

TRANSPORTATION IMPROVEMENT PROJECT

PLAN AND PROFILE OF PARKER STREET (BRIDGE NO. A-02-010)

IN THE TOWN OF ACTON MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. N.F.A.

ACTON
PARKER STREET

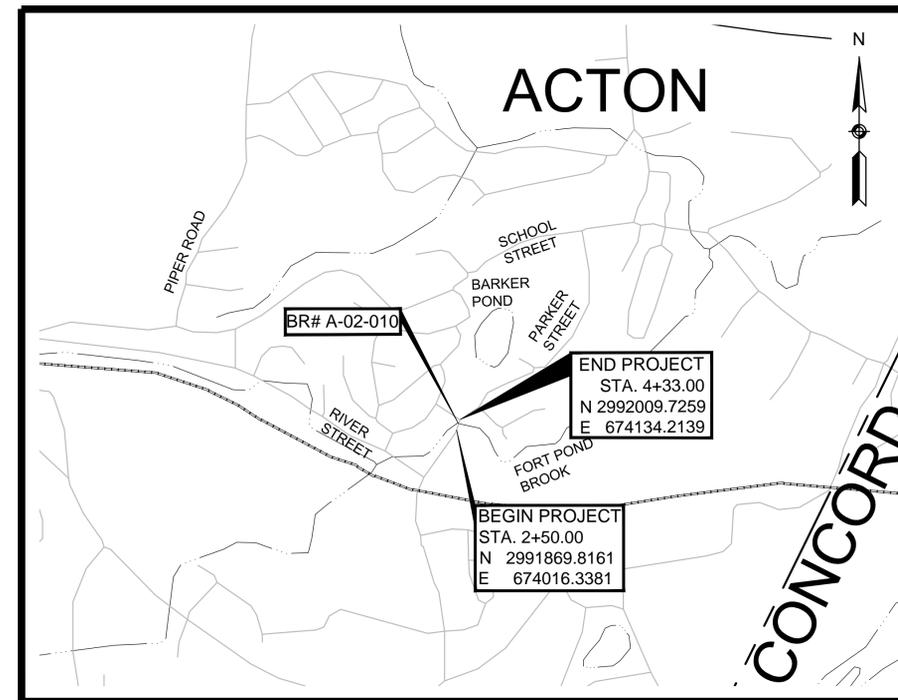
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 01 | 24 |

PROJECT FILE NO. N/A

TITLE SHEET & INDEX

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE INTERIM SUPPLEMENTAL SPECIFICATIONS DATED MARCH 21, 2014, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

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SCALE: 1" = 1000'

LENGTH OF PROJECT = 183.00 FEET = 0.035 MILES

DESIGN DESIGNATION (PARKER STREET)

| | |
|---------------------------|-----------------|
| DESIGN SPEED | 30 MPH |
| ADT (2001) | 2,900 |
| ADT (2015) | 3,300 (ASSUMED) |
| FUNCTIONAL CLASSIFICATION | URBAN COLLECTOR |

PROJECT ENGINEER
STRUCTURAL REVIEW
TRAFFIC SIGNAL REVIEW

HIGHWAY DEPT. AUTHORIZATION
HIGHWAY TECH. REVIEW
CONSTRUCTION REVIEW

| DATE | DESCRIPTION | REV # |
|------|-------------|-------|
| | | |
| | | |
| | | |

ENGINEER _____ DATE _____
 Vanasse Hangen Brustlin, Inc.
 Transportation • Land Development •
 Environmental Services
 101 Walnut St., P.O. Box 9151
 Watertown, MA 02472
 617 924 1770 FAX 617 924 2286

**PLANS TO BE PRINTED
AT 24" X 36" SIZE**

| | | | |
|--------------------|---------------------------|--|----------|
| DESIGNED BY EAW | APPROVED BY | SHEET 1 | OF 24 |
| DRAWN BY JCR | DFTG CHECKED BY EAW | VHB CAD FILE NAME 130160_HD (COV).DWG | |
| CHECKED BY | DATE FEBRUARY 23, 2016 | JOB NO. 130160.00 | |

GENERAL SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|---|
| | | JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER |
| | | CATCH BASIN |
| | | CATCH BASIN CURB INLET |
| | | FLAG POLE |
| | | GAS PUMP |
| | | MAIL BOX |
| | | POST SQUARE |
| | | POST CIRCULAR |
| | | WELL |
| | | ELECTRIC HANDHOLE |
| | | FENCE GATE POST |
| | | GAS GATE |
| | | BORING HOLE |
| | | MONITORING WELL |
| | | TEST PIT |
| | | HYDRANT |
| | | LIGHT POLE |
| | | COUNTY BOUND |
| | | GPS POINT |
| | | CABLE MANHOLE |
| | | DRAINAGE MANHOLE |
| | | ELECTRIC MANHOLE |
| | | GAS MANHOLE |
| | | MISC MANHOLE |
| | | SEWER MANHOLE |
| | | TELEPHONE MANHOLE |
| | | WATER MANHOLE |
| | | MASSACHUSETTS HIGHWAY BOUND |
| | | MONUMENT |
| | | STONE BOUND |
| | | TOWN OR CITY BOUND |
| | | TRAVERSE OR TRIANGULATION STATION |
| | | TROLLEY POLE OR GUY POLE |
| | | TRANSMISSION POLE |
| | | UTILITY POLE W/ FIREBOX |
| | | UTILITY POLE WITH DOUBLE LIGHT |
| | | UTILITY POLE W / 1 LIGHT |
| | | UTILITY POLE |
| | | BUSH |
| | | TREE |
| | | STUMP |
| | | SWAMP / MARSH |
| | | WATER GATE |
| | | PARKING METER |
| | | OVERHEAD CABLE/WIRE |
| | | CURBING |
| | | CONTOURS |
| | | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER) |

PAVEMENT MARKINGS SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|------------------------------|
| | | PAVEMENT ARROW - WHITE |
| | | LEGEND "ONLY" - WHITE |
| | | STOP LINE |
| | | CROSSWALK |
| | | SOLID WHITE LINE (4") |
| | | SOLID YELLOW LINE |
| | | BROKEN WHITE LINE |
| | | BROKEN YELLOW LINE |
| | | DOTTED WHITE LINE |
| | | DOTTED YELLOW LINE |
| | | DOTTED WHITE LINE EXTENSION |
| | | DOTTED YELLOW LINE EXTENSION |
| | | DOUBLE WHITE LINE |
| | | DOUBLE YELLOW LINE (4") |

ABBREVIATIONS

| GENERAL | DESCRIPTION |
|---------------|--------------------------------------|
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| ABAN | ABANDON |
| ADJ | ADJUST |
| APPROX. | APPROXIMATE |
| A.C. | ASPHALT CONCRETE |
| ACCM PIPE | ASPHALT COATED CORRUGATED METAL PIPE |
| BIT | BITUMINOUS |
| BC | BOTTOM OF CURB |
| BD. | BOUND |
| BL | BASELINE |
| BLDG | BUILDING |
| BM | BENCHMARK |
| BO | BY OTHERS |
| BOS | BOTTOM OF SLOPE |
| BR. | BRIDGE |
| CB | CATCH BASIN |
| CBCI | CATCH BASIN WITH CURB INLET |
| CC | CEMENT CONCRETE |
| CCM | CEMENT CONCRETE MASONRY |
| CEM | CEMENT |
| CI | CURB INLET |
| CIP | CAST IRON PIPE |
| CLF | CHAIN LINK FENCE |
| CL | CENTERLINE |
| CMP | CORRUGATED METAL PIPE |
| CSP | CORRUGATED STEEL PIPE |
| CO. | COUNTY |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CONST | CONSTRUCTION |
| CR GR | CROWN GRADE |
| DHV | DESIGN HOURLY VOLUME |
| DI | DROP INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DW | STEADY DON'T WALK - PORTLAND ORANGE |
| DWY | DRIVEWAY |
| ELEV (or EL.) | ELEVATION |
| EMB | EMBANKMENT |
| EOP | EDGE OF PAVEMENT |
| EXIST (or EX) | EXISTING |
| EXC | EXCAVATION |
| F&C | FRAME AND COVER |
| F&G | FRAME AND GRATE |
| FDN. | FOUNDATION |
| FLDSTN | FIELDSTONE |
| GAR | GARAGE |
| GD | GROUND |
| GG | GAS GATE |
| GI | GUTTER INLET |
| GIP | GALVANIZED IRON PIPE |
| GRAN | GRANITE |
| GRAV | GRAVEL |
| GRD | GRAD |
| HDW | HEADWALL |
| HMA | HOT MIX ASPHALT |
| HOR | HORIZONTAL |
| HYD | HYDRANT |
| INV | INVERT |
| JCT | JUNCTION |
| L | LENGTH OF CURVE |
| LB | LEACH BASIN |

ABBREVIATIONS (cont.)

| GENERAL | DESCRIPTION |
|----------|------------------------------------|
| LP | LIGHT POLE |
| LT | LEFT |
| MAX | MAXIMUM |
| MB | MAILBOX |
| MH | MANHOLE |
| MHB | MASSACHUSETTS HIGHWAY BOUND |
| MIN | MINIMUM |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| NTS | NOT TO SCALE |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| P.G.L. | PROFILE GRADE LINE |
| PI | POINT OF INTERSECTION |
| POC | POINT ON CURVE |
| POT | POINT ON TANGENT |
| PRC | POINT OF REVERSE CURVATURE |
| PROJ | PROJECT |
| PROP | PROPOSED |
| PSB | PLANTABLE SOIL BORROW |
| PT | POINT OF TANGENCY |
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| PVMT | PAVEMENT |
| PWW | PAVED WATER WAY |
| R | RADIUS OF CURVATURE |
| R&D | REMOVE AND DISPOSE |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROAD |
| RDWY | ROADWAY |
| REM | REMOVE |
| RET | RETAIN |
| RET WALL | RETAINING WALL |
| ROW | RIGHT OF WAY |
| RR | RAILROAD |
| R&R | REMOVE AND RESET |
| R&S | REMOVE AND STACK |
| RT | RIGHT |
| RTRC | REINFORCED THERMOSET RESIN CONDUIT |
| SB | STONE BOUND |
| SHLD | SHOULDER |
| SMH | SEWER MANHOLE |
| ST | STREET |
| STA | STATION |
| SSD | STOPPING SIGHT DISTANCE |
| SHLO | STATE HIGHWAY LAYOUT LINE |
| SW | SIDEWALK |
| T | TANGENT DISTANCE OF CURVE/TRUCK % |
| TAN | TANGENT |
| TEMP | TEMPORARY |
| TC | TOP OF CURB |
| TOS | TOP OF SLOPE |
| TYP | TYPICAL |
| UP | UTILITY POLE |
| VAR | VARIES |
| VERT | VERTICAL |
| VC | VERTICAL CURVE |
| WCR | WHEEL CHAIR RAMP |
| WG | WATER GATE |
| WIP | WROUGHT IRON PIPE |
| WM | WATER METER/WATER MAIN |
| X-SECT | CROSS SECTION |

| | | | |
|------------------------|--------------------|-----------|--------------|
| ACTON PARKER STREET | | | |
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MASS. | - | 02 | 24 |
| PROJECT FILE NO. N/A | | | |
| GENERAL NOTES & LEGEND | | | |

GENERAL NOTES

- TOPOGRAPHICAL INFORMATION FROM AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VANASSE HANGEN BRUSTLIN, INC. IN APRIL OF 2015.
- HORIZONTAL DATUM IS BASED ON MASS GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN REFER TO NAVD OF 1988.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONTACT DIGSAFE TO REQUEST EXISTING UTILITY MARKOUT IN THE FIELD.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE AND GRADE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5 FEET WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
- THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
- THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- JOINTS BETWEEN NEW HOT MIX ASPHALT ROADWAY PAVEMENT TOP COURSE AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH HOT POURED RUBBERIZED ASPHALT SEALER.
- EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND RESET UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF .01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- PROPOSED HOT MIX ASPHALT CURB SHALL BE MASSDOT TYPE 3.
- EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.

ACTON
PARKER STREET

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|----------------------|--------------------|-----------|--------------|
| MASS. | - | 03 | 24 |
| PROJECT FILE NO. N/A | | | |

TYPICAL SECTION & PAVEMENT NOTES

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT CONSTRUCTION

SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
 INTERMEDIATE COURSE: 2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)
 SUBBASE: 12" GRAVEL BORROW TYPE B

PROPOSED FULL DEPTH PAVEMENT TRANSITION

SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
 1.5" PAVEMENT MICROMILLING

PROPOSED PAVEMENT MILLING & PAVEMENT OVERLAY

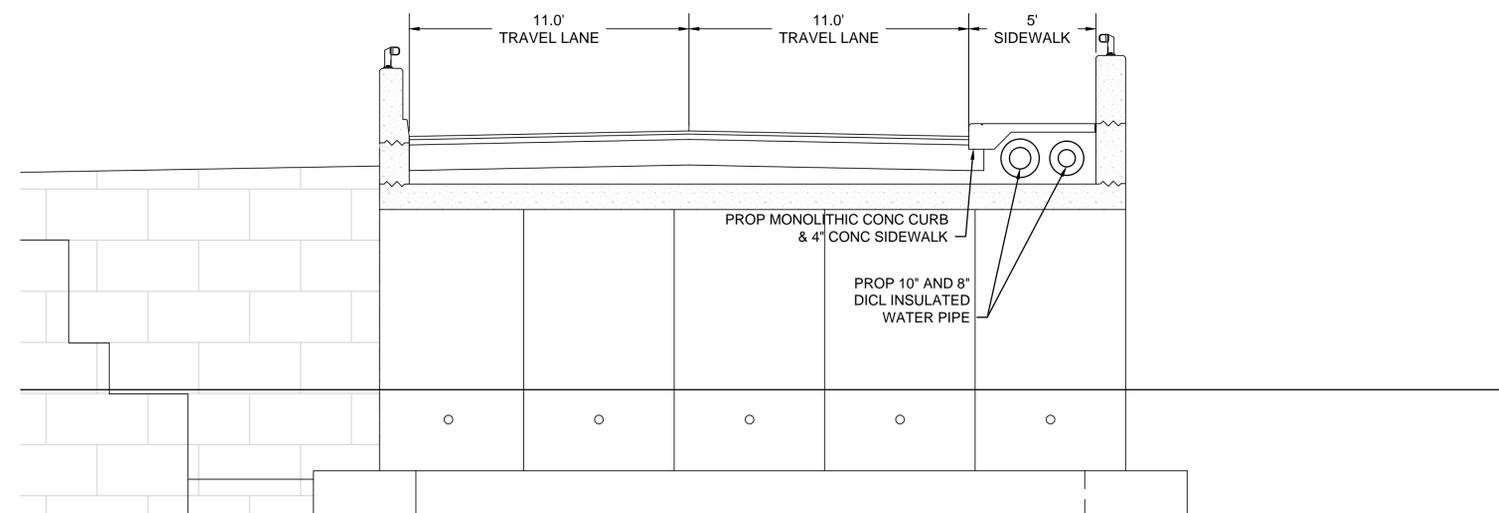
SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
 1.5" PAVEMENT MICROMILLING

PROPOSED CEM CONC SIDEWALKS

SURFACE COURSE: 4" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI - 3/4" - 610 LB)
 SUBBASE: 8" GRAVEL BORROW - TYPE B

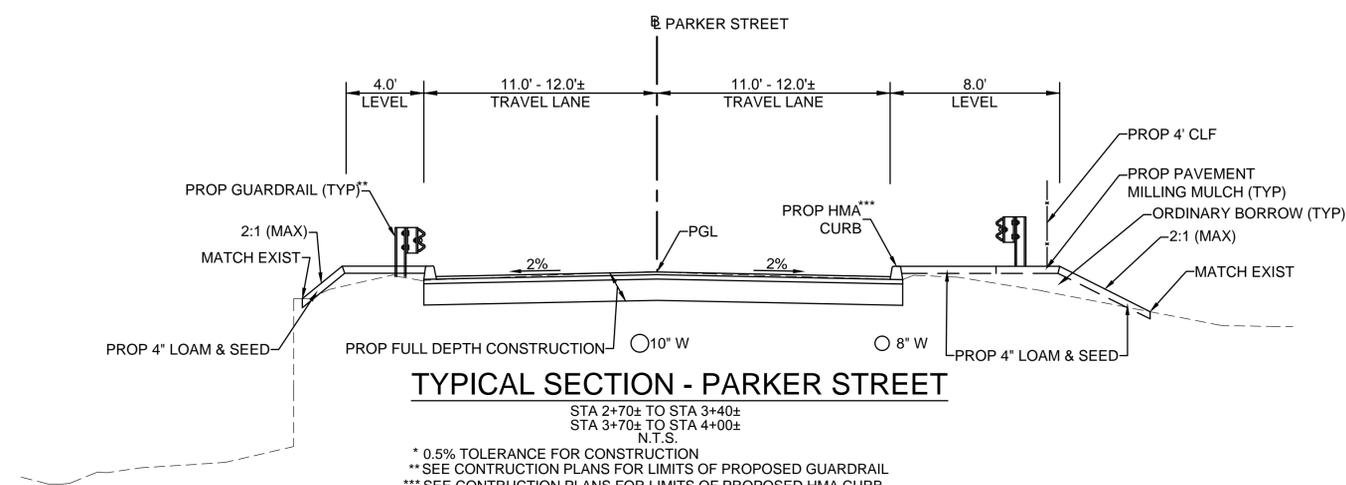
NOTES:

- ALL SUPERPAVE HOT MIX ASPHALT SHALL BE A WARM MIX ASPHALT TECHNOLOGY.
- ALL HOT MIX ASPHALT PAVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 450 QUALITY ASSURANCE FOR HMA AND SECTION 455 SUPERPAVE HMA SPECIFICATIONS.
- ALL MILLED SURFACES SHALL RECEIVE A TACK COAT APPLIED AT 0.07 GALLONS PER SQUARE YARD AND ALL UNMILLED SURFACES SHALL RECEIVE A TACK COAT APPLIED AT 0.05 GALLONS PER SQUARE YARD PRIOR TO PAVING.
- TEMPORARY CONSTRUCTION SHALL USE SUPERPAVE HOT MIX ASPHALT MIXTURES AND MAY NOT BE SUBJECT TO THE SAME SAMPLING AND TESTING REQUIRED FOR PERMANENT CONSTRUCTION.
- WHERE EXISTING SUBBASE/SUBGRADE IS FOUND TO MEET SPECIAL BORROW (M1.02.0) SPECIFICATION REQUIREMENTS, THE EXISTING MATERIAL MAY BE LEFT IN PLACE, AFTER APPROVAL OF THE ENGINEER.



TYPICAL BRIDGE SECTION - PARKER STREET

STA 3+40± TO STA 3+70±
N.T.S.



TYPICAL SECTION - PARKER STREET

STA 2+70± TO STA 3+40±
 STA 3+70± TO STA 4+00±
 N.T.S.

- * 0.5% TOLERANCE FOR CONSTRUCTION
- ** SEE CONSTRUCTION PLANS FOR LIMITS OF PROPOSED GUARDRAIL
- *** SEE CONSTRUCTION PLANS FOR LIMITS OF PROPOSED HMA CURB

HIGHWAY GUARD DETAILS

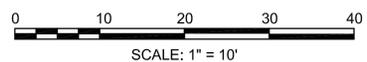
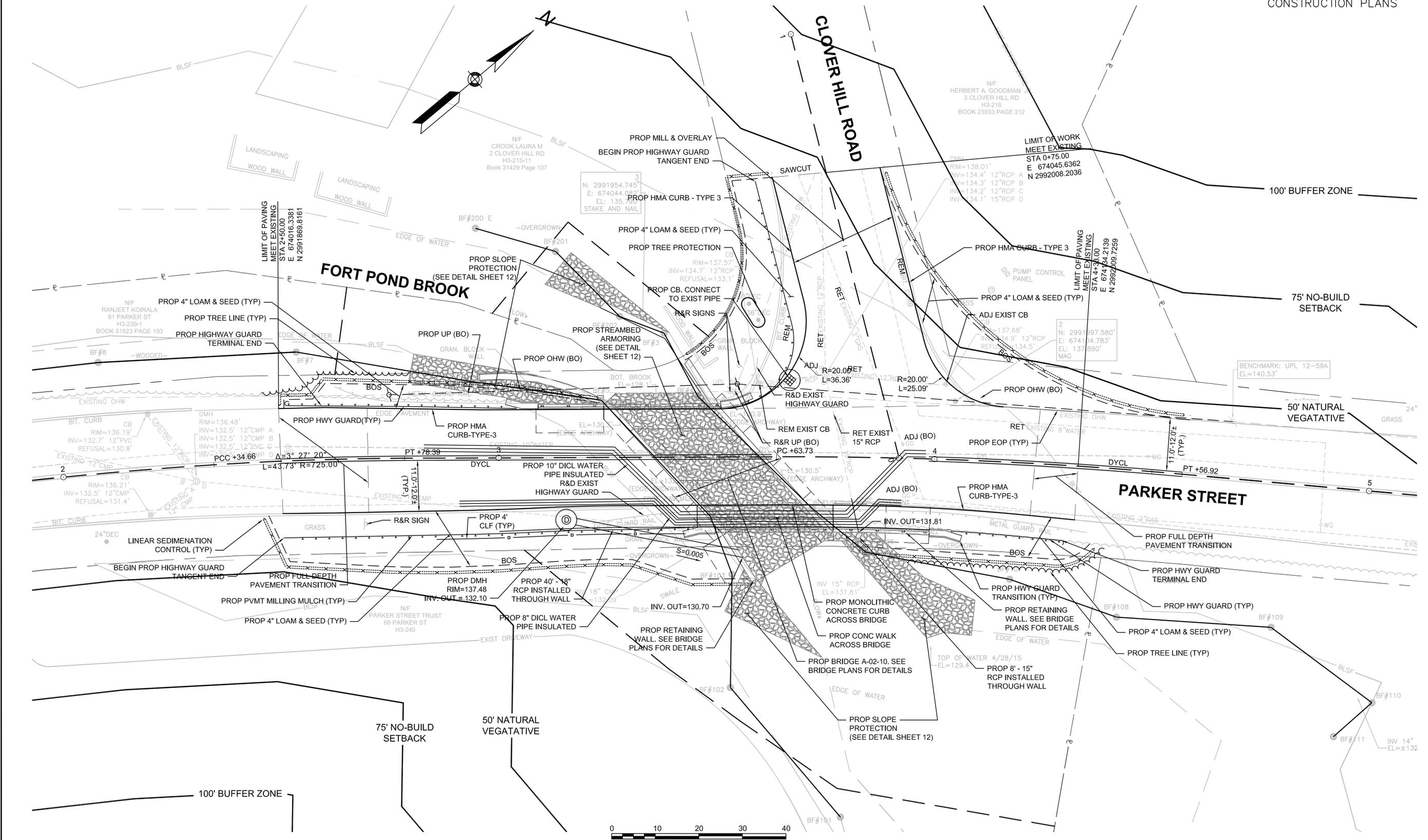
DRAINAGE DETAILS
SEE BELOW

ACTON
PARKER STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 04 | 24 |

PROJECT FILE NO. N/A

CONSTRUCTION PLANS



FOR PROFILE:
SEE SHEET NO. 05

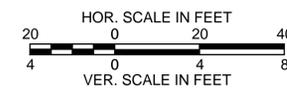
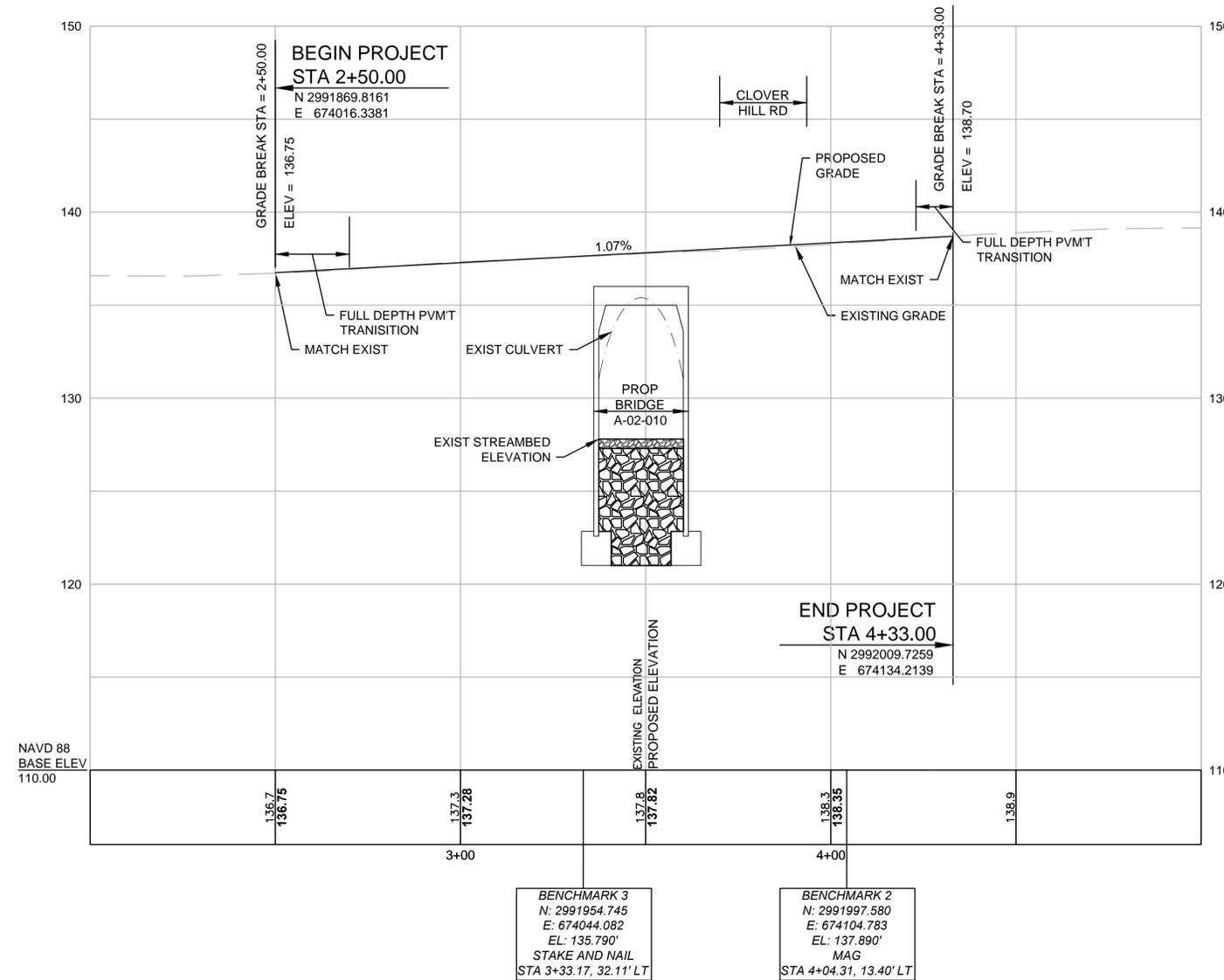
ACTON
PARKER STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 05 | 24 |

PROJECT FILE NO. N/A

PROFILE

PARKER STREET

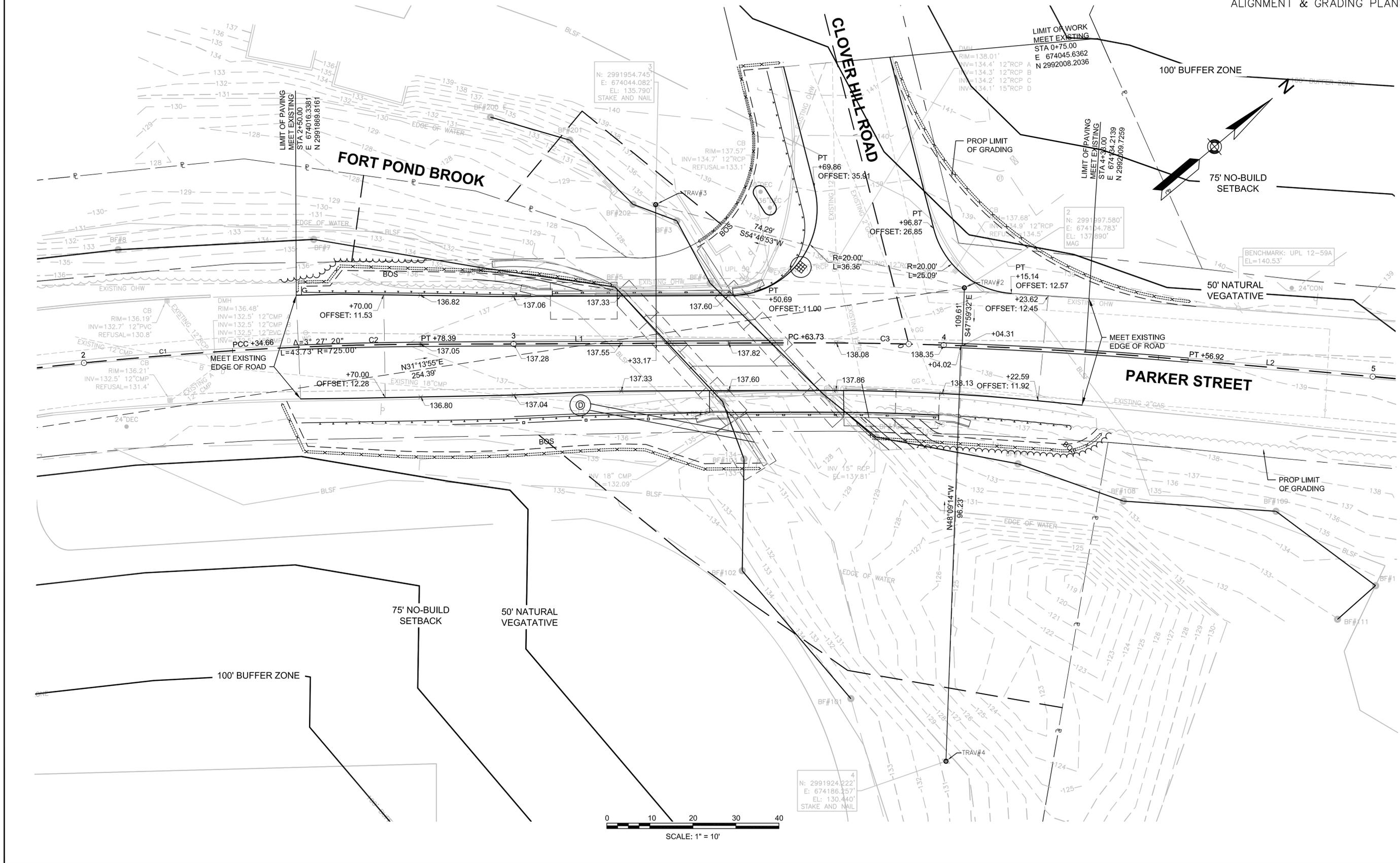


FOR CONSTRUCTION PLANS:
SEE SHEET NO. 04

ACTON
PARKER STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| MASS. | - | 06 | 24 |

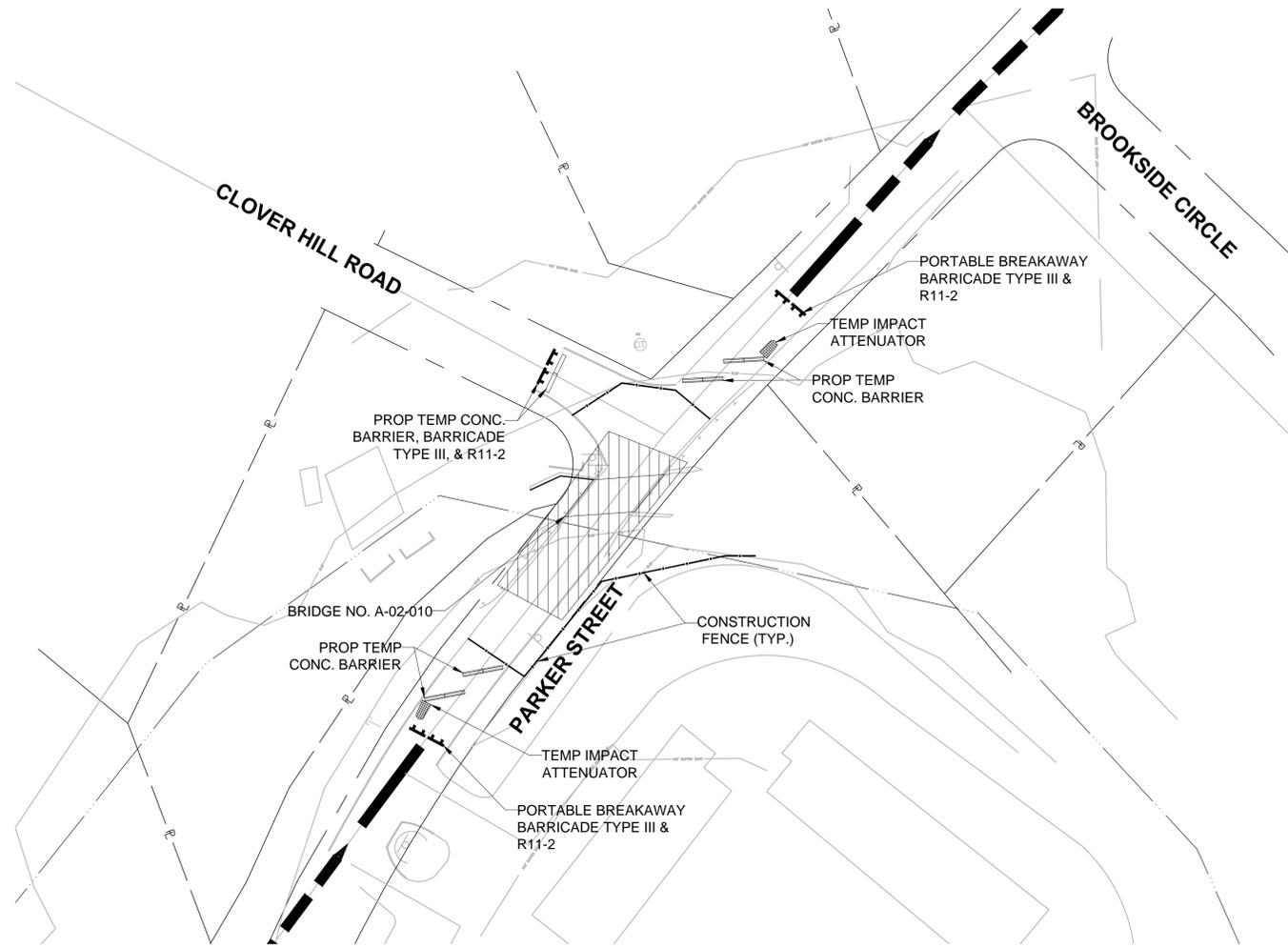
PROJECT FILE NO. N/A
ALIGNMENT & GRADING PLANS



| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
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| MASS. | - | 07 | 24 |

PROJECT FILE NO. N/A

TEMPORARY TRAFFIC CONTROL PLAN



PARKER STREET CLOSURE

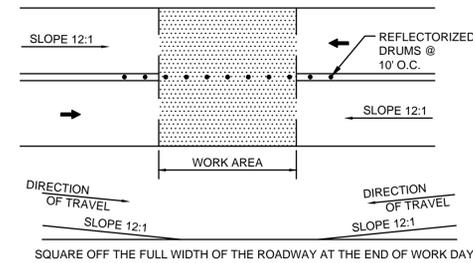
NTS
SIGNS TO BE INSTALLED AT THE PROJECT LIMITS AS SHOWN.

LEGEND

- REFLECTORIZED DRUM
- ⊙ DRUM WITH FLASHER
- Ⓜ Ⓜ POLICE OFFICER OR FLAGGER
- Ⓜ CONSTRUCTION SIGN
- ▲ TRAFFIC CONE
- ▨ WORK AREA PUBLIC ACCESS RESTRICTED
- ← PROPOSED TRAFFIC FLOW
- NTS NOT TO SCALE
- ▬ TYPE III BARRICADES
- ▬ TEMPORARY CONCRETE BARRIER
- ▨ TEMPORARY IMPACT ATTENUATOR
- x — CONSTRUCTION FENCE

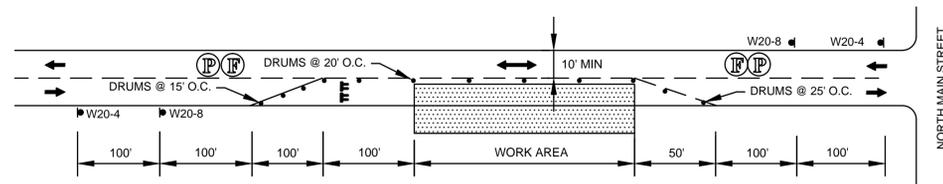
GENERAL NOTES

- ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS.
- ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX. ON LOCAL ROADWAY AND 50' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
- ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
- THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS.
- FOR RESTORATIVE WORK ON LOCAL ROADWAYS, A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT THAT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE OR FLAGGER CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- GRADE SEPARATIONS IN EXCESS OF 2' DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
- EXCAVATION EDGES IN EXCESS OF 4 INCHES DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF COMPACTED GRAVEL BORROW AT A 4:1 SLOPE PER THE DETAIL SHOWN. EXCAVATIONS IN EXCESS OF 2 FEET SHOULD BE PROTECTED BY A MASSDOT APPROVED TEMPORARY CONCRETE BARRIER WITH A MINIMUM LEVEL LATERAL OFFSET OF 3 FEET FROM THE EDGE OF EXCAVATION. BARRIER PLACED WITH LESS THAN THE RECOMMENDED LATERAL OFFSET TO THE EDGE OF EXCAVATION SHALL BE ANCHORED/RESTRAINED TO PREVENT LATERAL MOVEMENT WHEN STRUCK BY ERRANT VEHICLES TRAVELING AT THE POSTED SPEED.
- 10' MINIMUM LANE WIDTHS SHALL BE MAINTAINED.
- TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
- ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPROPRIATE AND AS DIRECTED BY THE ENGINEER.
- SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
- W20-8 SIGNS SHALL BE REPLACED BY W20-7a SIGNS WHEN FLAGGERS ARE USED IN LIEU OF POLICE OFFICER DETAILS.
- TEMPORARY MARKINGS SHALL BE WATER-BORNE PAINT.
- REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
- CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
- THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.



TEMPORARY PAVEMENT TRANSITION DETAIL

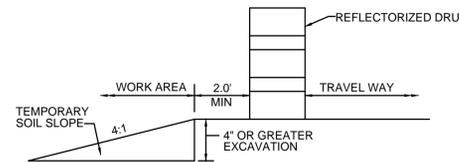
SCALE: N.T.S.



TYPICAL TWO WAY STREET LANE CLOSURE (LOCAL ROAD)

SCALE: N.T.S.

| BUFFER SPACING | |
|----------------|-----------------|
| SPEED (MPH) | DISTANCE (FEET) |
| 15 | 80 |
| 20 | 115 |
| 25 | 155 |
| 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |
| 50 | 425 |
| 55 | 495 |
| 60 | 570 |
| 65 | 645 |



ROADWAY SLOPE PROTECTION

SCALE: N.T.S.

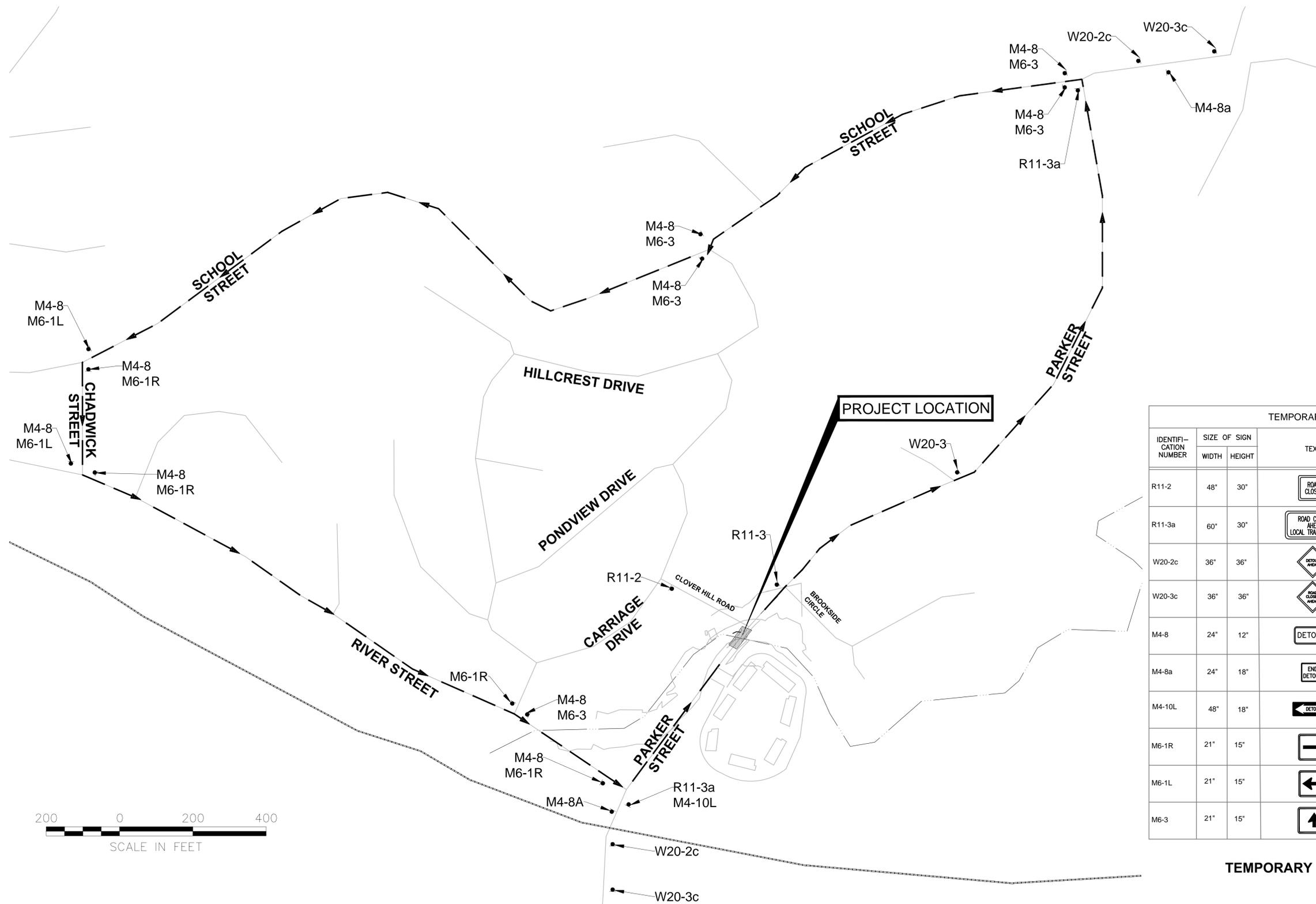
ACTON
PARKER STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 08 | 24 |

PROJECT FILE NO. N/A

TEMPORARY TRAFFIC CONTROL PLAN
DETOUR PLAN

13016_HD (TTCP) DWG 2-Mar-2016



LEGEND

- PROPOSED DETOUR ROUTE
- PROPOSED WORK ZONE - ROAD CLOSED
- LOCAL ACCESS ONLY
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- SIGN ASSEMBLY

PROPOSED CLOSURE & DETOUR OF
PARKER STREET

| TEMPORARY TRAFFIC SIGN SUMMARY | | | | | | | | | |
|--------------------------------|--------------|--------|------|---|------------------|-----------------|-------------|--------|--------|
| IDENTIFICATION NUMBER | SIZE OF SIGN | | TEXT | TEXT DIMENSIONS (INCHES) | | | COLOR | | |
| | WIDTH | HEIGHT | | LETTER HEIGHT | VERTICAL SPACING | ARROW RTE. MKR. | BACK-GROUND | LEGEND | BORDER |
| R11-2 | 48" | 30" | | SEE FHWA 'STANDARD HIGHWAY SIGNS, 2004 EDITION', AS AMENDED | | | WHITE | BLACK | BLACK |
| R11-3a | 60" | 30" | | | | | WHITE | BLACK | BLACK |
| W20-2c | 36" | 36" | | | | | ORANGE | BLACK | BLACK |
| W20-3c | 36" | 36" | | | | | ORANGE | BLACK | BLACK |
| M4-8 | 24" | 12" | | | | | ORANGE | BLACK | BLACK |
| M4-8a | 24" | 18" | | | | | ORANGE | BLACK | BLACK |
| M4-10L | 48" | 18" | | | | | BLACK | ORANGE | BLACK |
| M6-1R | 21" | 15" | | | | | ORANGE | BLACK | BLACK |
| M6-1L | 21" | 15" | | | | | ORANGE | BLACK | BLACK |
| M6-3 | 21" | 15" | | | | | ORANGE | BLACK | BLACK |

TEMPORARY TRAFFIC SIGN SUMMARY

CONSTRUCTION NOTES:

1. ALL SIGNS SHALL BE PLACED WITHIN THE PUBLIC RIGHT OF WAY. CONTRACTOR SHALL VERIFY EXISTING RIGHT OF WAY LIMITS PRIOR TO INSTALLATION OF SIGNS.
2. ALL SIGNS SHALL BE INSTALLED PER MUTCD.
3. ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE STREET CLOSURE.

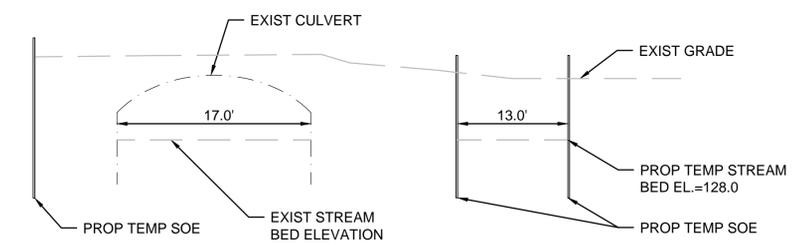
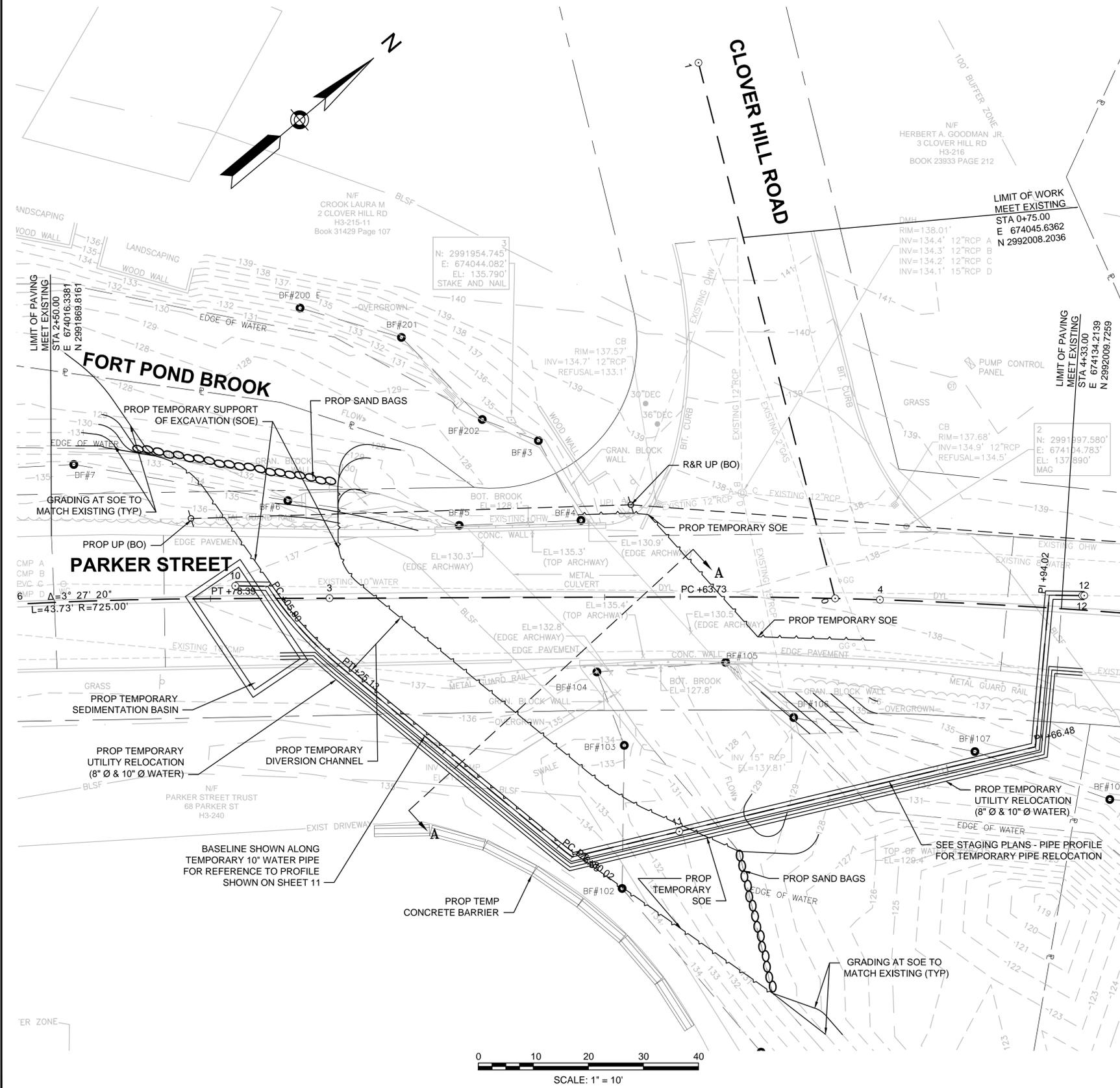
ACTON
PARKER STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 09 | 24 |

PROJECT FILE NO. N/A
STAGING PLANS

STAGE 1 NOTES:

1. IMPLEMENT FULL ROADWAY CLOSURE & CLOVER HILL ROAD. SEE TEMPORARY TRAFFIC CONTROL PLANS (SHEET 07).
2. REMOVE AND RESET UTILITY POLES (BY OTHERS).
3. INSTALL EROSION CONTROL MEASURES.
4. INSTALL SAND BAGS ALONG BANK, AS SHOWN, TO ALLOW EXCAVATION OF PROPOSED TEMPORARY DIVERSION CHANNEL.
5. INSTALL TEMPORARY SUPPORT OF EXCAVATION (SOE) ALONG PROPOSED TEMPORARY CHANNEL, SOUTH OF WATER LINES TO BE TEMPORARILY RELOCATED & BEHIND PROPOSED FOOTINGS AND WALLS WHERE SHOWN.
6. RELOCATE WATER LINES AND SUPPORT ACROSS THE STREAM AND THE SOE.
7. INSTALL REMAINING SOE ALONG PROPOSED TEMPORARY CHANNEL.
10. EXCAVATE MATERIAL WITHIN PROPOSED TEMPORARY CHANNEL TO EL. 128.0.
11. SET UP SEDIMENTATION BASIN AND DEWATERING MEASURES.
12. MAINTAIN TEMPORARY DRAINAGE DURING CONSTRUCTION STAGING.
13. SEE TEMPORARY CONTROL PLANS FOR SITE PROTECTION AT PROJECT LIMITS ON SHEET 07.



SECTION A-A
N.T.S.

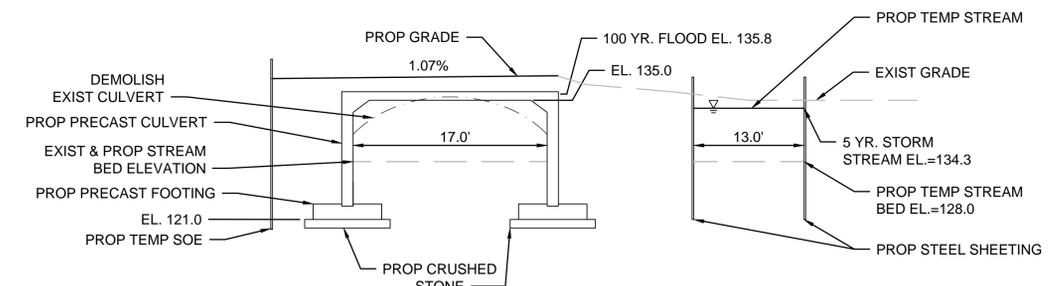
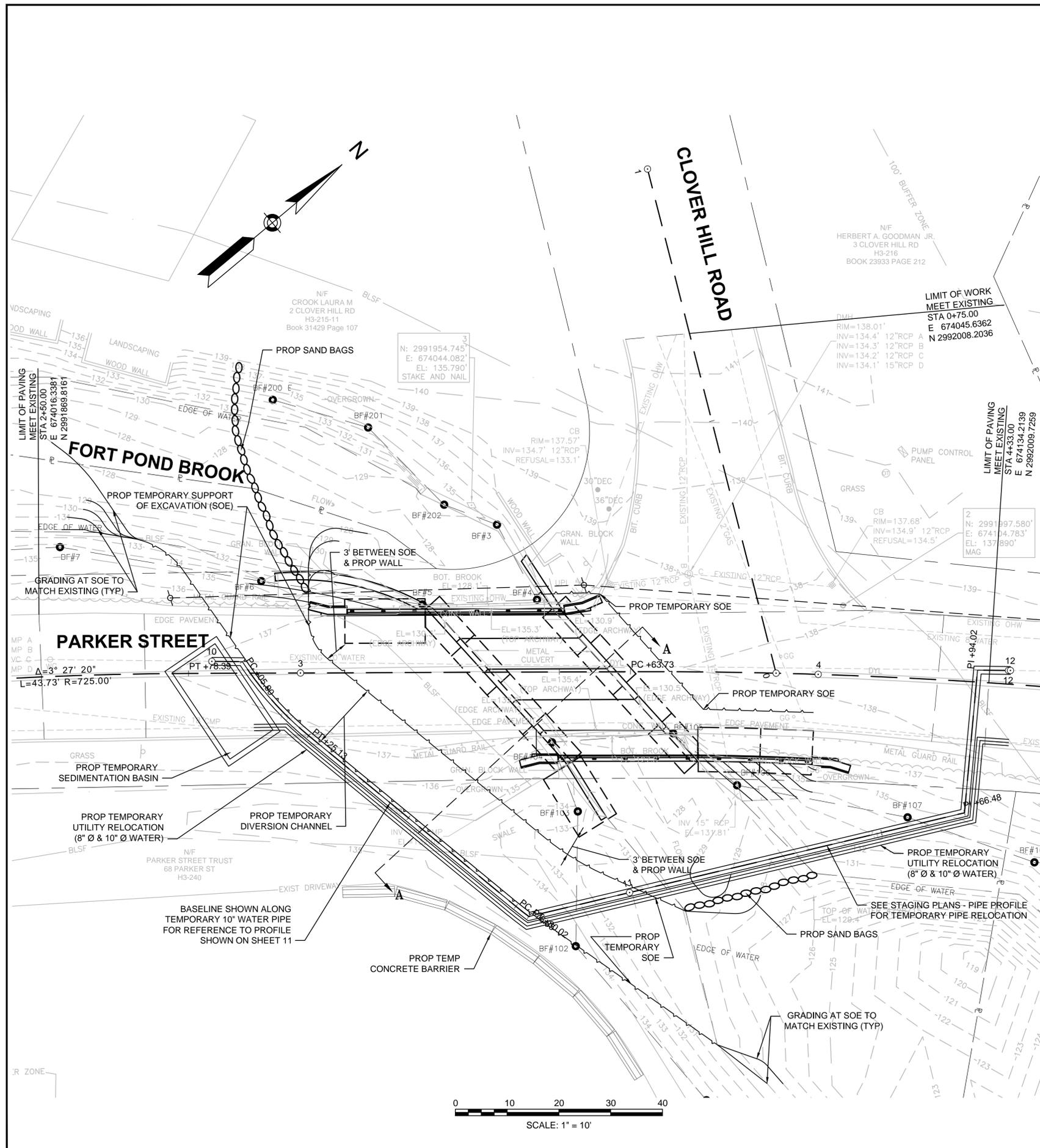
ACTON
PARKER STREET

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 10 | 24 |

PROJECT FILE NO. N/A
STAGING PLANS

STAGE 2 NOTES:

1. RETAIN FULL ROADWAY CLOSURE.
2. INSTALL TEMPORARY DIVERSION SAND BAGS AT BOTH UPSTREAM AND DOWNSTREAM ENDS OF THE CULVERT, AS SHOWN, AND COMPLETE INSTALLATION OF DIVERSION SYSTEM TO REDIRECT STREAM FLOW.
3. USE DEWATERING PUMPS AND SEDIMENTATION BASIN TO KEEP WORK ZONE DRY.
4. EXCAVATE AND DEMOLISH EXISTING PARKER STREET CULVERT STRUCTURE.
5. EXCAVATE AND INSTALL PROPOSED CULVERT, WINGWALLS AND FOOTINGS (SEE BRIDGE PLANS FOR DETAILS).
6. REMOVE TEMPORARY DIVERSION SAND BAGS AT BOTH UPSTREAM AND DOWNSTREAM ENDS OF THE CULVERT ALLOWING STREAM FLOW THROUGH THE PROPOSED CULVERT, BACKFILL TEMPORARY CHANNEL & REMOVE SOE.



SECTION A-A
N.T.S.

ACTON
PARKER STREET

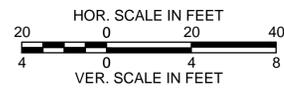
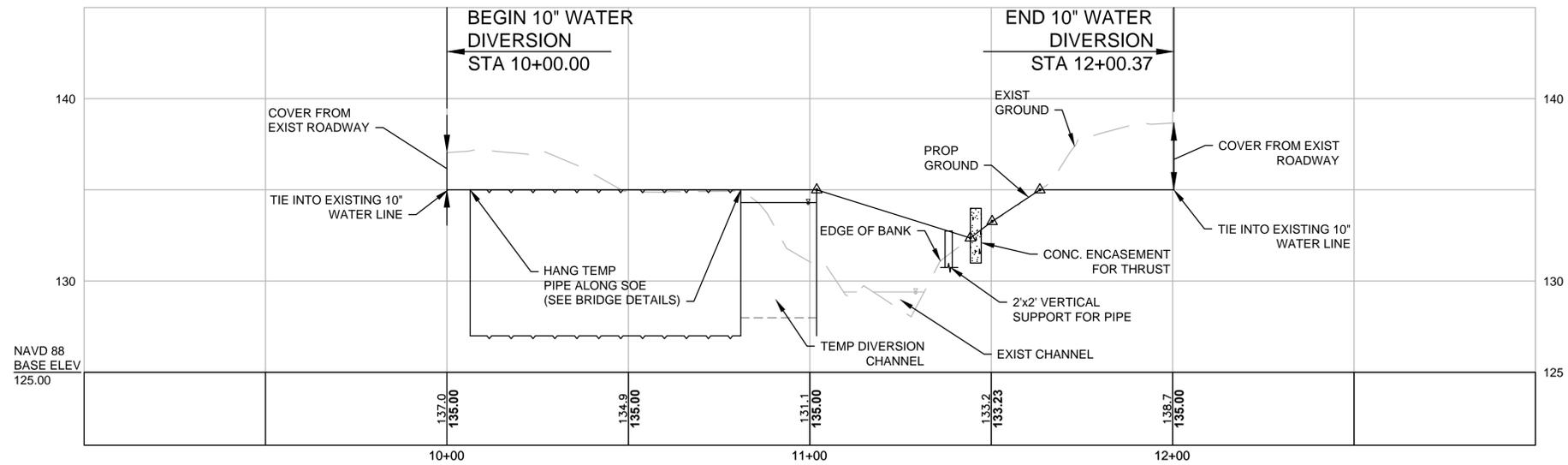
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 11 | 24 |

PROJECT FILE NO. N/A

STAGING PLANS

13016_HD (PHASING).DWG 2-Mar-2016

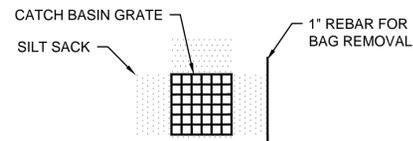
10 INCH TEMPORARY WATER LINE



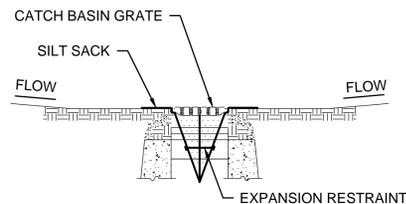
SEE STAGING PLANS 10 & 10
FOR TEMPORARY WATER
LINE STATIONING

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|--------------------|-----------|--------------|
| MASS. | - | 12 | 24 |

PROJECT FILE NO. N/A



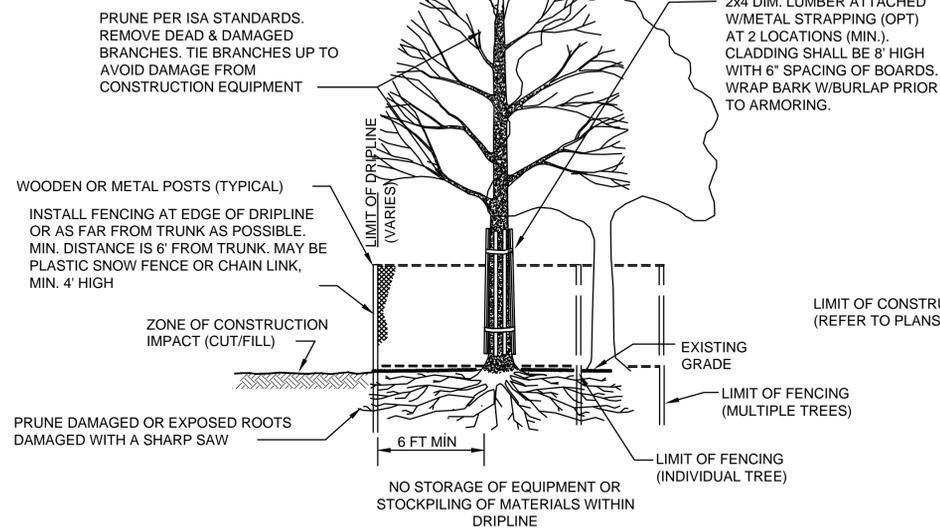
PLAN VIEW



SECTION VIEW

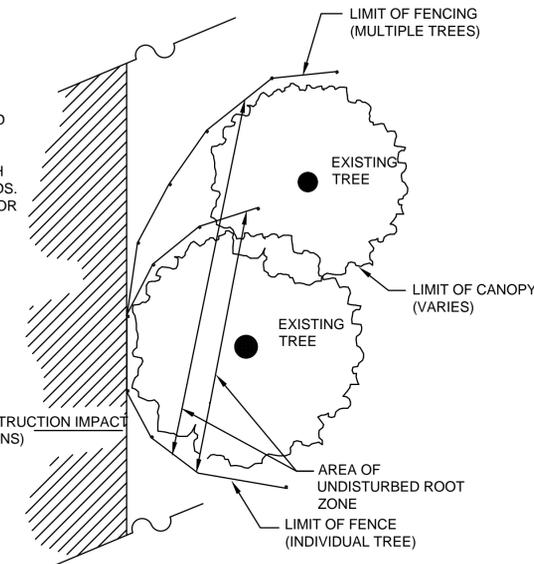
NOTES:

1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED



TREE PROTECTION

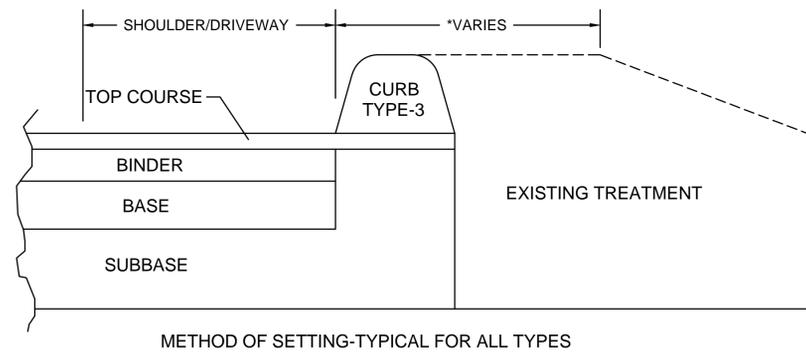
SCALE: N.T.S.



PLAN VIEW

INLET PROTECTION-SILT SACK IN CATCH BASIN

SCALE: N.T.S.

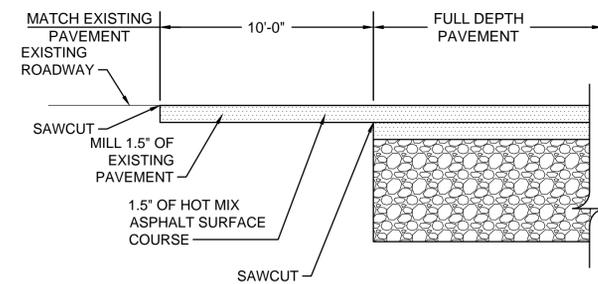


HOT MIX ASPHALT CURB

SCALE: N.T.S.

DWG: CURB-15

DATE: JUNE 2014

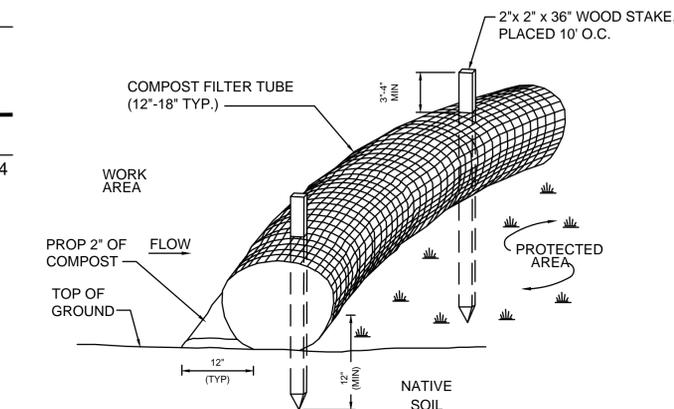


FULL DEPTH PAVEMENT TRANSITION

SCALE: N.T.S.

DWG: PVMT-03

DATE: OCT. 2012



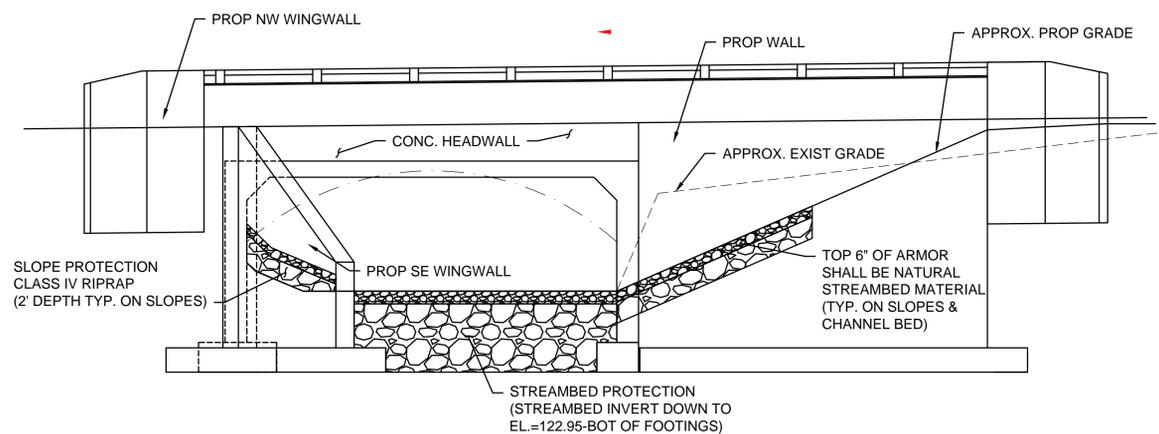
NOTES:

1. FILTER TUBE SHALL BE FILLED BY BLOWN IN ORGANIC COMPOST AND PLACED AS ILLUSTRATED ON THE PROJECT PLANS.
2. COMPOST FILTER TUBES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIRED OR REPLACED AS NEEDED.
3. AT COMPLETION OF PROJECT, COMPOST FILTER TUBES SHALL BE CUT OPEN AND COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
4. THE EMPTY FILTER TUBE FABRIC SHALL BE COLLECTED AND DISPOSED OF PROPERLY.

LINEAR SEDIMENTATION AND EROSION CONTROL

SCALE: N.T.S.

DATE: NOVEMBER 2011



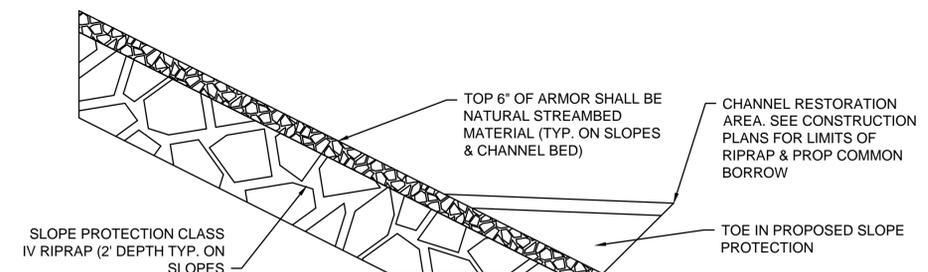
NOTES:

1. STREAMBED MATERIAL SHALL BE EXCAVATED AND STOCKPILED FOR INSTALLATION OF THE CONCRETE STRUCTURE.
2. CONSTRUCTION WORK THAT DISTURBS THE STREAMBED OR THE ROADWAY EMBANKMENT WITHIN OR NEAR THE SCOUR POOL SHALL BE RESTORED AND/OR ARMORED.
3. STREAMBED MATERIAL; COARSE SANDS, GRAVELS AND LARGER MATERIAL (NOT SILT) MAY BE PLACED ON TOP 6" OF ARMORED CHANNEL FOR A MORE NATURAL-LIKE INTERFACE BETWEEN THE WATER AND THE STREAMBED AS SHOWN.
4. ARMORING MATERIAL THICKNESS SHALL BE THE FULL DEPTH FROM THE FOOTING ELEVATION TO THE STREAMBED INVERT WITHIN THE CHANNEL.
5. DOWNSTREAM SLOPES SHALL BE PROTECTED TO EL.=132.4. UPSTREAM SLOPES SHALL BE PROTECTED TO EL.=135.5 (SEE CONSTRUCTION PLAN FOR LIMITS).

CHANNEL ARMORING AND SLOPE STABILIZATION SECTION (LOOKING UPSTREAM)

SCALE: N.T.S.

DATE: FEBRUARY 2016



PROPOSED SLOPE STABILIZATION

SCALE: N.T.S.

DATE: FEBRUARY 2016