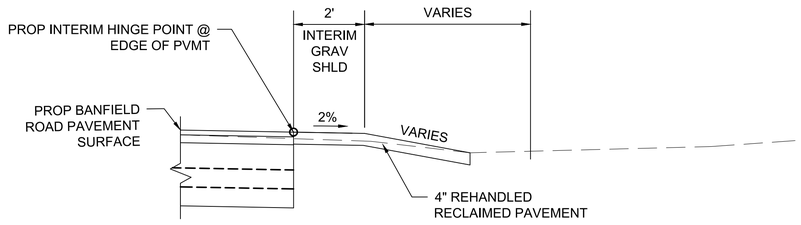
SHEET 6 OF 62



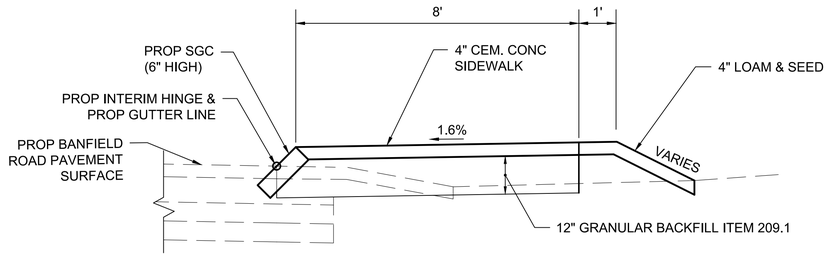
BASE PROJECT
INTERIM GRAVEL SHOULDER - CUT



ADD ALTERNATE
CURBED SIDEWALK - CUT



BASE PROJECT
INTERIM GRAVEL SHOULDER - FILL



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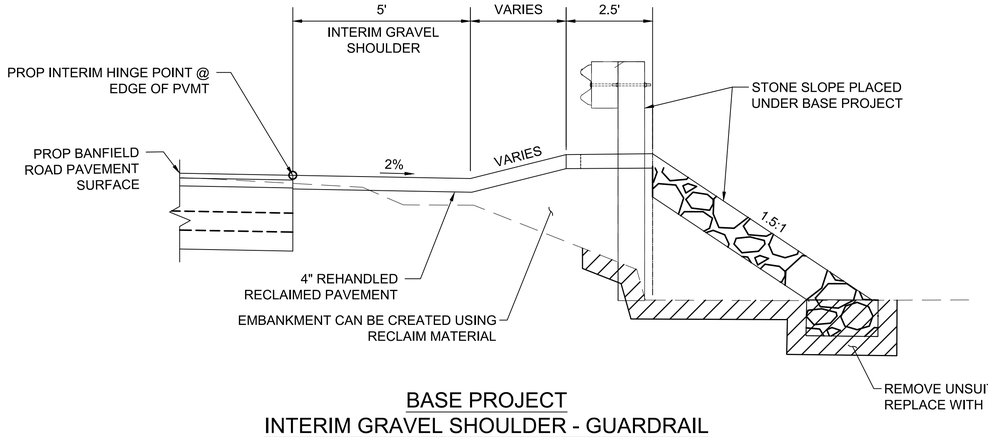
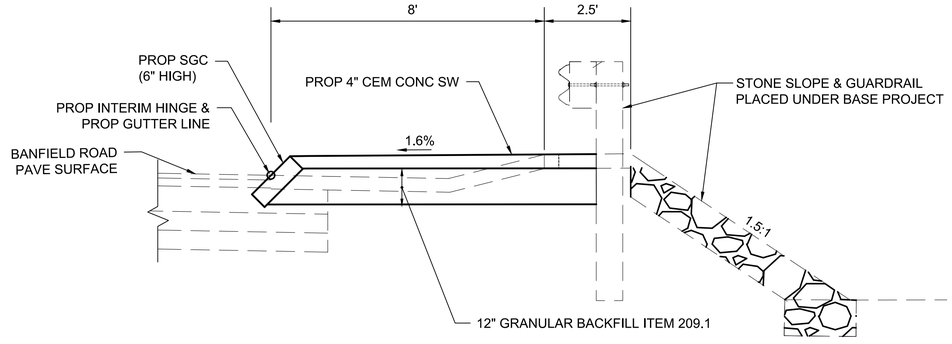
CURBED SIDEWALK - FILL



BASE PROJECT
INTERIM GRAVEL SHOULDER - GUARDRAIL



ADD ALTERNATE
CURBED SIDEWALK - GUARDRAIL

BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GUARDRAIL INSTALLATION

ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE

TEC, Inc.

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DATE	3/3/2020
SCALE	NTS

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements
& Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Typical Sections
Interin Shoulder &
Sidewalk Details

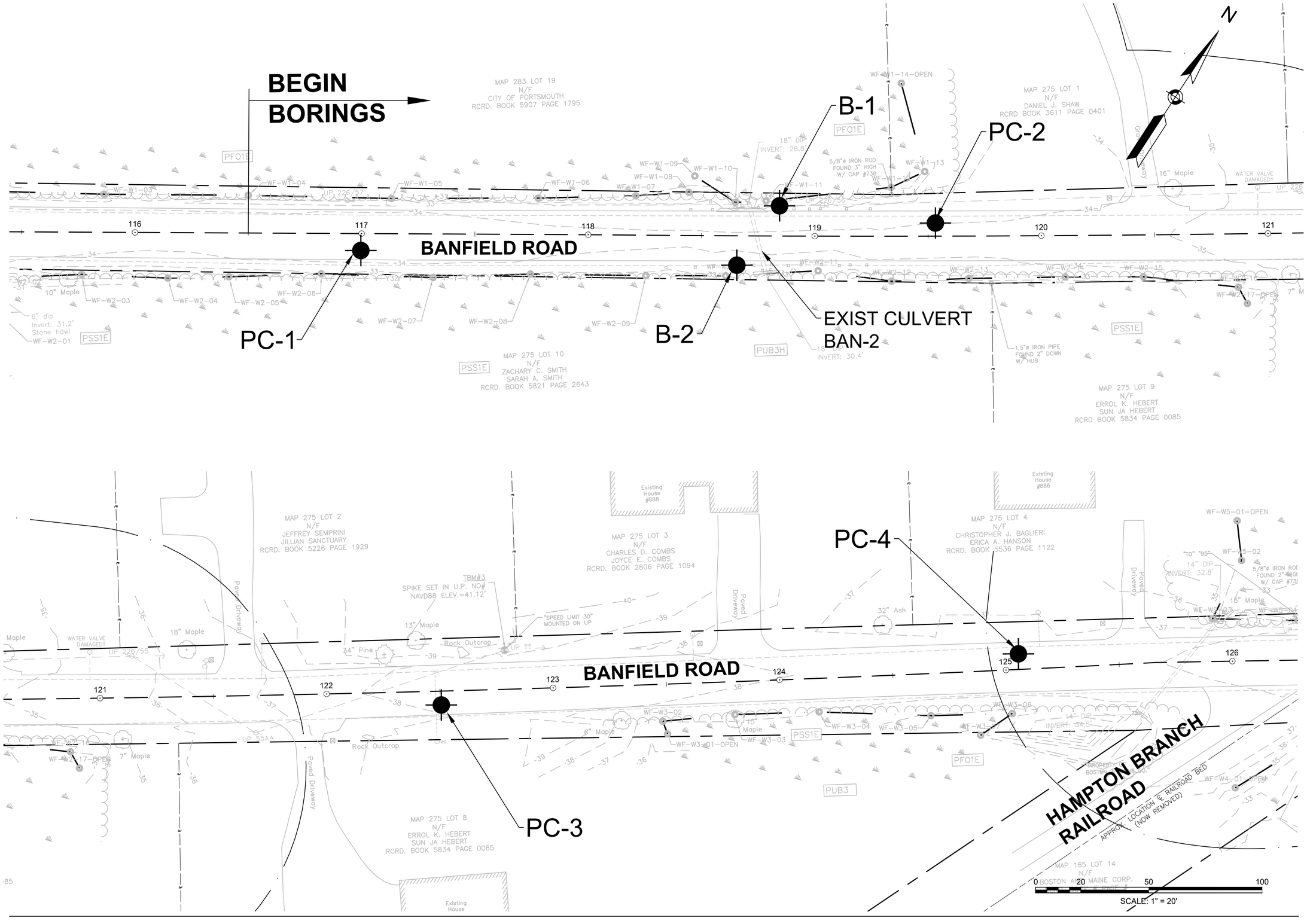
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED
PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(TypSects)

DRAWING NO.
7

SHEET 7 OF 62



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DATE	3/3/2020
SCALE	1" = 20'

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Boring Plan

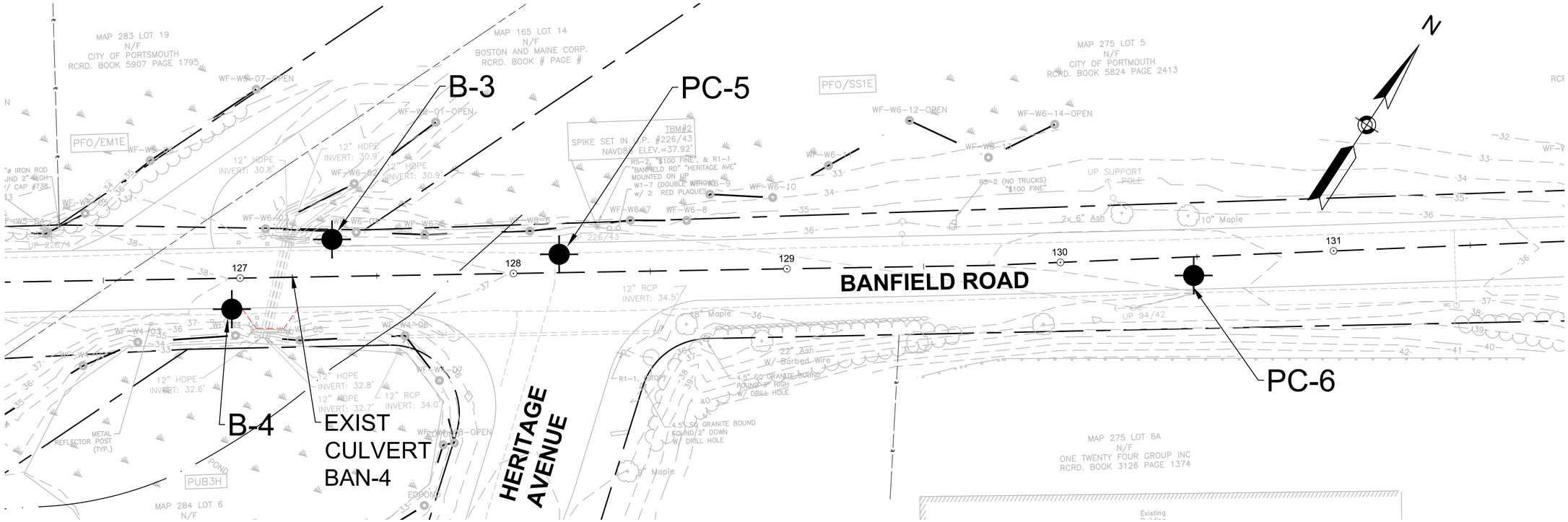
PROJECT NO.
N0620

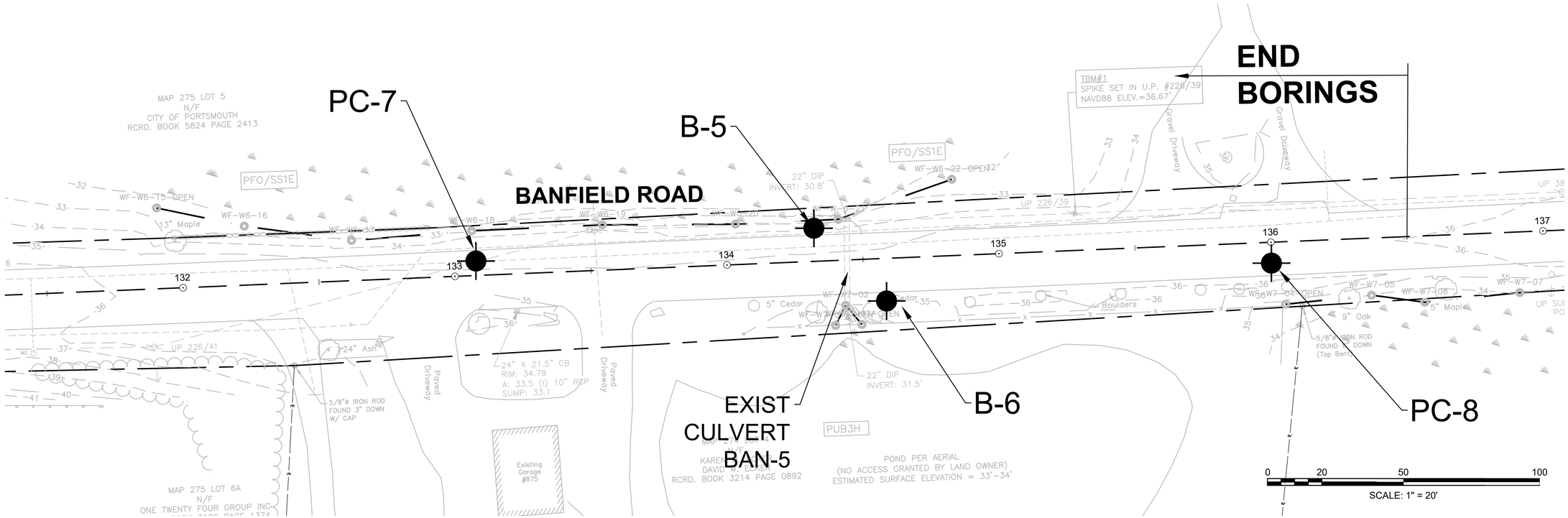
TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
8

SHEET 8 OF 62

STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER
3/3/20





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DATE	3/3/2020
SCALE	1" = 20'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements
& Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Boring Plan

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED
PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
9

SHEET 9 OF 62

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: B-1
Total Depth (ft): 24.5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (6 inches). FILL; Fine to coarse sand, some fine gravel, little silt. Turns gray at 4'.	12	16 16 22	38	7	GS
			S-2	FILL; Silt, with some fine gravel, trace fine sand. Few cobbles at 5'.	14	24 8 8 9	17		
5			S-3	CLAYEY SILT (CL); Stiff, wet, silt, little clay, brown. SILTY CLAY (CL); Stiff, wet, clay with occasional silt lenses, brown to gray.	8	10 6 6 8	14		
10			S-4		24	6 5 7 6	12		
15				Becomes gray.					
20			S-5	Becomes very soft. Probed with "A" rod by hydraulic push from 22' to 23.5'. SILTY SAND WITH GRAVEL (SM); Logged from change in probe resistance. Bottom of Exploration at 24.5'; Probe rod refusal, possible bedrock or boulder.	24	1 1 1 1	2		
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: B-2
Total Depth (ft): 21
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 4.5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (6 inches). FILL; Fine to coarse sand, some gravel, few silt, brown.	12	6 11 12 11	23	6	GS
			S-2	FILL; Silt, some fine gravel, trace to few fine sand, gray.	12	10 8 10 8	18		
5			S-3	SILTY CLAY (CL); Stiff, wet, clay with little silt, brown to gray.	12	9 9 9 8	11		
10			S-4	CLAYEY SILT (ML); Medium, wet, silt, little clay, brown. SILTY CLAY (CL); Medium, wet, clay with some silt, brown.	24	5 3 3 4	6		
15			S-5	Becomes gray, several silt lenses, 1" to 3", soft. Probed with "A" rod by hydraulic push from 14' to 20.3'. SILTY SAND WITH GRAVEL (SM); Logged from change in probe resistance. Bottom of Exploration at 21'; Probe rod refusal, possible bedrock or boulder.	24	WOH 1 2 1	3		
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: B-3
Total Depth (ft): 22
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 6.5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches). FILL; Moist, coarse to fine sand, some coarse to fine gravel, little silt, brown.	12	11 17 21 26	38	7	GS
			S-2	FILL; Silt, some fine gravel, few fine sand, gray.	12	25 27 24	51		
5			S-3	SILTY CLAY (CL); Very stiff, wet, little silt, few to little sand, gray.	4	13 6 9 4	17		
10			S-4		20	7 8 12 12	20		
15			S-5		22	7 6 5 4	11		
20				SAND (SP); Medium dense, fine sand, trace medium sand, gray.					
			S-6	SILTY SAND WITH GRAVEL (SM); Dense, fine to medium sand, little silt, little gravel, gray. Bottom of Exploration at 22'; Not refusal.	18	16 21 22 15	43		
25									

Notes:

BORING LOCATION		
BORING NO.	STATION	OFFSET
B-1	118+84.39	13.319, LT
B-2	118+65.68	12.959, RT
B-3	127+33.85	13.580, LT

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

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Unit 101, PO Box 249
Hampton, NH 03842
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DATE	3/3/2020
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City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

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Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Boring Logs

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
10

SHEET 10 OF 62

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geophysics • Materials Testing Services

Boring Log: B-4
Total Depth (ft): 17.5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 5.5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/26/2016
Date Completed: 04/26/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches). FILL; Moist, fine to medium sand, some gravel, few silt, brown.	10	14 18 17	35	13	GS
			S-2		10	17 12 8	15		
5			S-3	Becomes wet, little coarse gravel.	6	7 6 6 6 9 11	15		
				SILTY CLAY (CL); Very stiff to medium, wet, clay with some silt, brown.					
10			S-4		18	8 11 12 13	23		
15			S-5			3 3 3 4	6		
				Bottom of Exploration at 17.5'; Auger refusal, possible bedrock or boulder.					
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geophysics • Materials Testing Services

Boring Log: B-5
Total Depth (ft): 20.4
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 5.8'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/26/2016
Date Completed: 04/26/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).	10	5 7 9	16	9	GS
			S-2	FILL; Medium dense, moist, fine to medium sand, some fine to medium gravel, few silt, brown.	0	13 50/3"	100+		
5			S-3	SILT (ML); Loose, moist, silt, little fine sand, with organics. SAND (SP); Loose, wet, medium sand, black. SILTY CLAY (CL); Medium stiff, wet, clay with some silt, brown.	16	4 4 4 4	8		
10			S-4	Silt lenses, gray.	24	2 3 4 4	7		
15			S-5	Sand lenses.	24	2 3 5 10	8		
20			S-6	SILTY SAND (SM); Very dense, medium to fine sand, some silt, gray.	2	50/4"	100+		
				Bottom of Exploration at 20.4'; Spoon refusal, possible bedrock or boulder.					
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geophysics • Materials Testing Services

Boring Log: B-6
Total Depth (ft): 17
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/26/2016
Date Completed: 04/26/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	TOPSOIL AND ORGANIC MATERIAL (3 inches). FILL; Moist, fine to medium sand, some fine gravel, few silt, 1st layer of asphalt at 1', brown.	16	2 3 5	8	11	GS
			S-2	FILL; Silt, some fine gravel, few fine sand, gray.	4	3 4 4	7		
5			S-3	Becomes wet.	4	3 4 4	8		
				SILTY CLAY (CL); Soft, wet, clay, occasional silt lenses, gray.					
10			S-4		24	2 2 1 2	3		
15			S-5	SILTY SAND WITH GRAVEL (SM); Dense, wet, fine to coarse sand, some gravel, little silt.	10	14 25 23 20	48		
				Bottom of Exploration at 17'; Not refusal.					
20									
25									

Notes:

BORING LOCATION		
BORING NO.	STATION	OFFSET
B-4	126+96.80	11.311, RT
B-5	134+32.45	12.156, LT
B-6	134+58.01	15.651, RT

TEC, Inc.

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DATE	3/3/2020
SCALE	

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Boring Logs

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
11

SHEET 11 OF 62

R.W. Gillespie & Associates, Inc.

Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-1
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (6 inches).					
			S-2	FILL; Fine to coarse sand, some fine gravel, few silt, brown.	8	9 16 11	27	5	GS
5			S-3		8	7 5 6	11		
				FILL; Silt with some fine to medium gravel, trace fine sand.					
				Bottom of Exploration at 5'; Not refusal.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.

Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-2
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 4.5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).					
			S-2	FILL; Fine to coarse sand, some fine gravel, few silt, brown.	14	8 15 23	38	6	GS
5			S-3	Becomes moist.	14	18 9 6	10		
				SILT (ML); Wet, some clay, little fine gravel.					
				Bottom of Exploration at 5'; Not refusal.		4 4			
10									
15									
20									
25									

Notes:

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Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-3
Total Depth (ft): 4
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (6.5 inches).					
			S-2	FILL; Moist, fine to coarse sand, some gravel, few silt, brown.	10	6 11 22	33	7	GS
5			S-3	Becomes moist, with cobbles.	6	38 50/6"	100+		
				Bottom of Exploration at 4'; Not refusal.					
10									
15									
20									
25									

Notes:

BORING LOCATION		
BORING NO.	STATION	OFFSET
PC–1	116+99.71	7.483, RT
PC–2	119+53.26	5.788, LT
PC–3	122+50.46	6.122, RT

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Boring Logs

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
12

SHEET 12 OF 62

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-4
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).	10	10	36	5	GS
			S-2	FILL; Moist, fine to coarse sand, some gravel, few silt, brown.		21			
						15			
			S-3		4	20	24		
5						21			
				Bottom of Exploration at 5'; Not refusal.		16			
						8			
						7			
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-5
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 5'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).	12	9	13	7	GS
			S-2	FILL; Fine to medium sand, some fine gravel, little silt.		7			
						6			
			S-3		12	10	23		
5				SILT (ML); Medium dense, silt, some fine gravel, little fine sand, gray.		14			
				Bottom of Exploration at 5'; Not refusal.		9			
						8			
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-6
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: Not Obs.

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).	16	6	9	7	GS
			S-2	FILL; Moist, fine to coarse sand, with some fine gravel, little silt, brown.		4			
						5			
			S-3		16	9	17		
5						8			
				Bottom of Exploration at 5'; Not refusal.		11			
10									
15									
20									
25									

Notes:

BORING LOCATION		
BORING NO.	STATION	OFFSET
PC–4	125+05.83	6.878, LT
PC–5	128+16.80	6.707, LT
PC–6	130+48.52	6.878, RT

TEC, Inc.

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DATE	3/3/2020
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PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Boring Logs

STATE OF NEW HAMPSHIRE – ANTHONY D. CIOLFI No. 11860 – LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
13

SHEET 13 OF 62

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-7
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 4'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).					
			S-2	FILL; Moist, fine to coarse sand, some fine gravel, few silt, brown.	14	8 7 6	13	5	GS
5			S-3	FILL; Moist to wet, silt with fine to medium gravel, dark gray.	14	6 8 7	8		
				Bottom of Exploration at 5'; Not refusal.					
10									
15									
20									
25									

Notes:

R.W. Gillespie & Associates, Inc.
Geotechnical Engineering • Geohydrology • Materials Testing Services

Boring Log: PC-8
Total Depth (ft): 5
Sheet 1 of 1

Project Name: Banfield Road Culverts
RWG&A Project No. 1574-001
Location: Portsmouth, New Hampshire
Client: TEC, Inc.
RWG&A Representative: D. Walker
Boring Location: See Exploration Location Plan
Boring Abandonment Method: Backfilled with cuttings
Observed Water Depth: 4'

Drilling Contractor: Great Works Test Boring
Drill Rig: Acker
Driller Rep.: Jeff Lee
Date Started: 04/27/2016
Date Completed: 04/27/2016
Surface Elevation: ()
Drilling Method: SSA 4" OD
Casing Type: N/A

DEPTH, FT.	SYMBOL	SAMPLES	SAMPLE NUMBER	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0			S-1	ASPHALTIC PAVEMENT (7 inches).					
			S-2	FILL; Moist, fine to coarse sand, some fine gravel, few silt, brown.	10	10 13 13	26	4	GS
5			S-3	FILL; Moist, silt, some fine to medium gravel, gray.	6	12 21 25	44		
				Bottom of Exploration at 5'; Not refusal.		19 13			
10									
15									
20									
25									

Notes:

BORING LOCATION		
BORING NO.	STATION	OFFSET
PC–7	133+07.91	5.302, LT
PC–8	135+99.84	7.670, RT

TEC, Inc.

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1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

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Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Boring Logs

STATE OF NEW HAMPSHIRE – ANTHONY D. CIOLFI No. 11860 LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Plan & Profile).dwg

DRAWING NO.
14

BEGIN PROJECT
STA 199+75

LIMIT OF MILL & OVERLAY MEET EXIST

STA 200+20
LIMIT OF FULL DEPTH PAVE RECONSTR.

AREA SHOWN AS "PROPOSED RIGHT-OF-WAY ADDITION TO CITY OF PORTSMOUTH" SEE PLAN D-28326

PROP MILL & OVERLAY

OCEAN ROAD

R=40'

RET UP

EXIST ROW

PROP SLOPE LINE (TYP)

PROP EOP

SAWCUT

PROP 6" CEM CONC MEDIAN ISLAND

+61.6

23'

4'

PC +88.36

PT +07.82

R&R SLOPE GRAN CURB

20.8'

PROP 8' CEM CONC SW

PT +30.06

BANFIELD ROAD

+54.3

SGC

WCR TYPE A

WARNING PANELS 8' WIDE

PROP 6" CEM CONC MEDIAN ISLAND

R=45'

18.1'

10'

15.5'

6'

+55.06

PC +56.72

WCR TYPE B

RET TREE

RET STONE WALL

LIMIT OF MILL & OVERLAY MEET EXIST

MAP 294 LOT 6
N/F
RONALD M. GAUDREAU
MARY E. GAUDREAU
RCRD. BOOK 2381 PAGE 753

MAP 283 LOT 19-3
N/F
FREDERICK A. BUTTS III
ELAINE BUTTS-APATANG
RCRD. BOOK 5214 PAGE 75

RET WG

RET UP

1.25"ø IRON PIPE FOUND 1" HIGH

PROP FULL DEPTH PAVE RECONSTR

+53.4

12'

PC +29.07

REM MB
PROP MB

SGC

+00

R&R 140 LF STONE WALL TO 1 FT BEYOND BACK OF SW

REM TREES (2)

RET UP

RET IP

REM TREE

RECONSTRUCT DRIVEWAY

1.25"ø IRON PIPE FOUND 2" DOWN

ADJ WG

PROP TEMP CONST EASEMENT

REM SHRUBS

MAP 294 LOT 5
N/F
SCOTT M. ONEILL
AMY L. ONEILL
RCRD. BOOK 4204 PAGE 1847

MAP 294 LOT 4
N/F
DANIEL F. RYAN III & ANNETTE M. RYAN IRREVOCABLE TRUST
DANIEL F. RYAN, III, TRUSTEE
ANNETTE M. RYAN, TRUSTEE
RCRD. BOOK 5578 PAGE 525

RET STONE WALL
PROP EOP

PROP 8' CEM CONC SW

RECONSTRUCT DRIVEWAY

RET TREE
RET WG

PROP WHITE VINYL FENCE 36" H X 70' L

.75"ø IRON PIPE FOUND FLUSH

RET IP

REM SHRUBS

MAP 283 LOT 36
N/F
DAVID M. GOULET
KAREN MARIE GOULET
RCRD. BOOK 5318 PAGE 2746

MAP 283 LOT 37
N/F
PAUL PARADIS
PETER PARADIS
RCRD BOOK 3147 PAGE 2982

1 STA 206+04.5, RT 11' TO STA 304+34, RT 11'
CONSTRUCT CB-B @ +34
CONSTRUCT POLYETHYLENE LINER
CONSTRUCT 167 LF X 12" PE PIPE
RIM = 54.40'
12" INV OUT = 46.10'

RECONSTRUCT DRIVEWAY

RET UP

RET IP

RET TREES

5/8"ø IRON ROD FOUND 1" DOWN

RET HYD

RET MB's

PT +24.85

1

12" PE PIPE

RECONSTRUCT DRIVEWAY

RET TREES

RET MB

PROP EOP

MATCH TO SHEET 16

ADJ WG

RECONSTRUCT DRIVEWAY

PROP SLOPE LINE (TYP)

EXIST ROW

REM TREE

RET TREE

RET IP

REM TREES (2)

R&R 60 LF STONE WALL TO 1 FT BACK OF SW

MAP 294 LOT 3
N/F
DONALD G. FATE, JR.
RCRD. BOOK 3625 PAGE 1085

MAP 294 LOT 2
N/F
TERESA L. JOHNSON
RCRD BOOK 5861 PAGE 122

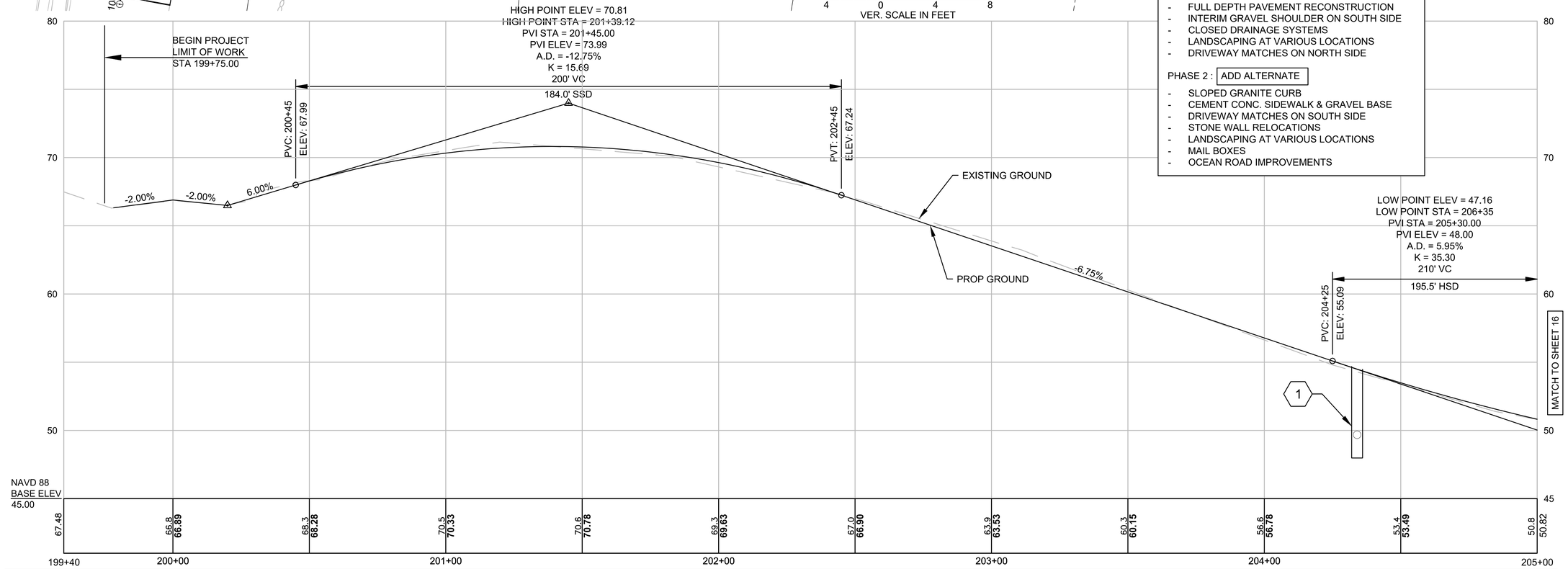
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

PHASE 1 : BASE PROJECT

- FULL DEPTH PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER ON SOUTH SIDE
- CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- DRIVEWAY MATCHES ON NORTH SIDE

PHASE 2 : ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE
- DRIVEWAY MATCHES ON SOUTH SIDE
- STONE WALL RELOCATIONS
- LANDSCAPING AT VARIOUS LOCATIONS
- MAIL BOXES
- OCEAN ROAD IMPROVEMENTS



TEC, Inc.

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Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
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Hampton, NH 03842
(603) 601-8154

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CHECKED BY	LSA
DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

General Plan & Profile

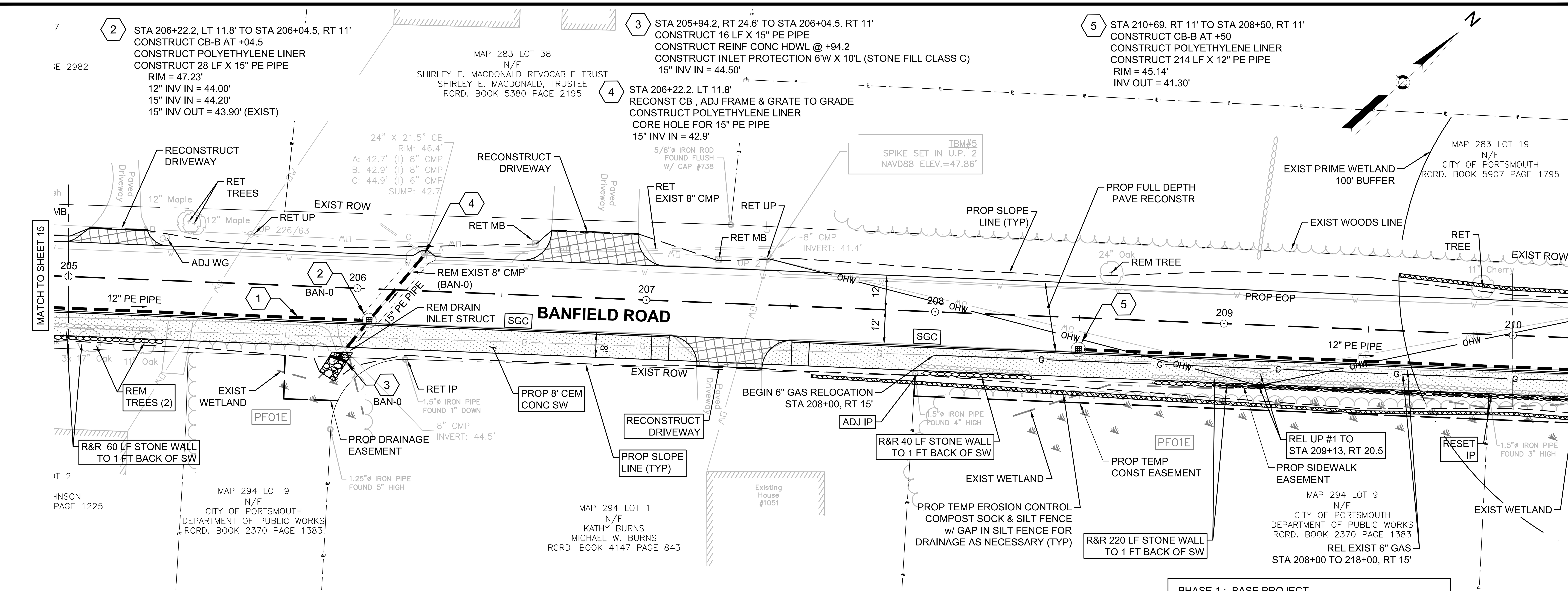
PROJECT NO.
N0620

TEC CAD FILE
20_(Plan & Profile).dwg

DRAWING NO.
15

SHEET 15 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED PROFESSIONAL ENGINEER
3/3/20



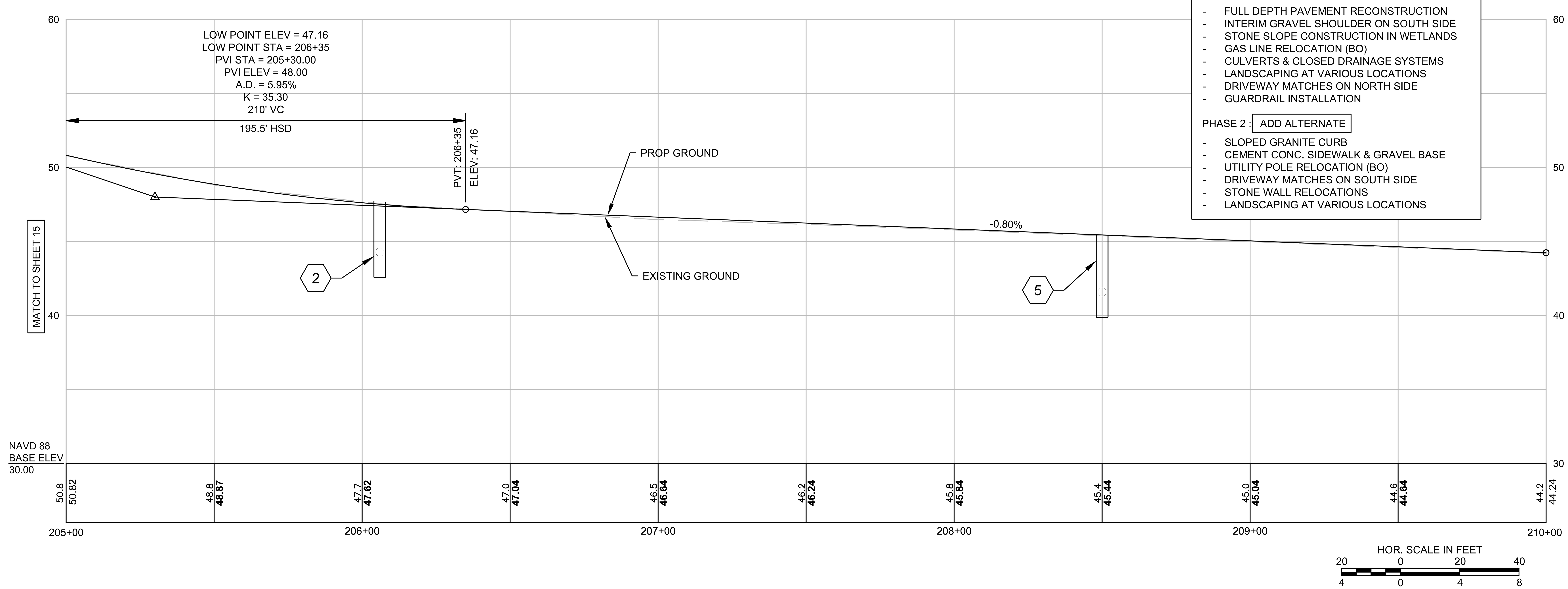
2 STA 206+22.2, LT 11.8' TO STA 206+04.5, RT 11'
CONSTRUCT CB-B AT +04.5
CONSTRUCT POLYETHYLENE LINER
CONSTRUCT 28 LF X 15" PE PIPE
RIM = 47.23'
12" INV IN = 44.00'
15" INV IN = 44.20'
15" INV OUT = 43.90' (EXIST)
3 STA 205+94.2, RT 24.6' TO STA 206+04.5. RT 11'
CONSTRUCT 16 LF X 15" PE PIPE
CONSTRUCT REINF CONC HDWL @ +94.2
CONSTRUCT INLET PROTECTION 6'W X 10'L (STONE FILL CLASS C)
15" INV IN = 44.50'
4 STA 206+22.2, LT 11.8'
RECONST CB , ADJ FRAME & GRATE TO GRADE
CONSTRUCT POLYETHYLENE LINER
CORE HOLE FOR 15" PE PIPE
15" INV IN = 42.9'
5 STA 210+69, RT 11' TO STA 208+50, RT 11'
CONSTRUCT CB-B AT +50
CONSTRUCT POLYETHYLENE LINER
CONSTRUCT 214 LF X 12" PE PIPE
RIM = 45.14'
INV OUT = 41.30'
N
MAP 283 LOT 38
N/F
SHIRLEY E. MACDONALD REVOCABLE TRUST
SHIRLEY E. MACDONALD, TRUSTEE
RCRD. BOOK 5380 PAGE 2195
24" X 21.5" CB
RIM: 46.4'
A: 42.7' (I) 8" CMP
B: 42.9' (I) 8" CMP
C: 44.9' (I) 6" CMP
SUMP: 42.7'
5/8"ø IRON ROD FOUND FLUSH W/ CAP #738
TBM#5
SPIKE SET IN U.P. 2
NAVD88 ELEV.=47.86'
MAP 283 LOT 19
N/F
CITY OF PORTSMOUTH
RCRD. BOOK 5907 PAGE 1795
EXIST PRIME WETLAND 100' BUFFER
RECONSTRUCT DRIVEWAY
RET TREES
RET UP
EXIST ROW
RET MB
ADJ WG
RET EXIST 8" CMP
RET UP
RET MB
8" CMP INVERT: 41.4'
PROP FULL DEPTH PAVE RECONSTR
PROP SLOPE LINE (TYP)
EXIST WOODS LINE
RET TREE
EXIST ROW
REM TREE
PROP EOP
MATCH TO SHEET 15
MATCH TO SHEET 17
205
206
207
208
209
210
12" PE PIPE
BAN-0
15" PE PIPE
REM EXIST 8" CMP (BAN-0)
REM DRAIN INLET STRUCT
SGC
BANFIELD ROAD
OHW
12'
8'
12" PE PIPE
REM TREES (2)
EXIST WETLAND
PFO1E
R&R 60 LF STONE WALL TO 1 FT BACK OF SW
PROP DRAINAGE EASEMENT
RET IP
1.5"ø IRON PIPE FOUND 1" DOWN
8" CMP INVERT: 44.5'
PROP 8' CEM CONC SW
RECONSTRUCT DRIVEWAY
PROP SLOPE LINE (TYP)
EXIST ROW
BEGIN 6" GAS RELOCATION STA 208+00, RT 15'
ADJ IP
R&R 40 LF STONE WALL TO 1 FT BACK OF SW
1.25"ø IRON PIPE FOUND 5" HIGH
1.5"ø IRON PIPE FOUND 4" HIGH
EXIST WETLAND
PROP TEMP EROSION CONTROL COMPOST SOCK & SILT FENCE w/ GAP IN SILT FENCE FOR DRAINAGE AS NECESSARY (TYP)
R&R 220 LF STONE WALL TO 1 FT BACK OF SW
PROP TEMP CONST EASEMENT
PROP SIDEWALK EASEMENT
REL UP #1 TO STA 209+13, RT 20.5
RESET IP
1.5"ø IRON PIPE FOUND 3" HIGH
EXIST WETLAND
REL EXIST 6" GAS STA 208+00 TO 218+00, RT 15'
MAP 294 LOT 9
N/F
CITY OF PORTSMOUTH
DEPARTMENT OF PUBLIC WORKS
RCRD. BOOK 2370 PAGE 1383
MAP 294 LOT 1
N/F
KATHY BURNS
MICHAEL W. BURNS
RCRD. BOOK 4147 PAGE 843
Existing House #1051

PHASE 1 : BASE PROJECT

- FULL DEPTH PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER ON SOUTH SIDE
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GAS LINE RELOCATION (BO)
- CULVERTS & CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- DRIVEWAY MATCHES ON NORTH SIDE
- GUARDRAIL INSTALLATION

PHASE 2 : ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE
- UTILITY POLE RELOCATION (BO)
- DRIVEWAY MATCHES ON SOUTH SIDE
- STONE WALL RELOCATIONS
- LANDSCAPING AT VARIOUS LOCATIONS



LOW POINT ELEV = 47.16
LOW POINT STA = 206+35
PVI STA = 205+30.00
PVI ELEV = 48.00
A.D. = 5.95%
K = 35.30
210' VC
195.5' HSD
PVT: 206+35
ELEV: 47.16
PROP GROUND
EXISTING GROUND
-0.80%
2
5
MATCH TO SHEET 15
MATCH TO SHEET 17
60
50
40
30
NAVD 88
BASE ELEV
30.00
50.8 50.82
48.8 48.87
47.7 47.62
47.0 47.04
46.5 46.64
46.2 46.24
45.8 45.84
45.4 45.44
45.0 45.04
44.6 44.64
44.2 44.24
205+00
206+00
207+00
208+00
209+00
210+00
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

TEC

TEC, Inc.
146 Dascomb Road, Andover, MA 01810, (978) 794-1792
169 Ocean Boulevard, Unit 101, PO Box 249, Hampton, NH 03842, (603) 601-8154
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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

General Plan & Profile

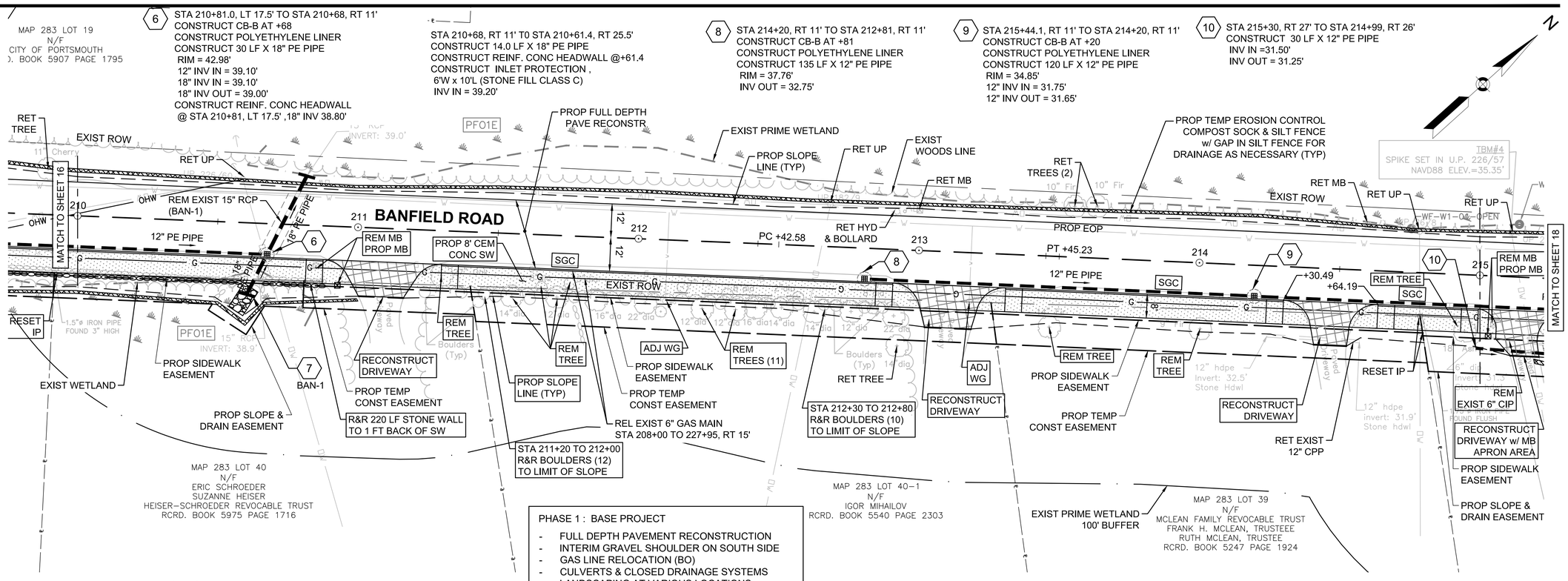
PROJECT NO. N0620

TEC CAD FILE ...20_(Plan & Profile).dwg

STATE OF NEW HAMPSHIRE ANTHONY D. CIOLFI No. 11860 LICENSED PROFESSIONAL ENGINEER

3/3/20

DRAWING NO. 16



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SCALE	1" = 20'

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REVISIONS

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Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
General Plan & Profile

STATE OF NEW HAMPSHIRE
ANTHONY D CIOLFI No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620
TEC CAD FILE
20_(Plan & Profile).dwg
DRAWING NO.
17
SHEET 17 OF 62

11 STA 215+44.7, RT 26' TO STA 215+44.1, RT 11'
CONSTRUCT CB-B AT +44.1
CONSTRUCT POLYETHYLENE LINER
CONSTRUCT 14 LF X 12" PE PIPE
RIM = 34.06'
12" INV IN = 31.16'
12" INV OUT = 31.16'

12 PROP BAN-2
STA 218+63.1, LT 23.5' TO STA 218+75.3, RT 29.0'
CONSTRUCT 18" PE PIPE (3) X 54 LF
CENTER PIPE INV IN = 30.40'
CENTER PIPE INV OUT = 28.80'

13 STA 219+13, RT 29' TO STA 219+12.6, RT 11'
CONSTRUCT CB-B AT +12.6
CONSTRUCT POLYETHYLENE LINER
CONSTRUCT 16 LF X 12" PE PIPE
RIM = 33.86'
12" INV OUT = 31.16'

2 STA 217+93.5 TO STA 218+18.5, LT 14'
CONSTRUCT TERMINAL UNIT TYPE EAGRT, 25'
STA 218+18.5 TO STA 219+81, LT 13'
CONSTRUCT 162.5 LF x W-BEAM GUARDRAIL w/ STEEL POSTS
STA 219+81 TO 220+06, LT 13'
CONSTRUCT TERMINAL UNIT TYPE EAGRT, 25'

1 STA 215+51 TO STA 215+76, RT 21.5'
CONSTRUCT TERMINAL UNIT EAGRT, 25'
STA 215+76 TO STA 220+81.7, RT 20.5'
CONSTRUCT 506.25 LF x W-BEAM GUARDRAIL w/ STEEL POSTS
STA 220+81.7 TO 221+06.7, RT 21.5'

PHASE 1 : BASE PROJECT
- FULL DEPTH PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER ON SOUTH SIDE
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GAS LINE RELOCATION (BO)
- CULVERTS & CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- DRIVEWAY MATCHES ON NORTH SIDE
- GUARDRAIL INSTALLATION

PHASE 2 : ADD ALTERNATE
- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE
- DRIVEWAY MATCHES ON SOUTH SIDE
- LANDSCAPING AT VARIOUS LOCATIONS

LOW POINT ELEV = 34.28
LOW POINT STA = 215+44.14
PVI STA = 214+50.00
PVI ELEV = 33.84
A.D. = 2.90%
K = 89.65
260' VC
499.7' HSD

HIGH POINT ELEV = 34.67
HIGH POINT STA = 216+91.52
PVI STA = 217+00.00
PVI ELEV = 34.84
A.D. = -0.90%
K = 166.31
150' VC
1271.5' SSD

LOW POINT ELEV = 33.89
LOW POINT STA = 219+12.66
PVI STA = 220+00.00
PVI ELEV = 33.33
A.D. = 2.75%
K = 99.93
275' VC
574.7' HSD

NAVD 88
BASE ELEV
25.00

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

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146 Dascomb Road
Andover, MA 01810
(978) 794-1792
169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154
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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

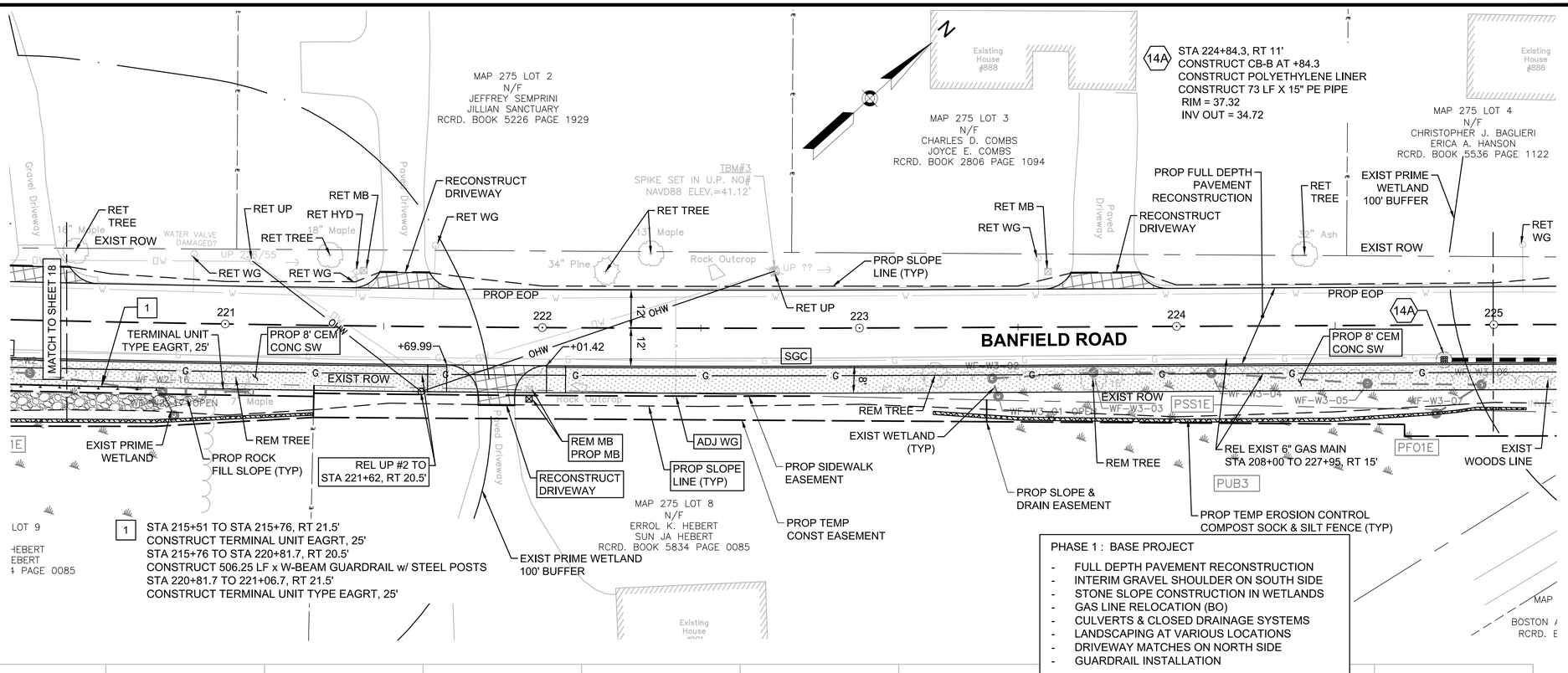
PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
General Plan & Profile

PROJECT NO.
N0620
TEC CAD FILE
20_(Plan & Profile).dwg
DRAWING NO.
18
SHEET 18 OF 62

STATE OF NEW HAMPSHIRE - ANTHONY D CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER
3/3/20



PHASE 1 : BASE PROJECT

- FULL DEPTH PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER ON SOUTH SIDE
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GAS LINE RELOCATION (BO)
- CULVERTS & CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- DRIVEWAY MATCHES ON NORTH SIDE
- GUARDRAIL INSTALLATION

PHASE 2 : ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE
- UTILITY POLE RELOCATION (BO)
- DRIVEWAY MATCHES ON SOUTH SIDE
- LANDSCAPING AT VARIOUS LOCATIONS
- MAIL BOXES

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CHECKED BY	LSA
DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

General Plan & Profile

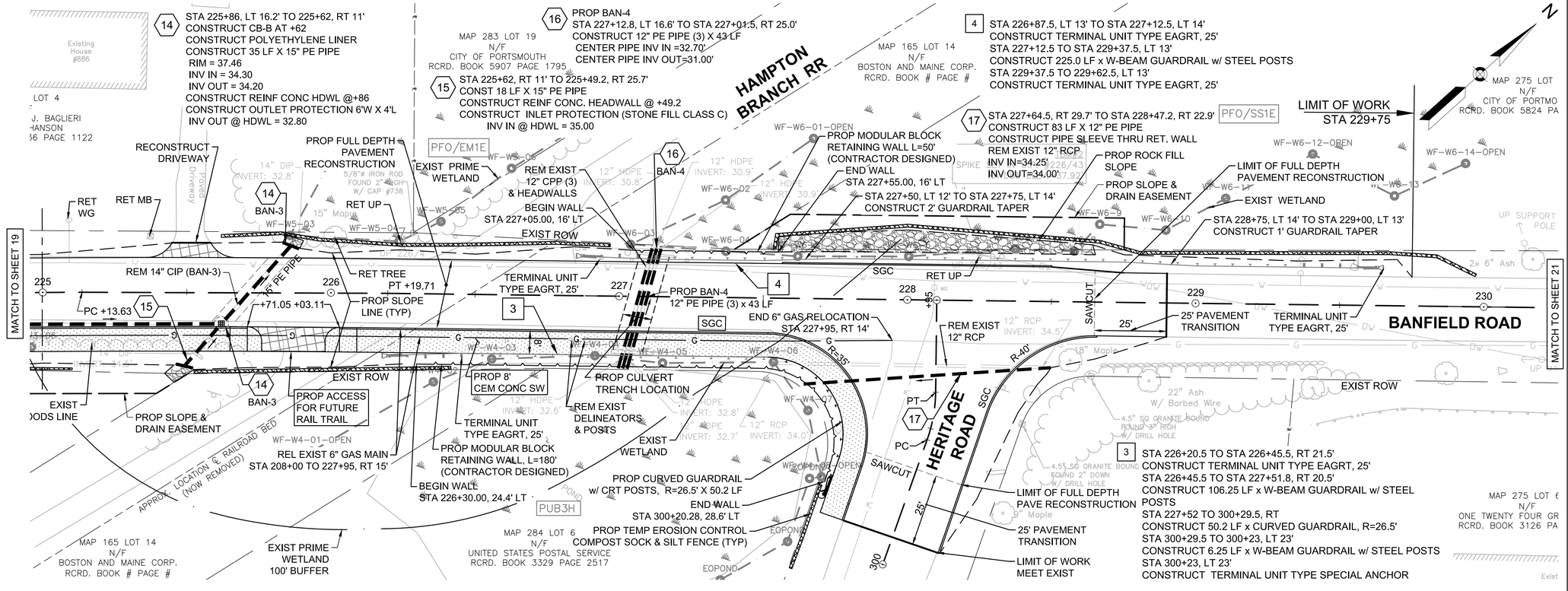
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
20_(Plan & Profile).dwg

DRAWING NO.
19

SHEET 19 OF 62

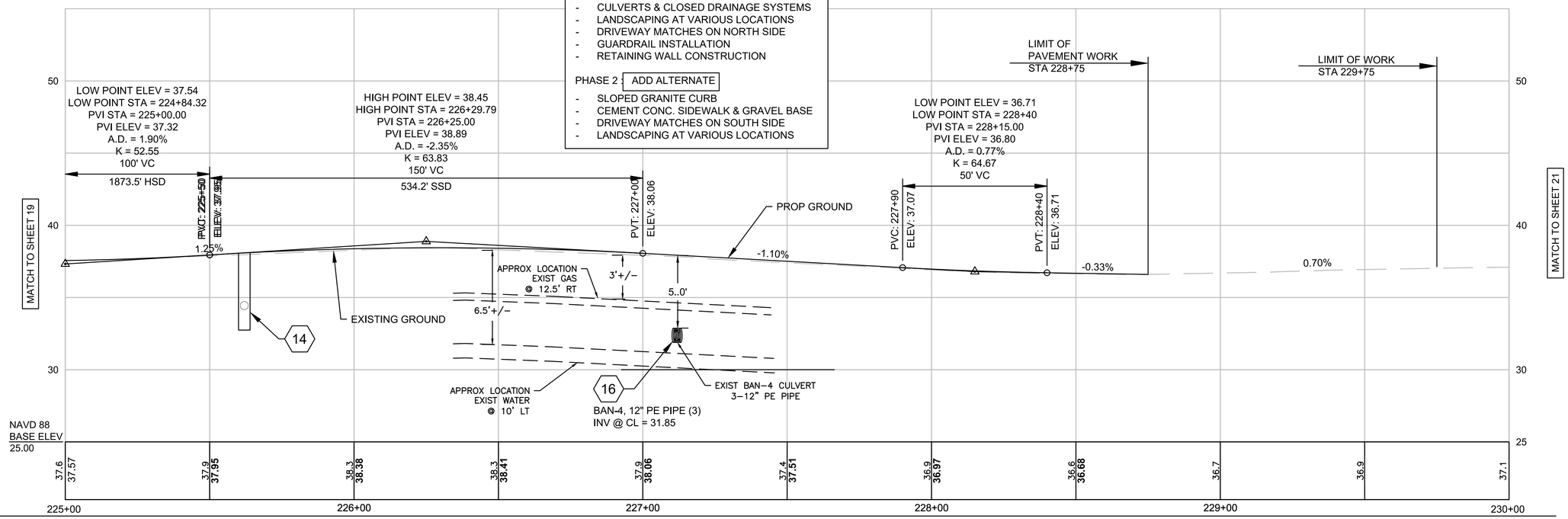


PHASE 1 : BASE PROJECT

- FULL DEPTH PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER ON SOUTH SIDE
- STONE SLOPE CONSTRUCTION IN WETLANDS
- GAS LINE RELOCATION
- CULVERTS & CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- DRIVEWAY MATCHES ON NORTH SIDE
- GUARDRAIL INSTALLATION
- RETAINING WALL CONSTRUCTION

PHASE 2 : ADD ALTERNATE

- SLOPED GRANITE CURB
- CEMENT CONC. SIDEWALK & GRAVEL BASE
- DRIVEWAY MATCHES ON SOUTH SIDE
- LANDSCAPING AT VARIOUS LOCATIONS



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PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

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Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
General Plan & Profile

PROJECT NO.
N0620

TEC CAD FILE
20_(Plan & Profile).dwg

DRAWING NO.
20

SHEET 20 OF 62

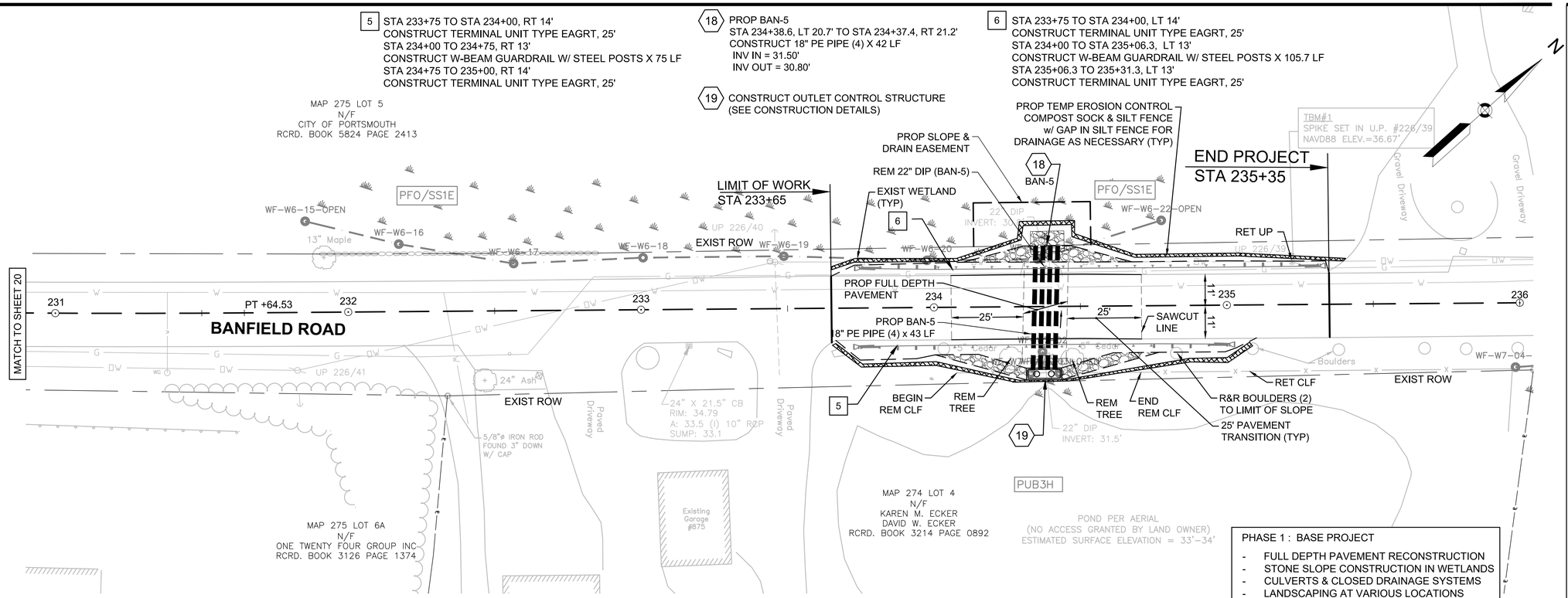
STATE OF NEW HAMPSHIRE ANTHONY D. CIOLFI No. 11660 LICENSED PROFESSIONAL ENGINEER
3/3/20

5 STA 233+75 TO STA 234+00, RT 14'
CONSTRUCT TERMINAL UNIT TYPE EAGRT, 25'
STA 234+00 TO 234+75, RT 13'
CONSTRUCT W-BEAM GUARDRAIL W/ STEEL POSTS X 75 LF
STA 234+75 TO 235+00, RT 14'
CONSTRUCT TERMINAL UNIT TYPE EAGRT, 25'

18 PROP BAN-5
STA 234+38.6, LT 20.7' TO STA 234+37.4, RT 21.2'
CONSTRUCT 18" PE PIPE (4) X 42 LF
INV IN = 31.50'
INV OUT = 30.80'

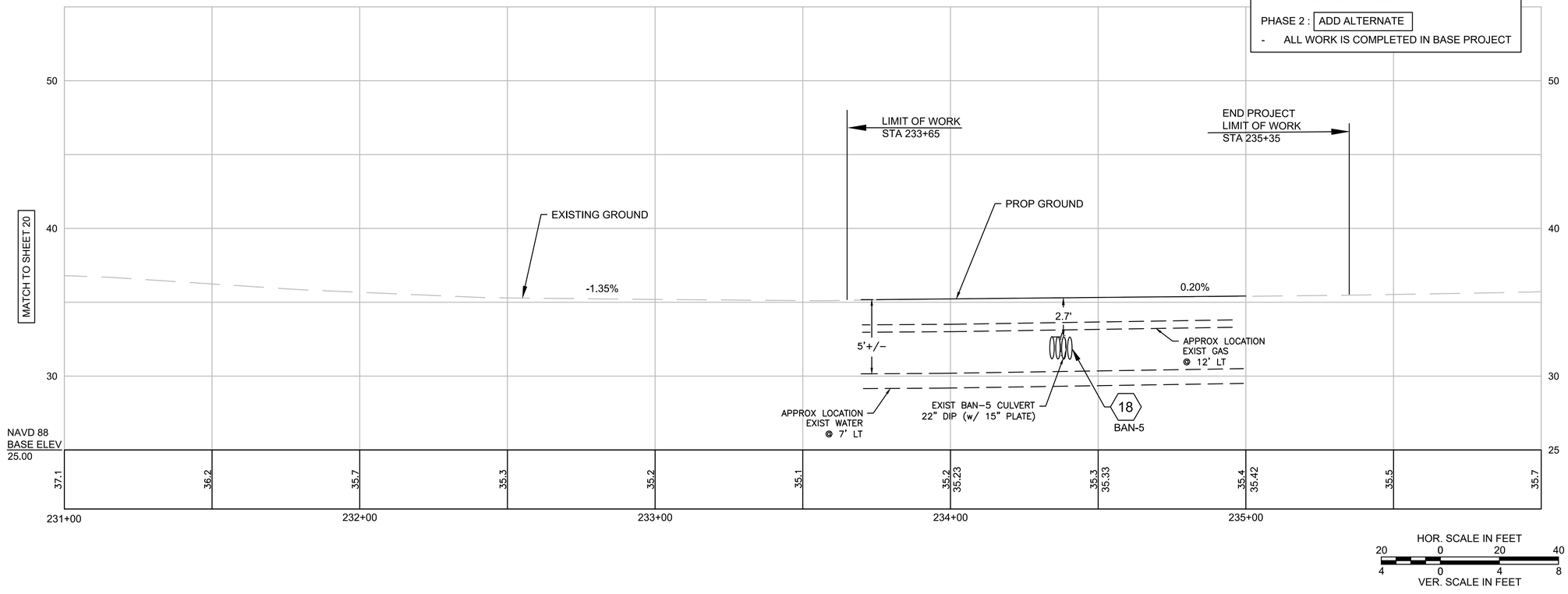
19 CONSTRUCT OUTLET CONTROL STRUCTURE
(SEE CONSTRUCTION DETAILS)

6 STA 233+75 TO STA 234+00, LT 14'
CONSTRUCT TERMINAL UNIT TYPE EAGRT, 25'
STA 234+00 TO STA 235+06.3, LT 13'
CONSTRUCT W-BEAM GUARDRAIL W/ STEEL POSTS X 105.7 LF
STA 235+06.3 TO 235+31.3, LT 13'
CONSTRUCT TERMINAL UNIT TYPE EAGRT, 25'



PHASE 1 : BASE PROJECT
- FULL DEPTH PAVEMENT RECONSTRUCTION
- STONE SLOPE CONSTRUCTION IN WETLANDS
- CULVERTS & CLOSED DRAINAGE SYSTEMS
- LANDSCAPING AT VARIOUS LOCATIONS
- GUARDRAIL INSTALLATION

PHASE 2 : ADD ALTERNATE
- ALL WORK IS COMPLETED IN BASE PROJECT



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SCALE	1" = 20'

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

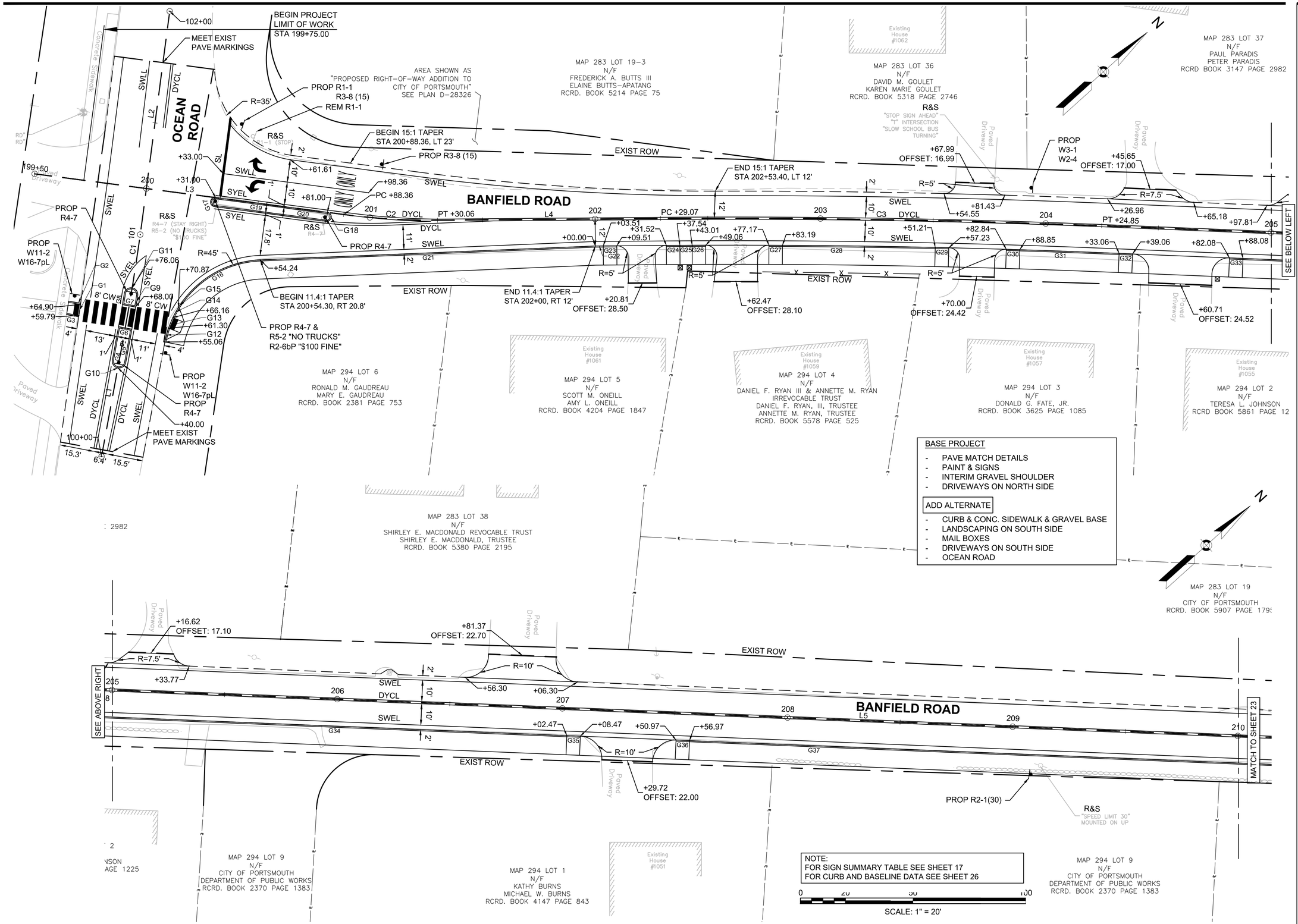
PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
General Plan & Profile

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620
TEC CAD FILE 20_(Plan & Profile).dwg
DRAWING NO. 21
SHEET 21 OF 62



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City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

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Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Pavement Layout, Marking, Signing & Curbing Plans

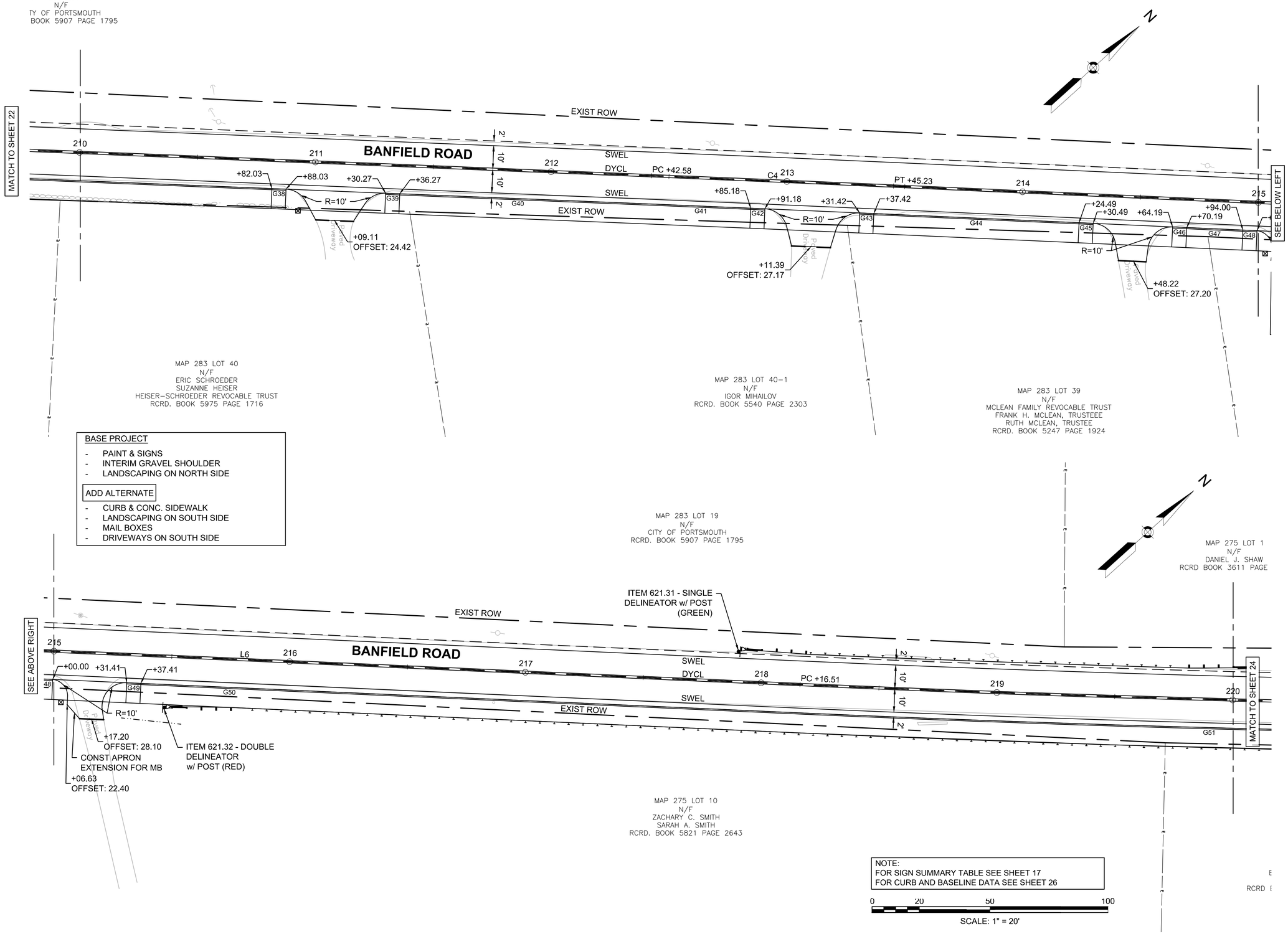
PROJECT NO.
N0620

TEC CAD FILE
N0620_(Pvmk_Sign).dwg

DRAWING NO.
22

SHEET 22 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D CIOLFI No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20



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SCALE	1" = 20'

PREPARED FOR

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Portsmouth, NH 03801

REVISIONS

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Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

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Portsmouth, NH

DRAWING TITLE

Pavement Layout, Marking, Signing & Curbing Plans

STATE OF NEW HAMPSHIRE
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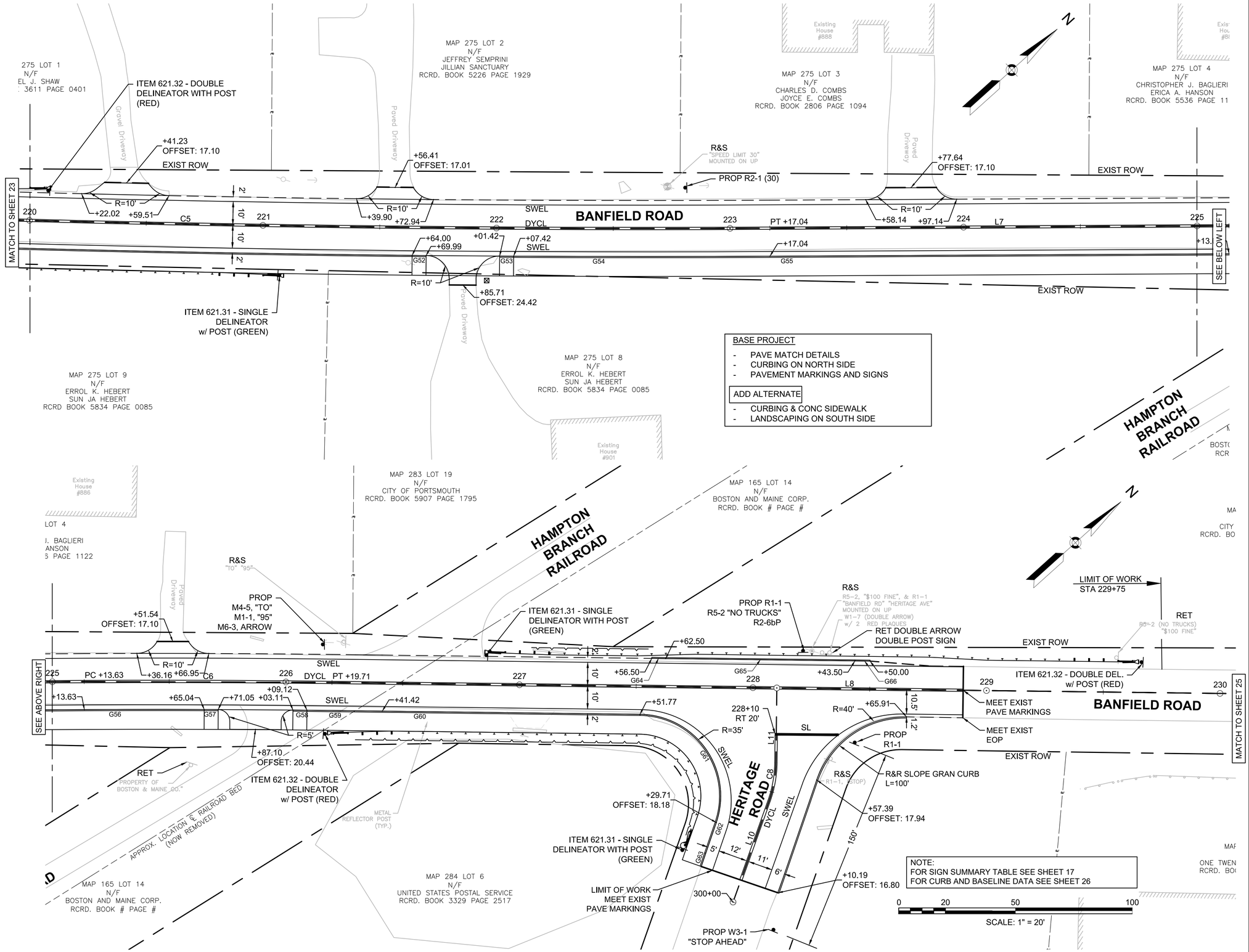
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Pvmk_Sign).dwg

DRAWING NO.
23

SHEET 23 OF 62



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DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR

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3/3/20

PROJECT NO.
N0620

TEC CAD FILE
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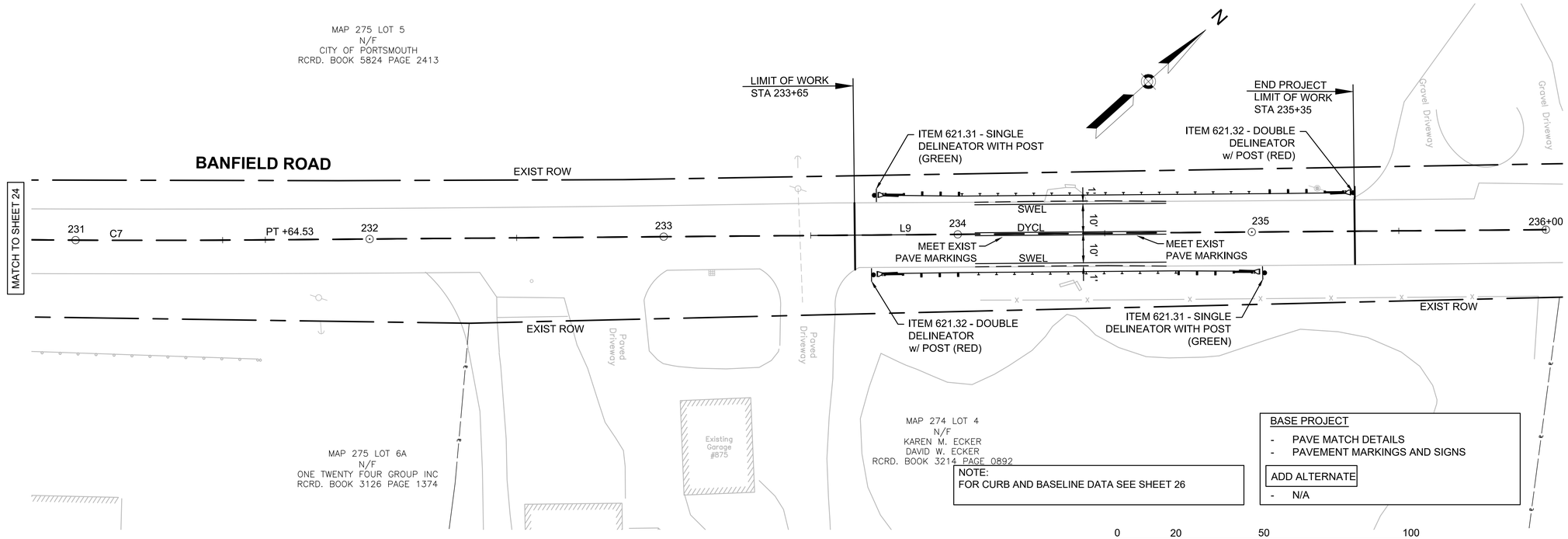
DRAWING NO.
24

SHEET 24 OF 62



TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LEGEND	LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER		
R1-1	30	30	STOP				3	RED	WHITE	WHITE	6.25	18.75
R2-1(30)	24	30	SPEED LIMIT 30				2	WHITE	BLACK	BLACK	5.00	10.00
R2-6bP	24	18	$150 FINE				2	WHITE	BLACK	BLACK	3.00	6.00
R3-8(15)	30	30	ONLY ONLY				2	WHITE	BLACK	BLACK	6.25	12.50
R4-7	24	30					4	WHITE	BLACK	BLACK	5.00	20.00
R5-2	24	24					2	WHITE	RED/ BLACK	BLACK	4.00	8.00

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LEGEND	LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER		
W2-4	30	30	T				1	FL. YELLOW	BLACK	BLACK	6.25	6.25
W3-1	30	30					2	FL. YELLOW	RED/ BLACK	BLACK	6.25	12.50
W11-2	30	30					2	FL. YELLOW	BLACK	BLACK	6.25	12.50
W16-7pl	24	12					2	FL. YELLOW	BLACK	BLACK	2.00	4.00
M4-5	24	12	TO				1	BLUE	WHITE	WHITE	2.00	2.00
M1-1	24	24	INTERSTATE 95				1	RED / BLUE	WHITE	WHITE	4.00	4.00
M6-3	21	15					1	BLUE	WHITE	WHITE	2.19	2.19

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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Pavement Layout, Marking, Signing & Curbing Plans

STATE OF NEW HAMPSHIRE
ANTHONY D CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Pvmk_Sign).dwg

DRAWING NO.
25

SHEET 25 OF 62

CURB SUMMARY TABLE

ITEM NO.	-	-	609.21	609.23	609.5
DESCRIPTION	MARK NO.	RADIUS	STRAIGHT GRANITE SLOPE CURB	CURVED GRANITE SLOPE CURB	RESET GRANITE CURB
UNIT		FT	LF	LF	LF
LOCATION					
BANFIELD ROAD					
	G1		5		
	G2		5.4		
	G3		5.4		
	G4		14.5		
	G5		14.5		
	G6		6		
	G7		6		
	G8		4.5		
	G9		4.5		
	G10	3.0		9.4	
	G11	3.0		9.4	
	G12	45.0	6.4		
	G13	45.0	5.1		
	G14	45.0	5.1		
	G15	45.0	2		
	G16	45.0	41.7		
	G17	2.0		6.3	
	G18	2.0		6.3	
	G19		50		
	G20		50		
	G21		148.8		
	G22		3.5		
	G23		6		
	G24		6		
	G25		5.5		
	G26		6		
	G27		6		
	G28	3988.0	67.8		
	G29		6		
	G30		6		
	G31		35.9		
	G32		6		
	G33		6		
	G34		214.4		
	G35		6		
	G36		6		
	G37		325.1		
	G38		6		
	G39		6		
	G40		106.3		
SUB TOTAL =			1205.4	31.4	0.0

CURB SUMMARY TABLE

ITEM NO.	-	-	609.21	609.23	609.5
DESCRIPTION	MARK NO.	RADIUS	STRAIGHT GRANITE SLOPE CURB	CURVED GRANITE SLOPE CURB	RESET GRANITE CURB
UNIT		FT	LF	LF	LF
	G41		42.6		
	G42		6		
	G43		6		
	G44		87.1		
	G45		6		
	G46		6		
	G47		23.8		
	G48		6		
	G49		6		
	G50		279.1		
	G51	10012.0	347.9		
	G52		6		
	G53		6		
	G54	10012.0	109.8		
	G55		196.6		
	G56		51.3		
	G57		6		
	G58		6		
	G59		32.3		
	G60		110.3		
	G61	35.0	66.1		
	G62		14		
	G63		6		
	G64		6		
	G65		81		
	G66		6		
SUB TOTAL (LEFT) =			1205.40	31.40	0.00
SUB TOTAL (RIGHT)=			1519.90	0.00	0.00
ESTIMATED RESET AMOUNT =			100	0	0
TOTAL			2625	31	0
ROUNDING			75	19	0
SAY			2700	50	100

BASE PROJECT

- CURBING FOR NORTH SIDE ACROSS FROM HERITAGE AVE
  CURB MARK NO. G64, G65, G66

ADD ALTERNATE

- CURBING FOR SIDEWALKS ON SOUTH SIDE

OCEAN ROAD CL CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	100+00.00	195489.7692	1213751.1380		N24°34'34"W 56.72'	100+56.72	195541.3544	1213727.5465
C1	100+56.72	195541.3544	1213727.5465	R=1000.00' Δ=2°55'39" L=51.09' T=25.55'		101+07.82	195587.2572	1213705.1187
L2	101+07.82	195587.2572	1213705.1187		N27°30'13"W 92.18'	102+00.00	195669.0208	1213662.5489

HERITAGE AVE CL CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	300+00.00	197052.1515	1216086.3426		N15°24'52"W 45.94'	300+45.94	197096.4400	1216074.1314
C8	300+45.94	197096.4400	1216074.1314	R=51.00' Δ=18°52'38" L=16.80' T=8.48'		300+62.74	197111.6179	1216067.1011
L11	300+62.74	197111.6179	1216067.1011		N34°17'30"W 31.97'	300+94.71	197138.0316	1216049.0885

BANFIELD ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	199+50.00	195575.5220	1213654.8577		N62°29'47"E 138.36'	200+88.36	195639.4156	1213777.5777
C2	200+88.36	195639.4156	1213777.5777	R=300.00' Δ=7°57'50" L=41.70' T=20.88'		201+30.06	195661.1769	1213813.1091
L4	201+30.06	195661.1769	1213813.1091		N54°31'57"E 99.01'	202+29.07	195718.6270	1213893.7479
C3	202+29.07	195718.6270	1213893.7479	R=4000.00' Δ=2°48'16" L=195.78' T=97.91'		204+24.85	195828.2807	1214055.9171
L5	204+24.85	195828.2807	1214055.9171		N57°20'13"E 817.73'	212+42.58	196269.6089	1214744.3301
C4	212+42.58	196269.6089	1214744.3301	R=26000.00' Δ=0°13'34" L=102.65' T=51.33'		213+45.23	196324.8386	1214830.8565
L6	213+45.23	196324.8386	1214830.8565		N57°33'47"E 471.28'	218+16.51	196577.6200	1215228.6093
C5	218+16.51	196577.6200	1215228.6093	R=10000.00' Δ=2°52'04" L=500.53' T=250.32'		223+17.04	196856.5465	1215644.1524
L7	223+17.04	196856.5465	1215644.1524		N54°41'43"E 196.59'	225+13.63	196970.1619	1215804.5889
C6	225+13.63	196970.1619	1215804.5889	R=6000.00' Δ=1°00'47" L=106.08' T=53.04'		226+19.71	197030.7013	1215891.6995
L8	226+19.71	197030.7013	1215891.6995		N55°42'30"E 443.35'	230+63.07	197280.4898	1216257.9892
C7	230+63.07	197280.4898	1216257.9892	R=5000.00' Δ=1°09'46" L=101.46' T=50.73'		231+64.53	197338.5006	1216341.2291
L9	231+64.53	197338.5006	1216341.2291		N54°32'44"E 435.47'	236+00.00	197591.0979	1216695.9544

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Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

www.TheEngineeringCorp.com

DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/20
SCALE	1" = 20'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Curb Summary & Baseline Data Table

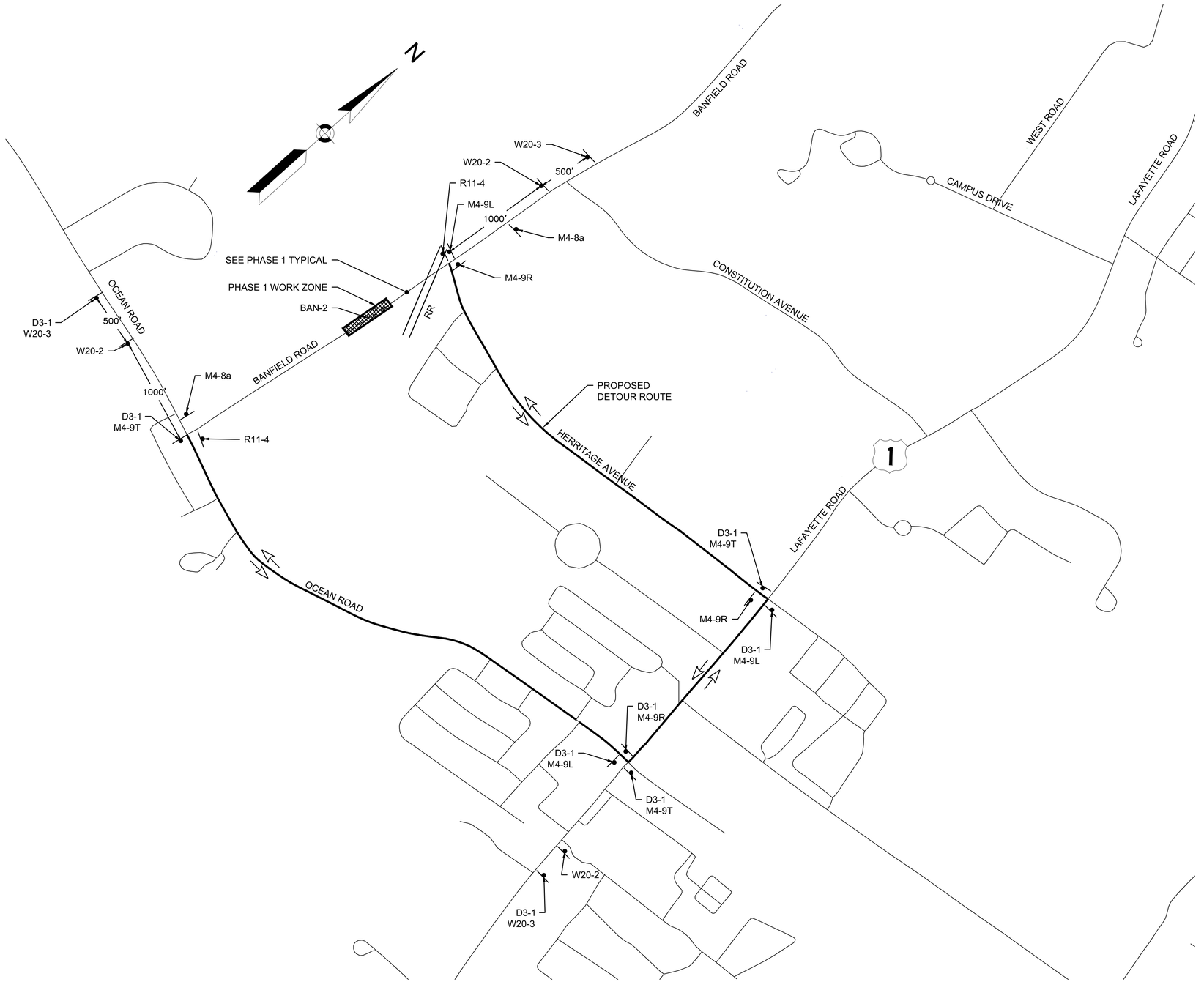
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED
PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_(Pvmk_Sign).dwg

DRAWING NO.
26

SHEET 26 OF 62



PROPOSED DETOUR ROUTE - PHASE 1
N.T.S.

BASE PROJECT

- TEMP. PAVE MATCH DETAILS
- INTERIM GRAVEL SHOULDER
- DRAINAGE
- LANDSCAPING ON NORTH SIDE

ADD ALTERNATE

- N/A

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	NTS

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Traffic Management Plan
Phase 1

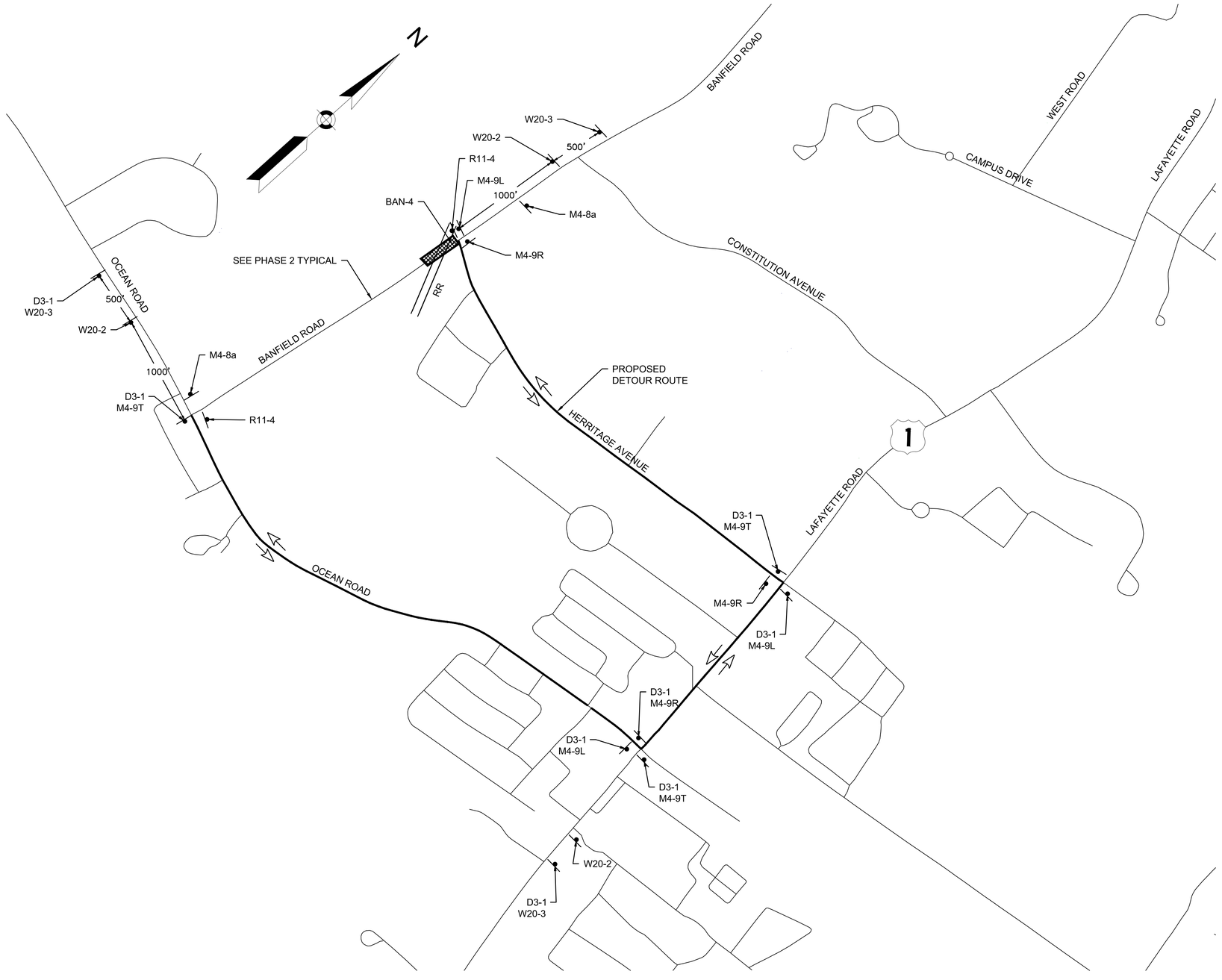
PROJECT NO.
N0620

TEC CAD FILE

DRAWING NO.
27

SHEET 27 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED PROFESSIONAL ENGINEER
3/3/20



PROPOSED DETOUR ROUTE - PHASE 2
N.T.S.

BASE PROJECT

- TEMP. PAVE MATCH DETAILS
- INTERIM GRAVEL SHOULDER
- DRAINAGE
- LANDSCAPING ON NORTH SIDE

ADD ALTERNATE

- N/A

TEC, Inc.

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Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
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Hampton, NH 03842
(603) 601-8154

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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	NTS

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Traffic Management Plan
Phase 2

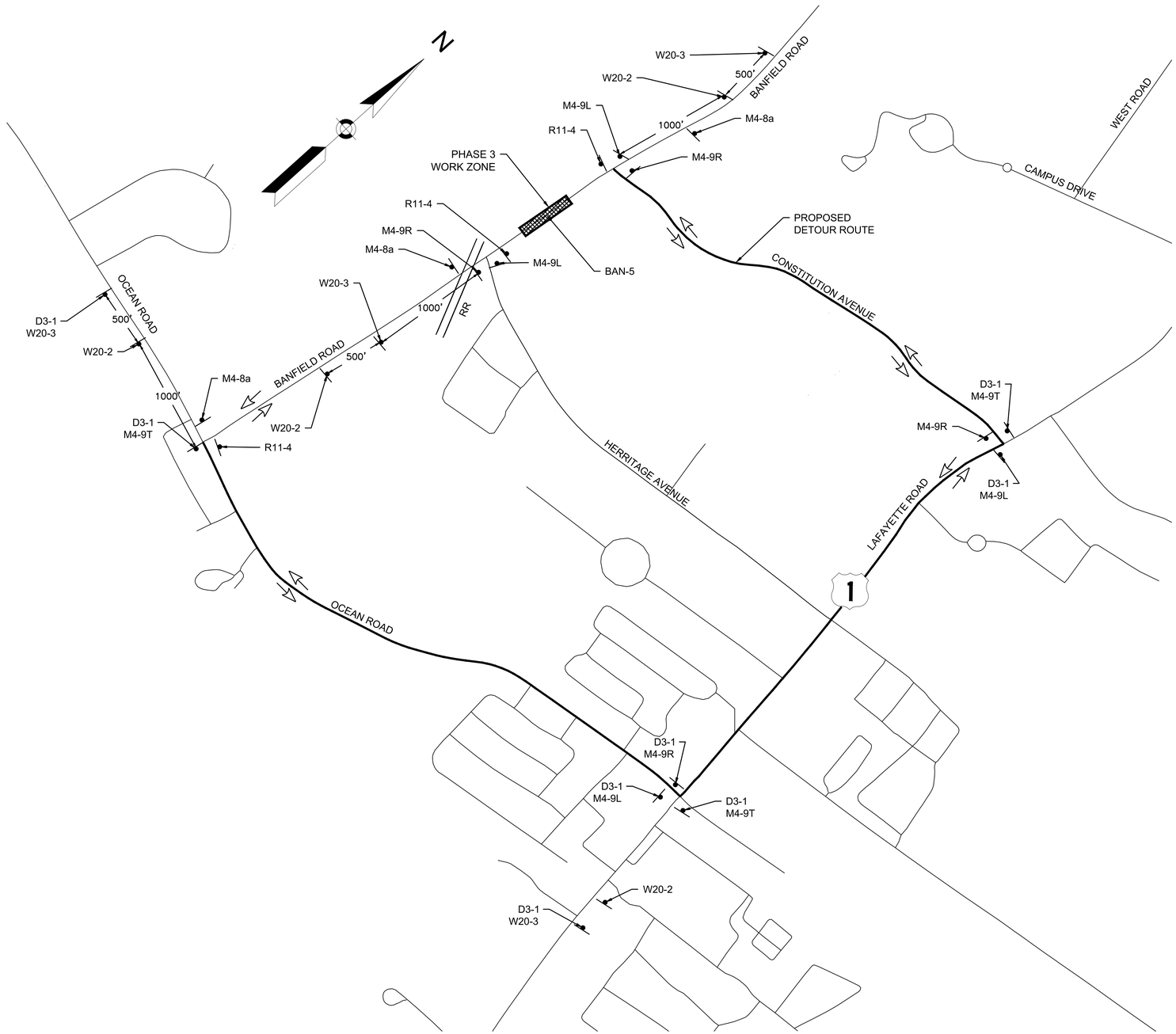
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11889
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE

DRAWING NO.
28

SHEET 28 OF 62



PROPOSED DETOUR ROUTE - PHASE 3
N.T.S.

BASE PROJECT

- TEMP. PAVE MATCH DETAILS
- INTERIM GRAVEL SHOULDER
- DRAINAGE
- LANDSCAPING ON NORTH SIDE

ADD ALTERNATE

- N/A

TEC, Inc.

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DATE	3/3/2020
SCALE	NTS

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Traffic Management Plan
Phase 3

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE

DRAWING NO.
29

SHEET 29 OF 62

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (in)			TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LEGEND	LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR		BACK-GROUND	LEGEND	BORDER		
D3-1	36	12	Banfield Rd	SEE 2009 MUTCD FOR DIMENSIONS			8	FL. ORANGE	BLACK	BLACK	3.00	24.00
G20-2a	36	18	END ROAD WORK				2	FL. ORANGE	BLACK	BLACK	4.50	9.00
M4-8a	36	24	END DETOUR				2	FL. ORANGE	BLACK	BLACK	6.00	12.00
M4-9L	30	24	DETOUR ←				5	FL. ORANGE	BLACK	BLACK	5.00	25.00
M4-9R	30	24	DETOUR →				3	FL. ORANGE	BLACK	BLACK	5.00	15.00
M4-9T	30	24	DETOUR ↑				3	FL. ORANGE	BLACK	BLACK	5.00	15.00
R11-4	60	30	ROAD CLOSED TO THRU TRAFFIC			↓	3	WHITE	BLACK	BLACK	12.50	37.50
R50-1	48	36	NH LAW WORK ZONE SPEEDING FINES $250 - $500	NHDOT STANDARD SIGN			2	WHITE	BLACK	BLACK	12.00	24.00
W20-1b	36	36	ROAD WORK 500 FT	SEE 2009 MUTCD FOR DIMENSIONS			2	FL. ORANGE	BLACK	BLACK	9.00	18.00
W20-2	36	36	DETOUR AHEAD				4	FL. ORANGE	BLACK	BLACK	9.00	36.00
W20-3	36	36	ROAD CLOSED AHEAD			↓	4	FL. ORANGE	BLACK	BLACK	9.00	36.00

NOTES:

1. SEE NHDOT STANDARD SHEETS TC-1, TC-2, & TC-3 FOR GENERAL NOTES AND TYPICAL SET-UP

BASE PROJECT

- TEMP. PAVE MATCH DETAILS
- INTERIM GRAVEL SHOULDER
- DRAINAGE
- LANDSCAPING ON NORTH SIDE

ADD ALTERNATE

- N/A

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PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

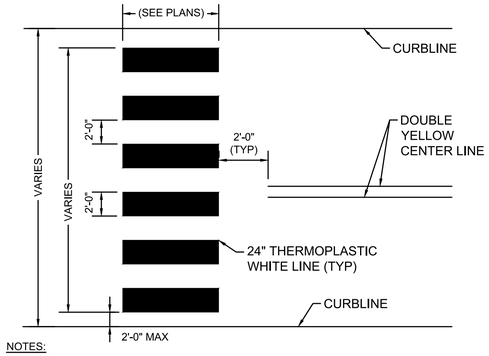
PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Traffic Management Plans
Sign Summary

STATE OF NEW HAMPSHIRE - ANTHONY D CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620
TEC CAD FILE
DRAWING NO. 30
SHEET 30 OF 62



NOTES:

1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED. ALL 24" LINES MAY BE EITHER ONE 24" LINE OR A COMBINATION OF TWO - 12" LINES.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION.
3. CROSSWALK BARS SHALL BE PLACED OUTSIDE THE VEHICULAR WHEEL PATH WHEREVER POSSIBLE.

CROSSWALK PAVEMENT MARKING

N.T.S.

BASE PROJECT

- PAVEMENT MARKINGS
- GUARDRAILS

ADD ALTERNATE

- N/A

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PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Construction Details

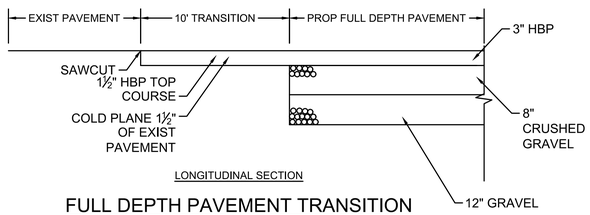
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE

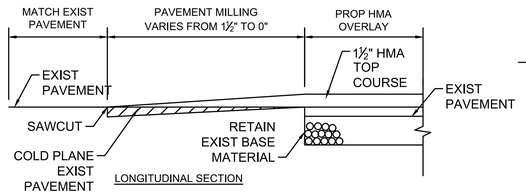
DRAWING NO.
31

SHEET 31 OF 62



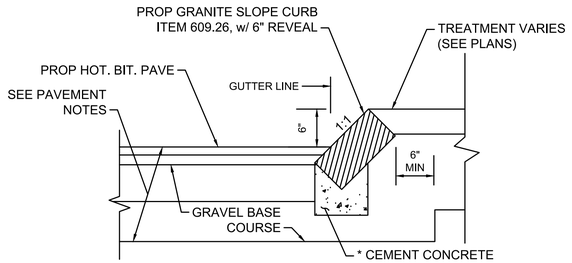
FULL DEPTH PAVEMENT TRANSITION

N.T.S.



PAVEMENT OVERLAY TRANSITION

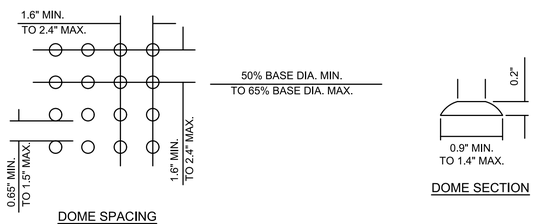
N.T.S.



1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR VARIOUS GRANITE EDGING ITEMS FOR 6" OFFSET FROM FACE OF CURB.

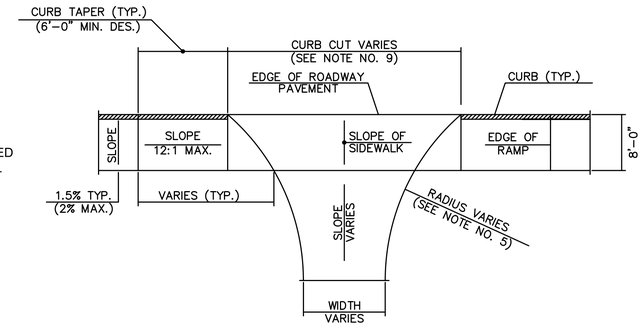
SLOPED GRANITE CURB

N.T.S.

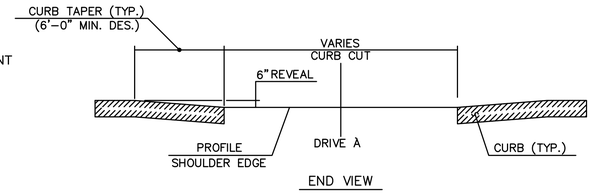


DETECTABLE WARNING PANEL

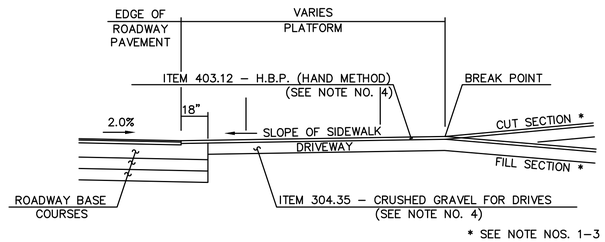
N.T.S.



PLAN VIEW WITH SIDEWALK RAMP



END VIEW



TYPICAL CURBED DRIVE IN CUT/FILL SECTION

WHEELCHAIR RAMP NOTES:

1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1, THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.

   RAMP RUNNING SLOPE EXCEPTION: A GREATER THAN 8.33% RAMP RUNNING GRADE IS ALLOWED WHERE THE THE ROADWAY AND THE SIDEWALK(S) ARE PARALLEL AND VERY CLOSE TOGETHER, WITH THE SAME GRADE, AND USING A GRADE OF 8.33% WOULD RESULT IN A RAMP LENGTH LONGER THAN 15'. IN THOSE CIRCUMSTANCES USE A MAXIMUM RAMP LENGTH OF 15'AND THE ALLOWABLE RUNNING SLOPE OF THE RAMP(S) IS GREATER THAN 8.33%.

2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 2 FT. FROM THE ROADWAY CURBLINE.

3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF SIDEWALK CURB RAMPS OR LANDINGS. CATCH BASINS, MANHOLES, ETC. SHALL NOT BE LOCATED IN, OR AT THE BASE OF, SIDEWALK CURB RAMPS OR LANDINGS.

4. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.

5. THE SURFACE OF A PERPENDICULAR SIDEWALK CURB RAMP OR THE LANDING OF A PARALLEL SIDEWALK CURB RAMP SHALL CONTRAST VISUALLY WITH THE ADJOINING SIDEWALK SURFACE, EITHER ASPHALT/LIGHT-COLORED CONCRETE OR LIGHT-COLORED CONCRETE/DARK-STAINED CONCRETE. THE CONCRETE SURFACE SHALL BE SLIP RESISTANT.

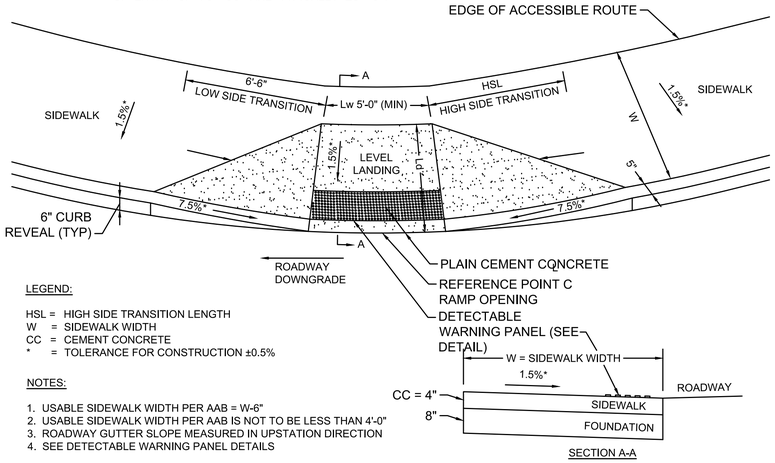
6. DETECTABLE WARNING PANELS SHALL BE THE FULL WIDTH OF THE LANDING, BLENDED TRANSITION, OR CURB RAMP THEY ARE A PART OF AND SHALL BE A MINIMUM OF 2 FEET IN DEPTH. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP, BLENDED TRANSITION, OR LANDING AND THE STREET.

WHEELCHAIR RAMP NOTES

N.T.S.

DRIVEWAY NOTES:

1. GRADES OF MAJOR ENTRANCES BEYOND THE PLATFORM SHOULD NOT EXCEED 8%.
2. GRADES OF OTHER DRIVES BEYOND THE PLATFORM SHOULD NOT EXCEED 15%.
3. THE ALGEBRAIC DIFFERENCE BETWEEN TWO ADJACENT GRADES SHOULD NOT EXCEED 10%.
4. PAVEMENT AND BASE COURSE DEPTHS ARE:
   A. TYPICALLY 8" CRUSHED GRAVEL WITH 3" HBP (HAND METHOD, PLACED IN 2 COURSES) FOR RESIDENTIAL DRIVES ADJACENT TO ROADWAYS WITH CONVENTIONAL CRUSHED GRAVEL, GRAVEL, AND SAND STRUCTURAL BOX. IF THE DRIVE IS ADJACENT TO A ROADWAY WITH A CRUSHED STONE STRUCTURAL BOX, 6" OF CRUSHED STONE FINE GRADATION MAY BE SUBSTITUTED FOR THE 8" OF CRUSHED GRAVEL NOTED ABOVE.
   B. TYPICALLY 12" CRUSHED GRAVEL WITH 3" HBP (HAND METHOD, PLACED IN 2 COURSES) FOR COMMERCIAL DRIVES WITH FREQUENT HEAVY TRUCK TRAFFIC THAT ARE ADJACENT TO ROADWAYS WITH CONVENTIONAL CRUSHED GRAVEL, GRAVEL, AND SAND STRUCTURAL BOX. IF THE DRIVE IS ADJACENT TO A ROADWAY WITH A CRUSHED STONE STRUCTURAL BOX, 9" OF CRUSHED STONE FINE GRADATION MAY BE SUBSTITUTED FOR THE 12" OF CRUSHED GRAVEL NOTED ABOVE.
5. FOR DESIGN CRITERIA AND OTHER ADDITIONAL INFORMATION, REFER TO THE NHDOT DRIVEWAY MANUAL.
6. DITCHES ARE RECOMMENDED FOR UNCURBED DRIVEWAYS IN CUT SLOPES.
7. USE SLOPED END SECTIONS ON DRIVE PIPES FOR UNCURBED DRIVEWAYS.
8. CURBING CAN BE FLARED TO FIT DRIVE RADII IF APPROPRIATE OR ENDED AS DETAILED ABOVE.
9. CURB CUTS VARY TO MATCH EXISTING CONDTIONS. CURB CUTS FOR RESIDENTIAL DRIVES WITH ANGLES OF ENTRY OF 75°–90° ARE TYPICALLY 25'–0".



LEGEND:

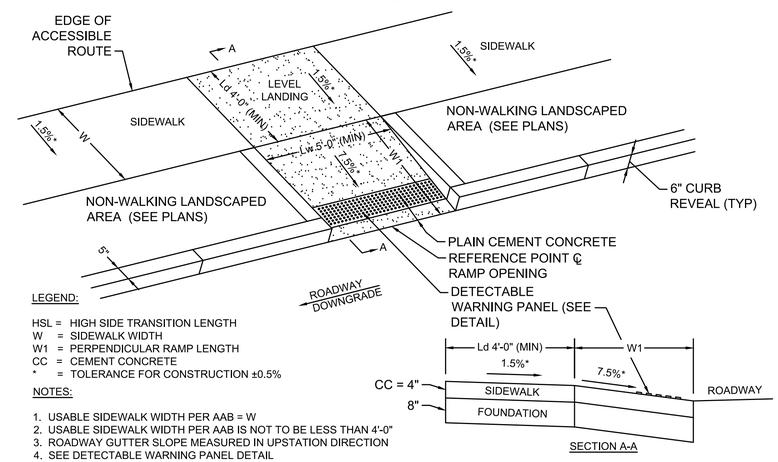
HSL = HIGH SIDE TRANSITION LENGTH
W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W-6"
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
4. SEE DETECTABLE WARNING PANEL DETAILS

WHEELCHAIR RAMP TYPE B

N.T.S.



LEGEND:

HSL = HIGH SIDE TRANSITION LENGTH
W = SIDEWALK WIDTH
W1 = PERPENDICULAR RAMP LENGTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%

NOTES:

1. USABLE SIDEWALK WIDTH PER AAB = W
2. USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
3. ROADWAY GUTTER SLOPE MEASURED IN UPSTATION DIRECTION
4. SEE DETECTABLE WARNING PANEL DETAIL

WHEELCHAIR RAMP TYPE A

N.T.S.

BASE PROJECT
- DRIVES

ADD ALTERNATE
- DRIVES
- CURB & CONC. SIDEWALK

TEC, Inc.
146 Dascomb Road
Andover, MA 01810
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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	N.T.S.

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

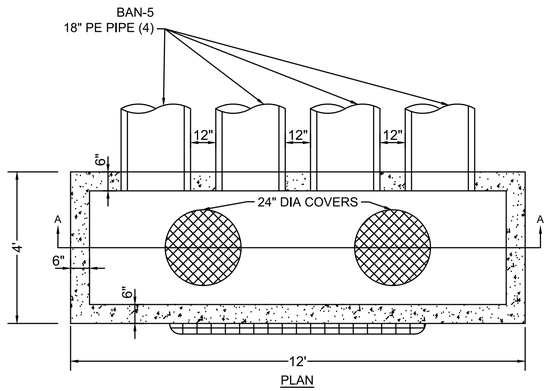
PROJECT TITLE
Roadway Improvements & Culvert Construction

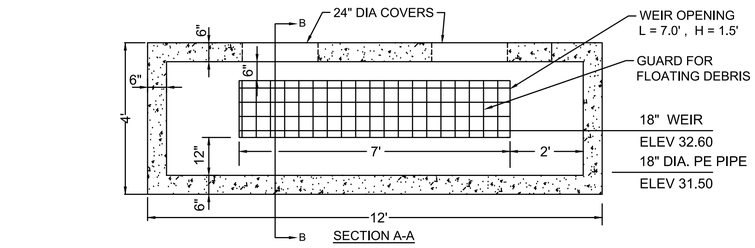
PROJECT LOCATION
Banfield Road
Portsmouth, NH

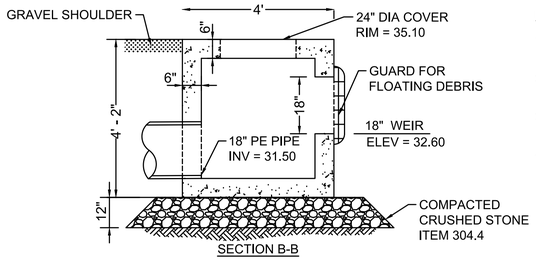
DRAWING TITLE
Construction Details
Add Alternate #1

STATE OF NEW HAMPSHIRE – ANTHONY D CIOLFI No. 11860 – LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620
TEC CAD FILE N0620_(Details)
DRAWING NO. 32
SHEET 32 OF 62





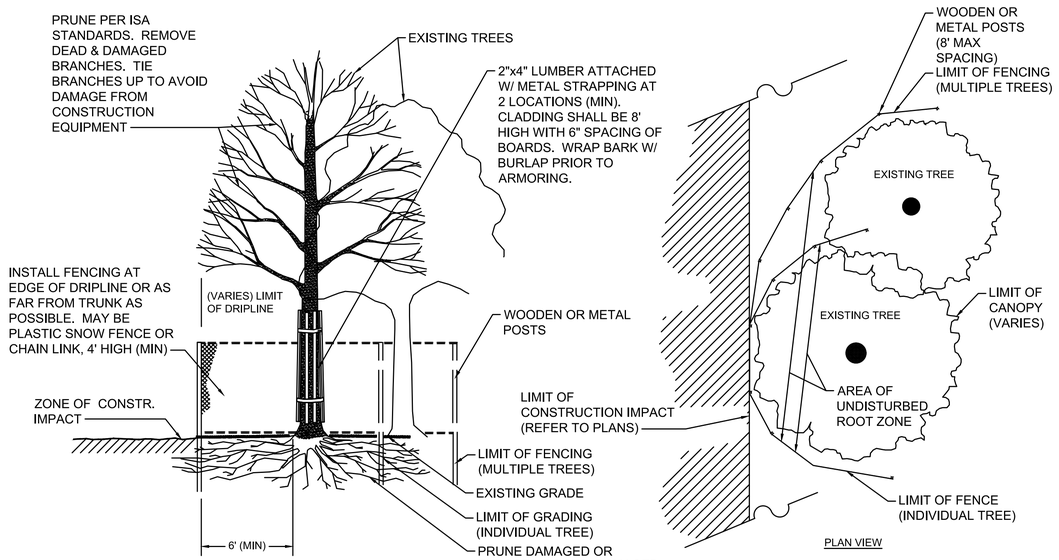


NOTES:

1. CONCRETE MINIMUM STRENGTH 5,000 PSI @ 28 DAYS
2. CEMENT PORTLAND TYPE II PER ASTM C-150-81
3. DESIGN LOADING PER ASSHTO HL-93.
4. COVERS SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS, OF TYPE ERGO XL FROM EJIW

OUTLET CONTROL STRUCTURE (BAN-5)

N.T.S.



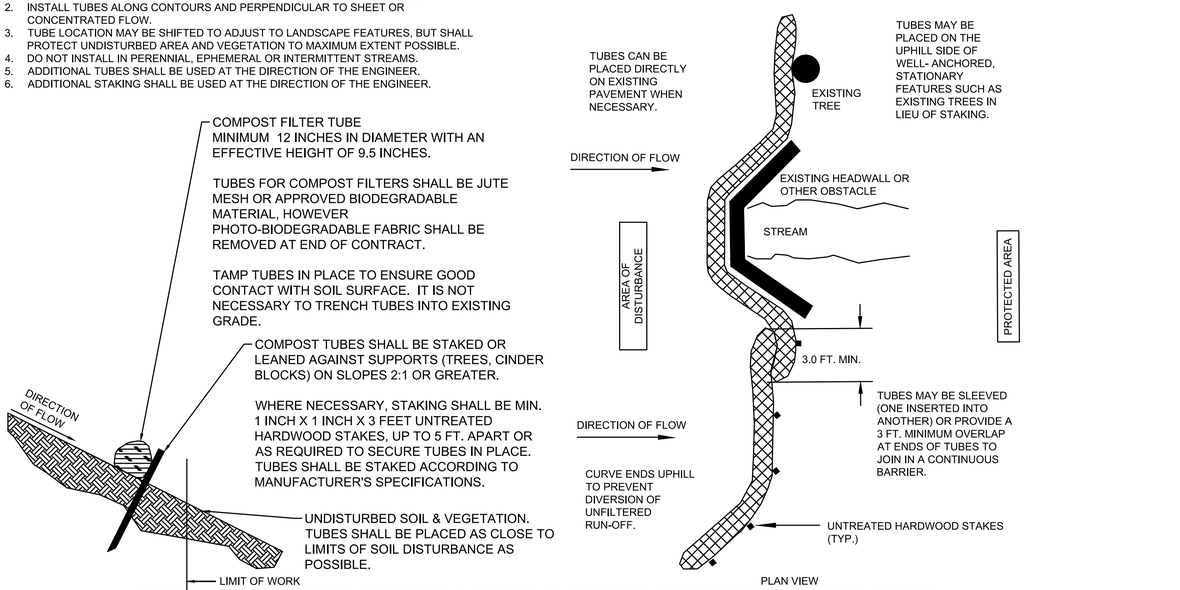
NOTE:
NO STORAGE OF EQUIPMENT OR STOCKPILING OF MATERIALS WITHIN DRIPLINE IS ALLOWED.

TREE PROTECTION

N.T.S.

NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.



TEMPORARY EROSION CONTROL BARRIER (COMPOST SOCK FOR PERIMETER BERM)

N.T.S.

BASE PROJECT
- DRAINAGE
- EROSION PROTECTION

ADD ALTERNATE
- LANDSCAPING

TEC, Inc.

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PREPARED FOR
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1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Construction Details

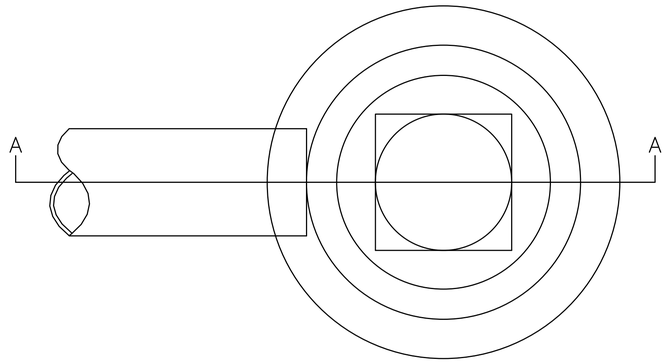
STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

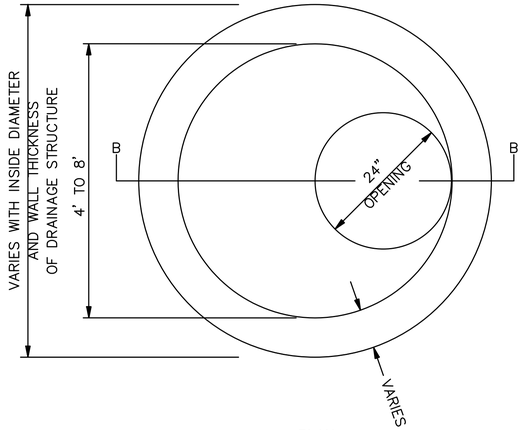
TEC CAD FILE
N0620_(Details)

DRAWING NO.
33

SHEET 33 OF 62

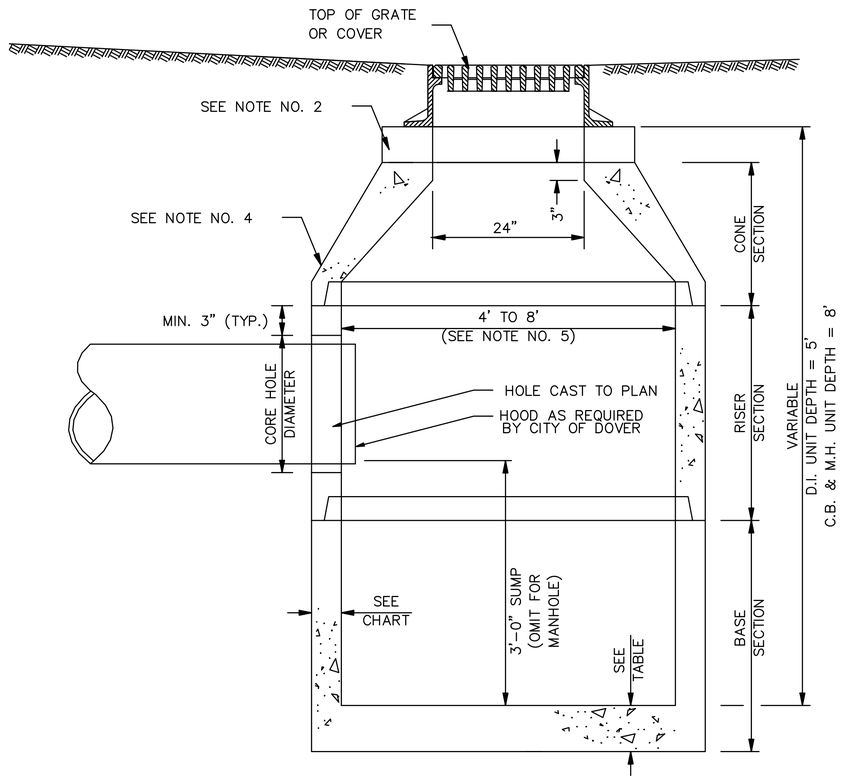


PLAN

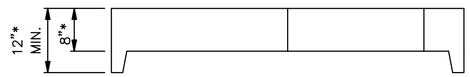


PLAN

CORE HOLE SIZE				
PIPE SIZE	RCP CORE HOLE DIA.		PLASTIC CORE HOLE DIA.	
INCHES	INCHES	FEET	INCHES	FEET
6			7	0.6
12	18	1.5	18	1.5
15	22	1.8	20	1.7
18	26	2.2	24	2.0
24	34	2.8	32	2.7
30	42	3.5	42	3.5
36	48	4.0	48	4.0
42	54	4.5	54	4.5
48	64	5.3	64	5.3
54	72	6.0		
60	78	6.5		



SECTION A–A



* FOR €6'Â STRUCTURES
USE 16" & 12" DIMENSIONS

SECTION B–B

FLAT SLAB TOP

DIAMETER	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"

GENERAL NOTES

1. ITEM NUMBERS: C.B.= 604.1XXX, D.I.= 604.2XXX, M.H.= 604.32XX
2. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
3. CB & DI GRATES IN PAVED AREAS SHALL BE SET ACCORDING TO THE PAVEMENT DEPRESSION DETAIL SHOWN ON PLATE 4 OF STANDARD NO. DR–2.
4. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
5. FOR STRUCTURES WITH DIAMETERS GREATER THAN 4', THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT SLAB TOP, OR A RISER SECTION THAT TRANSITIONS FROM A STANDARD 4' CONE SECTION TO THE LARGER DIAMETER RISER OR BASE SECTION MAY BE USED.
6. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
7. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
8. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
9. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS–SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.

BASE PROJECT
- DRAINAGE

ADD ALTERNATE
- N/A

TEC, Inc.
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169 Ocean Boulevard
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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	N.T.S.

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

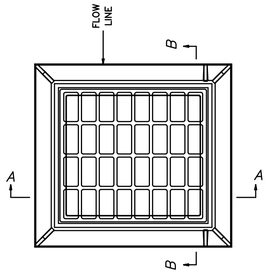
PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

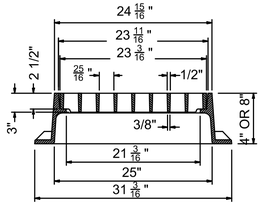
DRAWING TITLE
Construction Details

STATE OF NEW HAMPSHIRE – ANTHONY D CIOLFI No. 11860 – LICENSED PROFESSIONAL ENGINEER
3/3/20

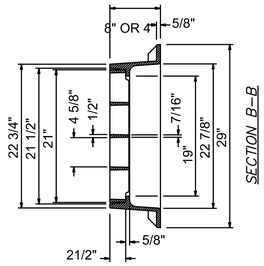
PROJECT NO. N0620
TEC CAD FILE N0620_(Details)
DRAWING NO. 34
SHEET 34 OF 62



PLAN



SECTION A–A

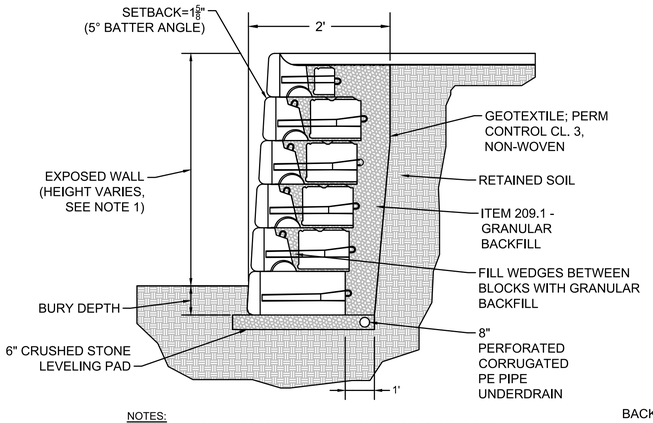


CATCH BASIN FRAME & GRATE - TYPE B

N.T.S.

GENERAL NOTES

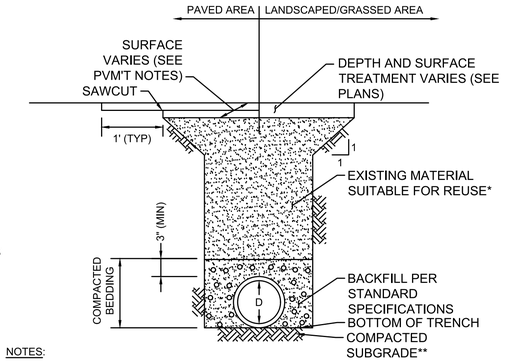
1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
3. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
4. FREE OPEN AREA = 2.55 S.F.
5. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.



NOTES:
1. RETAINING WALLS REQUIRE A FINAL WALL DESIGN STAMPED BY A PROFESSIONAL ENGINEER.
2. FINAL WALL DESIGN TO BE SUBJECT TO THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER INCLUDING DESIGN ON LATERAL EARTH PRESSURES, GLOBAL STABILITY, FILL MATERIALS ADJACENT TO THE WALLS AND REQUIRED GEOGRID REINFORCEMENT.
3. FINAL DESIGN SHALL BE REVIEWED BY CITY.

ITEM 592.31 - PRECAST CONCRETE MODULAR RETAINING WALL

N.T.S.



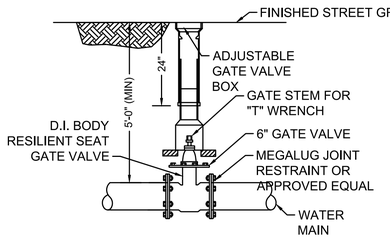
NOTES:

* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".

**SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

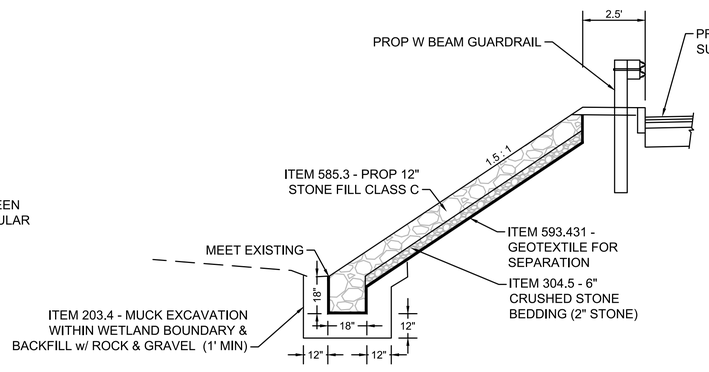
TRENCH EXCAVATION

N.T.S.



ADJUST WATER GATE DETAIL

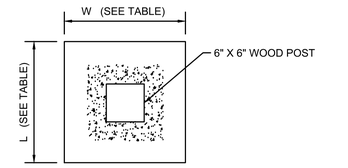
N.T.S.



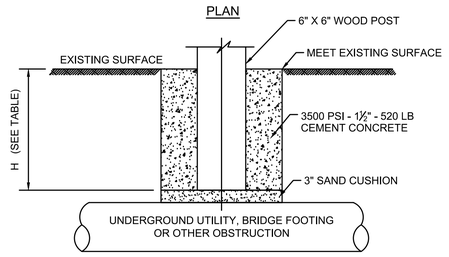
NOTES:
1. MUCK EXCAVATION WITHIN WETLAND BOUNDARIES SHALL BE CONDUCTED IN ACCORDANCE WITH NHDOT AND NHDES SPECIFICATIONS AND REGULATIONS.

MODIFIED ROCKFILL SLOPE STABILIZATION

N.T.S.



PLAN



ELEVATION

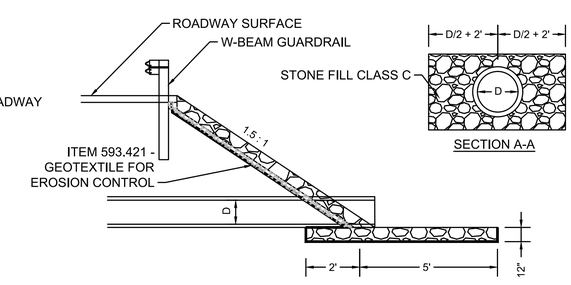
HEIGHT OF EXISTING SURFACE ABOVE TOP OF SAND CUSHION	DIMENSION OF CONCRETE ENVELOPE		
	H HEIGHT OF SURFACE ABOVE SAND CUSHION	W	L
1'-0" TO 1'-6"	VARIES 1'-0" TO 1'-6"	2'-6"	2'-6"
1'-6" TO 2'-0"	VARIES 1'-0" TO 1'-6"	2'-0"	2'-0"
OVER 2'-6"	2'-6"	1'-6"	1'-6"

NOTE:

NOT TO BE USED ON MORE THAN 2 POSTS IN A ROW.

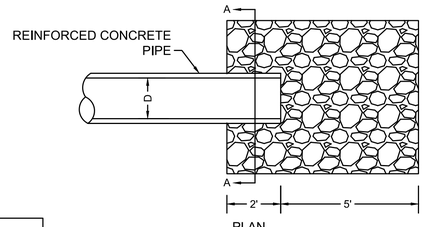
SHALLOW GUARDRAIL POST DETAIL

N.T.S.



SECTION A-A

SIDE ELEVATION



PLAN

OUTLET PROTECTION

N.T.S.

BASE PROJECT
- ROCK SLOPE
- RETAINING WALL
- GUARDRAIL
- DRAINAGE

ADD ALTERNATE
- ADJUST WATER GATES

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PREPARED FOR
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REVISIONS

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Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
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DRAWING TITLE
Construction Details

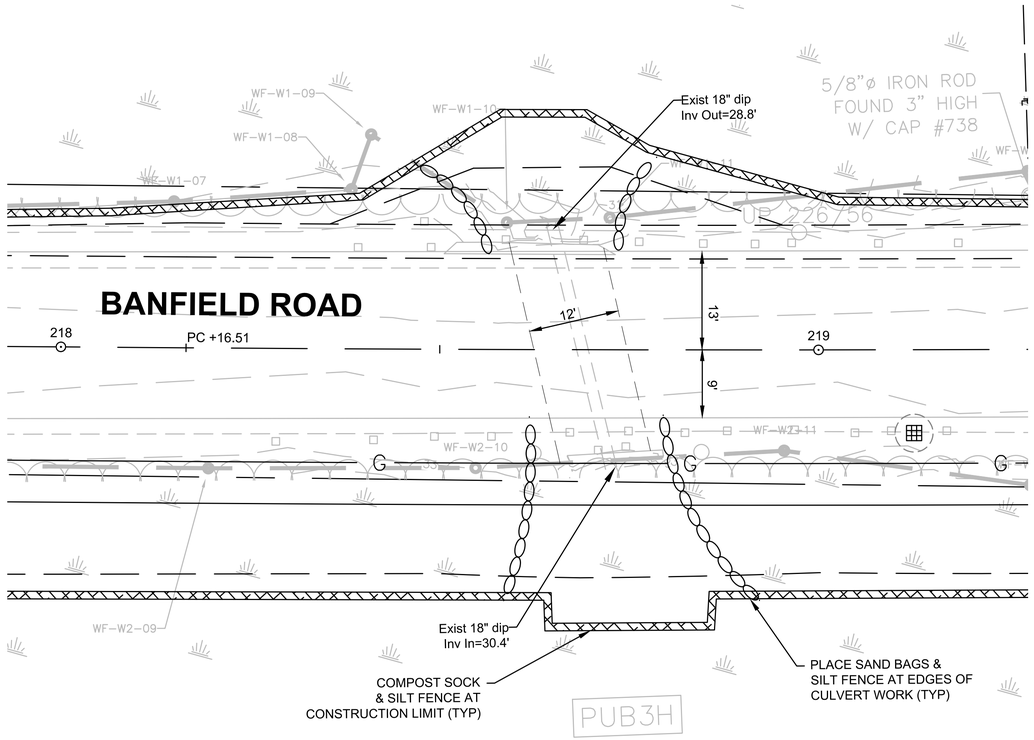
STATE OF NEW HAMPSHIRE - ANTHONY D CIOLFI No. 11860 LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620

TEC CAD FILE N0620_(Details)

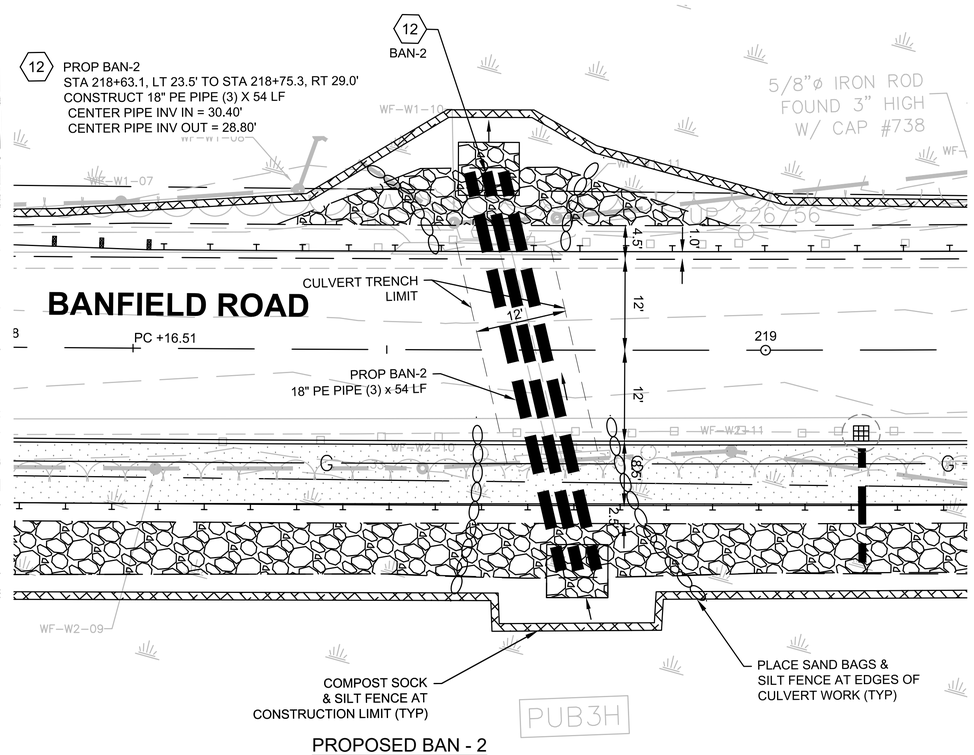
DRAWING NO. 35

SHEET 35 OF 62



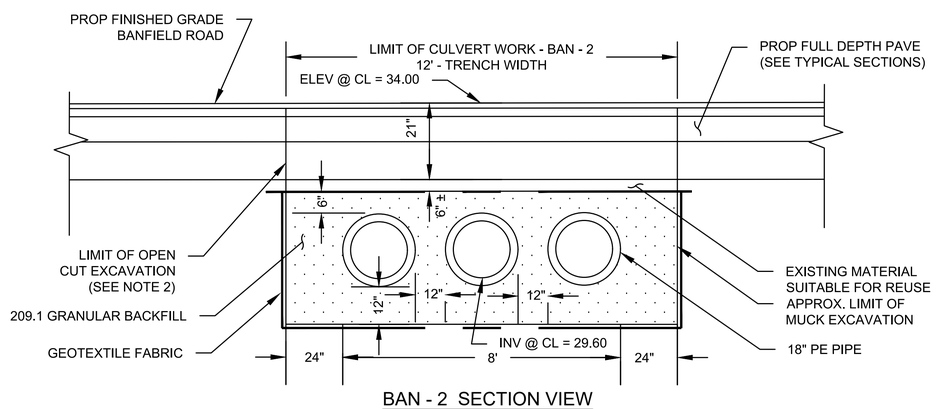
EROSION CONTROL PLAN FOR BAN - 2 CULVERT CONSTRUCTION

SCALE 1"=10'



PROPOSED BAN - 2

SCALE 1"=10'



BAN - 2 SECTION VIEW

N.T.S.

GENERAL NOTES:

1. PRIOR TO ANY LAND DISTURBANCE ACTIVITIES COMMENCING ALONG BANFIELD ROAD, THE CONTRACTOR SHALL PHYSICALLY MARK LIMITS OF NO LAND DISTURBANCE ON THE SITE WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE, SO THAT WORKERS CAN SEE THE AREA TO BE PROTECTED.
2. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SOIL DISTURBANCE. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. WETLAND AREAS AND SURFACE WATERS SHALL BE PROTECTED FROM SEDIMENT.
3. RUNOFF SHALL BE CONTROLLED AND CONVEYED INTO STORM DRAINS AND OTHER OUTLETS SO IT WILL NOT ERODE THE LAND OR CAUSE OFF-SITE DAMAGE; SEDIMENT IN RUNOFF SHALL BE TRAPPED BY USING STAKED HAY BALES, SILT FENCING, OR SEDIMENTATION TRAPS, OR OTHER APPROVED EROSION CONTROL DEVICES;
4. SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES ¼ TO ½ THE HEIGHT OF THE SILT FENCE OR HAY BALE.
5. OFFSITE RUNOFF SHALL BE DIVERTED FROM HIGHLY ERODIBLE SOILS AND STEEP SLOPES TO STABLE AREAS.
6. SOIL AND OTHER MATERIALS SHALL NOT BE STOCKPILED OR REDISTRIBUTED, EITHER TEMPORARILY OR PERMANENTLY, IN LOCATIONS OR IN SUCH A MANNER AS WOULD CAUSE SUFFOCATION OF TREE ROOT SYSTEMS OR NEAR WETLANDS;
7. TOPSOIL SHALL BE STRIPPED FROM DISTURBED AREAS, STOCKPILED IN APPROVED AREAS AND STABILIZED WITH TEMPORARY VEGETATIVE COVER IF IT IS TO BE LEFT FOR MORE THAN THIRTY (30) CALENDAR DAYS; PERIMETER SEDIMENT CONTROLS SHALL BE INSTALLED AROUND EACH AREA OF STOCKPILED TOPSOIL.
8. SOIL STOCKPILES SHALL BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY.
9. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
10. GRADING SHALL BE KEPT TO A MINIMUM; TREE REMOVAL SHALL BE MINIMIZED;
11. A TRACKING PAD SHALL BE INSTALLED WHERE POSSIBLE ALONG THE SHOULDER OF THE WORK AREA TO REDUCE THE AMOUNT OF SOIL CARRIED ONTO ROADWAYS. ROUTINE STREET SWEEPING OR VACUUMING SHALL BE PERFORMED TO REMOVE SOIL CARRIED ONTO ROADWAYS.
12. DUST SHALL BE CONTROLLED AT THE SITE.
13. ALL GRADED AREAS BEYOND THE STREET RIGHT-OF-WAY AND NOT WITHIN THE ROCK SLOPE CONSTRUCTION AREAS SHALL BE COVERED WITH FOUR (4) INCHES OF TOPSOIL AND PLANTED WITH A NATIVE SPECIE OF VEGETATIVE COVER, SUFFICIENT TO PREVENT EROSION;
14. PERMANENT SEEDING SHOULD BE UNDERTAKEN IN THE SPRING FROM MARCH THROUGH MAY, AND IN LATE SUMMER BETWEEN AUGUST AND SEPTEMBER 15. DURING PEAK SUMMER MONTHS AND IN THE LATE SUMMER AFTER SEPTEMBER 15, WHEN SEEDING IS FOUND TO BE IMPRACTICAL, AN APPROPRIATE TEMPORARY MULCH SHALL BE APPLIED. PERMANENT SEEDING MAY BE UNDERTAKEN DURING THE SUMMER IF PLANS PROVIDE FOR ADEQUATE MULCHING AND WATERING.
15. NATIVE SPECIES SHALL BE USED FOR RE-VEGETATION;
16. ALL SLOPES STEEPER THAN 3:1 (H:V, 33.3%), SHALL, UPON COMPLETION, BE IMMEDIATELY STABILIZED WITH SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES.
17. MONITORING AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION SHALL BE REQUIRED. THE APPLICANT SHALL SUBMIT TO THE CITY OF PORTSMOUTH DEPT. OF PUBLIC WORKS, A COMPLETE OPERATION AND MAINTENANCE PLAN FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES, AS PART OF THE APPLICATION PACKAGE. EROSION CONTROL MEASURES FOR WINTER CONSTRUCTION SHALL BE IN EFFECT FROM OCTOBER 15 THROUGH MAY 15.
18. TEMPORARY SEDIMENT TRAPPING DEVICES SHALL NOT BE REMOVED UNTIL PERMANENT STABILIZATION IS ESTABLISHED IN ALL CONTRIBUTORY DRAINAGE AREAS. SIMILARLY, STABILIZATION SHALL BE ESTABLISHED PRIOR TO CONVERTING SEDIMENT TRAPS/BASINS INTO PERMANENT (POST-CONSTRUCTION) STORMWATER MANAGEMENT FACILITIES. ALL FACILITIES USED AS TEMPORARY MEASURES SHALL BE CLEANED PRIOR TO BEING PUT INTO FINAL OPERATIONS.

GENERAL NOTES:

20. THE CULVERT INSTALLATION CONSTRUCTION SHALL BE PERFORMED "IN THE DRY" EITHER DURING PERIODS OF LOW WATER OR BEHIND TEMPORARY DIVERSIONS SUCH AS SANDBAGS OR COFFERDAMS.
21. DE-WATERING OF WORK AREAS AND DREDGED MATERIALS SHOULD BE TO UPLAND AREAS AND SET BACK AS FAR AS POSSIBLE FROM WETLANDS AND SURFACE WATERS.
21. EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".
22. CONTRACTOR SHALL PREPARE THE CULVERT TRENCH EXCAVATION IN ACCORDANCE WITH WATER DIVERSION METHODS OF NHDOT ITEM 503.10X.
23. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS. THE APPLICANT'S ENGINEER SHALL SUBMIT WRITTEN CERTIFICATION THAT THIS CONDITION HAS BEEN MET.

SEQUENCE OF CONSTRUCTION NOTES:

1. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES.
2. IMPLEMENT ROAD CLOSURES.
3. CONDUCT TRENCHING OF ROADWAY PER PLANS.
4. REMOVE EXISTING CULVERT.
5. CONSTRUCT NEW CULVERTS.
6. BACK-FILL TRENCH.
7. INSTALL PAVEMENT IN COORDINATION OF FINAL ROADWAY SURFACE FOUND IN THE PLANS AND SPECIFICATIONS.
8. REMOVE TEMPORARY EROSION CONTROL MEASURES.

BASE PROJECT

- DRAINAGE
- ROCK SLOPE
- GUARDRAIL
- INTERIM GRAVEL SHOULDER

ADD ALTERNATE

- CURB & CONC. SIDEWALK

TEC, Inc.

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DESIGNED BY	ADC
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DATE	3/3/2020
SCALE	AS SHOWN

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Construction Details
BAN-2 Culvert

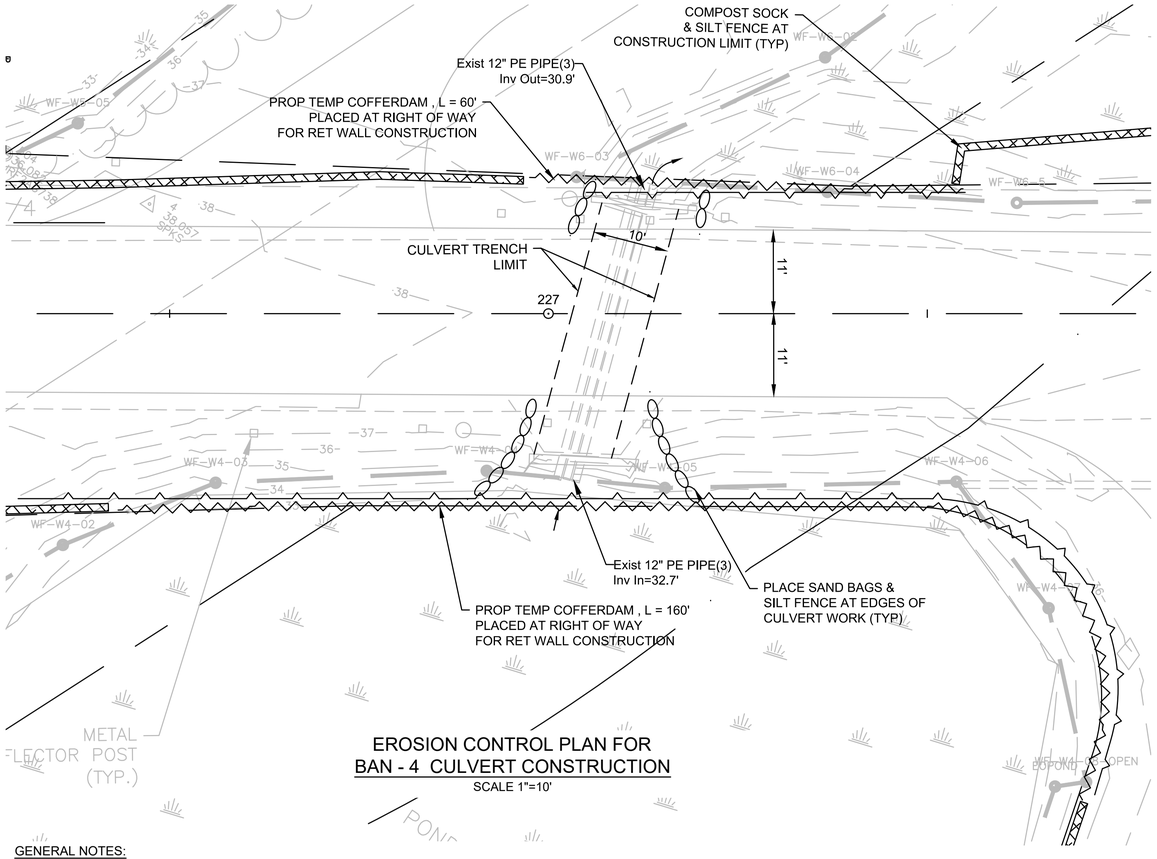
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11660
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

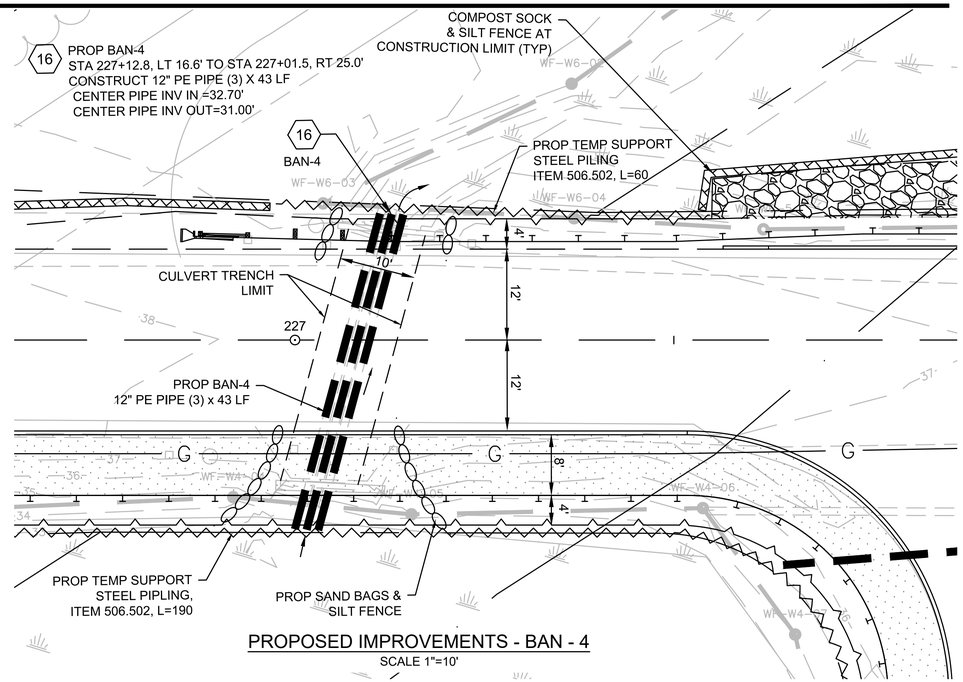
TEC CAD FILE
N0620_(Details)

DRAWING NO.
36

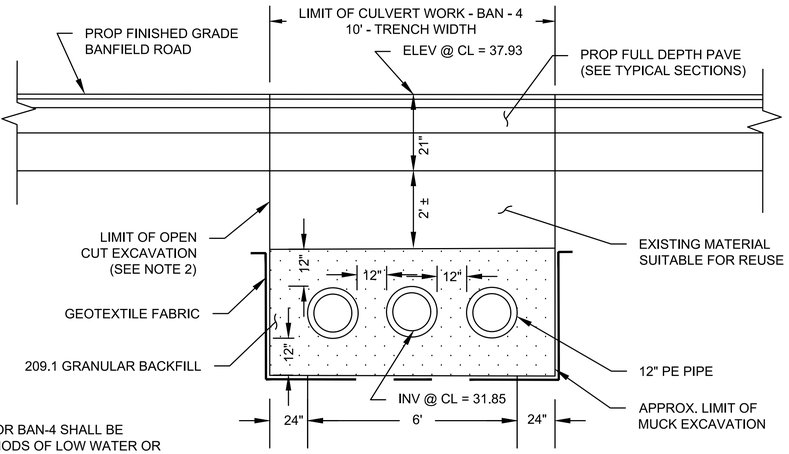
SHEET 36 OF 62



EROSION CONTROL PLAN FOR
BAN - 4 CULVERT CONSTRUCTION
SCALE 1"=10'



PROPOSED IMPROVEMENTS - BAN - 4
SCALE 1"=10'



BAN - 4 SECTION VIEW
N.T.S.

GENERAL NOTES:

1. PRIOR TO ANY LAND DISTURBANCE ACTIVITIES COMMENCING ALONG BANFIELD ROAD, THE CONTRACTOR SHALL PHYSICALLY MARK LIMITS OF NO LAND DISTURBANCE ON THE SITE WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE, SO THAT WORKERS CAN SEE THE AREA TO BE PROTECTED.
2. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SOIL DISTURBANCE. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. WETLAND AREAS AND SURFACE WATERS SHALL BE PROTECTED FROM SEDIMENT.
3. RUNOFF SHALL BE CONTROLLED AND CONVEYED INTO STORM DRAINS AND OTHER OUTLETS SO IT WILL NOT ERODE THE LAND OR CAUSE OFF-SITE DAMAGE; SEDIMENT IN RUNOFF SHALL BE TRAPPED BY USING STAKED HAY BALES, SILT FENCING, OR SEDIMENTATION TRAPS, OR OTHER APPROVED EROSION CONTROL DEVICES;
4. SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES ¼ TO ½ THE HEIGHT OF THE SILT FENCE OR HAY BALE.
5. OFFSITE RUNOFF SHALL BE DIVERTED FROM HIGHLY ERODIBLE SOILS AND STEEP SLOPES TO STABLE AREAS.
6. SOIL AND OTHER MATERIALS SHALL NOT BE STOCKPILED OR REDISTRIBUTED, EITHER TEMPORARILY OR PERMANENTLY, IN LOCATIONS OR IN SUCH A MANNER AS WOULD CAUSE SUFFOCATION OF TREE ROOT SYSTEMS OR NEAR WETLANDS;
7. TOPSOIL SHALL BE STRIPPED FROM DISTURBED AREAS, STOCKPILED IN APPROVED AREAS AND STABILIZED WITH TEMPORARY VEGETATIVE COVER IF IT IS TO BE LEFT FOR MORE THAN THIRTY (30) CALENDAR DAYS; PERIMETER SEDIMENT CONTROLS SHALL BE INSTALLED AROUND EACH AREA OF STOCKPILED TOPSOIL.
8. SOIL STOCKPILES SHALL BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY.
9. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
10. GRADING SHALL BE KEPT TO A MINIMUM; TREE REMOVAL SHALL BE MINIMIZED;
11. A TRACKING PAD SHALL BE INSTALLED WHERE POSSIBLE ALONG THE SHOULDER OF THE WORK AREA TO REDUCE THE AMOUNT OF SOIL CARRIED ONTO ROADWAYS. ROUTINE STREET SWEEPING OR VACUUMING SHALL BE PERFORMED TO REMOVE SOIL CARRIED ONTO ROADWAYS.
12. DUST SHALL BE CONTROLLED AT THE SITE.
13. ALL GRADED AREAS BEYOND THE STREET RIGHT-OF-WAY AND NOT WITHIN THE ROCK SLOPE CONSTRUCTION AREAS SHALL BE COVERED WITH FOUR (4) INCHES OF TOPSOIL AND PLANTED WITH A NATIVE SPECIE OF VEGETATIVE COVER, SUFFICIENT TO PREVENT EROSION;
14. PERMANENT SEEDING SHOULD BE UNDERTAKEN IN THE SPRING FROM MARCH THROUGH MAY, AND IN LATE SUMMER BETWEEN AUGUST AND SEPTEMBER 15. DURING PEAK SUMMER MONTHS AND IN THE LATE SUMMER AFTER SEPTEMBER 15, WHEN SEEDING IS FOUND TO BE IMPRACTICAL, AN APPROPRIATE TEMPORARY MULCH SHALL BE APPLIED. PERMANENT SEEDING MAY BE UNDERTAKEN DURING THE SUMMER IF PLANS PROVIDE FOR ADEQUATE MULCHING AND WATERING.
15. NATIVE SPECIES SHALL BE USED FOR RE-VEGETATION;
16. ALL SLOPES STEEPER THAN 3:1 (H:V, 33.3%), SHALL, UPON COMPLETION, BE IMMEDIATELY STABILIZED WITH SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES.
17. MONITORING AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION SHALL BE REQUIRED. THE APPLICANT SHALL SUBMIT TO THE CITY OF PORTSMOUTH DEPT. OF PUBLIC WORKS, A COMPLETE OPERATION AND MAINTENANCE PLAN FOR TEMPORARY AND PERMANENT EROSION CONTROL MEASURES, AS PART OF THE APPLICATION PACKAGE. EROSION CONTROL MEASURES FOR WINTER CONSTRUCTION SHALL BE IN EFFECT FROM OCTOBER 15 THROUGH MAY 15.
18. TEMPORARY SEDIMENT TRAPPING DEVICES SHALL NOT BE REMOVED UNTIL PERMANENT STABILIZATION IS ESTABLISHED IN ALL CONTRIBUTORY DRAINAGE AREAS. SIMILARLY, STABILIZATION SHALL BE ESTABLISHED PRIOR TO CONVERTING SEDIMENT TRAPS/BASINS INTO PERMANENT (POST-CONSTRUCTION) STORMWATER MANAGEMENT FACILITIES. ALL FACILITIES USED AS TEMPORARY MEASURES SHALL BE CLEANED PRIOR TO BEING PUT INTO FINAL OPERATIONS.

GENERAL NOTES:

20. THE CULVERT INSTALLATION CONSTRUCTION FOR BAN-4 SHALL BE PERFORMED "IN THE DRY" EITHER DURING PERIODS OF LOW WATER OR BEHIND TEMPORARY DIVERSIONS SUCH AS TEMPORARY STEEL SHEETING COFFERDAMS.
21. CONTRACTOR DESIGNED RETAINING WALLS SHALL BE CONSTRUCTED ON EACH END OF BAN-4 AND TEMPORARY SUPPORTS SUCH AS STEEL SHEETING COFFERDAMS MAY BE NECESSARY TO STAY WITHIN THE EXISTING ROW. CONTRACTOR SHALL SUBMIT TEMPORARY SUPPORT DESIGN FOR REVIEW BY THE CITY PRIOR TO CONSTRUCTION.
22. DE-WATERING OF WORK AREAS AND DREDGED MATERIALS SHOULD BE TO UPLAND AREAS AND SET BACK AS FAR AS POSSIBLE FROM WETLANDS AND SURFACE WATERS.
23. EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".
24. CONTRACTOR SHALL PREPARE THE CULVERT TRENCH EXCAVATION IN ACCORDANCE WITH WATER DIVERSION METHODS OF NHDOT ITEM 503.10X.
25. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS. THE APPLICANT'S ENGINEER SHALL SUBMIT WRITTEN CERTIFICATION THAT THIS CONDITION HAS BEEN MET.

SEQUENCE OF CONSTRUCTION NOTES:

1. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES.
2. IMPLEMENT ROAD CLOSURES
3. CONDUCT TRENCHING OF ROADWAY PER PLANS.
4. REMOVE EXISTING CULVERT.
5. INSTALL TEMPORARY COFFERDAM SUPPORT SYSTEM
6. CONSTRUCT RETAINING WALLS
7. CONSTRUCT NEW CULVERTS.
8. BACK-FILL TRENCH .
9. INSTALL PAVEMENT IN COORDINATION OF FINAL ROADWAY SURFACE FOUND IN THE PLANS AND SPECIFICATIONS.
10. REMOVE TEMPORARY SUPPORT SYSTEM AND EROSION CONTROL MEASURES.

BASE PROJECT

- DRAINAGE
- RETAINING WALL
- ROCK SLOPE & GUARDRAIL
- INTERIM GRAVEL SHOULDER

ADD ALTERNATE

- CURB & CONC. SIDEWALK

TEC, Inc.
146 Dascomb Road
Andover, MA 01810
(978) 794-1792
169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154
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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	AS SHOWN

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

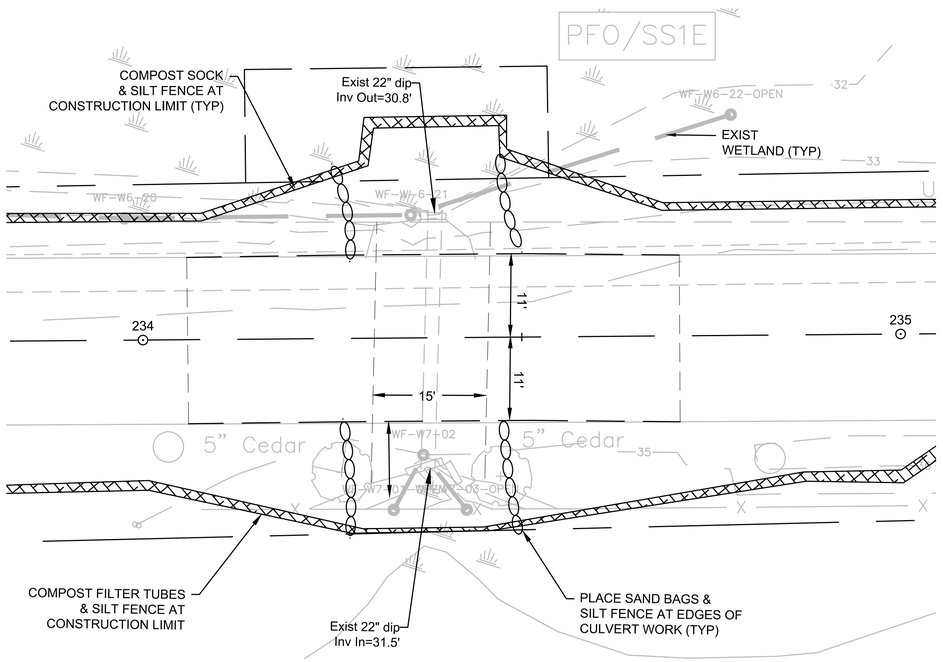
PROJECT TITLE
Roadway Improvements
& Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Construction Details
BAN-4 Culvert

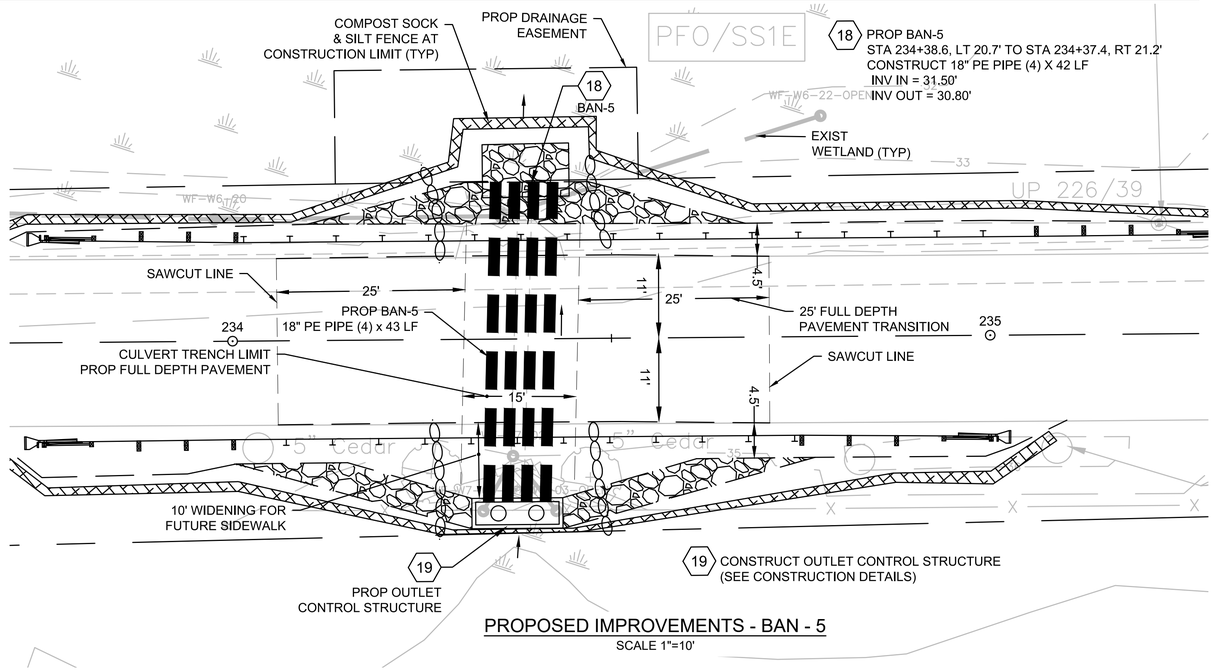
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI No. 11880 LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620
TEC CAD FILE
N0620_(Details)
DRAWING NO.
37
SHEET 29 OF 62



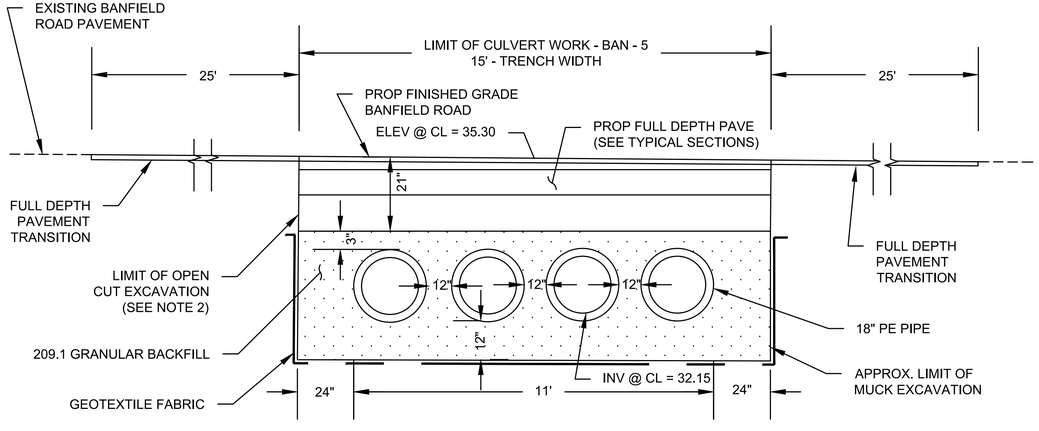
EROSION CONTROL PLAN FOR BAN - 5 CULVERT CONSTRUCTION

SCALE 1"=10'



PROPOSED IMPROVEMENTS - BAN - 5

SCALE 1"=10'



BAN - 5 SECTION VIEW

N.T.S.

GENERAL NOTES:

1. PRIOR TO ANY LAND DISTURBANCE ACTIVITIES COMMENCING ALONG BANFIELD ROAD, THE CONTRACTOR SHALL PHYSICALLY MARK LIMITS OF NO LAND DISTURBANCE ON THE SITE WITH TAPE, SIGNS, OR ORANGE CONSTRUCTION FENCE, SO THAT WORKERS CAN SEE THE AREA TO BE PROTECTED.
2. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SOIL DISTURBANCE. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. WETLAND AREAS AND SURFACE WATERS SHALL BE PROTECTED FROM SEDIMENT.
3. RUNOFF SHALL BE CONTROLLED AND CONVEYED INTO STORM DRAINS AND OTHER OUTLETS SO IT WILL NOT ERODE THE LAND OR CAUSE OFF-SITE DAMAGE; SEDIMENT IN RUNOFF SHALL BE TRAPPED BY USING STAKED HAY BALES, SILT FENCING, OR SEDIMENTATION TRAPS, OR OTHER APPROVED EROSION CONTROL DEVICES;
4. SEDIMENT SHALL BE REMOVED ONCE THE VOLUME REACHES ¼ TO ½ THE HEIGHT OF THE SILT FENCE OR HAY BALE.
5. OFFSITE RUNOFF SHALL BE DIVERTED FROM HIGHLY ERODIBLE SOILS AND STEEP SLOPES TO STABLE AREAS.
6. SOIL AND OTHER MATERIALS SHALL NOT BE STOCKPILED OR REDISTRIBUTED, EITHER TEMPORARILY OR PERMANENTLY, IN LOCATIONS OR IN SUCH A MANNER AS WOULD CAUSE SUFFOCATION OF TREE ROOT SYSTEMS OR NEAR WETLANDS;
7. TOPSOIL SHALL BE STRIPPED FROM DISTURBED AREAS, STOCKPILED IN APPROVED AREAS AND STABILIZED WITH TEMPORARY VEGETATIVE COVER IF IT IS TO BE LEFT FOR MORE THAN THIRTY (30) CALENDAR DAYS; PERIMETER SEDIMENT CONTROLS SHALL BE INSTALLED AROUND EACH AREA OF STOCKPILED TOPSOIL.
8. SOIL STOCKPILES SHALL BE STABILIZED OR COVERED AT THE END OF EACH WORKDAY.
9. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 14 DAYS SHALL BE STABILIZED.
10. GRADING SHALL BE KEPT TO A MINIMUM; TREE REMOVAL SHALL BE MINIMIZED;
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4. REMOVE EXISTING CULVERT.
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6. BACK-FILL TRENCH.
7. INSTALL PAVEMENT IN COORDINATION OF FINAL ROADWAY SURFACE FOUND IN THE PLANS AND SPECIFICATIONS.
8. REMOVE TEMPORARY EROSION CONTROL MEASURES.

BASE PROJECT

- DRAINAGE
- ROCK SLOPE & GUARDRAIL

~~ADD ALTERNATE~~

- ~~N/A~~

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	AS SHOWN

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Construction Details
BAN-5 Culvert

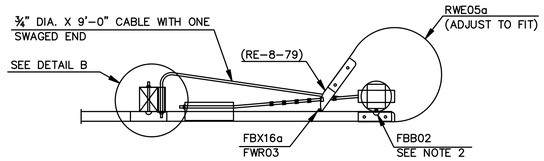
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

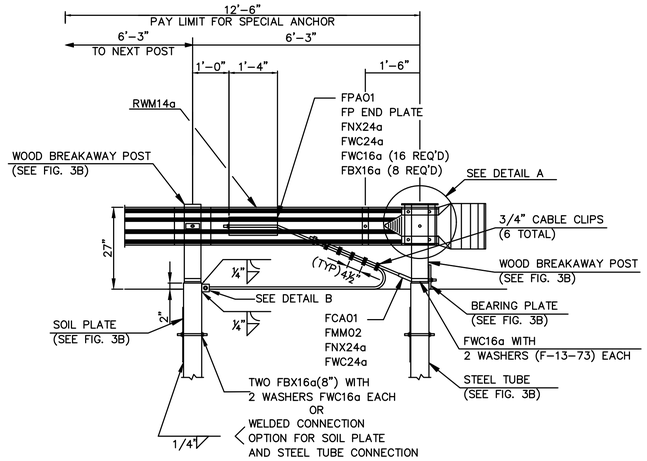
TEC CAD FILE
N0620_(Details)

DRAWING NO.
38

SHEET 30 OF 62

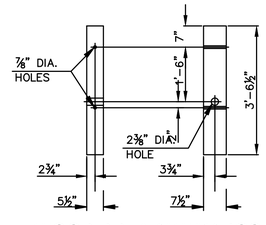


PLAN

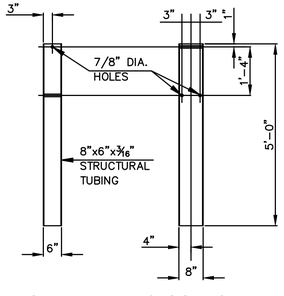


ELEVATION

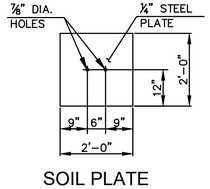
FIGURE 3A (SPECIAL ANCHOR)



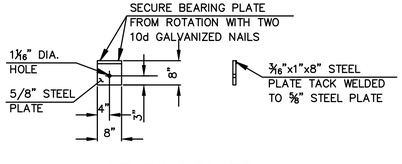
WOOD BREAKAWAY POST



STEEL TUBE (POST A)

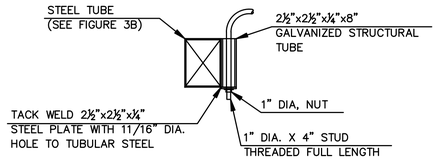


SOIL PLATE

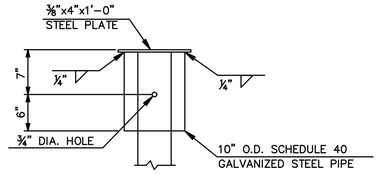


BEARING PLATE FPB01

FIGURE 3B

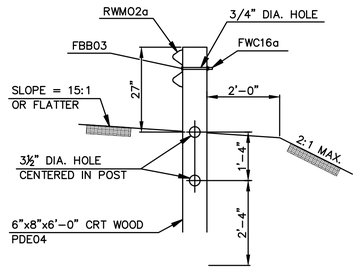


DETAIL B



DETAIL A

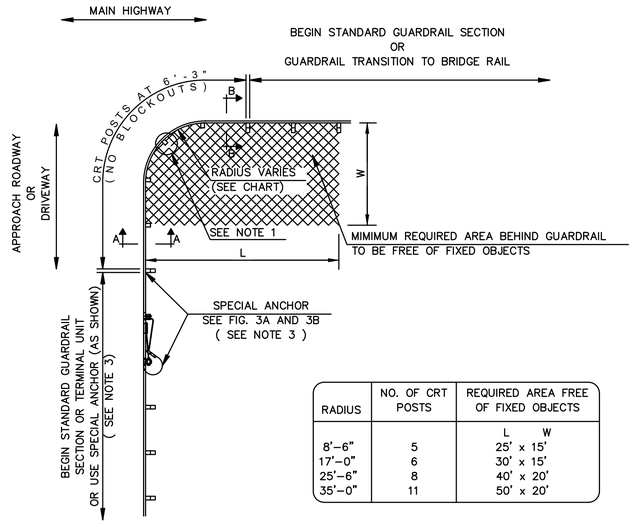
1. ATTACH W-BEAM TO STEEL PIPE WITH F-3[2"]-76 BUTTON HEAD BOLT WITH NO WASHER. NO CONNECTION TO POST IS REQUIRED.
2. THE STEEL TUBE FOR POST B IS FABRICATED FROM POST A BY ADDING THE GALVANIZED STRUCTURAL TUBE (SEE FIGURE 3A, DETAIL B) BEFORE GALVANIZING.



SECTION A-A

GENERAL NOTES

1. ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
2. DESIGNATIONS PROVIDED IN PARENTHESIS REFERENCE STANDARD ELEMENTS DETAILED IN "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE." 2005, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.



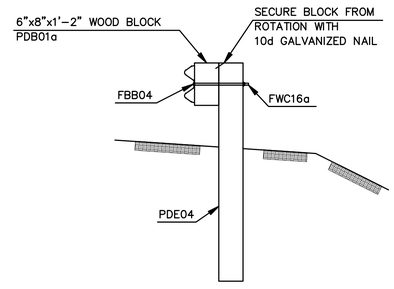
RADIUS	NO. OF CRT POSTS	REQUIRED AREA FREE OF FIXED OBJECTS
		L W
8'-6"	5	25' x 15'
17'-0"	6	30' x 15'
25'-6"	8	40' x 20'
35'-0"	11	50' x 20'

CURVED GUARDRAIL DETAIL FOR 8'-6" RADIUS

(ITEMS 606.141 & 606.84)

CURVED GUARDRAIL NOTES

1. THE RAIL IS NOT BOLTED TO THE CRT POST AT THE CENTER OF THE NOSE AS SHOWN. (8'-6" RADIUS ONLY).
2. THE CURVED GUARDRAIL SECTION SHALL BE SHOP BENT.
3. THE SPECIAL ANCHOR HAS NOT BEEN TESTED AS A CRASHWORTHY END TREATMENT FOR APPROACHING TRAFFIC ON THE INTERSECTING ROADWAY. THEREFORE, IT'S USE SHALL BE LIMITED TO DRIVEWAYS OR LOW SPEED, LOW VOLUME (I.E., 40 MPH MAX., 6000 ADT MAX.) ROADS.
4. SEE SHEET 65, 66; GR NOTES 122 & 123



SECTION B-B

BASE PROJECT
- GUARDRAIL

ADD ALTERNATE
- N/A

TEC, Inc.
146 Dascomb Road
Andover, MA 01810
(978) 794-1792
169 Ocean Boulevard
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PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

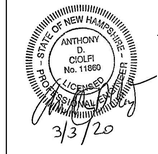
DRAWING TITLE
Construction Details
CRT Posts

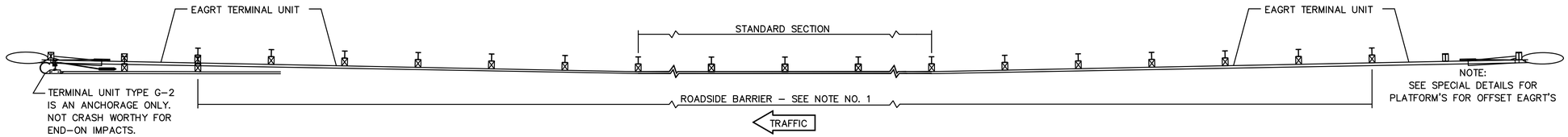
PROJECT NO.
N0620

TEC CAD FILE
nfield Rd_(Details).dwg

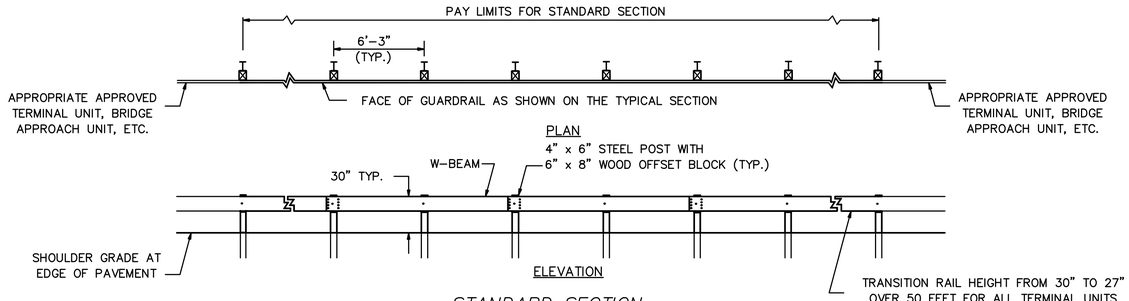
DRAWING NO.
39

SHEET 31 OF 62



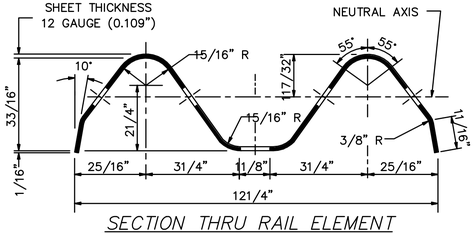


SAMPLE GUARDRAIL INSTALLATION LAYOUT



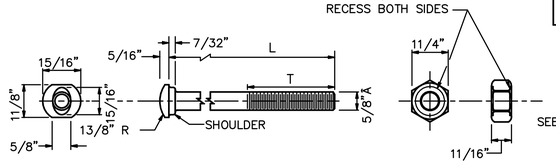
STANDARD SECTION

ITEM 606.120 – BEAM GUARDRAIL (STANDARD SECTION–STEEL POSTS)
PAID: LINEAR FOOT
USE: STRONG STEEL POST W–BEAM WITH SPLICE ON POST IS APPROPRIATE FOR REPAIRS OF EXISTING STRONG POST W–BEAM SPLICE ON POST GUARDRAIL RUNS OF LIMITED LENGTH OR SPECIFIC LOCATIONS WHERE USE OF 31" MID–SPLICE STEEL POST W–BEAM GUARDRAIL WOULD NOT BE PRACTICAL. OTHERWISE, 31" MID–SPLICE STEEL POST W–BEAM GUARDRAIL IS TO BE USED



SECTION THRU RAIL ELEMENT

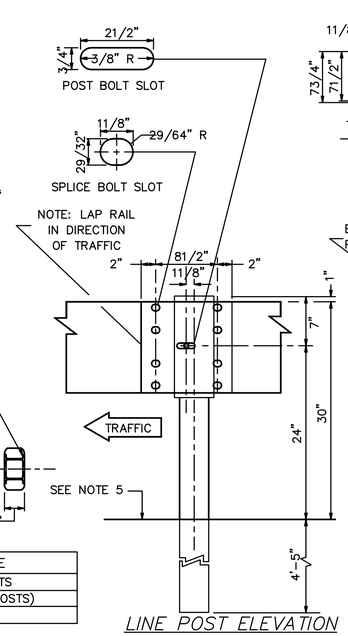
[4 SPACE W–BEAM GUARDRAIL DESIGNATED RWM04a (NOMINALLY 12'–6")]
[8 SPACE W–BEAM GUARDRAIL UNDESIGNATED AT THIS TIME (NOMINALLY 25'=0")]



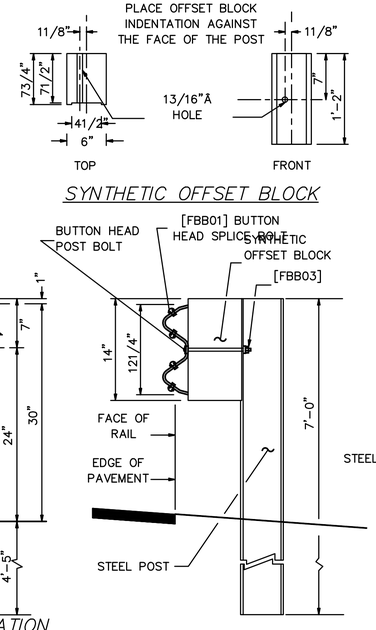
DESIGNATOR	L	T	INTENDED USE
FBB01	11/4"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	13/4" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	91/2"	4" MIN. THREAD LENGTH	POST BOLT

5/8" BUTTON HEAD BOLT AND RECESSED NUT

[FBB01–03]



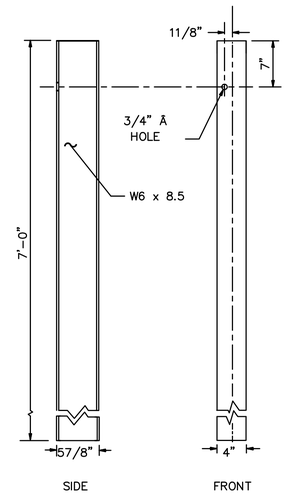
LINE POST ELEVATION VIEW AT BEAM SPLICE



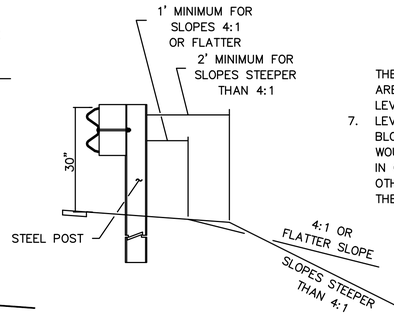
SYNTHETIC OFFSET BLOCK

TYPICAL SIDE VIEW

(SHOWN WITH FASTENERS)



STRUCTURAL SHAPE STEEL POST



CLARIFICATION DETAIL FOR GENERAL NOTE 6

GENERAL NOTES

1. THE DEFINITION OF ROADSIDE BARRIER IS PER THE LATEST ADOPTED EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE. EXCLUDED FROM THIS IS THE GATING PORTION OF A GUARDRAIL TERMINAL UNIT OR CRASH CUSHION AS WELL AS THE ENTIRE G–2 TERMINAL UNIT. ITEMS IN BRACKETS [ ] ARE *STANDARD ELEMENTS* DESCRIBED
2. IN AASHTO'S "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE". ONLY USE RECTANGULAR PLATE WASHERS [FWR03] WHERE SHOWN ON THE OTHER STANDARD SHEETS OR AS REQUIRED BY THE
3. MANUFACTURERS FOR THEIR PROPRIETARY PRODUCTS. USE 12'–6" LENGTH RAIL ELEMENTS IN RAIL CURVES OF LESS THAN 100' RADIUS.
4. ESTABLISH RAIL HEIGHT AS FOLLOWS:
   A) SET THE HEIGHT OF RAIL FROM THE EDGE OF THE PAVEMENT (EP) WHEN THE FACE OF RAIL IS AT THE EDGE OF PAVEMENT.
5. B) SET THE HEIGHT OF RAIL FROM THE GROUND AT THE FACE OF RAIL WHEN:
      I) THE FACE OF RAIL IS OFFSET FROM THE EP AND THE CROSS SLOPE FROM THE EP TO THE FACE OF RAIL IS 10:1 OR FLATTER OR
      II) THE FACE OF RAIL IS AT THE BACK OF A CURBED SIDEWALK AND THE CURB IS AT THE EDGE OF PAVEMENT
   C) WHEN SITUATIONS OTHER THAN THOSE DESCRIBED IN A OR B ABOVE ARE ENCOUNTERED, ESTABLISH RAIL HEIGHT THROUGH AN ENGINEERING REVIEW TO ENSURE APPROPRIATE SYSTEM PERFORMANCE.
6. USE OF POSTS SHORTER THAN 7', BUT NOT LESS THAN 6'–0" LONG, IS ONLY ALLOWED UNDER THE FOLLOWING CONDITIONS:
   A) WHERE THERE IS A MINIMUM DISTATNCE OF 1' FROM THE BACK OF THE GUARDRAIL POST ALONG A 10:1 OR FLATTER SLOPE TO THE SLOPE BREAK OF A 4:1 OR FLATTER SLOPE OR
   B) WHERE THERE IS A MINIMUM DISTANCE OF 2' FROM THE BACK OF THE GUARDRAIL POST ALONG A 10:1 OR FLATTER SLOPE TO THE SLOPE BREAK OF A STEEPER THAN 4:1 STABLE SOIL OR STONE LINED SLOPE. THE TERM STABLE INCLUDES NOT SHOWING SIGNS OF SLOPE MOVEMENT (SUCH AS DEPRESSIONS, CRACKS PARALLEL TO THE ROADWAY, ETC.) OR ACTIVE EROSION.
7. THE FHWA HAS LISTED OFFSET BLOCKS ON THEIR WEBSITE THAT ARE ELIGIBLE FOR FEDERAL PARTICIPATION PER NCHRP 350 TEST LEVEL 3 CRITERIA. OTHERS MAY BE ADDED UNDER MASH AT TEST LEVEL 3 OR HIGHER IN THE FUTURE. SOME OF THESE OFFSET BLOCKS HAVE OR MAY HAVE DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINALDIMENSIONS. IN ORDER TO USE ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS AS SHOWN ON THE PLANS, THE FOLLOWING APPLIES:
   A) THE FACE OF RAIL SHALL REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED LOCATION AS SHOWN ON THE PLANS, AND
   B) THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE SHALL NOT BE LESS THAN WHAT IS SHOWN ON THE PLANS BUT IT MAY BE MORE.
   C) ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

STEEL POST BEAM GUARDRAIL

N.T.S.

BASE PROJECT
- GUARDRAIL

ADD ALTERNATE
- N/A

TEC, Inc.
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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	N.T.S.

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Construction Details Guardrail

PROJECT NO.
N0620

TEC CAD FILE
nfield Rd_(Details).dwg

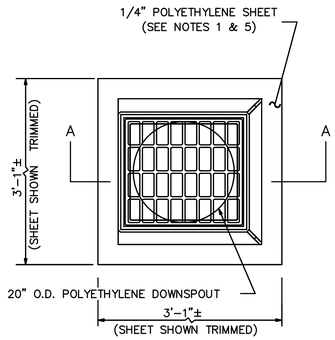
DRAWING NO.
40

SHEET 40 OF 62

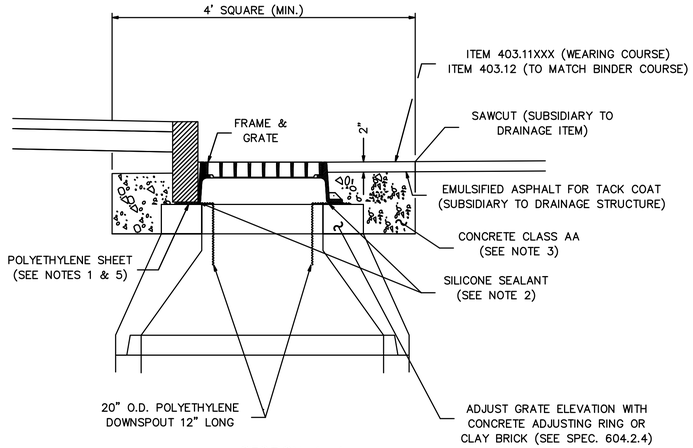
STATE OF NEW HAMPSHIRE – ANTHONY D. CIOLFI No. 11660 – LICENSED PROFESSIONAL ENGINEER
3/3/20

GENERAL NOTES

1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET (SEE SECTION A–A, PLATE 4).
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
4. USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
7. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT.



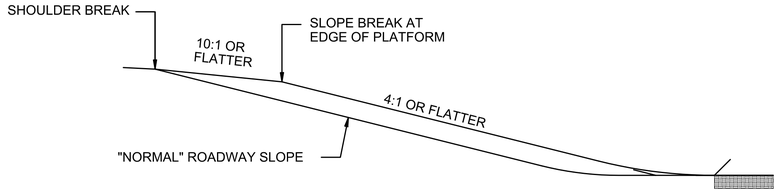
PLAN



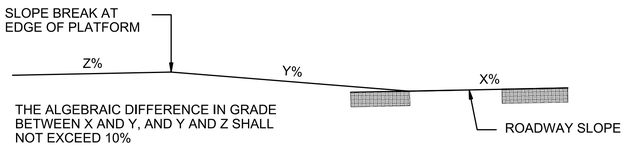
SECTION A–A

CATCH BASIN POLYETHYLENE LINERS

NTS

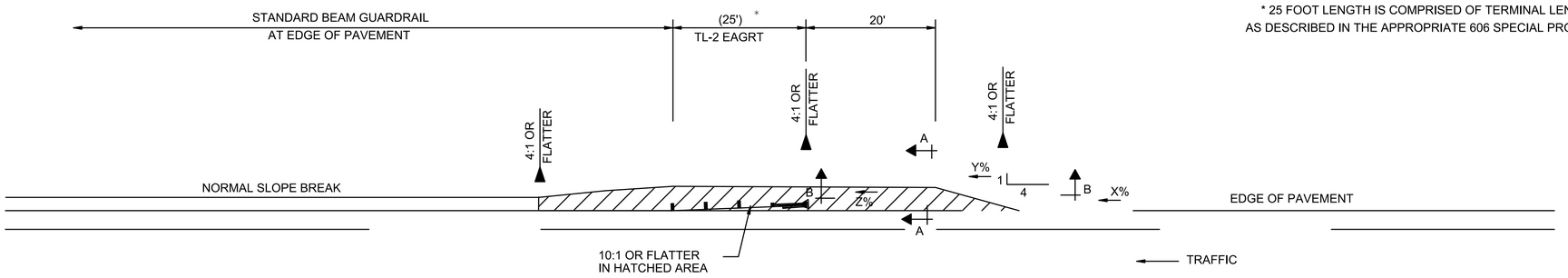


SECTION A-A
PLATFORM SLOPE GRADING



X: LONGITUDINAL GRADE OF ROADWAY SLOPE IN ADVANCE OF PLATFORM
Y: LONGITUDINAL GRADE OF PLATFORM APPROACH
Z: LONGITUDINAL GRADE OF PLATFORM

SECTION B-B
PLATFORM APPROACH GRADING



* 25 FOOT LENGTH IS COMPRISED OF TERMINAL LENGTH AS DESCRIBED IN THE APPROPRIATE 606 SPECIAL PROVISION

GUARDRAIL EAGRT OFFSET ALTERNATIVE PLATFORM, TL-2, 25'

NTS

BASE PROJECT
- GUARDRAIL
- DRAINAGE

ADD ALTERNATE
- N/A

TEC, Inc.

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SCALE	N.T.S.

PREPARED FOR
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1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Construction Details EAGRT PlatforM & CB Liners

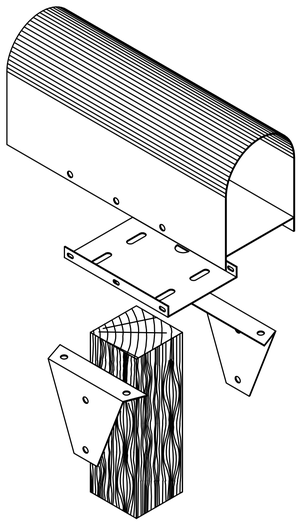
STATE OF NEW HAMPSHIRE – ANTHONY D. CIOLFI No. 11660 – LICENSED PROFESSIONAL ENGINEER
3/3/20

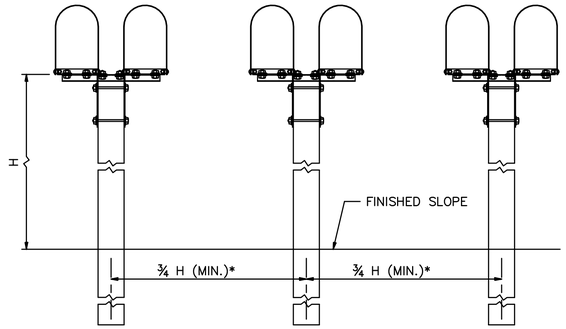
PROJECT NO.
N0620

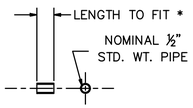
TEC CAD FILE
nfield Rd_(Details).dwg

DRAWING NO.
41

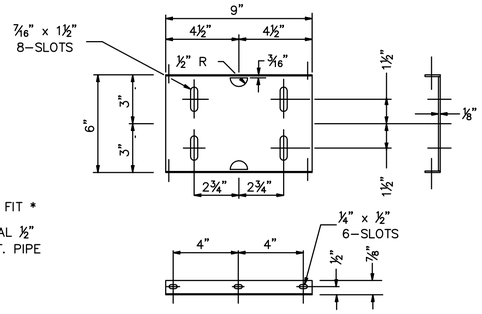
SHEET 41 OF 62

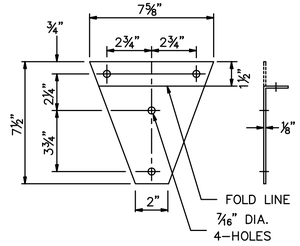


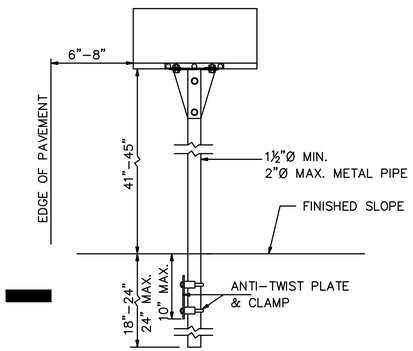


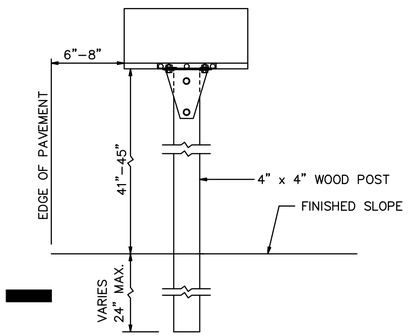


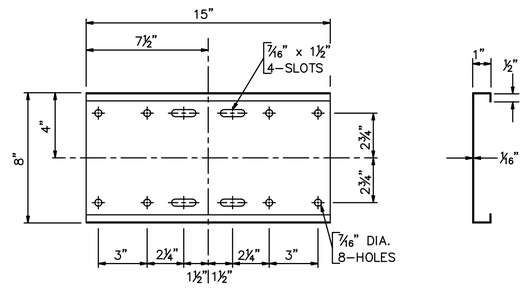
* STANDARD MAILBOX WIDTHS ARE 6½", 8", AND 11½"











1. THE MAILBOX SUPPORT ASSEMBLY SHOWN ON THIS SHEET IS AN EXAMPLE OF AN ACCEPTABLE NON–PROPRIETARY DESIGN.

2. NO MORE THAN TWO MAILBOXES MAY BE MOUNTED ON A SUPPORT STRUCTURE UNLESS THE SUPPORT STRUCTURE AND MAILBOX ARRANGEMENT HAVE BEEN SHOWN TO BE SAFE BY CRASH TESTING. HOWEVER, LIGHTWEIGHT NEWSPAPER BOXES MAY BE MOUNTED BELOW THE MAILBOX ON THE SIDE OF THE MAILBOX SUPPORT.

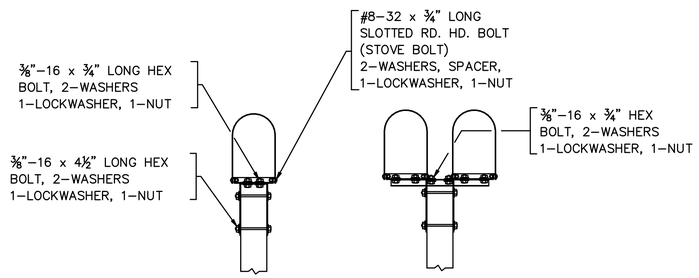
3. MAILBOX SUPPORTS SHALL NOT BE SET IN CONCRETE UNLESS THE SUPPORT DESIGN HAS BEEN SHOWN TO BE SAFE BY CRASH TESTS WHEN SO INSTALLED.

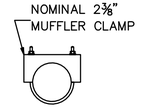
4. A SINGLE 4" x 4" SQUARE* OR 4" DIAMETER* WOOD POST OR A METAL POST WITH A STRENGTH NO GREATER THAN A 2" DIAMETER STANDARD STRENGTH STEEL PIPE AND EMBEDDED NO MORE THAN 24" INTO THE GROUND WILL BE ACCEPTABLE AS A MAILBOX SUPPORT. A METAL POST SHALL NOT BE FITTED WITH AN ANCHOR PLATE, BUT IT SHALL HAVE AN ANTI–TWIST DEVICE THAT EXTENDS NO MORE THAN 10" BELOW THE GROUND SURFACE.
   * THESE DIMENSIONS ARE BOTH MAXIMUM AND MINIMUM

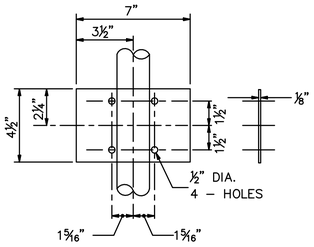
5. IN AREAS OF HIGH SNOWFALL, CANTILEVER DESIGNS MAY BE ADVANTAGEOUS. CANTILEVER SUPPORTS PERMIT WINDSHIELD CONTACT WITH THE MAILBOX WITHOUT THE VEHICLE FIRST CONTACTING THE POST, THEREFORE, AN APPROVED BREAKAWAY SUPPORT MUST BE USED.

6. FOR ADDITIONAL INFORMATION, REFER TO THE LATEST ADOPTED EDITION OF THE AASHTO – *ROADSIDE DESIGN GUIDE – CHAPTER 11, ERECTING MAILBOXES ON STREETS AND HIGHWAYS.*

7. CONTACT THE LOCAL POSTMASTER FOR OFFSET AND HEIGHT FROM EP WHEN INSTALLING IN UNCURBED AREAS.







MAIL BOX ASSEMBLY DETAIL
NTS

BASE PROJECT
- MAILBOXES

ADD ALTERNATE
- MAILBOXES

TEC, Inc.
146 Dascomb Road
Andover, MA 01810
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Unit 101, PO Box 249
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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	N.T.S.

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

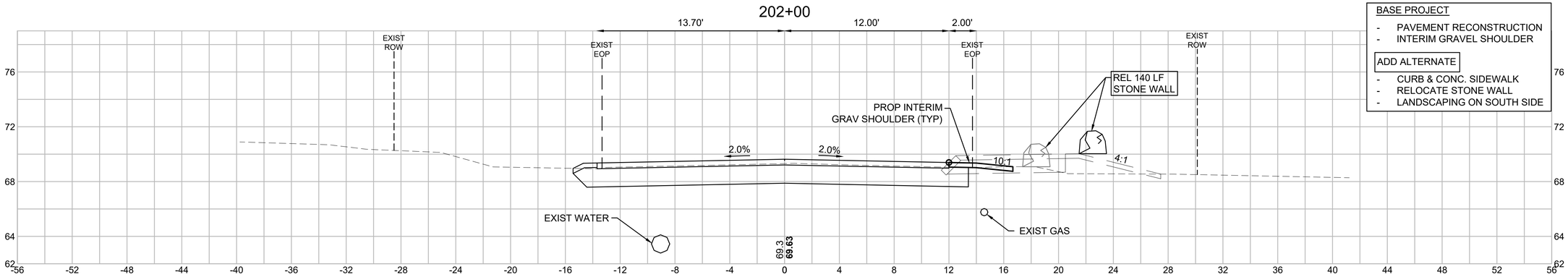
PROJECT TITLE
Roadway Improvements & Culvert Construction

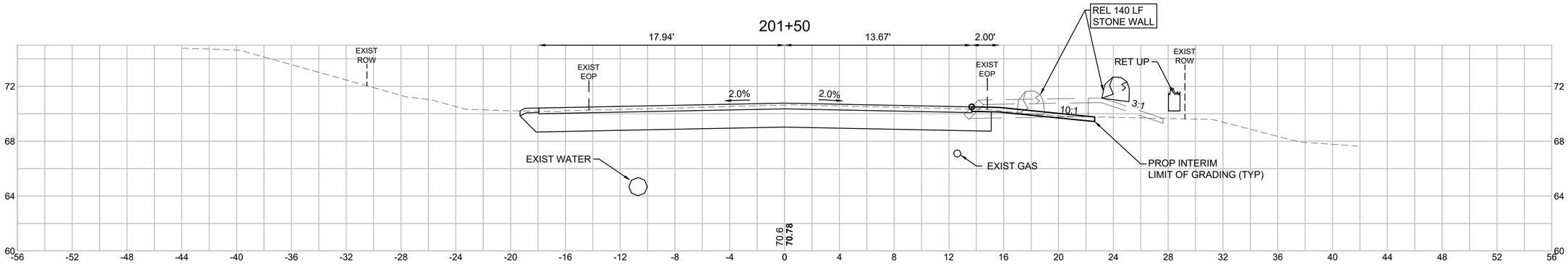
PROJECT LOCATION
Banfield Road
Portsmouth, NH

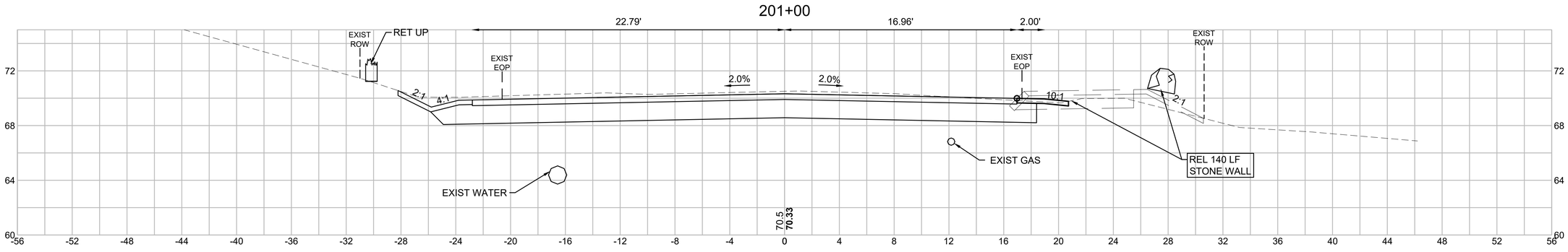
DRAWING TITLE
Construction Details

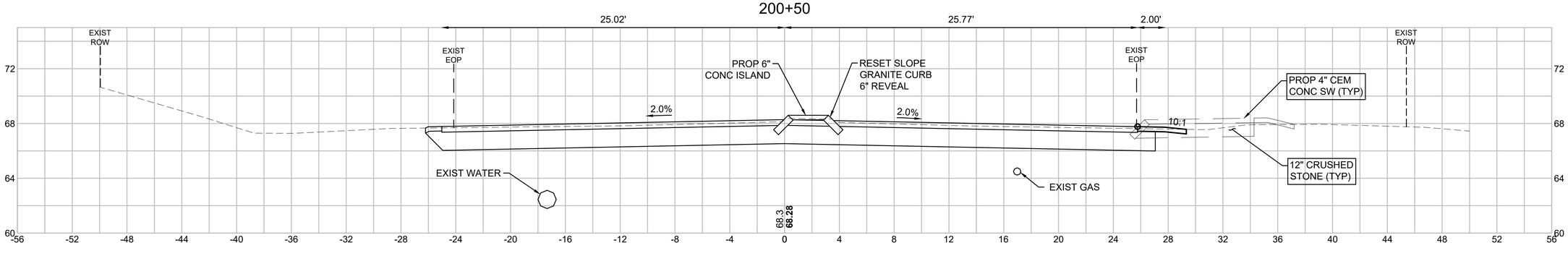
STATE OF NEW HAMPSHIRE – ANTHONY D. CIOLFI No. 11860 – LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620
TEC CAD FILE N0620_(Details)
DRAWING NO. 42
SHEET 42 OF 62









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DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

PROJECT NO.
N0620

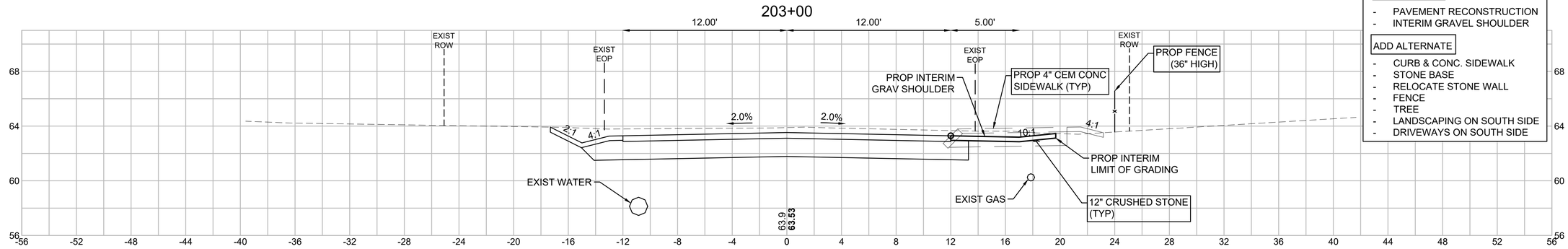
TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
43

SHEET 43 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

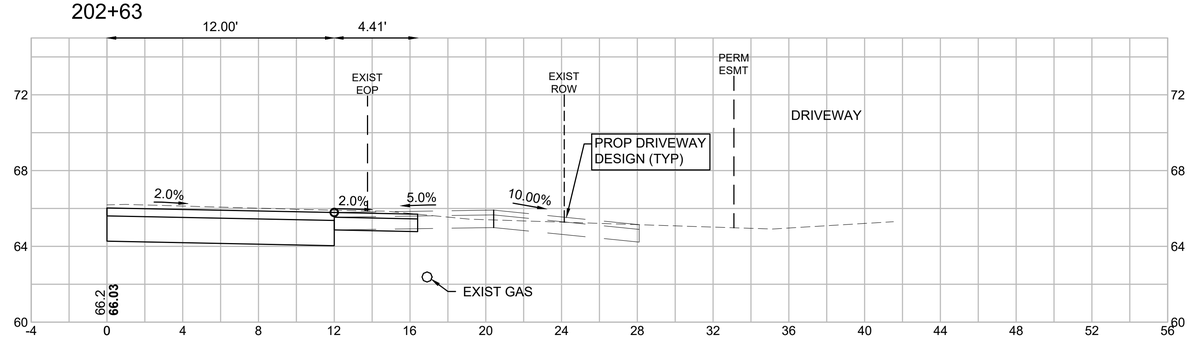
203+00



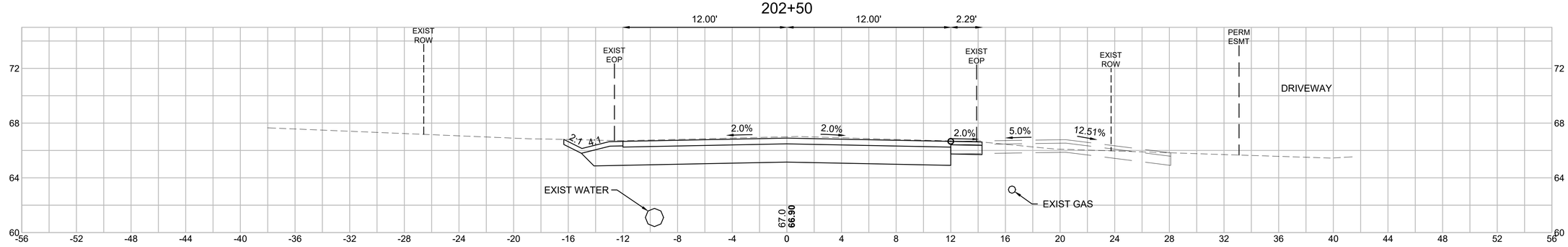
BASE PROJECT
- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER

ADD ALTERNATE
- CURB & CONC. SIDEWALK
- STONE BASE
- RELOCATE STONE WALL
- FENCE
- TREE
- LANDSCAPING ON SOUTH SIDE
- DRIVEWAYS ON SOUTH SIDE

202+63



202+50



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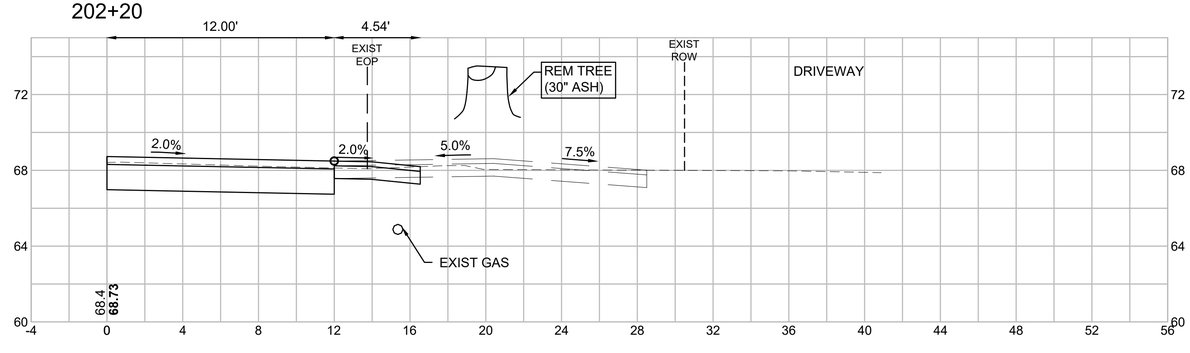

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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

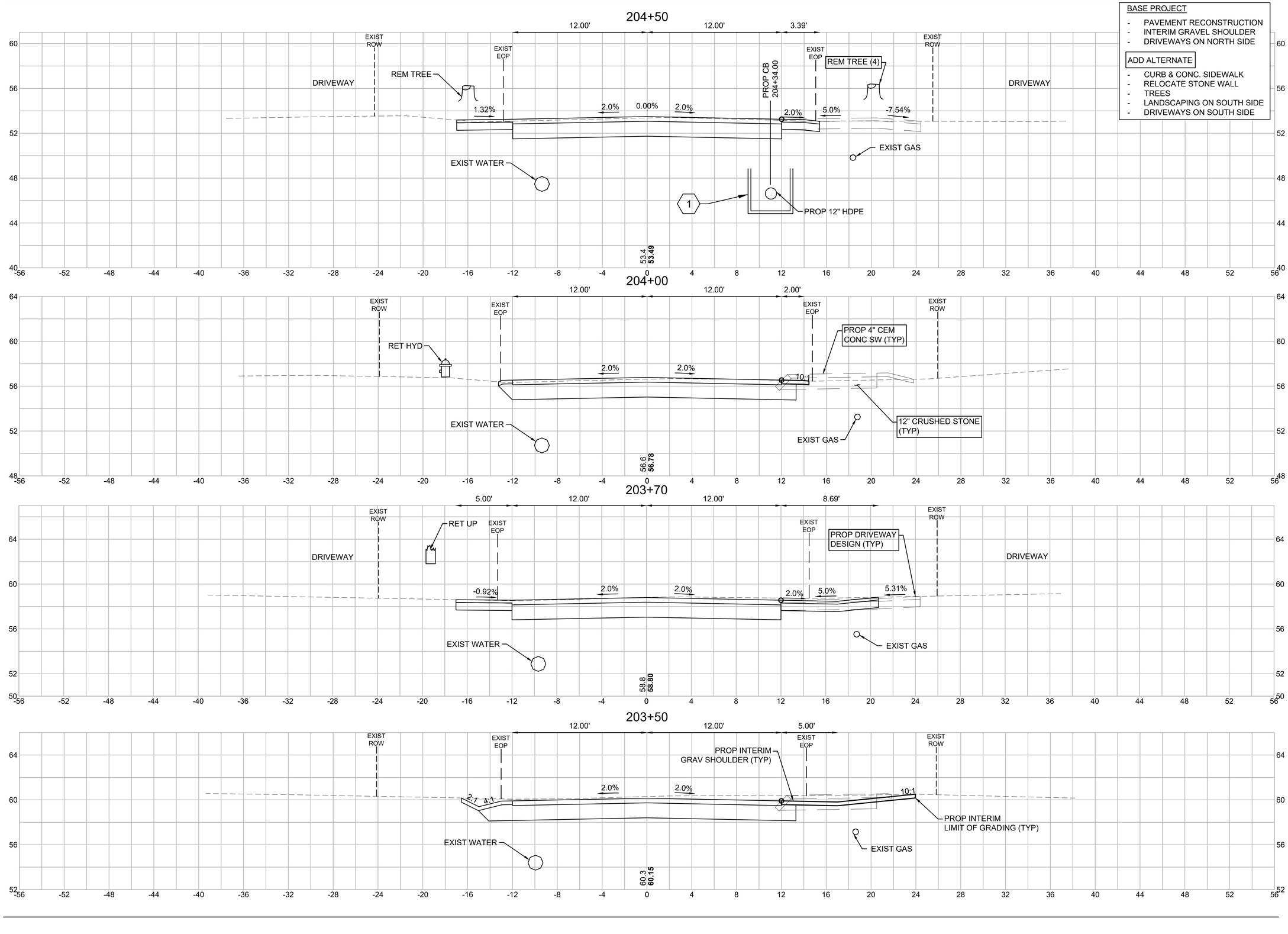
Cross Sections

STATE OF NEW HAMPSHIRE — ANTHONY D. CIOLFI No. 11869 — LICENSED PROFESSIONAL ENGINEER — 3/3/20

PROJECT NO. N0620

TEC CAD FILE N0620_Banfield Rd_(XS)

DRAWING NO. 44



BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- DRIVEWAYS ON NORTH SIDE

ADD ALTERNATE

- CURB & CONC. SIDEWALK
- RELOCATE STONE WALL
- TREES
- LANDSCAPING ON SOUTH SIDE
- DRIVEWAYS ON SOUTH SIDE

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

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Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

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DESIGNED BY	ADC
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CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

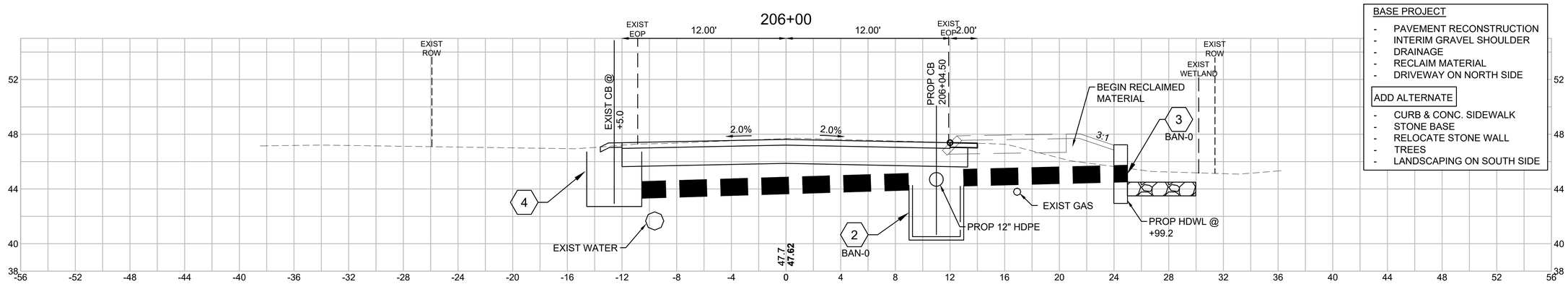
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11880
LICENSED PROFESSIONAL ENGINEER
3/3/20

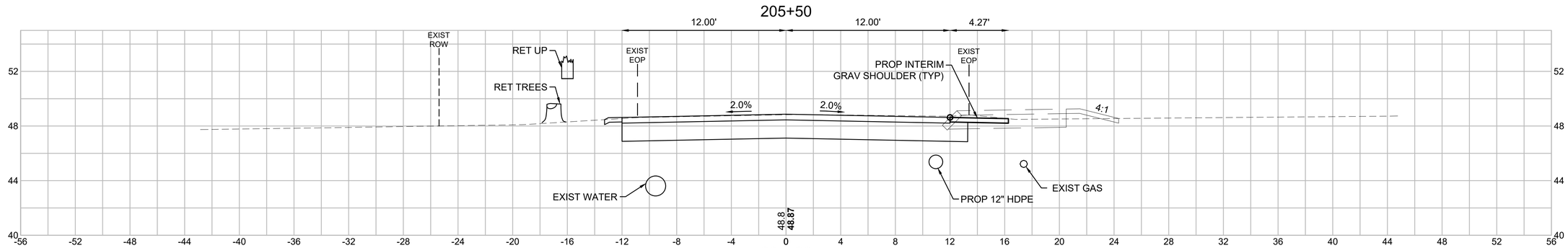
PROJECT NO.
N0620

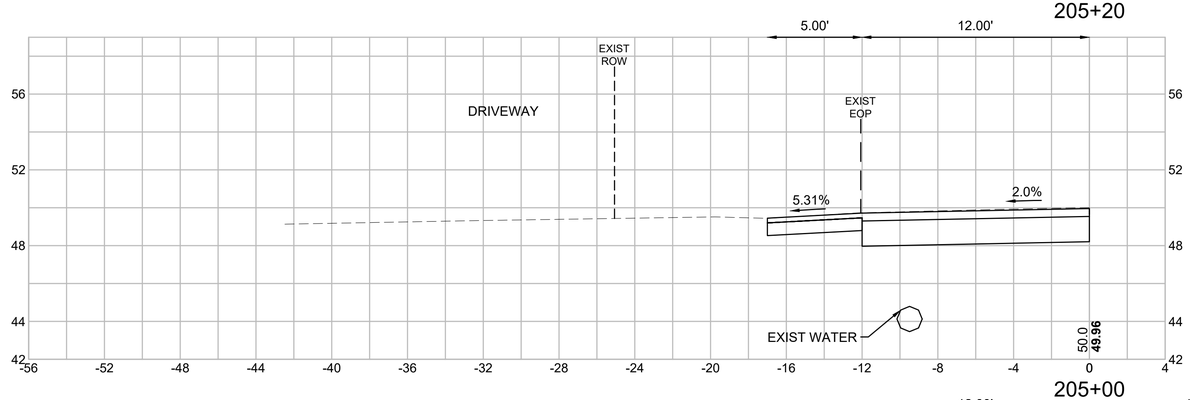
TEC CAD FILE
N0620_Banfield Rd_(XS)

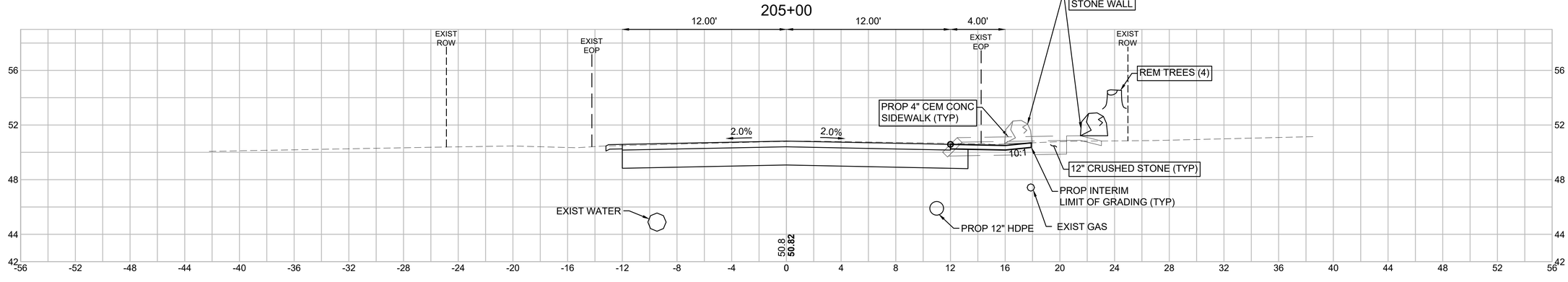
DRAWING NO.
45

SHEET 45 OF 62









BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- DRAINAGE
- RECLAIM MATERIAL
- DRIVEWAY ON NORTH SIDE

ADD ALTERNATE

- CURB & CONC. SIDEWALK
- STONE BASE
- RELOCATE STONE WALL
- TREES
- LANDSCAPING ON SOUTH SIDE

TEC, Inc.

146 Dascomb Road
Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

PROJECT NO.
N0620

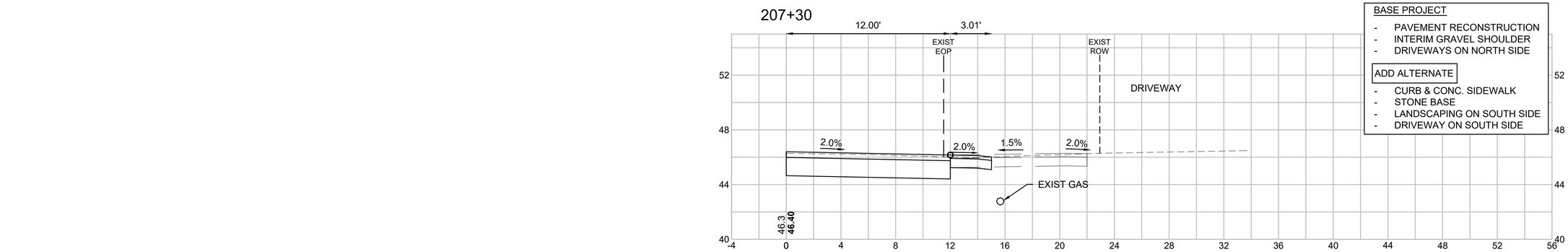
TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
46

SHEET 46 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI No. 11869 LICENSED PROFESSIONAL ENGINEER
3/3/20

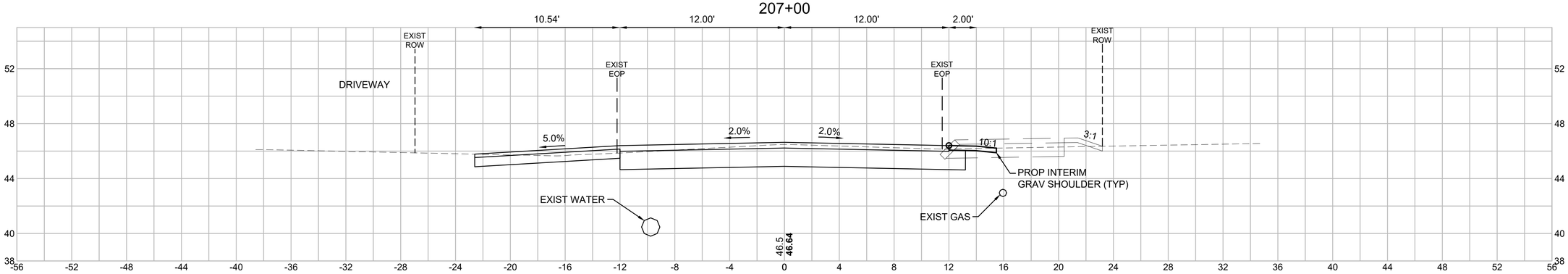
207+30



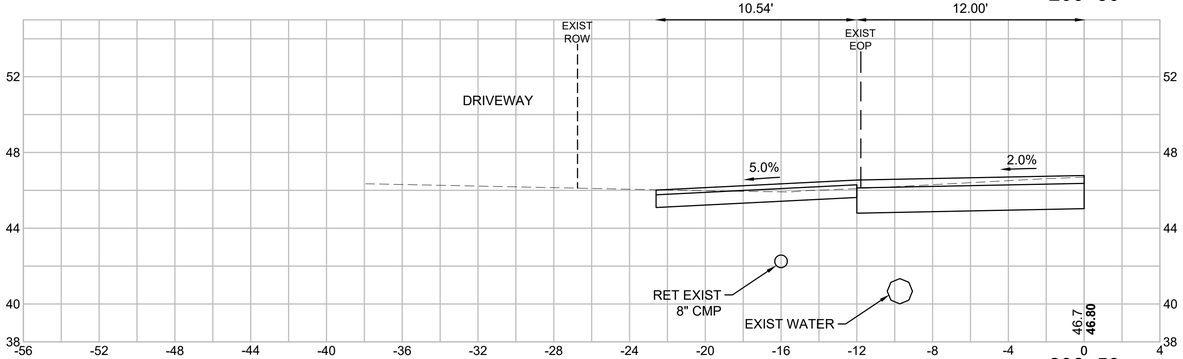
BASE PROJECT
- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- DRIVEWAYS ON NORTH SIDE

ADD ALTERNATE
- CURB & CONC. SIDEWALK
- STONE BASE
- LANDSCAPING ON SOUTH SIDE
- DRIVEWAY ON SOUTH SIDE

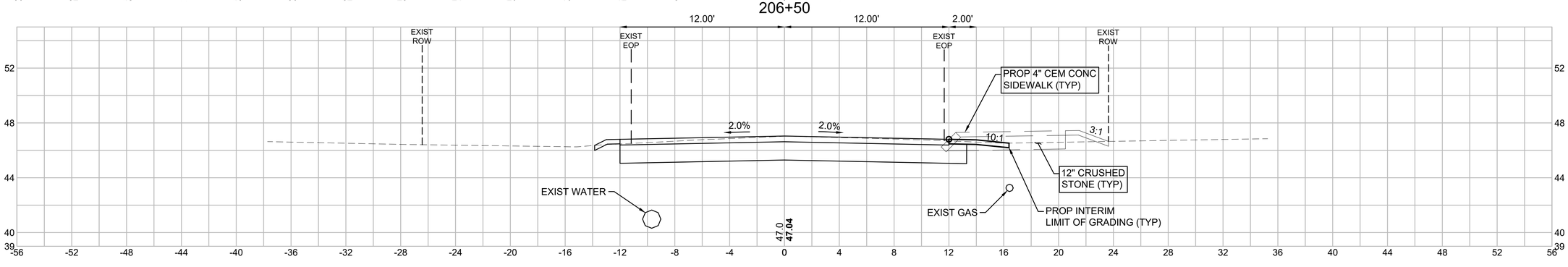
207+00



206+80



206+50



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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR
City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR
Construction

PROJECT TITLE
Roadway Improvements & Culvert Construction

PROJECT LOCATION
Banfield Road
Portsmouth, NH

DRAWING TITLE
Cross Sections

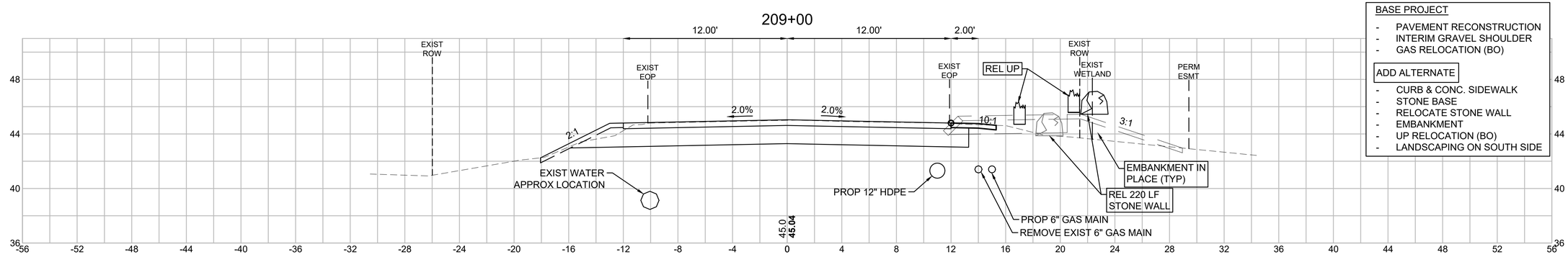
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
47

SHEET 47 OF 62

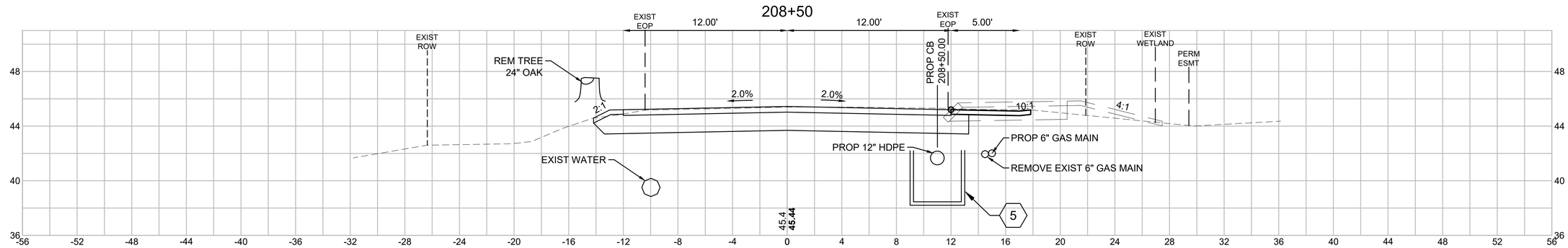


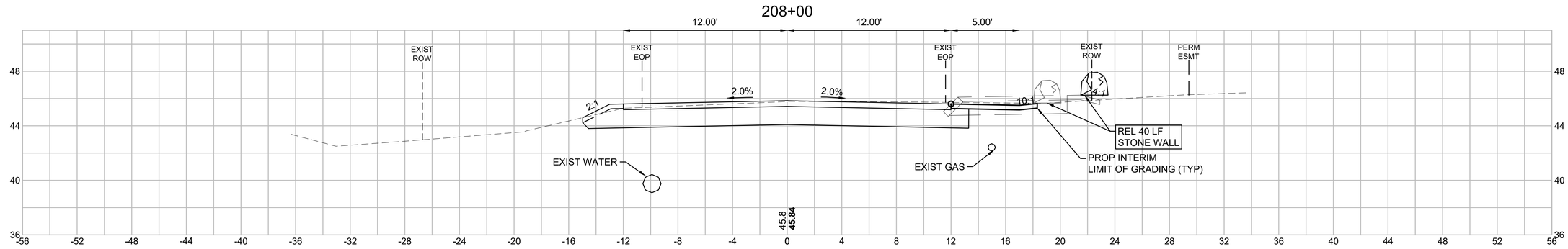
BASE PROJECT

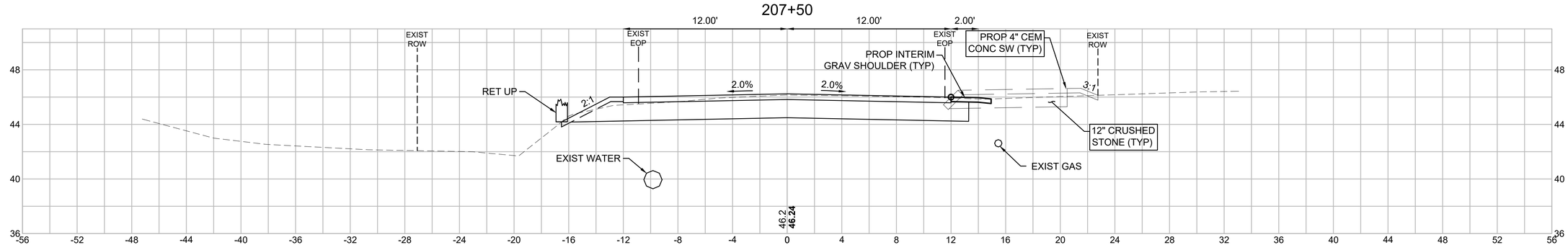
- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)

ADD ALTERNATE

- CURB & CONC. SIDEWALK
- STONE BASE
- RELOCATE STONE WALL
- EMBANKMENT
- UP RELOCATION (BO)
- LANDSCAPING ON SOUTH SIDE







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DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

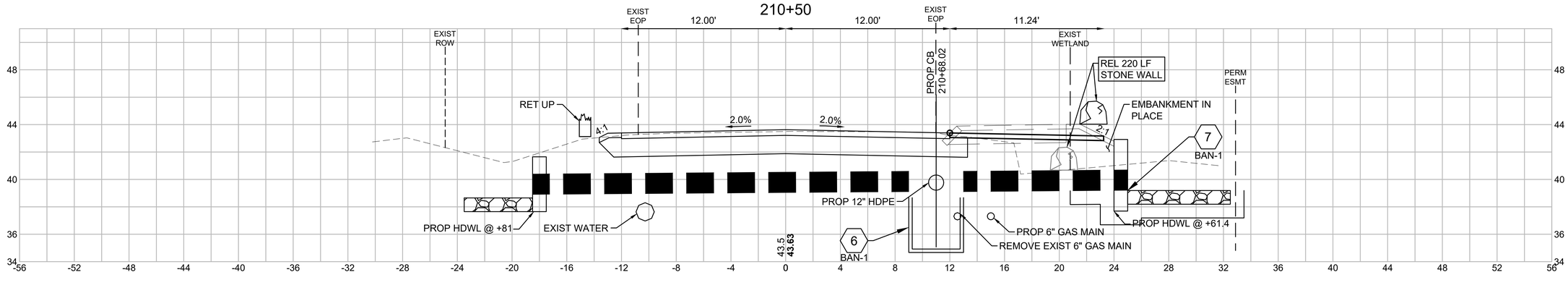
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11869
LICENSED PROFESSIONAL ENGINEER
3/3/20

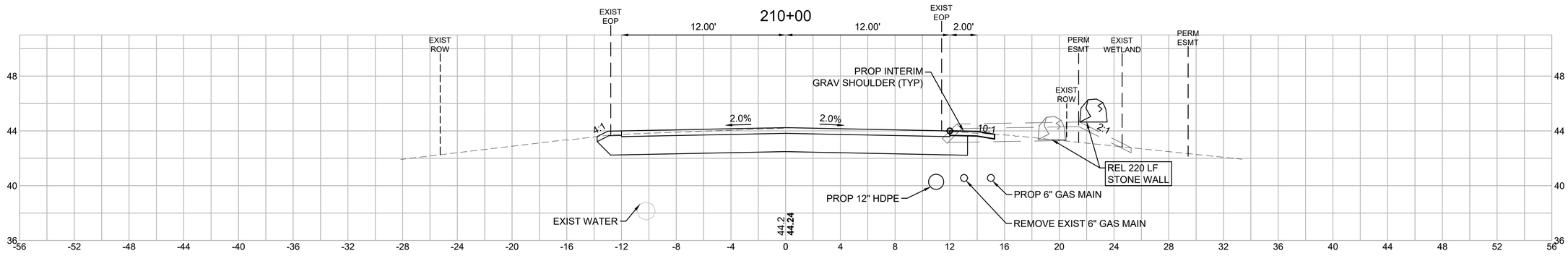
PROJECT NO.
N0620

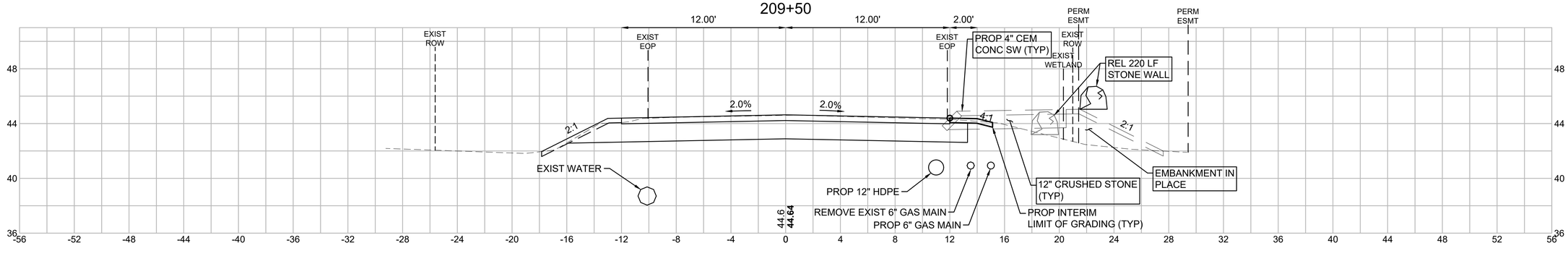
TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
48

SHEET 48 OF 62







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SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

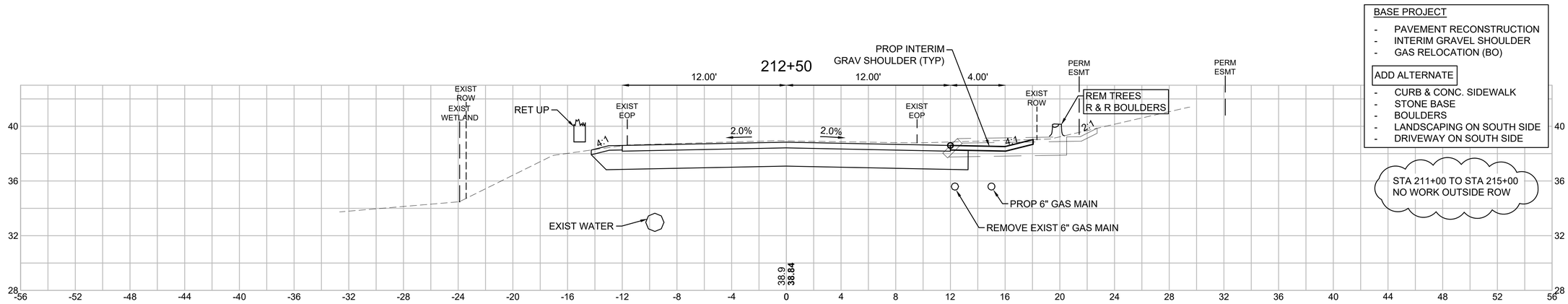
PROJECT NO.
N0620

TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
49

SHEET 49 OF 62

STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11660 LICENSED PROFESSIONAL ENGINEER
3/3/20



BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)

ADD ALTERNATE

- CURB & CONC. SIDEWALK
- STONE BASE
- BOULDERS
- LANDSCAPING ON SOUTH SIDE
- DRIVEWAY ON SOUTH SIDE

STA 211+00 TO STA 215+00
NO WORK OUTSIDE ROW

TEC, Inc.

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DESIGNED BY	ADC
DRAWN BY	SQN
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DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

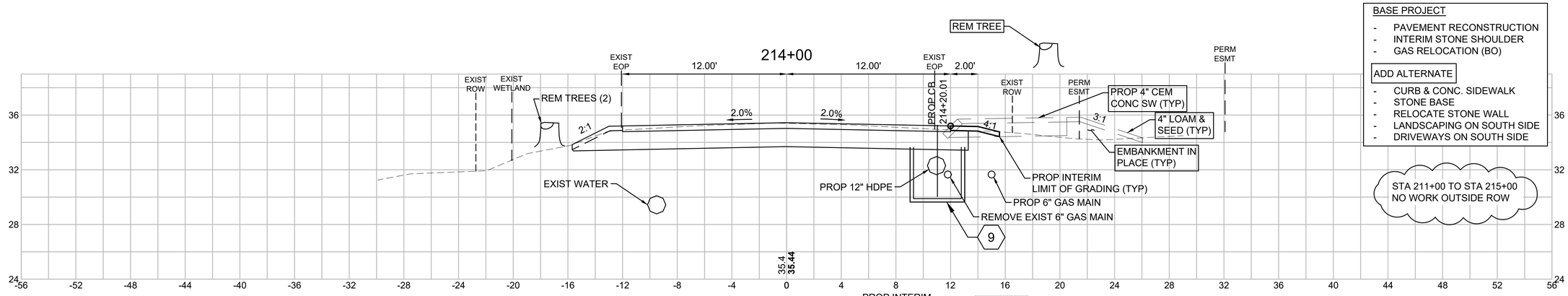
PROJECT NO.
N0620

TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
50

SHEET 50 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20



BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM STONE SHOULDER
- GAS RELOCATION (BO)

ADD ALTERNATE

- CURB & CONC. SIDEWALK
- STONE BASE
- RELOCATE STONE WALL
- LANDSCAPING ON SOUTH SIDE
- DRIVEWAYS ON SOUTH SIDE

STA 211+00 TO STA 215+00
NO WORK OUTSIDE ROW

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DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

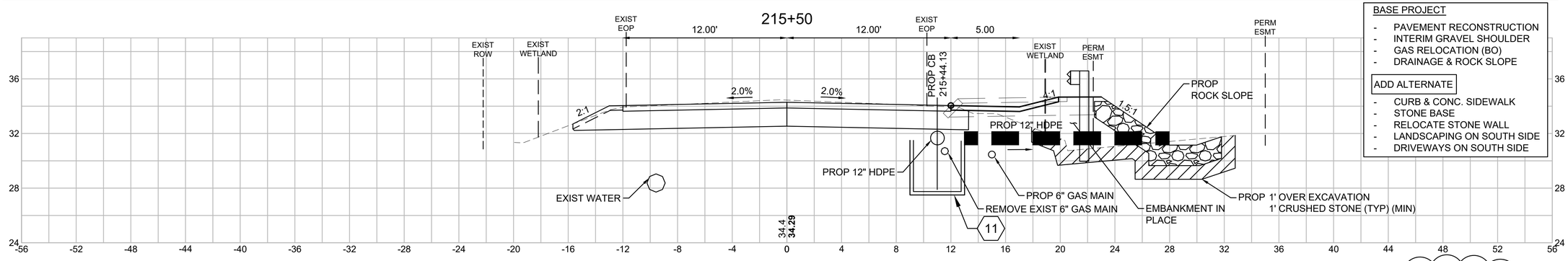
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

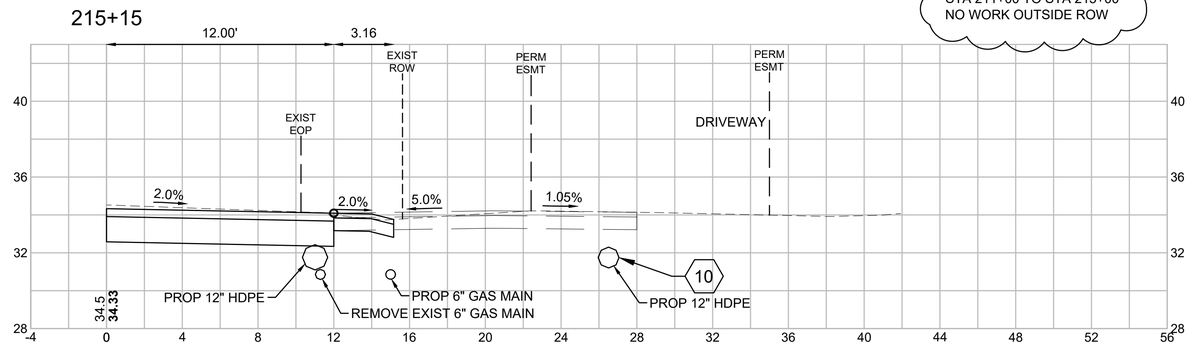
PROJECT NO.
N0620

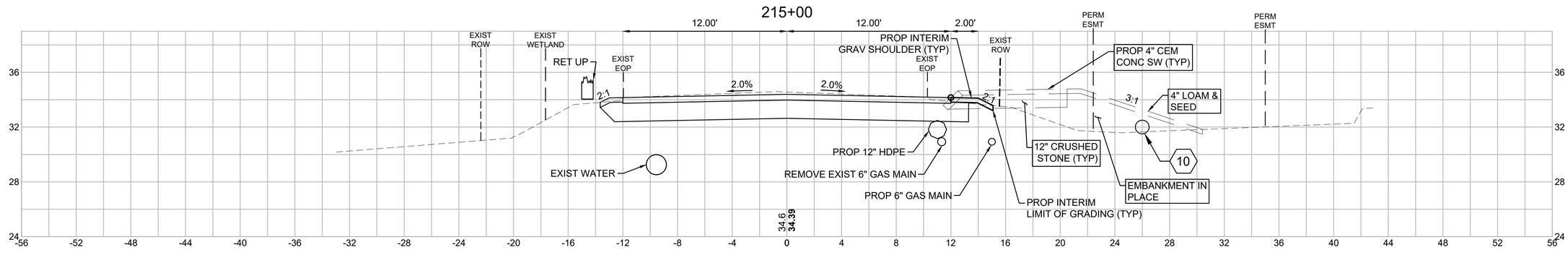
TEC CAD FILE
N0620_Banfield Rd_(XS)

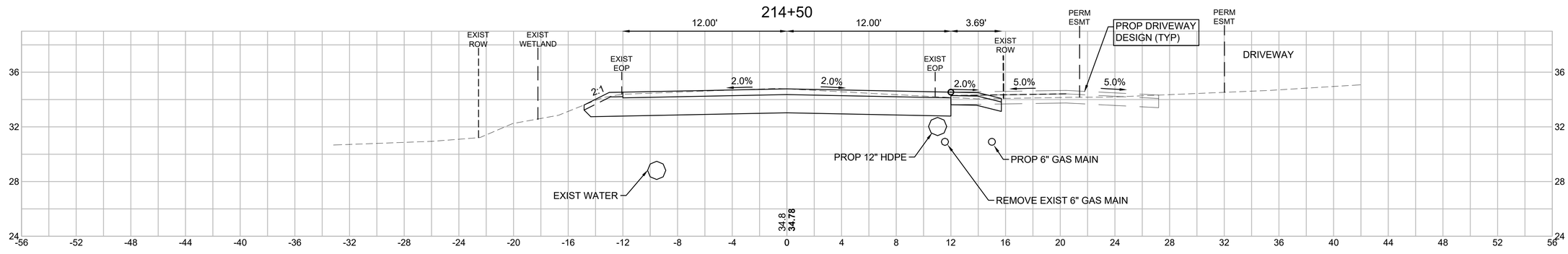
DRAWING NO.
51

SHEET 51 OF 62









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Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

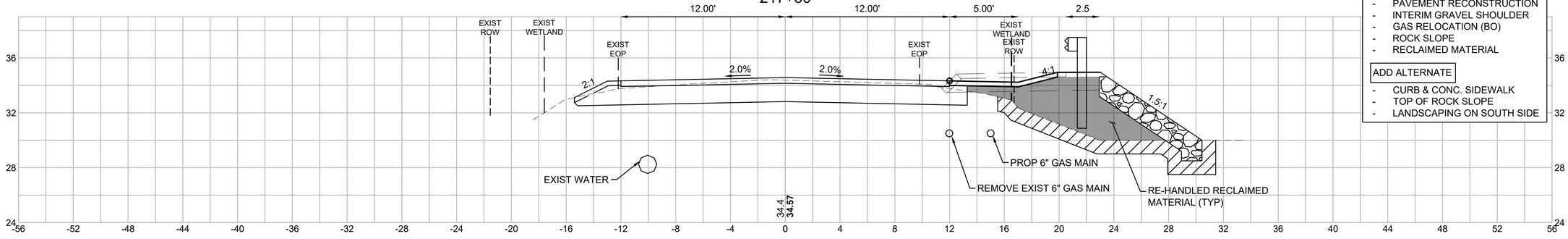
PROJECT NO.
N0620

TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
52

SHEET 52 OF 62

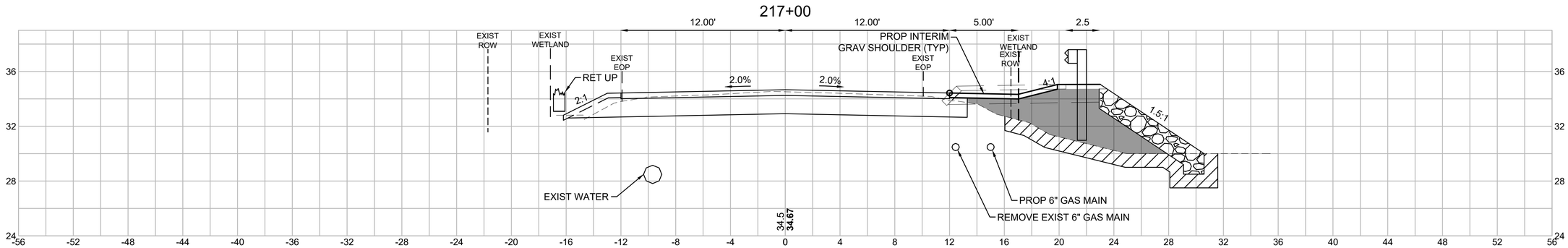
217+50



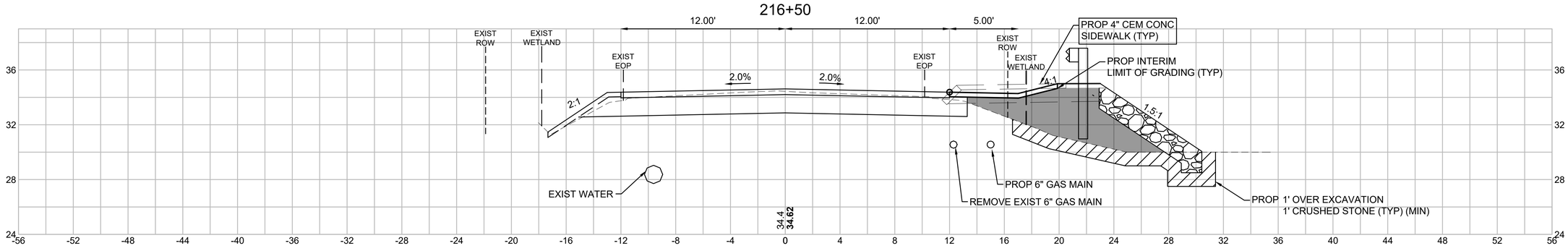
BASE PROJECT
- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)
- ROCK SLOPE
- RECLAIMED MATERIAL

ADD ALTERNATE
- CURB & CONC. SIDEWALK
- TOP OF ROCK SLOPE
- LANDSCAPING ON SOUTH SIDE

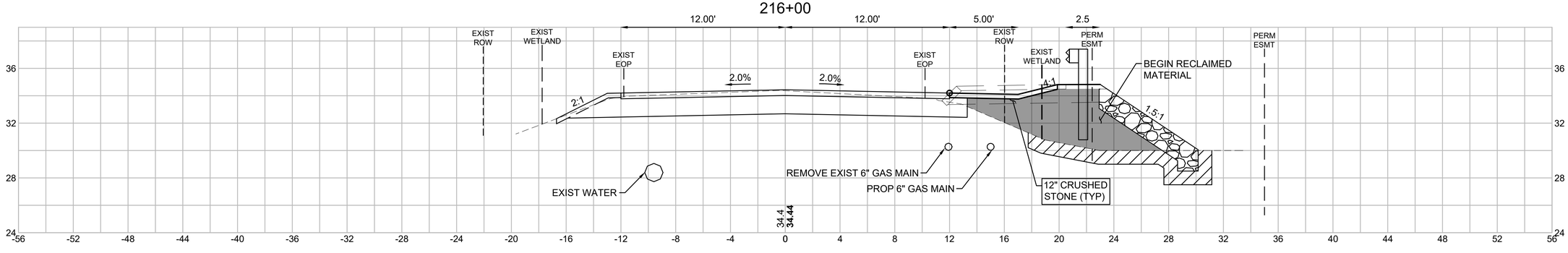
217+00



216+50



216+00



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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

PROJECT NO.
N0620

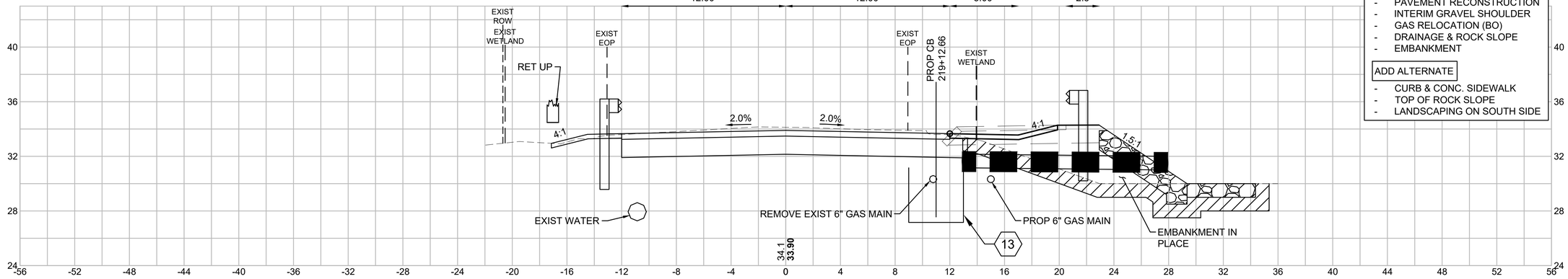
TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
53

SHEET 53 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

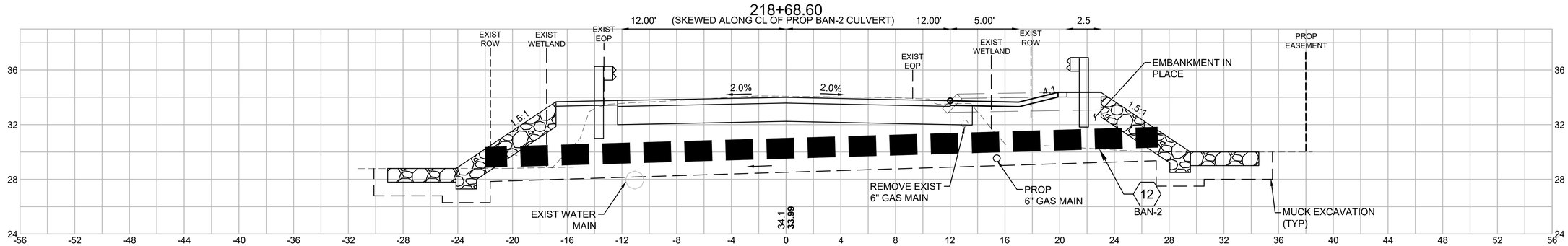
219+00



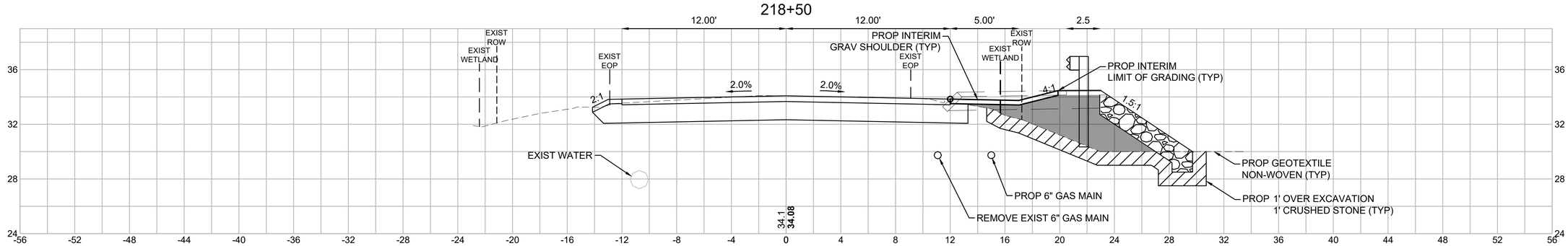
BASE PROJECT
- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)
- DRAINAGE & ROCK SLOPE
- EMBANKMENT

ADD ALTERNATE
- CURB & CONC. SIDEWALK
- TOP OF ROCK SLOPE
- LANDSCAPING ON SOUTH SIDE

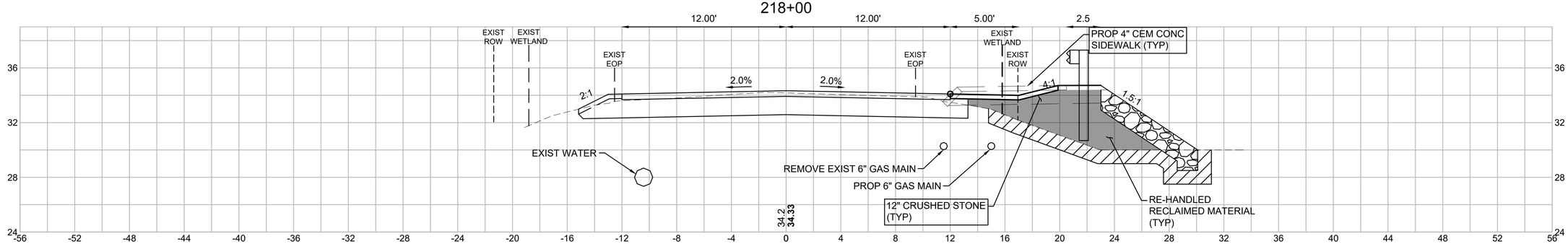
218+68.60



218+50



218+00



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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

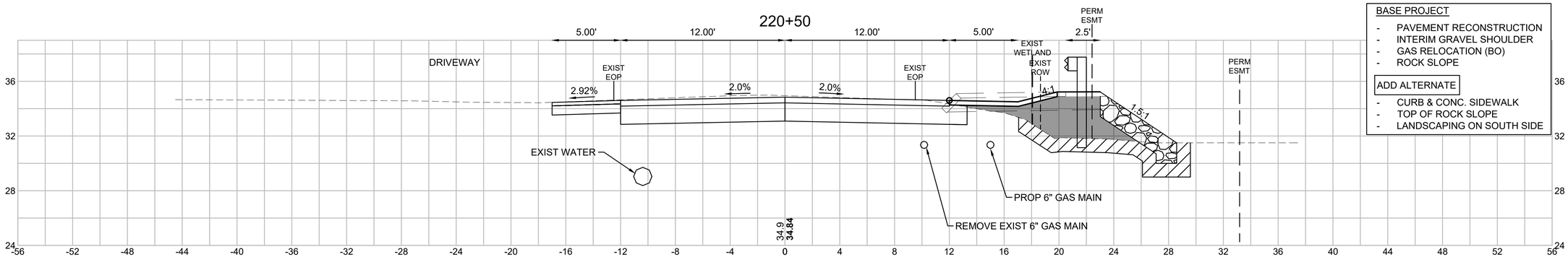
Cross Sections

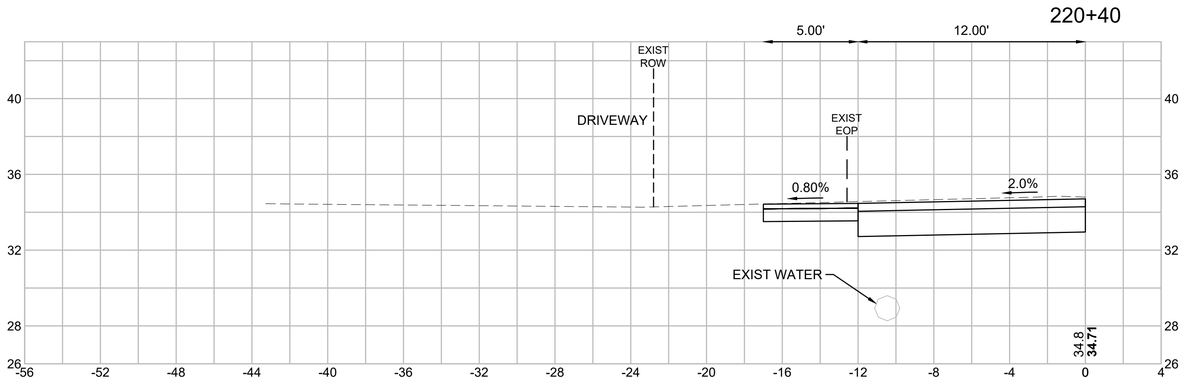
STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER - 3/3/20

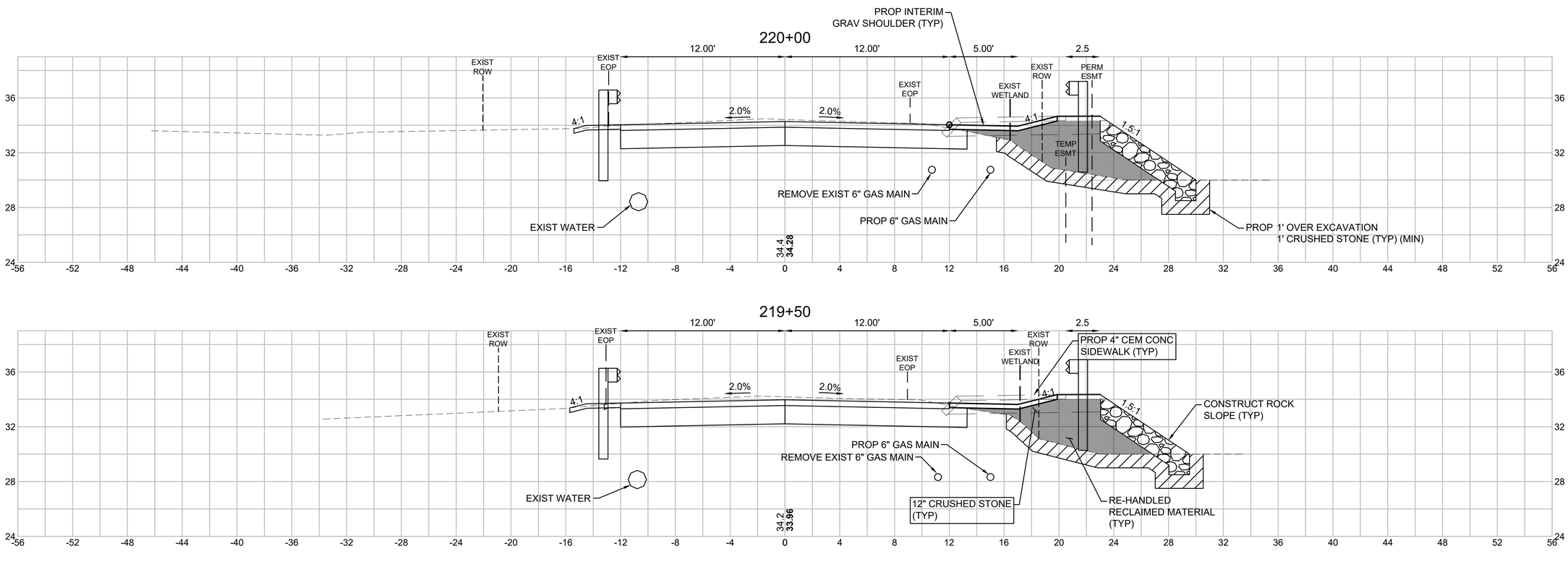
PROJECT NO. N0620

TEC CAD FILE N0620_Banfield Rd_(XS)

DRAWING NO. 54







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DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

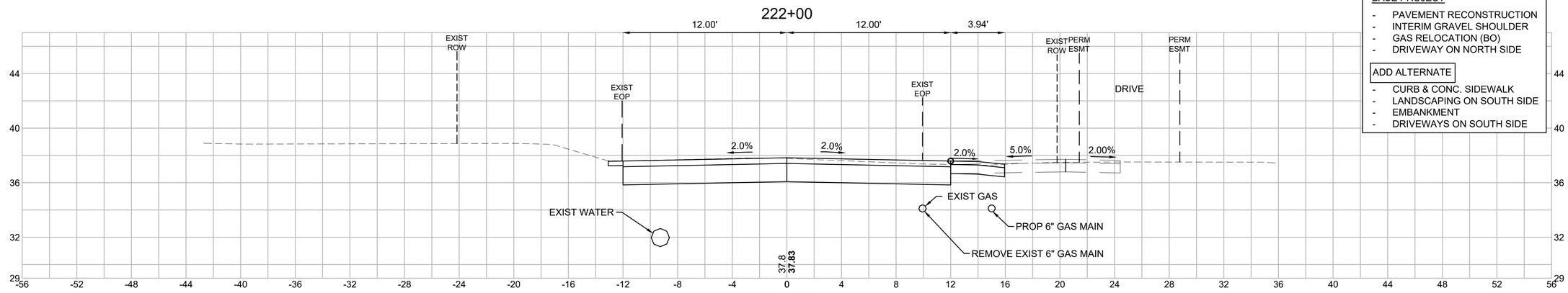
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

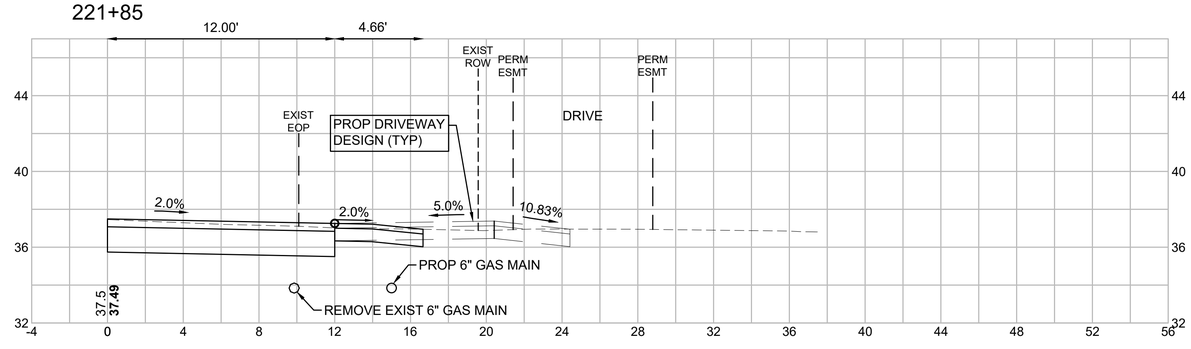
PROJECT NO.
N0620

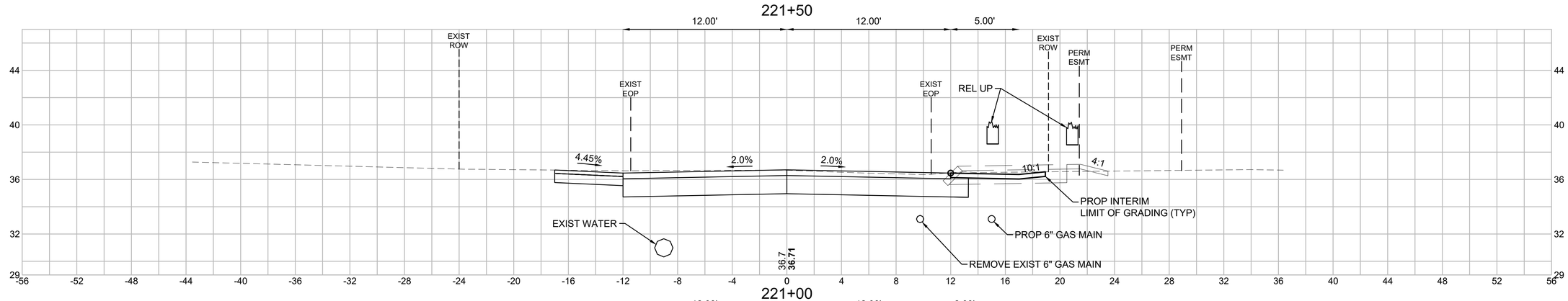
TEC CAD FILE
N0620_Banfield Rd_(XS)

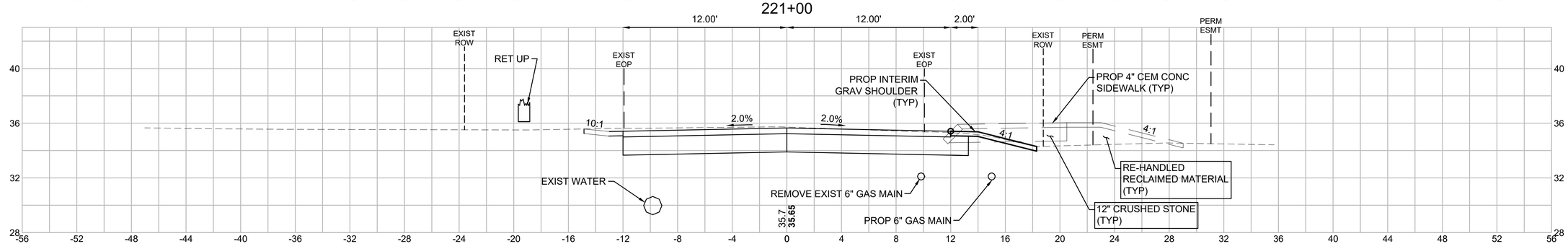
DRAWING NO.
55

SHEET 55 OF 62









BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)
- DRIVEWAY ON NORTH SIDE

ADD ALTERNATE

- CURB & CONC. SIDEWALK
- LANDSCAPING ON SOUTH SIDE
- EMBANKMENT
- DRIVEWAYS ON SOUTH SIDE

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CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO. N0620

TEC CAD FILE N0620_Banfield Rd_(XS)

DRAWING NO. 56

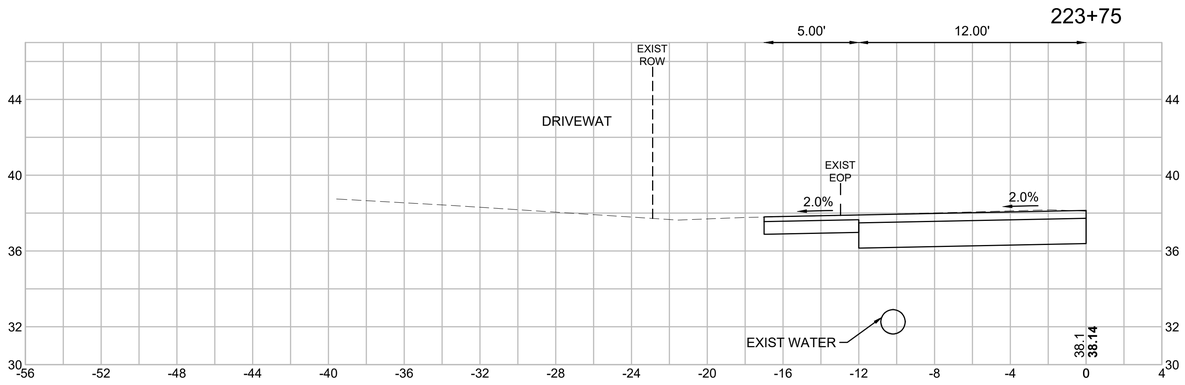
SHEET 56 OF 62

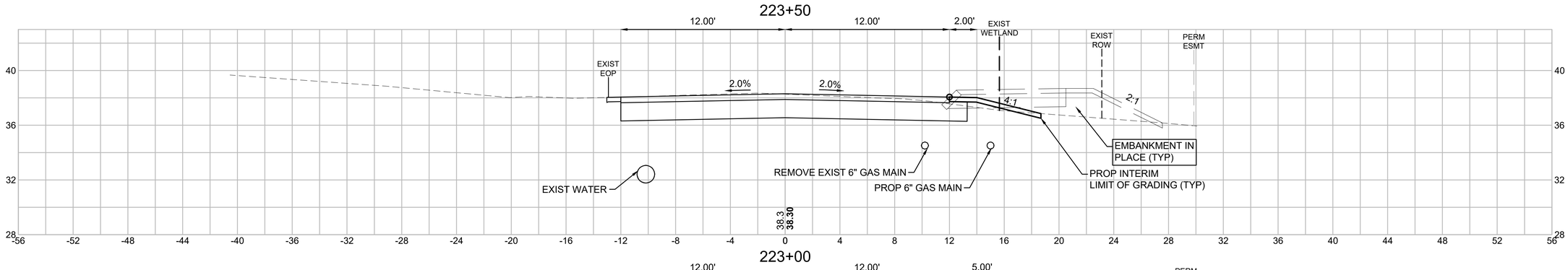
BASE PROJECT

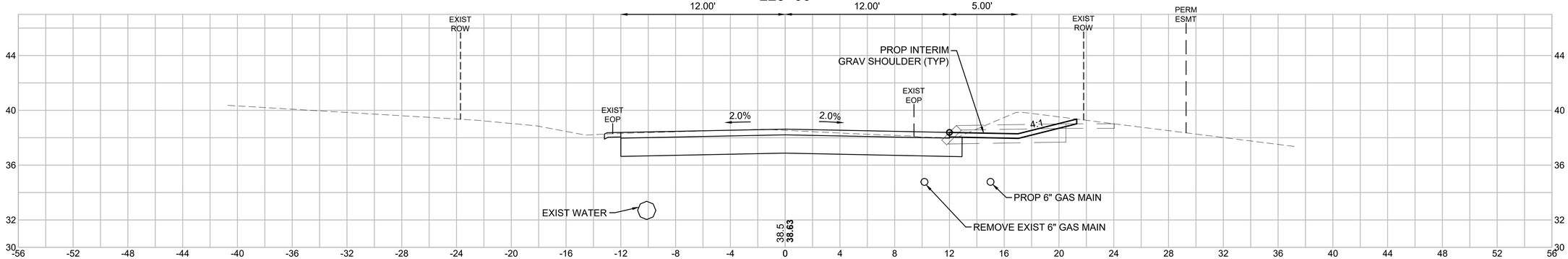
- PAVEMENT RECONSTRUCTION
- INTERIM STONE SHOULDER
- GAS RELOCATION (BO)

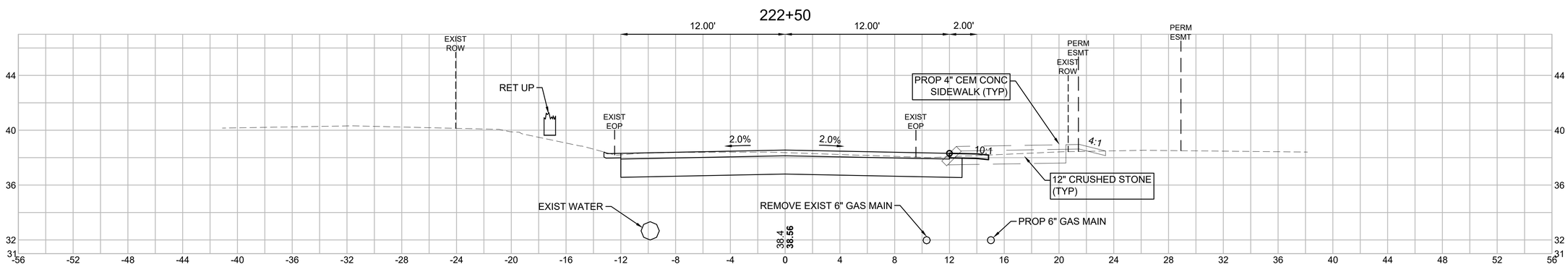
ADD ALTERNATE

- CURB & CONC. SIDEWALK
- LANDSCAPING ON SOUTH SIDE









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146 Dascomb Road
Andover, MA 01810
(978) 794-1792

169 Ocean Boulevard
Unit 101, PO Box 249
Hampton, NH 03842
(603) 601-8154

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DESIGNED BY	ADC
DRAWN BY	SQN
CHECKED BY	LSA
DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

ISSUED FOR

Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

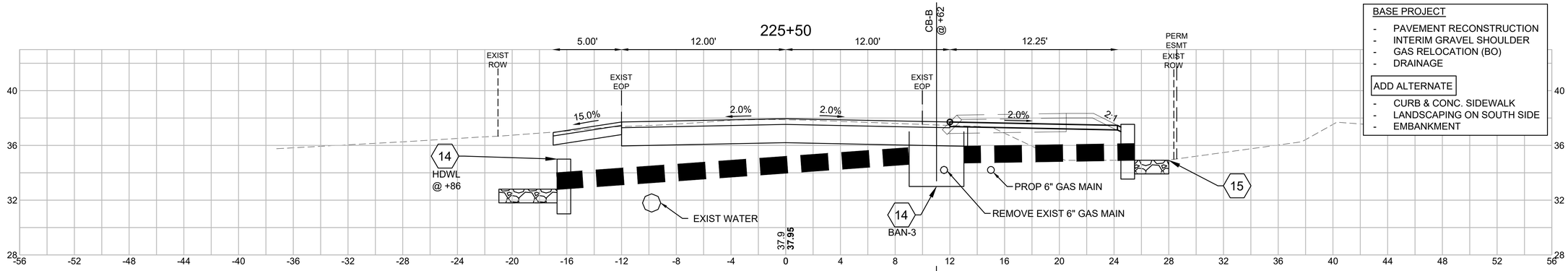
STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

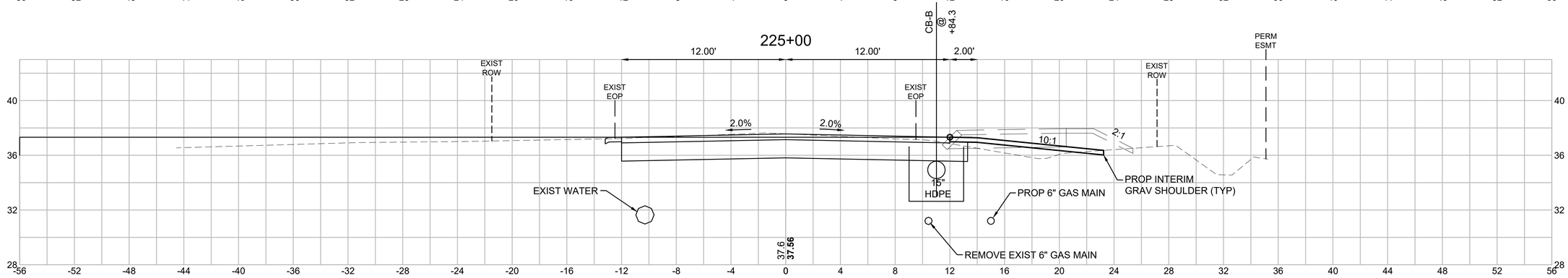
PROJECT NO.
N0620

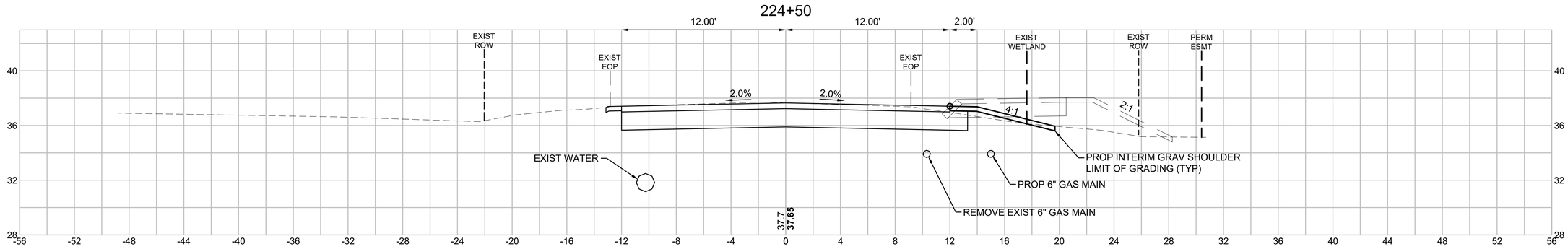
TEC CAD FILE
N0620_Banfield Rd_(XS)

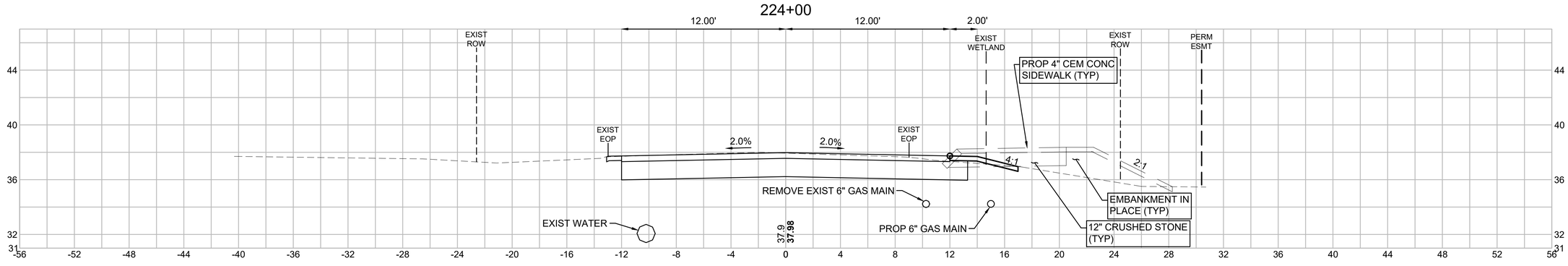
DRAWING NO.
57

SHEET 57 OF 62









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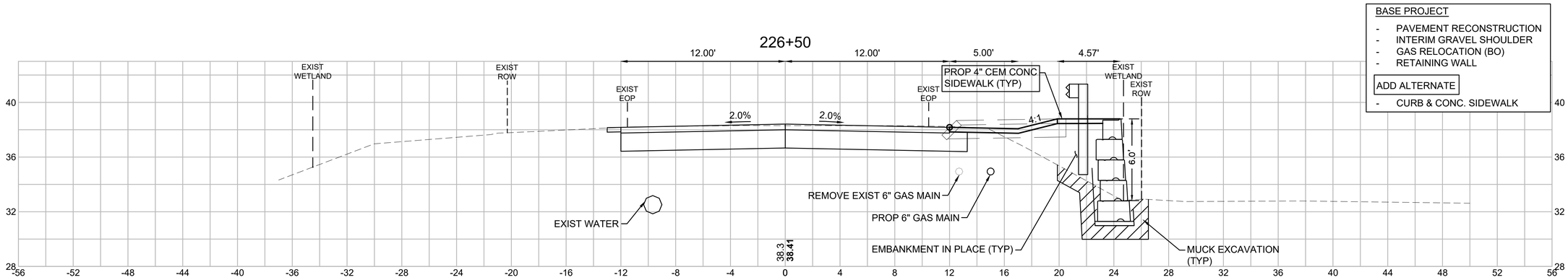
No. 11860
LICENSED PROFESSIONAL ENGINEER
3/3/20

PROJECT NO.
N0620

TEC CAD FILE
N0620_Banfield Rd_(XS)

DRAWING NO.
58

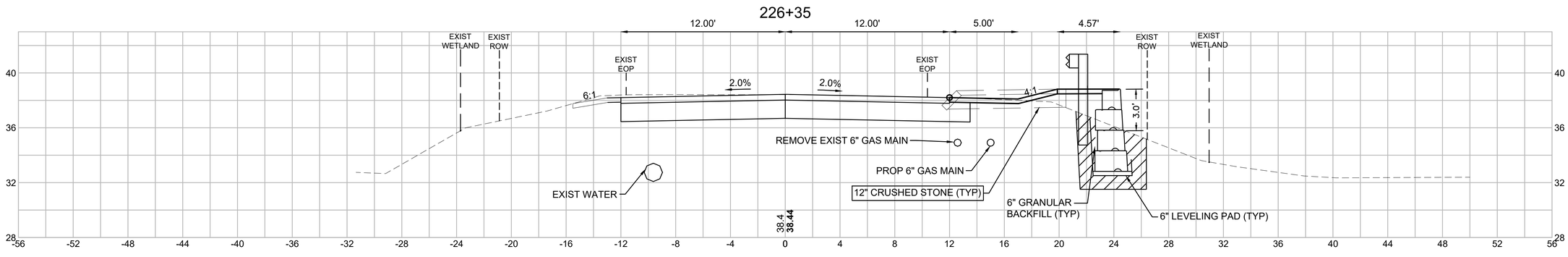


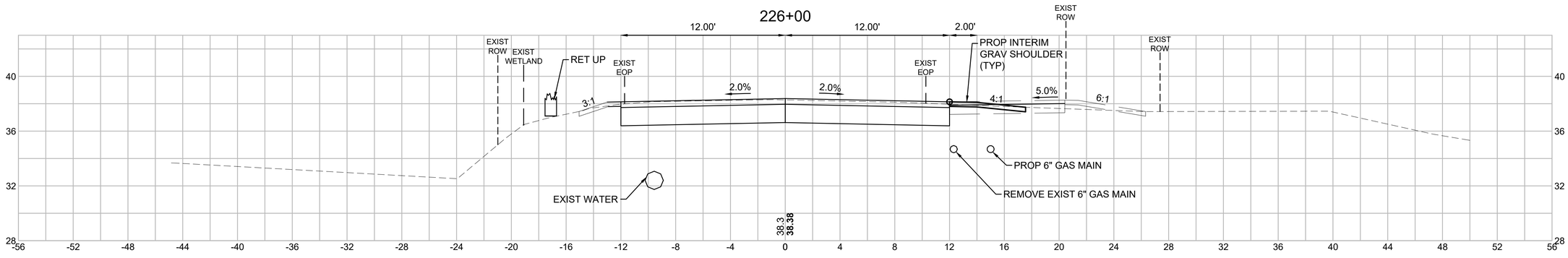
BASE PROJECT

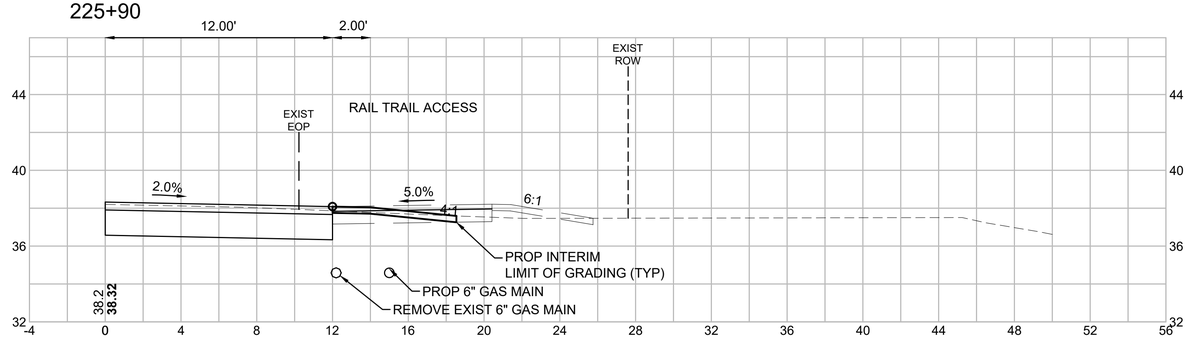
- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)
- RETAINING WALL

ADD ALTERNATE

- CURB & CONC. SIDEWALK







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3/3/20

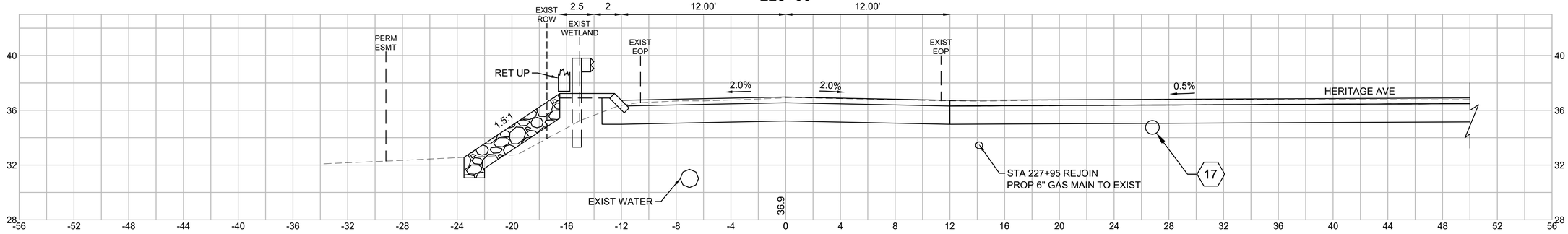
PROJECT NO.
N0620

TEC CAD FILE
N0620_Banfield Rd_(XS)

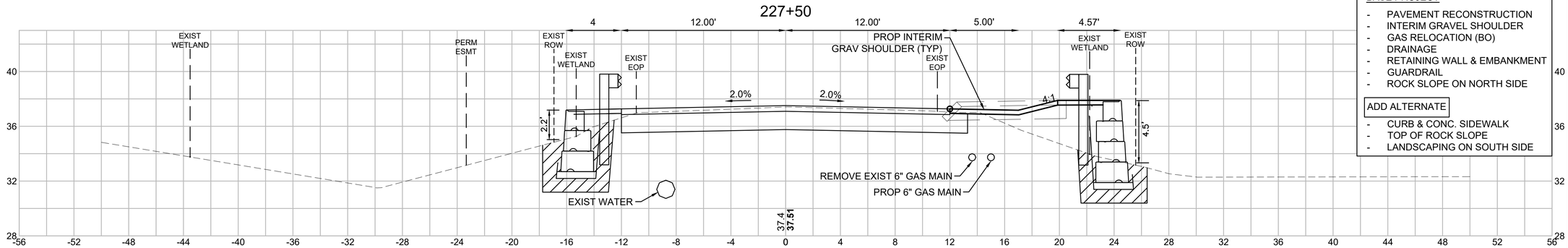
DRAWING NO.
59

SHEET 59 OF 62

228+00



227+50



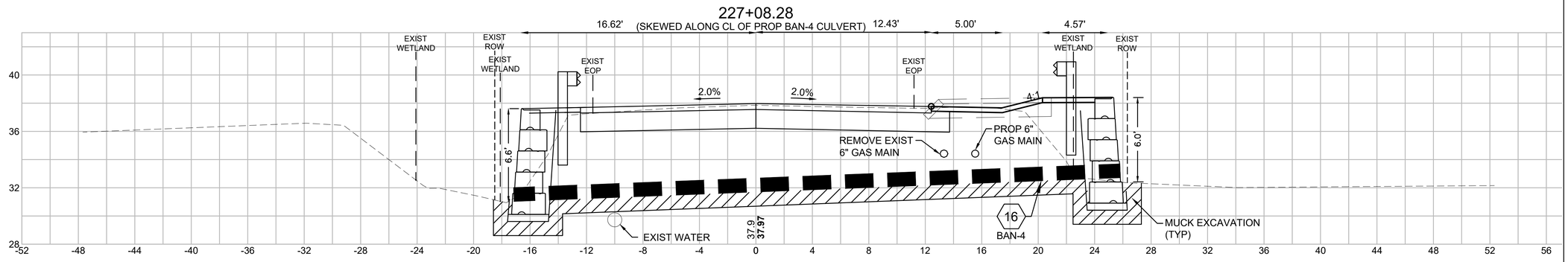
BASE PROJECT

- PAVEMENT RECONSTRUCTION
- INTERIM GRAVEL SHOULDER
- GAS RELOCATION (BO)
- DRAINAGE
- RETAINING WALL & EMBANKMENT
- GUARDRAIL
- ROCK SLOPE ON NORTH SIDE

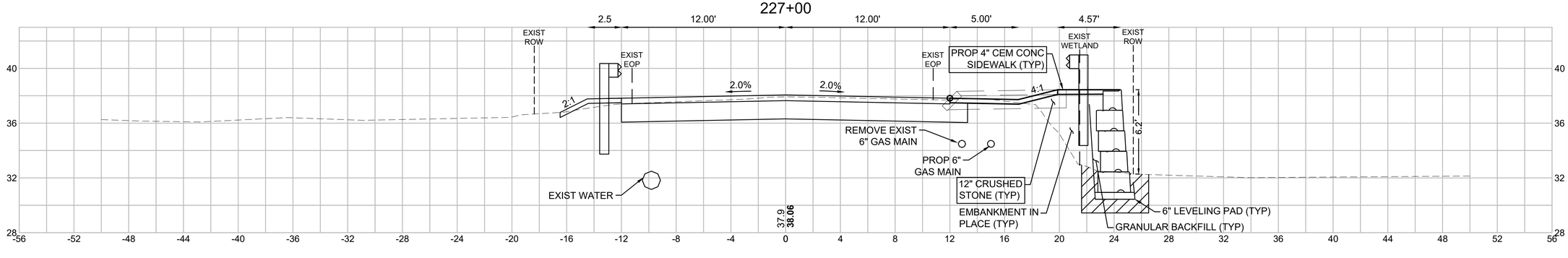
ADD ALTERNATE

- CURB & CONC. SIDEWALK
- TOP OF ROCK SLOPE
- LANDSCAPING ON SOUTH SIDE

227+08.28



227+00



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DATE	3/3/2020
SCALE	1" = 4'

PREPARED FOR

City of Portsmouth
1 Junkins Avenue
Portsmouth, NH 03801

REVISIONS

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Construction

PROJECT TITLE

Roadway Improvements & Culvert Construction

PROJECT LOCATION

Banfield Road
Portsmouth, NH

DRAWING TITLE

Cross Sections

STATE OF NEW HAMPSHIRE — ANTHONY D. CIOLFI No. 11060 — LICENSED PROFESSIONAL ENGINEER — 3/3/20

PROJECT NO. N0620

TEC CAD FILE N0620_Banfield Rd_(XS)

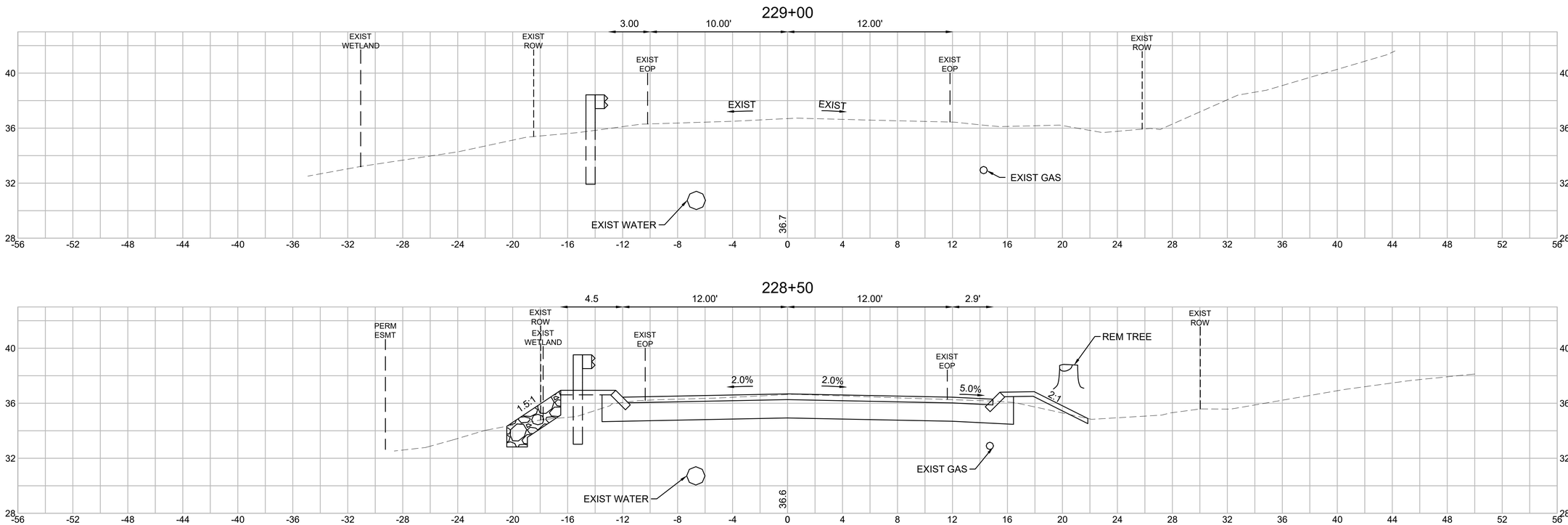
DRAWING NO. 60

BASE PROJECT

- PAVEMENT RECONSTRUCTION
- ROCK SLOPE ON NORTH SIDE
- LANDSCAPING
- GUARDRAIL
- SLOPE GRANITE CURB

ADD ALTERNATE

- N/A



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REVISIONS

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PROJECT LOCATION

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Portsmouth, NH

DRAWING TITLE

Cross Sections

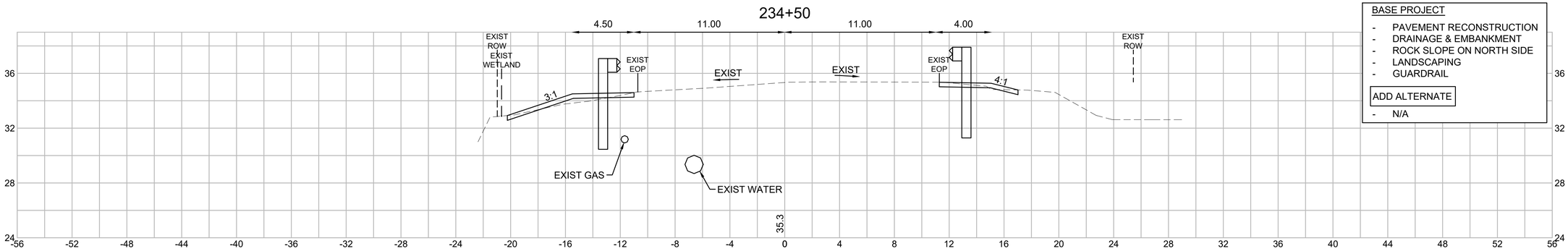
STATE OF NEW HAMPSHIRE - ANTHONY D. CIOLFI No. 11860 - LICENSED PROFESSIONAL ENGINEER
3/3/20

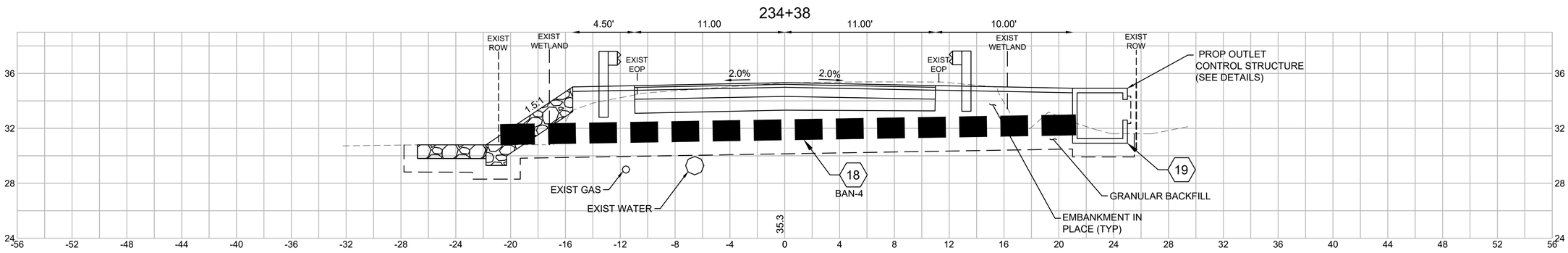
PROJECT NO.
N0620

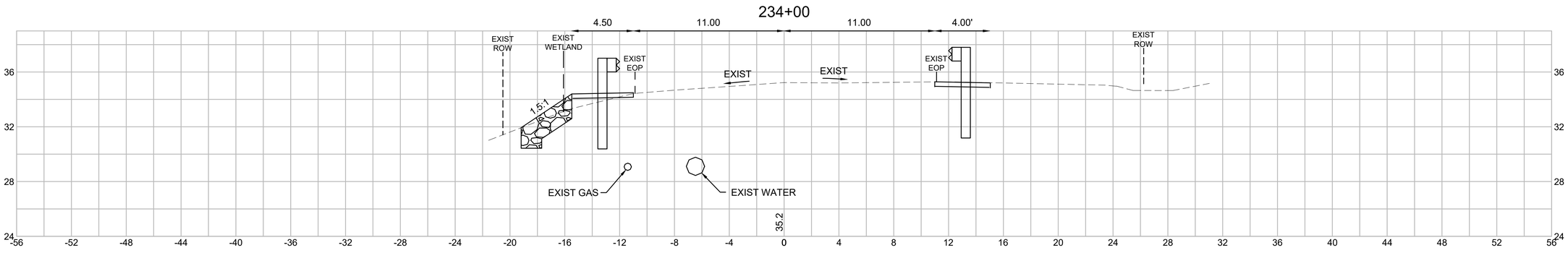
TEC CAD FILE
N0620_Banfield Rd_(XS)

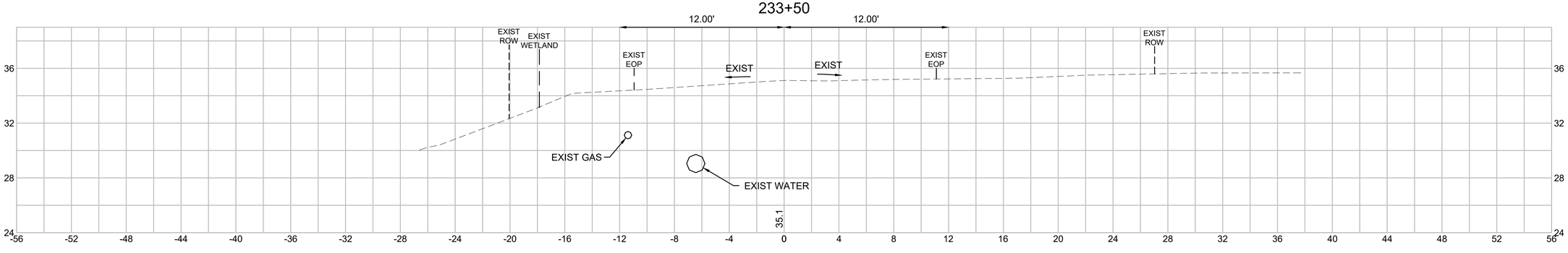
DRAWING NO.
61

SHEET 61 OF 62









BASE PROJECT

- PAVEMENT RECONSTRUCTION
- DRAINAGE & EMBANKMENT
- ROCK SLOPE ON NORTH SIDE
- LANDSCAPING
- GUARDRAIL

ADD ALTERNATE

- N/A

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TEC CAD FILE
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DRAWING NO.
62

SHEET 62 OF 62

STATE OF NEW HAMPSHIRE
ANTHONY D. CIOLFI No. 11060 LICENSED PROFESSIONAL ENGINEER
3/3/20