

Prepared for The:

CITY OF AMESBURY DEPARTMENT OF PUBLIC WORKS

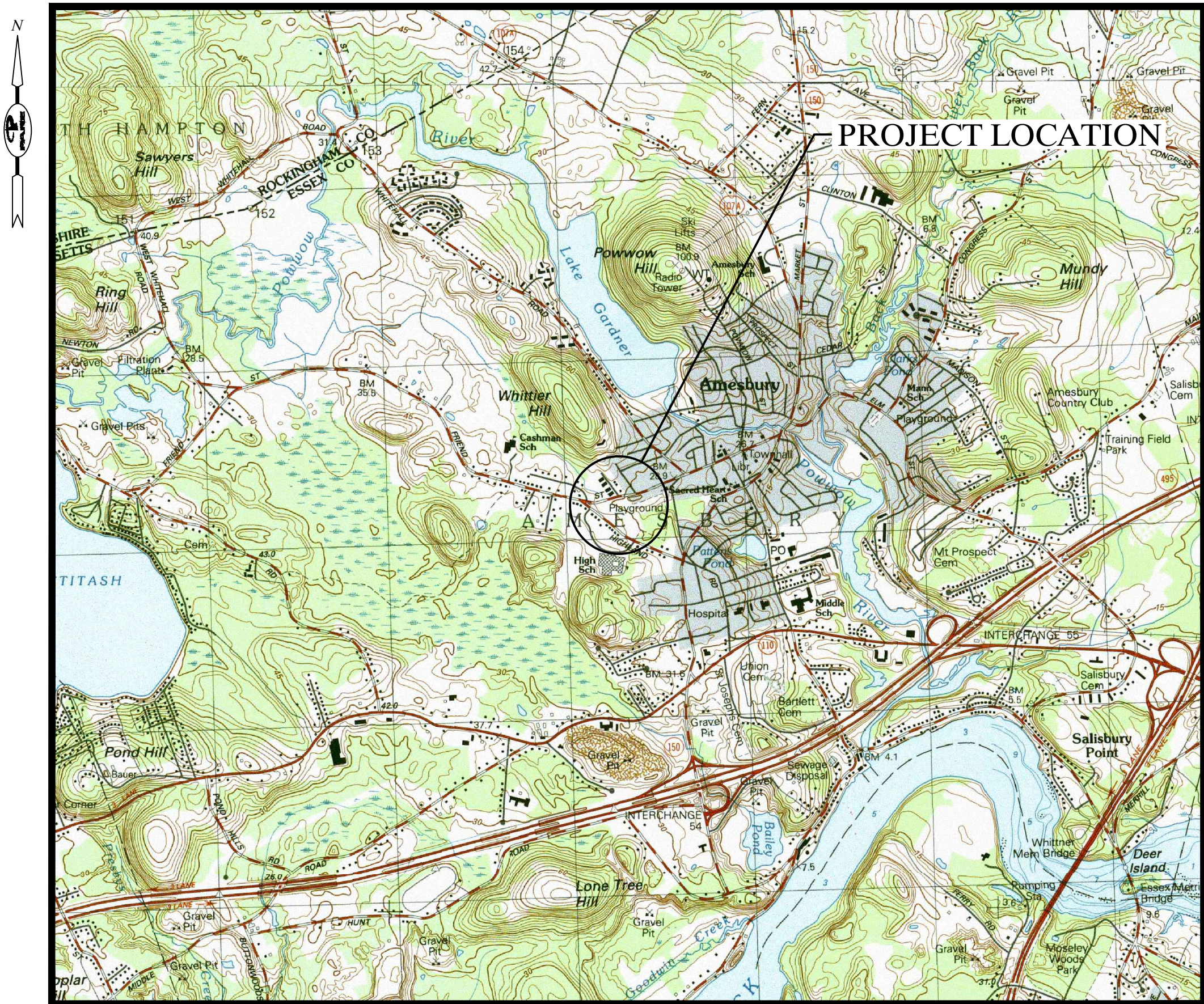
FRIEND STREET DRAINAGE IMPROVEMENTS

AMESBURY, MASSACHUSETTS

APRIL 2, 2024

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LOCUS PLAN

SCALE: 1" = 2000'



AERIAL PLAN

SCALE: 1" = 400'

Prepared by:

PARE CORPORATION

Foxboro, Massachusetts



FOR THE PURPOSE OF THIS PROJECT

OWNER – CITY OF AMESBURY
62 FRIEND STREET
AMESBURY, MA 01913

CONTACT – JOE BUCKLEY, P.E., DIRECTOR OF PUBLIC WORKS

ENGINEER – PARE CORPORATION
10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035

CONTACT – MARK MCCLUSKY, P.E.

2. ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF MASSACHUSETTS STATE BUILDING CODE, THE SPECIFICATIONS INCLUDED IN THIS CONTRACT, AND APPLICABLE MASSACHUSETTS RULES AND REGULATIONS. THESE PLANS ARE INCOMPLETE UNLESS ACCOMPANIED BY THE SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS, WHERE REFERENCE IS MADE TO ANY STANDARD SPECIFICATION IT SHALL MEAN THE MOST RECENT SPECIFICATION, CODE, STANDARD, OR INTERIM SPECIFICATIONS OF THE ORGANIZATION REFERRED TO AND SHALL BE CONSIDERED A PART OF THESE CONTRACT DOCUMENTS TO THE EXTENT INDICATED. IN CASE OF CONFLICT, THE MORE RIGID REQUIREMENTS AND CODES SHALL GOVERN. THESE CODES INCLUDE, BUT ARE NOT LIMITED TO: AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), AND THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).

3. THE STATE OF MASSACHUSETTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES 2024 EDITION AND THE LATEST REVISION, AND THE MASSACHUSETTS STANDARD DETAILS AND THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE CITY OF AMESBURY ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO. THE 2024 EDITION OF THE STANDARD SPECIFICATIONS MAY BE OBTAINED AT THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION.

4. THE EXISTING CONDITIONS PLAN WAS DEVELOPED FROM A PLAN TITLE "TOPOGRAPHIC PLAN OF LAND" IN AMESBURY MA BY NORTHPOINT SURVEY SERVICES, INC DATED FEBRUARY 25, 2013, SURVEY PERFORMED BY WSP USA INC. OF MERRIMACK, NH DATED NOVEMBER 22, 2021, AND LIMITED CONFIRMATORY SURVEY OF CATCH BASIN RIMS, WETFLAGS, AND OTHER ABOVE GROUND LOCATIONS PERFORMED BY PARE AS WELL AS AVAILABLE LIDAR DATA THROUGH MASS GIS.

5. THE VERTICAL DATUM FOR THE PROJECT IS NAVD 1988. THE HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE NAD83. CONTRACTOR SHALL ESTABLISH HORIZONTAL AND VERTICAL CONTROL AS REQUIRED TO ENABLE COMPLETION OF THE WORK.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS. PLANS SHALL NOT BE SCALED FOR DIMENSIONS WITHOUT PRIOR APPROVAL BY THE ENGINEER.

7. THE CONTRACTOR SHALL VERIFY EXISTING ELEVATION OF SANITARY SEWER SERVICE AT 8 LINDBERG AVENUE AT SEWER MAIN AND AT DWELLING PRIOR TO INITIATION OF WORK IN THE AREA.

8. CONSTRUCTION SHALL BE MADE FROM APPROVED SHOP DRAWINGS ONLY.

9. NOTES, TYPICAL DETAILS AND SCHEDULES APPLY TO ALL WORK UNLESS OTHERWISE NOTED. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTING SHOP DRAWINGS FOR REVIEW.

10. INFORMATION REGARDING THE LOCATION OF SURROUNDING STRUCTURES, UTILITIES, AND THE AS-BUILT CONFIGURATION AND CONDITION OF THE EXISTING CULVERTS, DAM AND SPILLWAY IS FURNISHED SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL CONDUCT ITS OWN INDEPENDENT EXAMINATION OF SITE CONDITIONS AND AVAILABLE DOCUMENTS FOR THE PURPOSE OF BIDDING, FABRICATION, AND CONSTRUCTION ASSOCIATED WITH THE PROJECT. ANY RELIANCE UPON INFORMATION MADE AVAILABLE BY THE OWNER OR THE ENGINEER SHALL BE AT THE CONTRACTOR'S RISK.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL PROJECT DEMOLITION AND EXCESS MATERIAL IN ACCORDANCE WITH MASSACHUSETTS, LOCAL, AND FEDERAL LAWS.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ALL DAMAGE TO ADJACENT PROPERTY, STRUCTURES, AND UTILITIES AT NO ADDITIONAL COST TO THE OWNER.

13. THE CONTRACTOR SHALL FOLLOW ALL OSHA AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS FOR ALL PROJECT COMPONENTS AND ACTIVITIES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SITE SAFETY PROCEDURES AND PRACTICES REGARDLESS OF THE PRESENCE OF THE OWNER OR ENGINEER.

14. CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO THE LIMITS OF WORK AND TEMPORARY EASEMENTS DEFINED HEREIN.

15. CONTRACTOR WILL BE REQUIRED TO SUBMIT A CONSTRUCTION SCHEDULE TO THE OWNER WITHIN THE SET PERIOD OF DAYS OF THE NOTICE OF AWARD AS DESCRIBED IN THE BID DOCUMENT. CONTRACTOR SHALL UPDATE SCHEDULE AS NEEDED THROUGHOUT THE COURSE OF WORK.

16. CONTRACTOR SHALL COORDINATE AND CONFIRM WITH THE CITY MATERIAL AND CONSTRUCTION EQUIPMENT AREAS. POTENTIAL MATERIALS STORAGE AND REFUELING AREAS ARE SHOWN ON THE OVERALL LAYOUT PLAN BUT SHALL BE VERIFIED WITH CITY AND CONSERVATION COMMISSION.

17. CONTRACTOR IS REQUIRED TO PROVIDE AND HAVE ON SITE A 32-gal FUEL SPILL AND CONTAINMENT KIT READY FOR USE. CONTAINMENT KIT SHALL INCLUDE LEAK PROOF CONTAINER, ABSORBENT SORB KIT TUBE (20 FT), ABSORBENT PADS, DISPOSAL BAGS, AND 25 LB BAG SPEEDI-DRI OR QUICK-SORB.

18. CONTRACTOR SHALL MAINTAIN A SECURE SITE AND PROVIDE APPROPRIATE SAFETY MEASURES TO PREVENT ACCIDENTS. THE SAFETY MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO SIGNAGE, BARRICADES, FENCES, FLASHING WARNING LIGHTS, AND POLICING IF NECESSARY. OPEN TRENCHES ARE NOT ALLOWED OVERNIGHT.

19. UPON COMPLETION OF THE PROJECT, CONTRACTOR IS TO PROVIDE TWO AS-BUILT PLAN SETS TO THE OWNER DEPICTING ANY FIELD CHANGES OF DIMENSION OR DETAIL, LOCATION OF UNDERGROUND STRUCTURES AND/OR UTILITIES, CONSTRUCTION DEVIATIONS, CHANGES DUE TO FIELD OR CHANGE ORDER, AND DETAILS NOT ON THE ORIGINAL DRAWINGS.

20. NO WORK OR DISCHARGES, OTHER THAN THAT SHOWN, SHALL BE PERFORMED WITHIN WETLANDS WITHOUT FIRST RECEIVING PROPER PERMITS FROM THE REGULATORY AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESTORING AND REPAIRING ALL DAMAGE AS A RESULT OF UNAUTHORIZED WORK OR DISCHARGES TO ANY WETLAND AREA AT NO ADDITIONAL COST TO THE OWNER.

21. UPON COMPLETION OF THE WORK ALL DISTURBED AREAS SHALL BE DRESSED AND SEEDED WITH THE APPROVED SEED AND MAINTAINED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

22. CONTRACTOR WILL BE REQUIRED TO ATTEND PROGRESS MEETINGS IN ACCORDANCE WITH SPECIFICATION SECTION 01200; PROJECT MEETINGS.

23. ALL UTILITIES (LOCATION AND ELEVATION) SHOWN SHALL BE CONSIDERED APPROXIMATE ONLY. BEFORE COMMENCING SITE WORK IN ANY AREA, CONTACT "DIG SAFE" AT 1-888-484-7233 AND ALL UTILITY COMPANIES NOT COVERED BY DIG SAFE AT 1-888-484-7233 TO OBTAIN THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES OR STRUCTURES AS SHOWN ON THE PLANS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. COSTS OF SUCH DAMAGE SHALL BE THE CONTRACTOR'S RESPONSIBILITY. NO EXCAVATION SHALL BE DONE UNTIL ALL UTILITY COMPANIES ARE PROPERLY NOTIFIED IN ADVANCE. NOTE THAT NOT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS. THE CONTRACTOR'S RESPONSIBILITY IS TO GET ALL RESPECTIVE UTILITY COMPANIES TO VERIFY AND LOCATE EXISTING UTILITIES.

1. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT.
2. CONTRACTOR SHALL PREVENT SEDIMENT FROM ENTERING THE IMPOUNDMENT, WATERCOURSES, OR ANY WATER BODIES OF THE STATE VIA DISCHARGES THROUGH ANY DRAINAGE STRUCTURES.
3. STOCKPILES SHALL BE A MINIMUM OF 1-FOOT FROM THE EDGE OF ANY SLOPE TO LIMIT RUNOFF DOWN THE EMBANKMENT SLOPES.
4. EROSION CONTROL BARRIERS SHALL BE MODIFIED OR EXPANDED AS FIELD CONDITIONS WARRANT.
5. ALL EROSION CONTROL BARRIERS SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND AFTER EACH STORM EVENT OF 0.5 INCH OR GREATER DURING CONSTRUCTION. ANY DAMAGED AREAS SHALL BE REPAIRED WITHIN 24 HOURS OF DISCOVERY.
6. DEWATERING BASINS SHALL CONSIST OF STRAW BALE ENCLOSURES, TANKS, PERMEABLE BLADDERS, OR OTHER APPROPRIATE METHODS. DEWATERING WASTE WATERS SHALL BE PUMPED TO THE DEWATERING BASINS AND TREATED PRIOR TO DISCHARGE. DEWATERING WASTEWATER PUMPED FROM EXCAVATIONS WILL BE CONVEYED BY HOSE TO AN UPLAND AREA AND DISCHARGED INTO A DEWATERING BASIN, STRAW BALE CORRALS, OR SEDIMENTATION BAGS.
7. ALL DIVERTED INTERMITTENT STREAM FLOW SHALL BE CONVEYED AND DISCHARGED SO AS TO NOT INCREASE SEDIMENT TRANSPORT AND TURBIDITY TO THE RECEIVING CHANNEL.
8. DISCHARGE OF TURBID WATER TO THE IMPOUNDMENT, THE DOWNSTREAM CHANNEL, OR ANY WETLAND SHALL BE PROHIBITED. ALL DISCHARGE SHALL COMPLY WITH ENVIRONMENTAL REGULATIONS.
9. CONTRACTOR SHALL PREVENT SEDIMENT FROM ENTERING THE IMPOUNDMENT OR DOWNSTREAM CHANNELS VIA DISCHARGES THROUGH ANY NECESSARY COFFERDAMS UPSTREAM OF ANY WORK.

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REGULATING FLOWS AND IMPOUNDMENT LEVELS THROUGHOUT CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOSS AND DAMAGE DUE TO A FAILURE OF ANY DIVERSION STRUCTURES CONSTRUCTED DURING THE WORK.
3. CONTRACTOR SHALL REGULATE DISCHARGES AND PHASE CONSTRUCTION SO THAT CONSTRUCTION EQUIPMENT DOES NOT PASS THROUGH FLOWING WATER.
4. WATER CONTROL AND DIVERSION SYSTEMS SHALL MEET THE REQUIREMENTS SPECIFIED WITHIN SECTION 02400.
5. ANY NECESSARY COFFERDAMS AND DIVERSIONS SHALL BE DESIGNED BY THE CONTRACTOR, APPROVED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER HIRED BY THE CONTRACTOR. APPROVAL BY THE OWNER AND DESIGN ENGINEER IS REQUIRED PRIOR TO INSTALLATION. ALL COFFERDAMS AND DIVERSIONS SHALL BE INSTALLED AND REMOVED IN THEIR ENTIRETY AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL RESTORE ANY IMPACTED PORTION OF THE SITE AT NO ADDITIONAL COST TO THE OWNER. ALL NECESSARY COFFERDAMS AND DIVERSIONS SHALL BE DESIGNED TO WITHSTAND A 25-YEAR STORM EVENT.

1. STRIPPED TOPSOIL FROM THE SITE SHALL BE STOCKPILED SEPARATELY FOR POTENTIAL REUSE AT THE OWNERS DISCRETION.
2. UPON COMPLETION OF GRADING, ALL EXPOSED SURFACES NOT OTHERWISE TO BE TREATED SHALL BE COVERED WITH A MINIMUM OF 6 INCHES OF LOAM AND SEEDED. MULCH SHALL BE APPLIED AS NECESSARY TO PROVIDE TEMPORARY STABILIZATION UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED. CONTRACTOR SHALL INSTALL JUTE MESH OVER SEEDED AREAS WHERE REQUIRED AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR OVERLAPPING, ANCHORING, AND DIRECTION OF PLACEMENT.
3. CONTRACTOR SHALL APPLY FERTILIZER AND LIME TO PREPARE TOPSOIL SURFACE AT THE RATES INDICATED IN THE PROJECT SPECIFICATIONS, AND AS INDICATED BY THE ANALYTICAL TESTING OF THE TOPSOIL.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SEEDED AREA THROUGH ONE GROWING SEASON, MAINTENANCE INCLUDES MOWING, WATERING, FERTILIZING AND RE-SEEDING AS REQUIRED TO DEVELOP A SATISFACTORY STAND OF HEALTHY GRASS AS DEFINED IN THE PROJECT SPECIFICATIONS (SECTION 02900: LANDSCAPING).

THE FOLLOWING SEQUENCE IS INTENDED TO BE GENERAL IN NATURE AND SHALL NOT BE CONSIDERED DIRECTION BY THE ENGINEER OR THE OWNER. ALTHOUGH IT IS LIKELY THAT SOME OF THE WORK ITEMS WILL OVERLAP, CONSTRUCTION SEQUENCES FOR THE VARIOUS PROJECT COMPONENTS ARE DESCRIBED SEPARATELY AND MAY NOT NECESSARILY PROCEED IN CONSECUTIVE ORDER. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.

- FRIEND STREET CONDUIT REPLACEMENT**

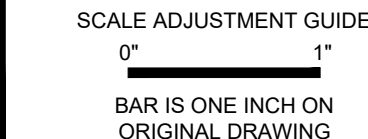
 - A. IMPLEMENT THE TEMPORARY TRAFFIC CONTROL PLAN INCLUDING THE ROADWAY CLOSURE, VEHICLE DETOUR, AND PEDESTRIAN DETOUR PLANS
 - B. INSTALL CONTROL OF WATER AND STREAM BYPASS SYSTEMS
 - C. SAWCUT AND REMOVE THE ASPHALT ROADWAY AND CONCRETE SIDEWALKS. DISPOSE OF MATERIALS GENERATED.
 - D. REROUTE WATER MAIN AND GAS MAIN AS NEEDED TO COMPLETE THE WORK
 - E. COMPLETE EARTHWORK NECESSARY TO REMOVE THE EXISTING CONDUIT AND ACHIEVE SUBGRADE FOR THE PROPOSED WORK. STOCKPILE SUITABLE FILL MATERIALS FOR LATER REUSE; DISPOSE OF ALL OTHER MATERIAL GENERATED
 - F. REROUTE WATER MAIN UNDER THE PROPOSED CULVERT
 - G. INSTALL THE PROPOSED CONDUIT SYSTEM INCLUDING SUGRADE PREP, CULVERT INSTALLATION, FLARED END INSTALLATION, DMH#1 AND CONNECTIONS, AND OTHER COMPONENTS AS SHOWN AND AS NECESSARY.
 - H. REROUTE GAS MAIN OVER THE CONDUIT AS SHOWN.
 - I. BACKFILL THE CONDUIT; REGRADE AS SHOWN.
 - J. ABANDON THE EXISTING DRAINAGE CONDUIT.
 - K. INSTALL/ESTABLISH THE SPECIFIED SURFACE COVERAGE
 - ASPHALT ROADWAY WITH STRIPING
 - CONCRETE SIDEWALKS
 - RIPRAP ALONG APPROACH
 - GRASS ALL OTHER AREAS
- 6. AMESBURY PARK CONDUIT REPLACEMENT**

 - A. INSTALL CONTROL OF WATER AND STREAM BYPASS SYSTEMS
 - B. COMPLETE EARTHWORK NECESSARY TO REMOVE THE EXISTING CONDUIT AND ACHIEVE SUBGRADE FOR THE PROPOSED WORK. STOCKPILE SUITABLE FILL MATERIALS FOR LATER REUSE; DISPOSE OF ALL OTHER MATERIAL GENERATED
 - C. INSTALL THE PROPOSED CONDUIT SYSTEM INCLUDING SUGRADE PREP, CULVERT INSTALLATION, DMH#2, #3, AND #4 AND CONNECTIONS, OUTLET HEADWALL AND OTHER COMPONENTS AS SHOWN AND AS NECESSARY.
 - D. BACKFILL THE CONDUIT; REGRADE AS SHOWN.

- C. INSTALL/ESTABLISH THE SPECIFIED SURFACE COVERAGE
 - RIPRAP AT DISCHARGE END
 - GRASS ALL OTHER AREAS
7. PLEASURE POND DAM REPAIRS
 - A. INSTALL CONTROL OF WATER AND STREAM BYPASS SYSTEMS.
 - B. REMOVE UNWANTED VEGETATION.
 - C. INSTALL CONCRETE REPAIRS.
 - D. FILL LOW AREAS LEFT AND RIGHT OF SPILLWAY
 - REMOVE EXISTING RIPRAP AND OTHER MATERIAL TO SUITABLE SUBGRADE
 - INSTALL ENGINEERED FILL
 - E. INSTALL/ESTABLISH THE SPECIFIED SURFACE COVERAGE
 - RIPRAP ALONG UPSTREAM AND DOWNSTREAM SLOPE
 - GRASS ALL OTHER AREAS
8. PROJECT COMPLETION
 - A. REMOVE ALL UNUSED MATERIAL
 - B. RESTORE DISTURBED AREAS OF THE SITE
 - C. COMPLETE PUNCH LIST WORK
 - D. DEMOBILIZE

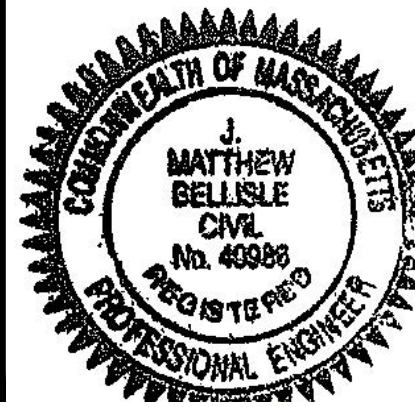
<u>EXISTING</u>		<u>PROPOSED</u>
	BUILDING	
	PROPERTY LINE	
	1' CONTOUR	
	5' CONTOUR	
	EDGE OF WATER	
	EDGE OF PAVE/CONC.	
	CURBING/WALL	
	STONE WALL	
	FENCE	
	DRAIN LINE	
	GAS LINE	
	WATER LINE	
	OVERHEAD WIRE	
	SANITARY SEWER	
	DRAINAGE MANHOLE	
	CATCH BASIN	
	GAS GATE	
	SEWER MANHOLE	
	UTILITY POLE	
	WATER GATE	
	HYDRANT	
	TREES	
	SAWCUT	
	PAVEMENT HATCH	
	RIP RAP	
	COFFERDAM WITH TURBIDITY BARRIER	
	COMPOST FILTER SOCK	
	LIMIT OF DISTURBANCE	
	100 FOOT WETLAND BUFFER ZONE	
	100 FOOT RIVERFRONT AREA	
	200 FOOT RIVERFRONT AREA	
	100 FOOT WELL BUFFER	
	WETLAND FLAGS	
	BASELINE AND STATIONING	
	BORING	

- LOD LIMIT OF DISTURBANCE
- R&D REMOVE & DISPOSE
- TB TURBIDITY BARRIER



FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY

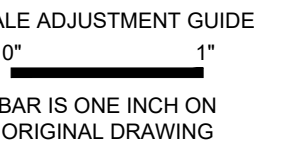
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CHECKED BY:	MAM / MED
DRAWN BY:	AWL / LMC
APPROVED BY:	ARC
DRAWING TITLE:	

NOTES
AND LEGEND

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SHEET NO. 2 OF 14

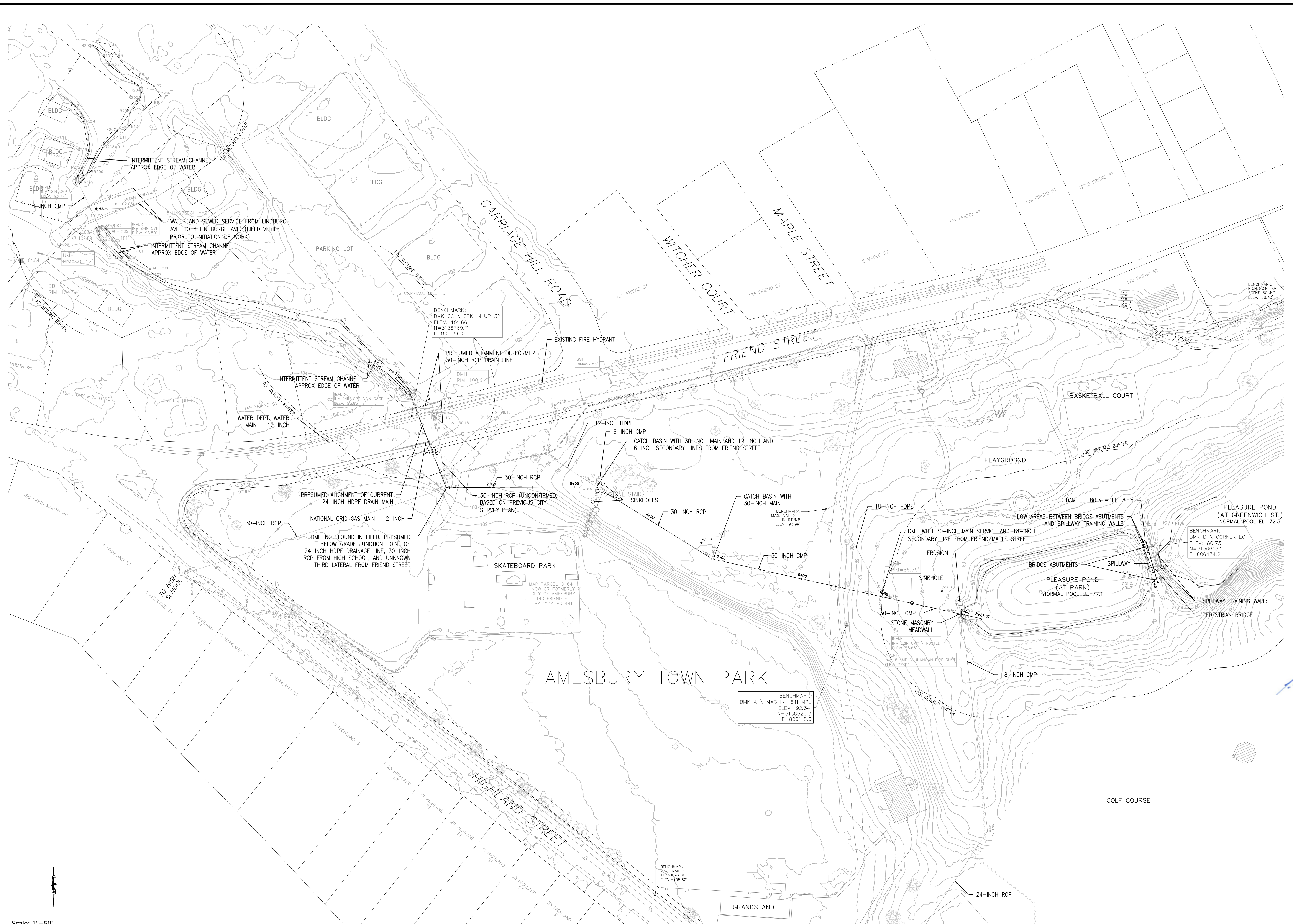


CITY OF AMESBURY



EXISTING CONDITIONS PLAN

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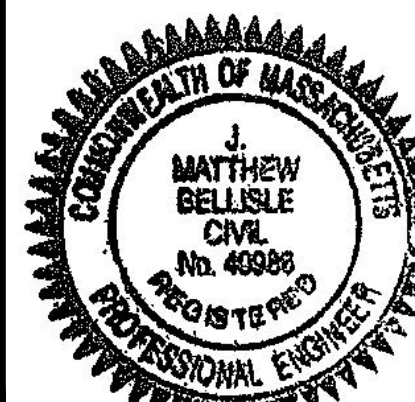
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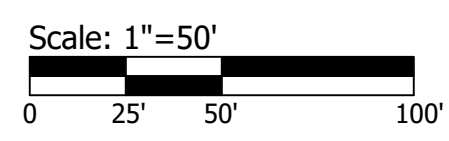
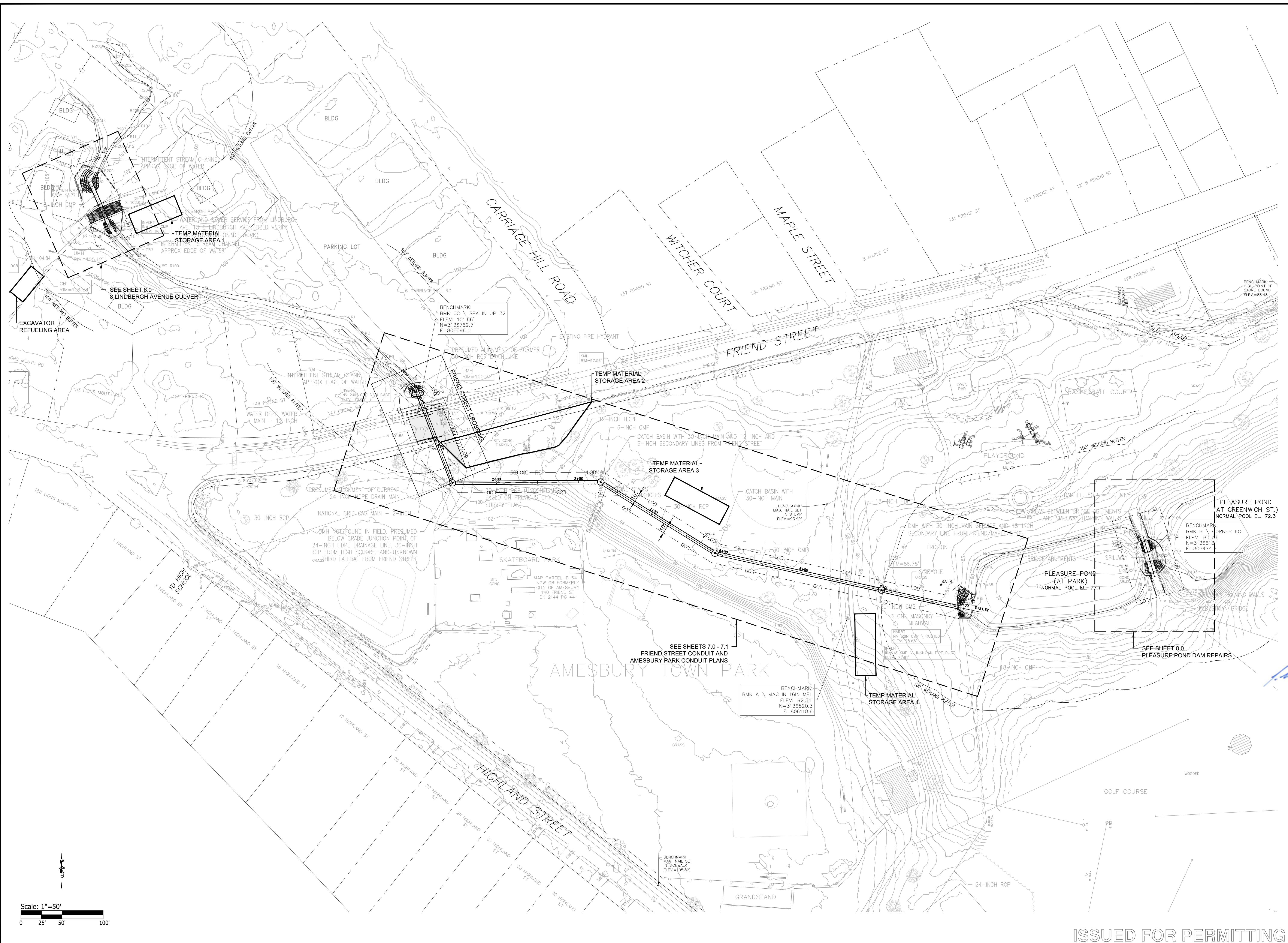
BORING LOGS

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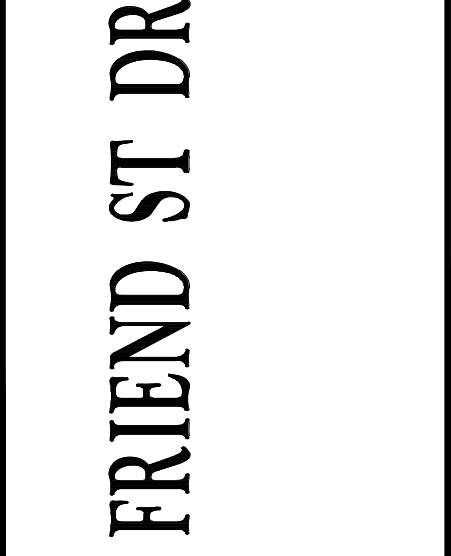
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FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY

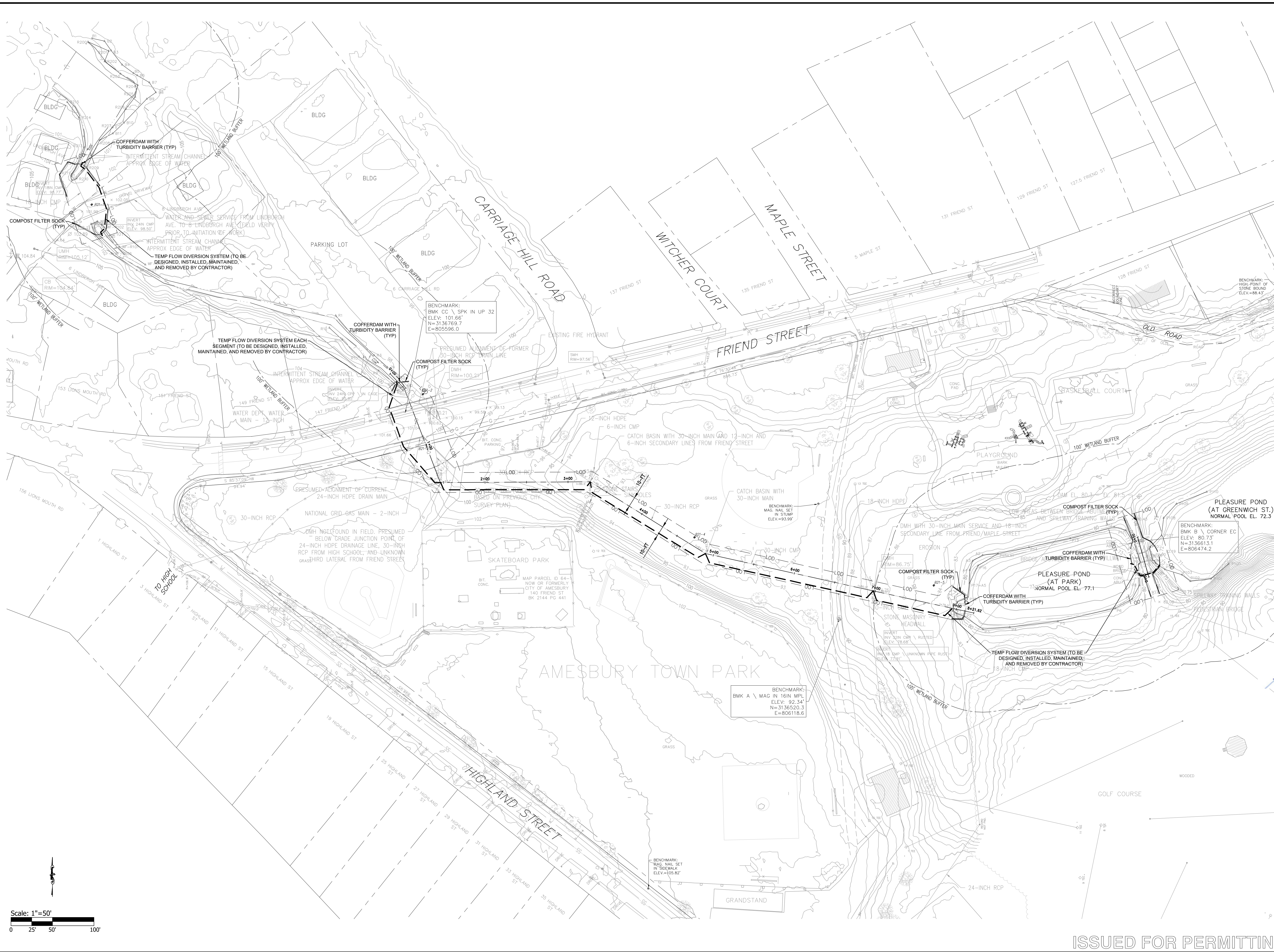


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CHECKED BY: MAM / MED
DRAWN BY: AWL / LMC
APPROVED BY: ARO
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OVERALL WORK AREAS
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SHEET NO. 5 OF 14

ISSUED FOR PERMITTING

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SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

FRIEND ST DRAINAGE IMPROVEMENTS
CITY OF AMESBURY



J. Matthew Bellisle

PROJECT NO.:	21200.00
DATE:	APRIL 2, 2024
SCALE:	AS NOTED
DESIGNED BY:	MLP
CHECKED BY:	MAM / MED
DRAWN BY:	AWL / LMC
APPROVED BY:	ARO
DRAWING TITLE:	

EROSION CONTROL PLAN

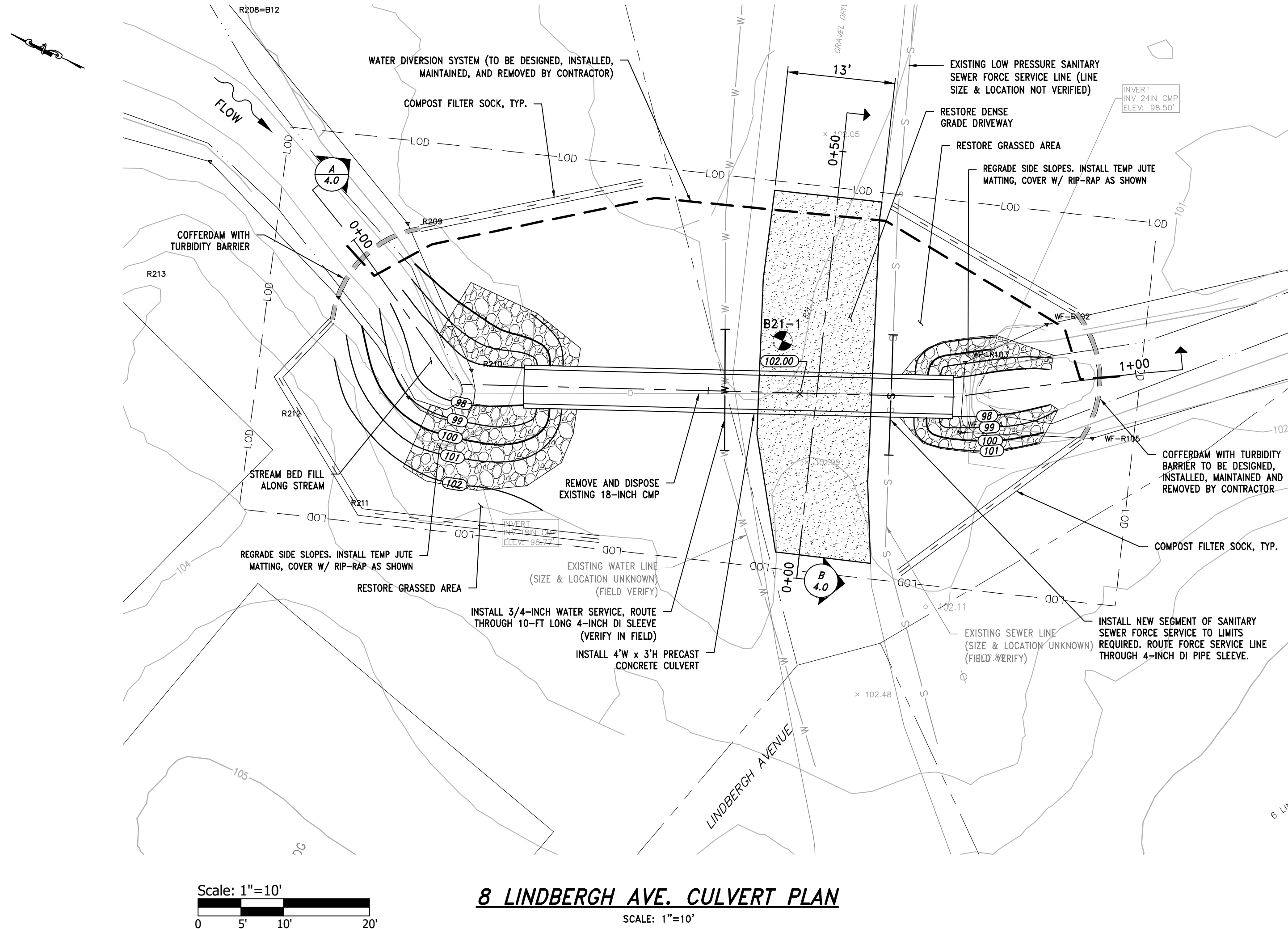
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SHEET NO. 6 OF 14

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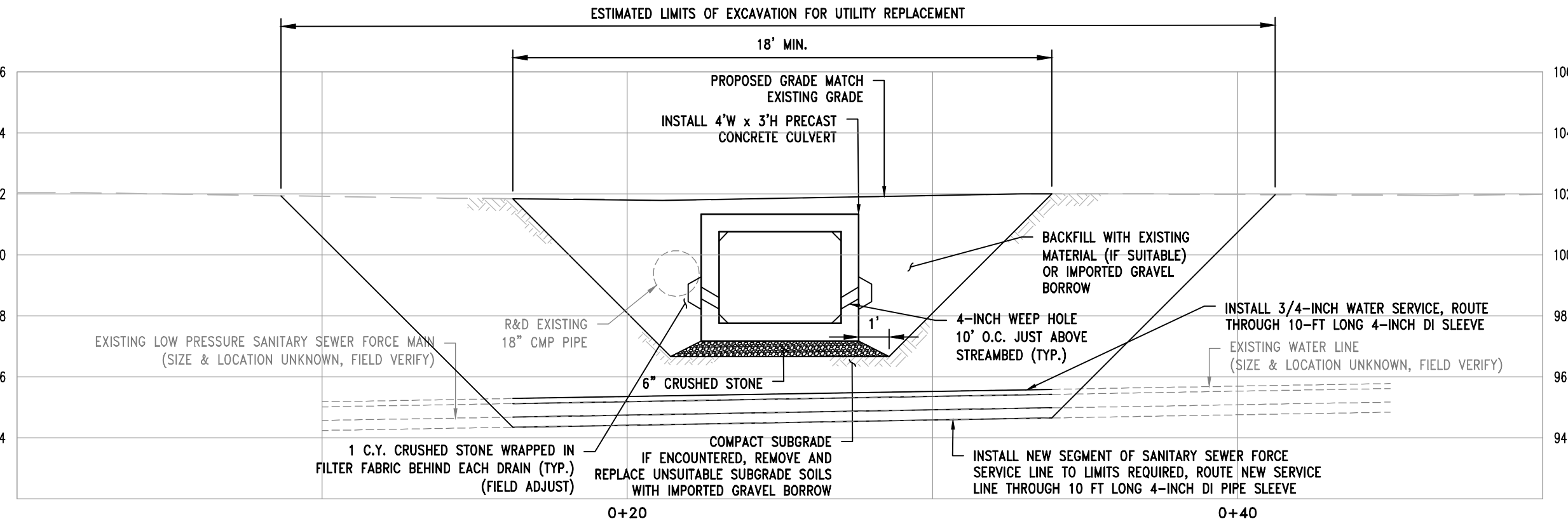


8 LINDBERGH AVE. CULVERT PLAN

SCALE: 1"=10'

NOTES:

1. PRECAST CEMENT CONCRETE BOX CULVERT SHALL BE HS20 LIVE LOAD RATED.
2. EACH BOX CULVERT SEGMENT SHALL BE SECURED TO ADJACENT SEGMENTS WITH FASTENING BOLTS.
3. UPSTREAM BOX SEGMENT SHALL HAVE AN INTEGRAL ANTI-SEEPAGE CUTOFF WALL OR FOOTER.

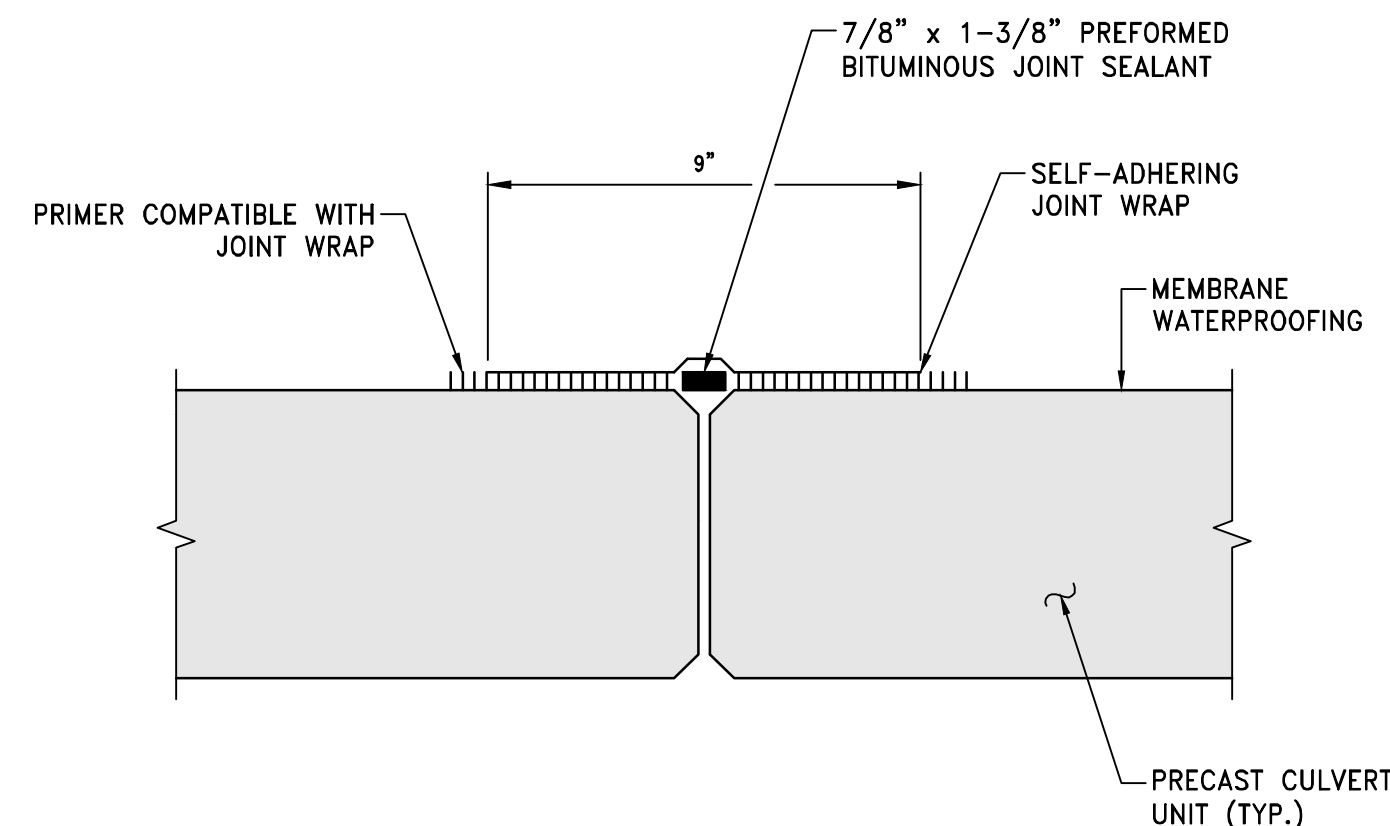


8 LINDBERGH AVE. CULVERT SECTION

SCALE: 1"=4'

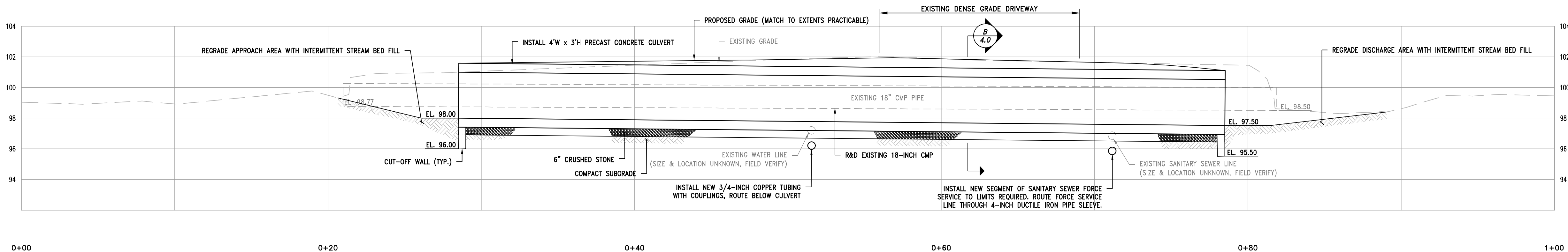
NOTES:

1. TRENCH EXCAVATIONS SHALL COMPLY WITH OSHA 1926 SUBPART P, EXCAVATIONS, APP B SLOPING AND BRACING.
2. TRENCH EXCAVATIONS SHALL ALSO COMPLY WITH 520 CMR 14.00, EXCAVATION AND TRENCH SAFETY.



PRECAST JOINT SEALING DETAIL

SCALE: 3"=1'-0"



8 LINDBERGH AVE. CULVERT PROFILE

SCALE: 1"=4'



FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY



J. Matthew Bellisle

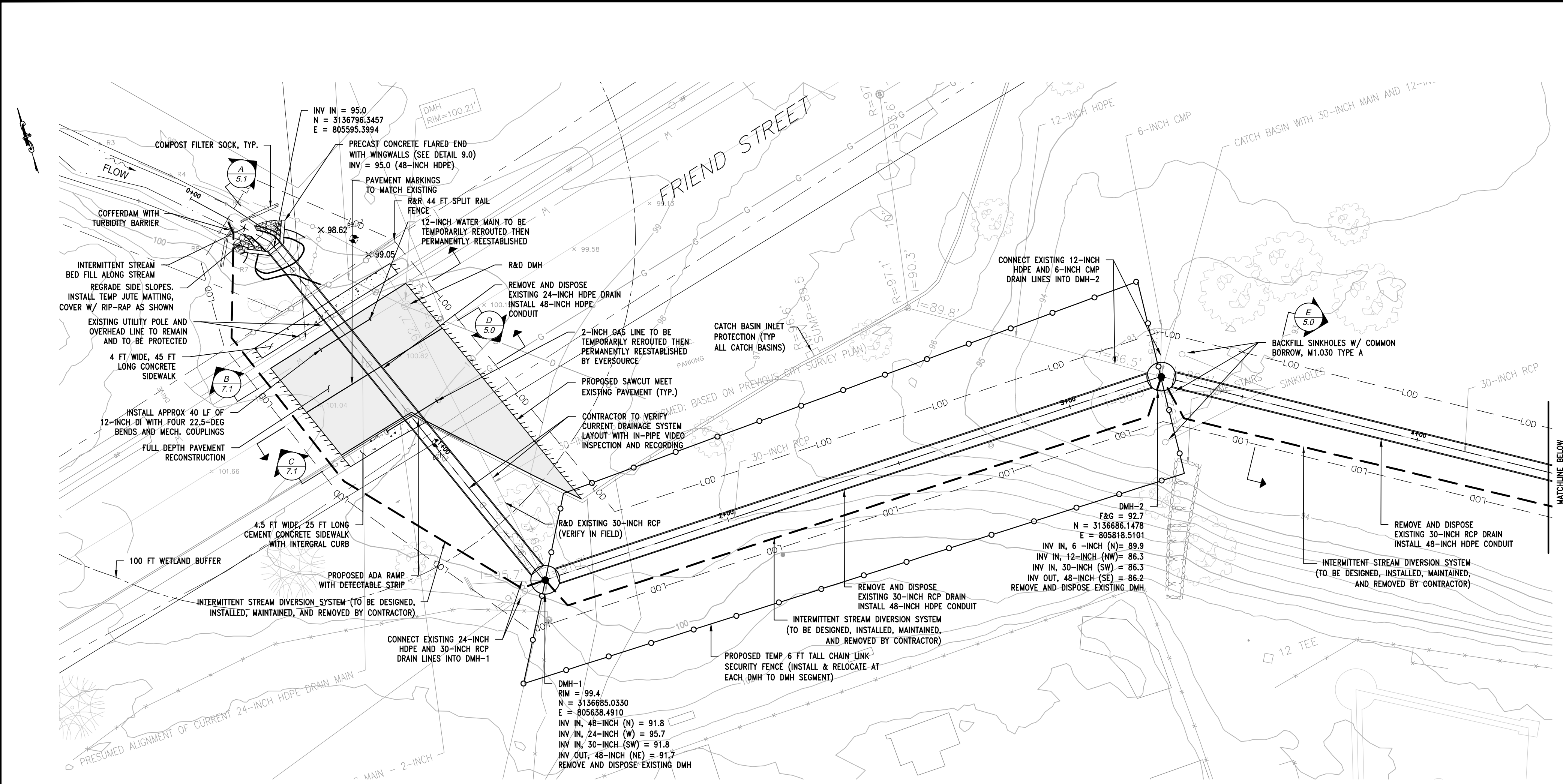
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8 LINDBERGH AVENUE CULVERT

DRAWING NO.: 6.0
SHEET NO. 7 OF 14

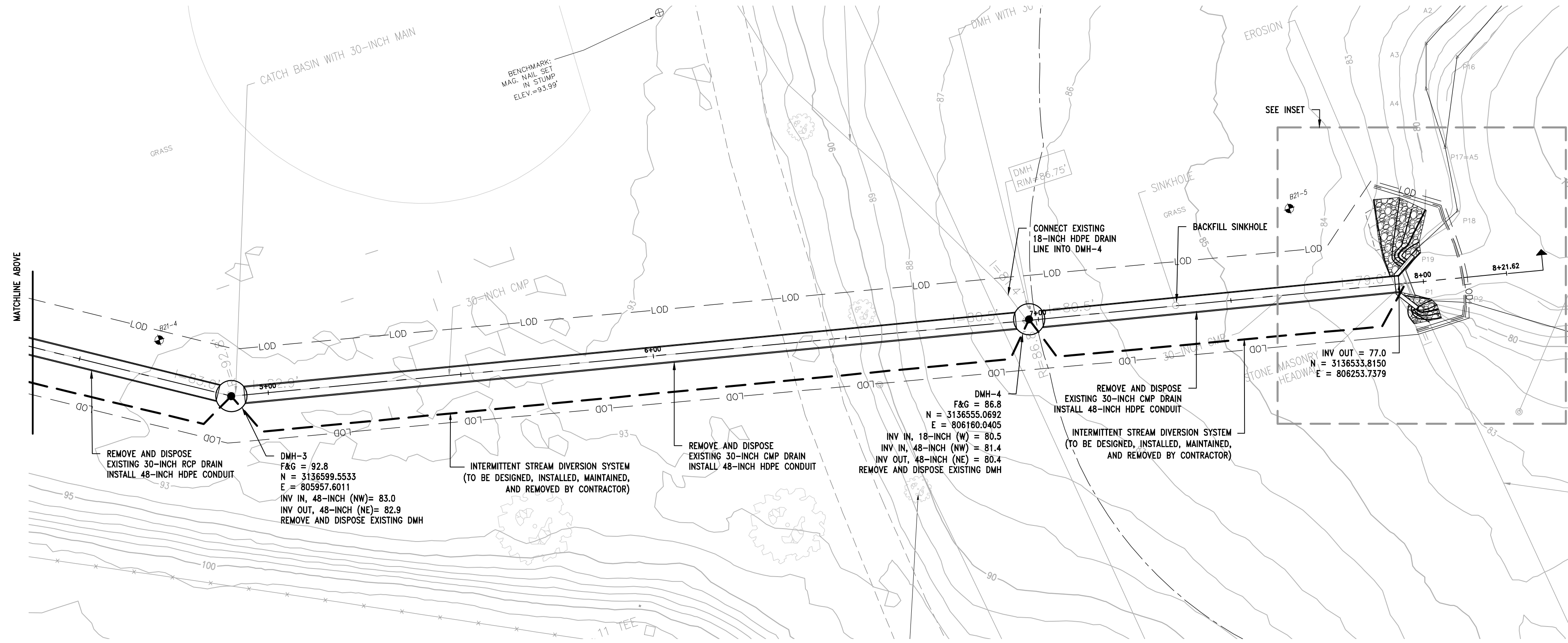
ISSUED FOR PERMITTING

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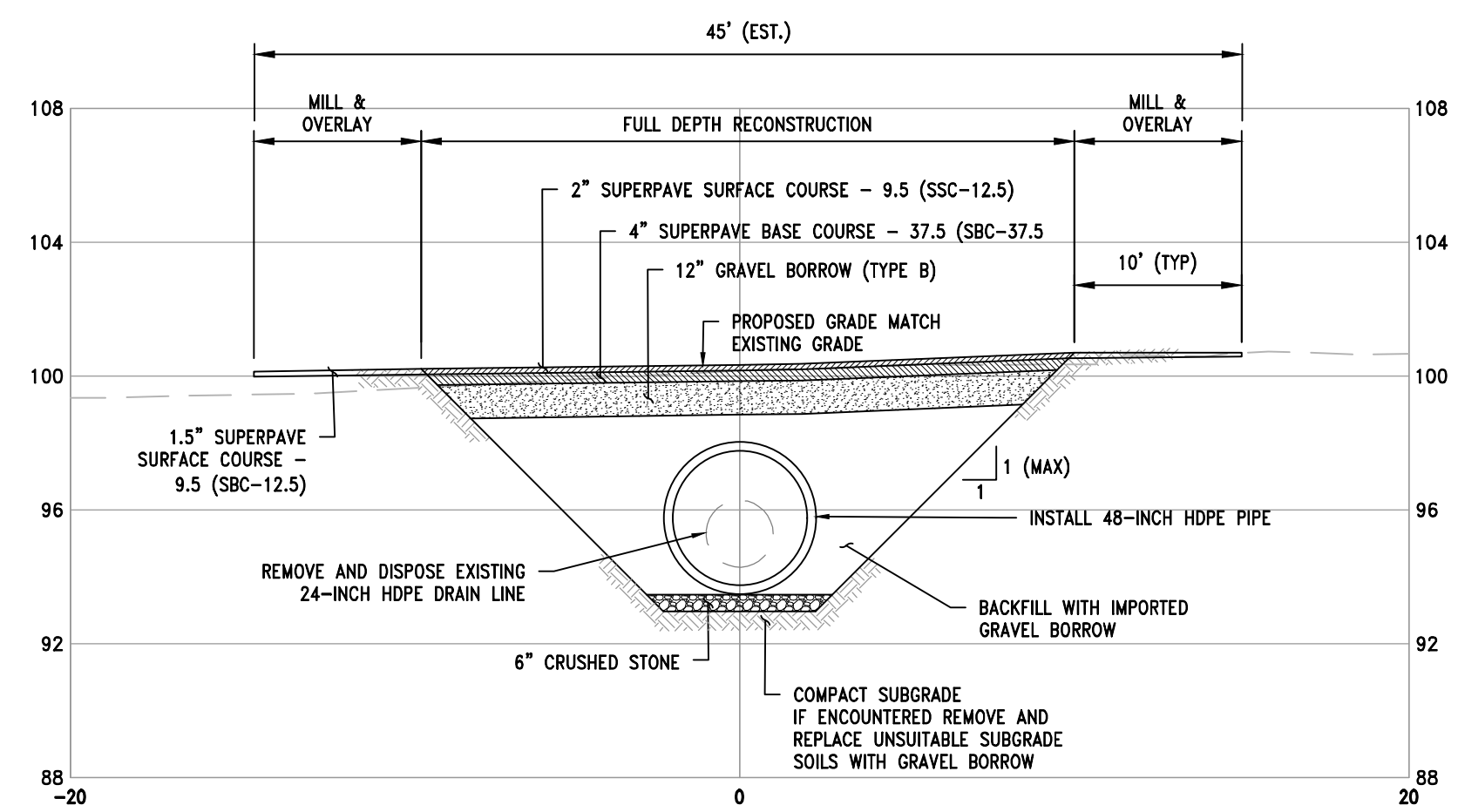
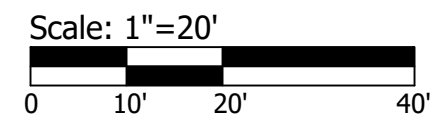
FRIEND STREET AND AMESBURY PARK - PLAN

SCALE: 1"=20'



FRIEND STREET AND AMESBURY PARK - PLAN

SCALE: 1"=20'

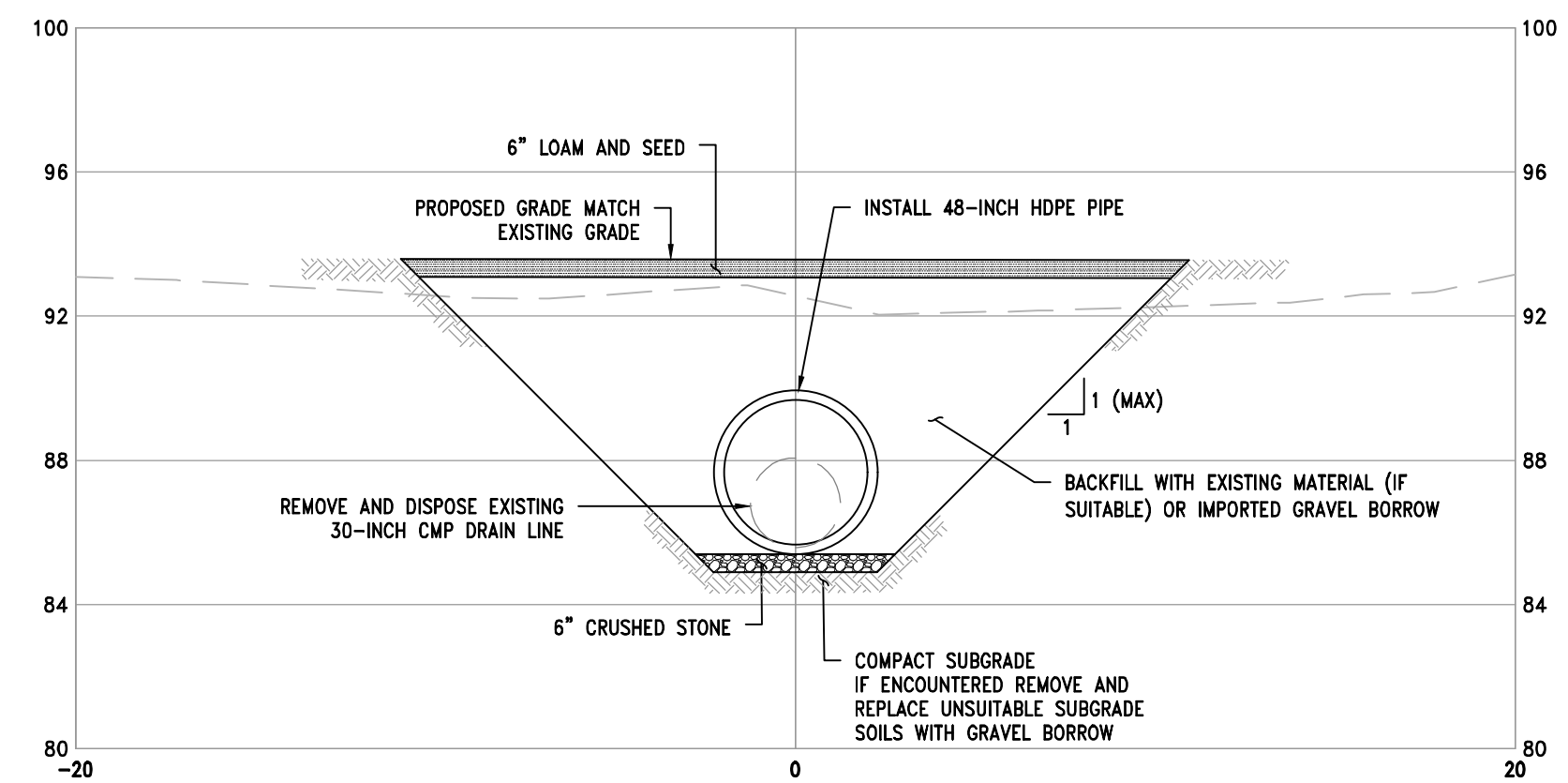


FRIEND STREET CONDUIT - SECTION

SCALE: 1"=5'

NOTES:

1. TRENCH EXCAVATIONS SHALL COMPLY WITH OSHA 1926 SUBPART P, EXCAVATIONS, APP B SLOPING AND BRACING.
2. TRENCH EXCAVATIONS SHALL ALSO COMPLY WITH 520 CMR 14.00, EXCAVATION AND TRENCH SAFETY.

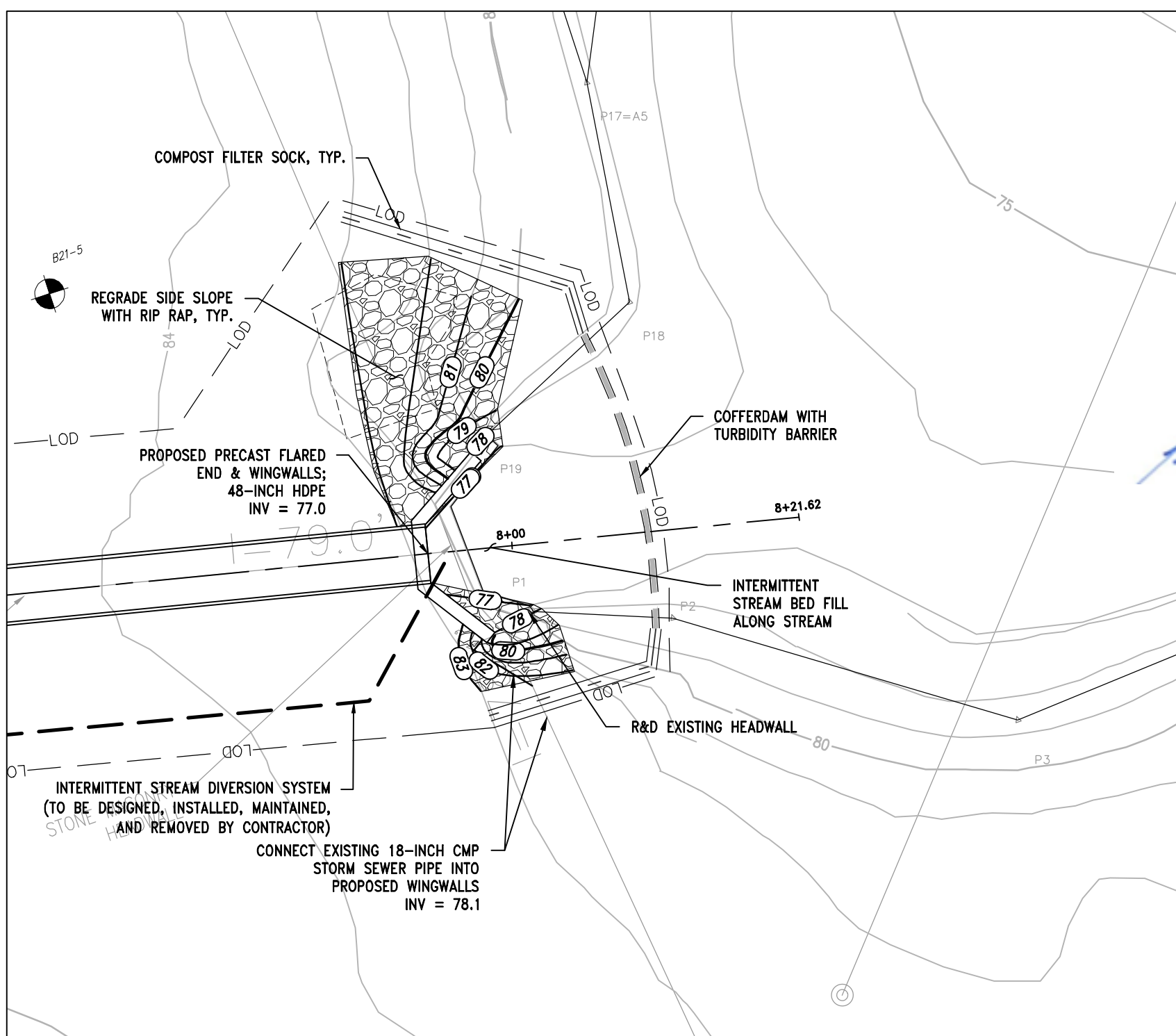


AMESBURY PARK CONDUIT - SECTION

SCALE: 1"=5'

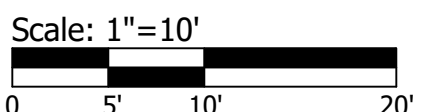
NOTES:

1. TRENCH EXCAVATIONS SHALL COMPLY WITH OSHA 1926 SUBPART P, EXCAVATIONS, APP B SLOPING AND BRACING.
2. TRENCH EXCAVATIONS SHALL ALSO COMPLY WITH 520 CMR 14.00, EXCAVATION AND TRENCH SAFETY.



INSET

SCALE: 1"=10'



ISSUED FOR PERMITTING



FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY

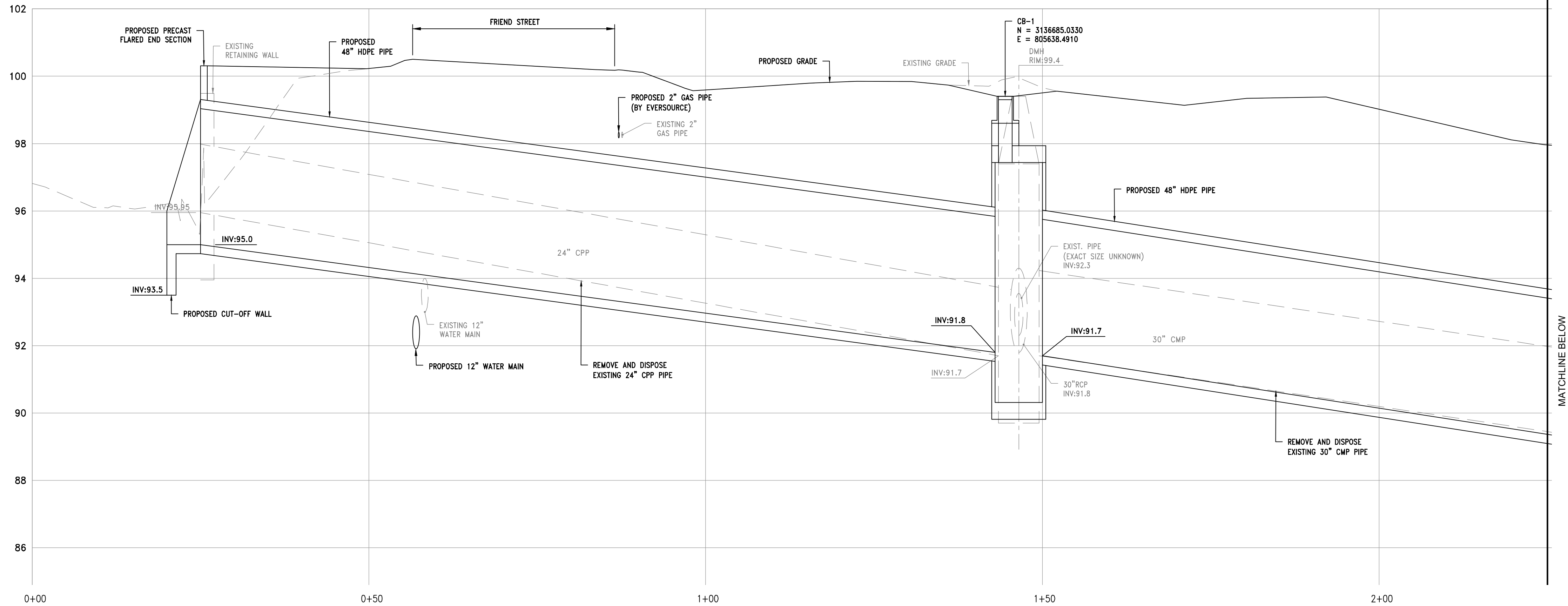
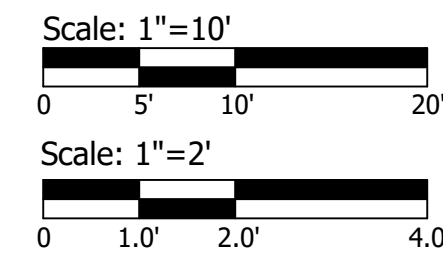


PROJECT NO.: 21200.00
DATE: APRIL 2, 2024
SCALE: AS NOTED
DESIGNED BY: MLP
CHECKED BY: MAM / MED
DRAWN BY: AWL / LMC
APPROVED BY: ARO
DRAWING TITLE:

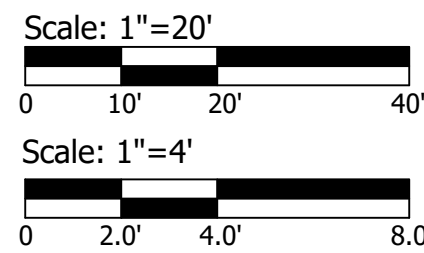
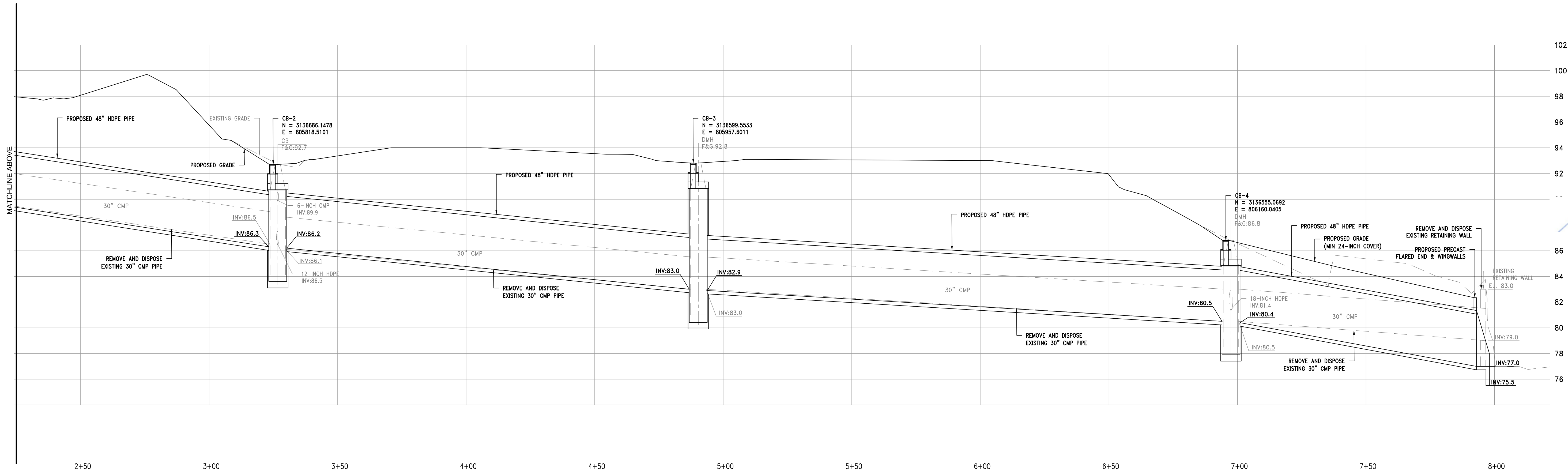
FRIEND STREET AND AMESBURY PARK

DRAWING NO.: 7.0
SHEET NO. 8 OF 14

Y:\JOBS\21 Jobs\21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg, 7/1 Friend Street Culvert.dwg, 3/28/2024 9:56:01 AM
PLA085121 Job 21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg, 7/1 Friend Street Culvert.dwg



FRIEND STREET CONDUIT - PROFILE
(INLET TO STA. 2+25)
SCALE: HORIZ. 1"=10'
VERT. 1"=2'

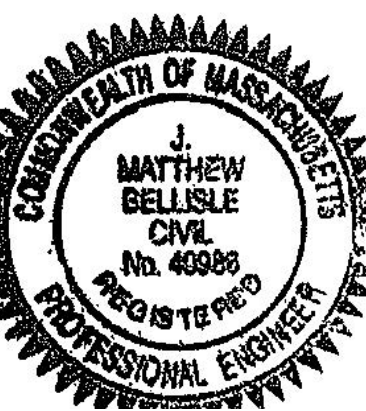


AMESBURY PARK CONDUIT - PROFILE
(STA. 2+25 TO OUTLET)
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

FRIEND ST DRAINAGE IMPROVEMENTS
CITY OF AMESBURY



Matthew Bellisle

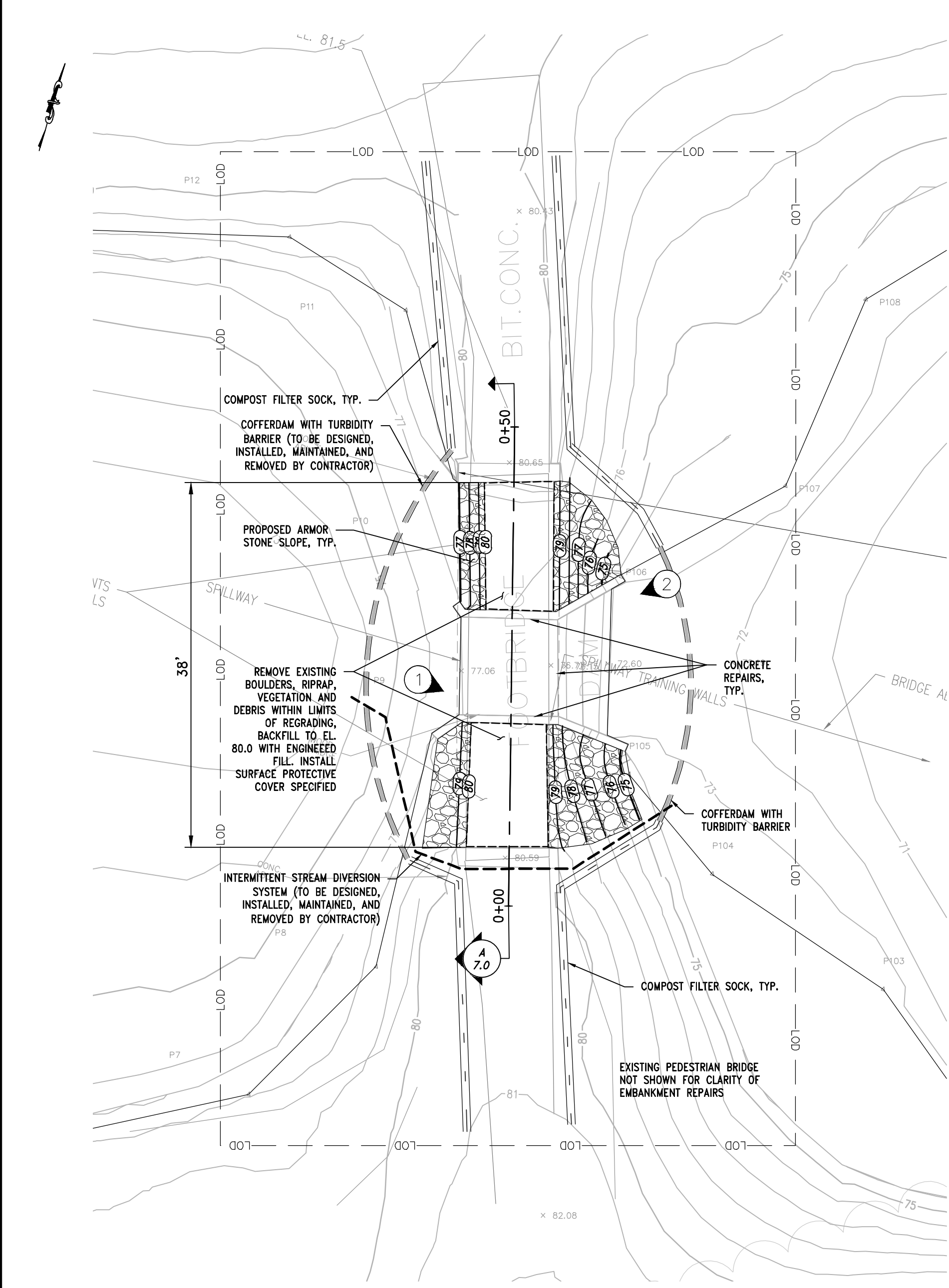
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DRAWING TITLE:

FRIEND STREET AND AMESBURY PARK

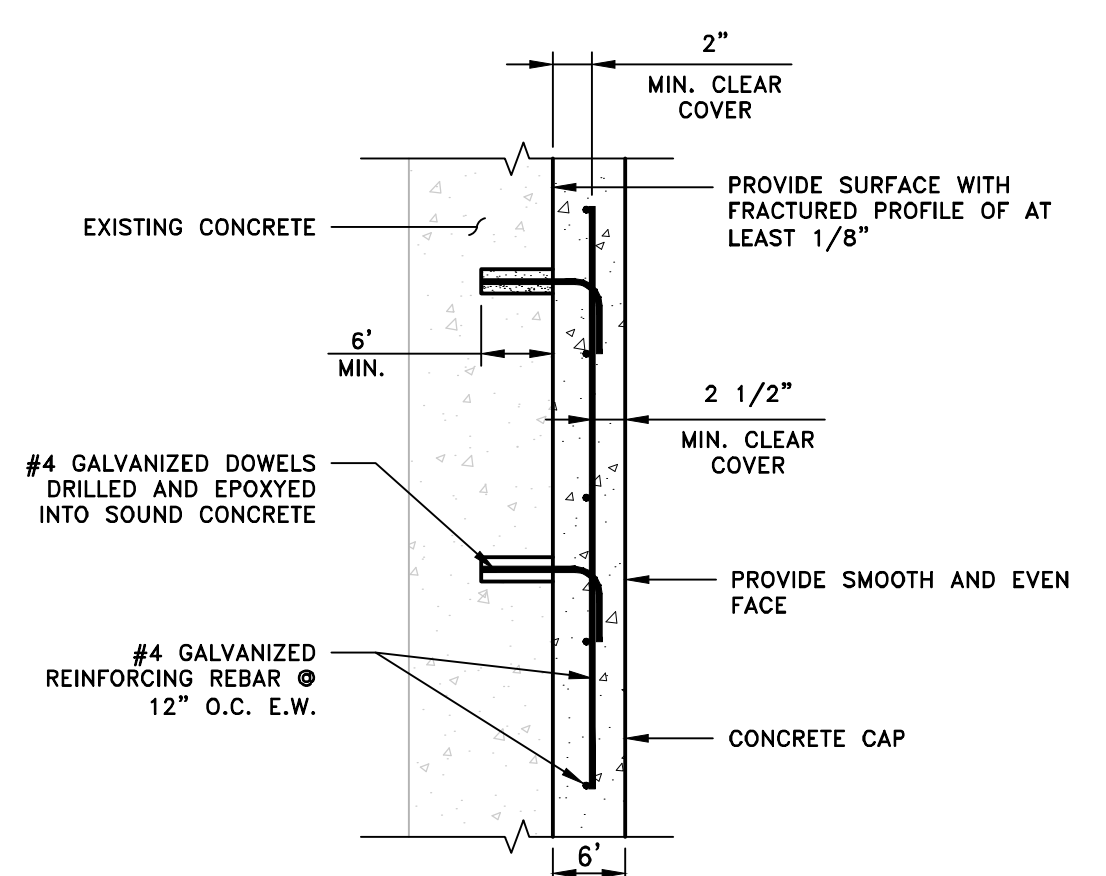
DRAWING NO.:
7.1
SHEET NO. 9 OF 14

ISSUED FOR PERMITTING

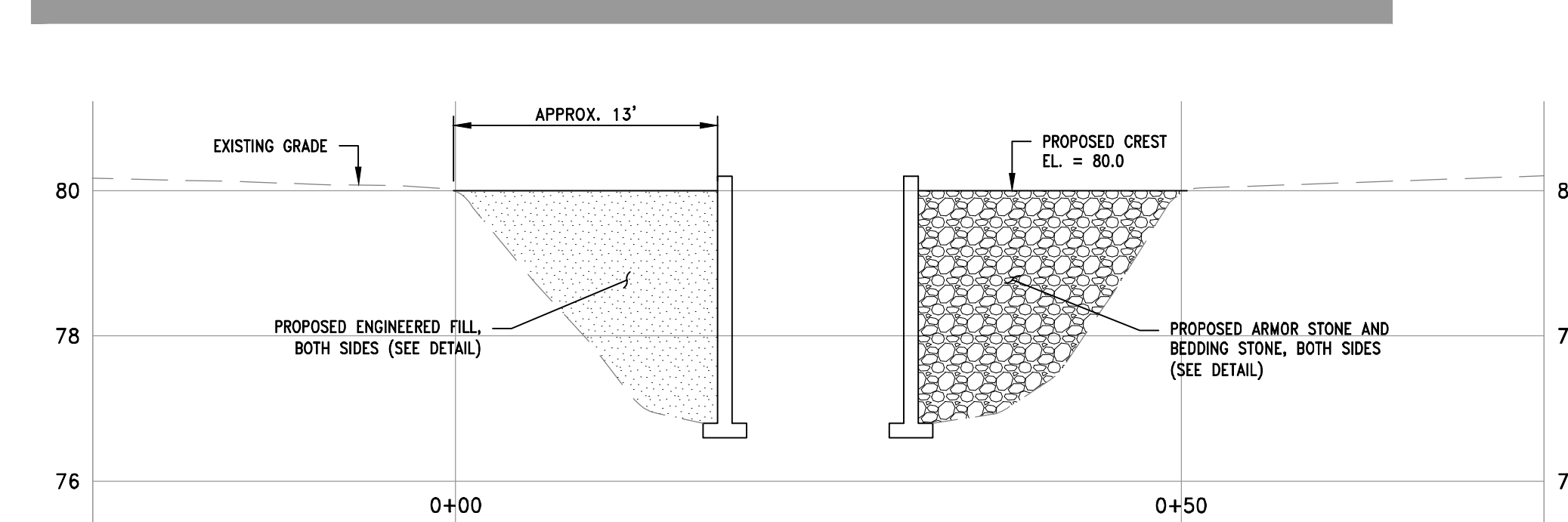
Y:\JOBS\21 Jobs\21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg 8.0 PLEASURE POND DAM.dwg, 3/28/2024 9:57:11 AM
PL08/21 Job 21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg 8.0 PLEASURE POND DAM.dwg



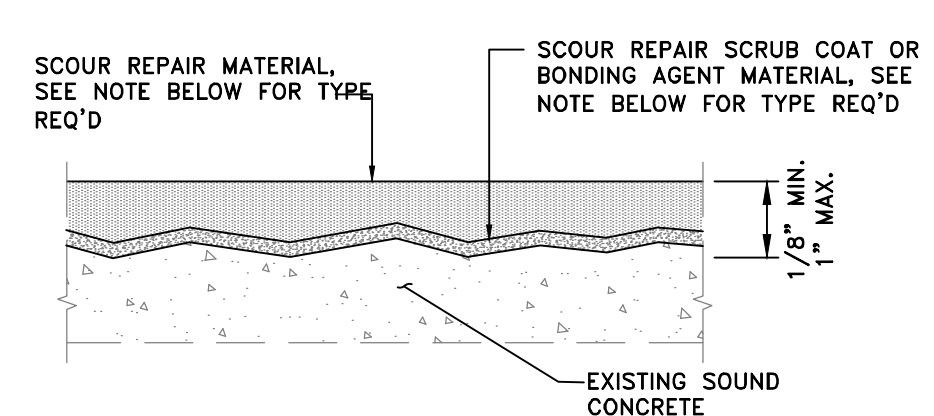
- PLEASURE POND DAM REPAIRS PLAN**
SCALE: 1"=10'
- EMBANKMENT REPAIR NOTES:**
1. INSTALL EROSION CONTROL MEASURES.
 2. INSTALL COFFERDAMS AND TURBIDITY BARRIERS.
 3. INSTALL INTERMITTENT STREAM DIVERSION MEASURES AND DEWATER WORK AREAS.
 4. REMOVE EXISTING BOULDERS AND RIPRAP FROM EMBANKMENT ERODED AREAS (TO EXTENTS SHOWN ABOVE).
 5. EXCAVATE EXISTING EMBANKMENT MATERIAL UNTIL A LEVEL AND UNIFORM SURFACE OR SHELF IS ESTABLISHED.
 6. BACKFILL EMBANKMENT WITH ENGINEERED FILL (SEE SPECIFICATIONS) IN LEVEL LAYERS NOT EXCEEDING 10-INCHES IN UNCOMPACTED THICKNESS.
 7. COMPACT AND MOISTEN SOIL AS REQUIRED TO ACHIEVE A MINIMUM OF 98% OF MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT PREVIOUSLY ESTABLISHED BY THE MODIFIED PROCTOR TEST (ASTM D 1557-12) FOR THE SPECIFIC BACKFILL MATERIAL.
 8. CONTINUE WITH BACKFILLING AND COMPACTION OF ENGINEERED FILL UNTIL MEET REQUIRED DAM CREST ELEVATION AND UPSTREAM AND DOWNSTREAM SLOPES ARE ESTABLISHED.
 9. INSTALL GEOTEXTILE FABRIC OVER REPAIRED EMBANKMENT REPAIR AREA.
 10. CAREFULLY INSTALL BEDDING STONE AND ARMOR STONE OVER FABRIC AND ENSURE NOT TO PUNCTURE OR DAMAGE FABRIC.
 11. UPON COMPLETION OF EMBANKMENT AND CONCRETE DAM REPAIRS, REMOVE COFFERDAMS, TURBIDITY BARRIERS, AND EROSION CONTROL MEASURES.



TYPE I REPAIR REINFORCED CONCRETE FACING
NOT TO SCALE

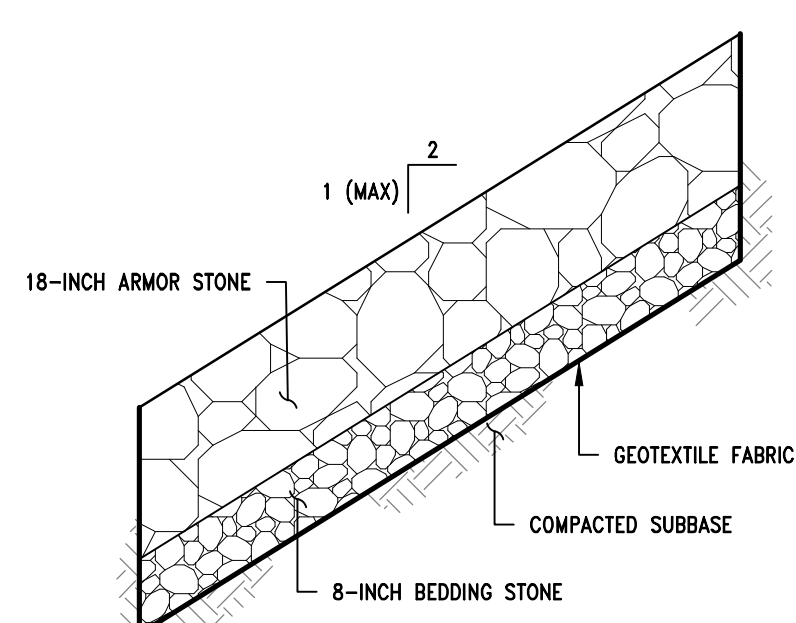


PLEASURE POND DAM SECTION
SCALE: 1"=10'

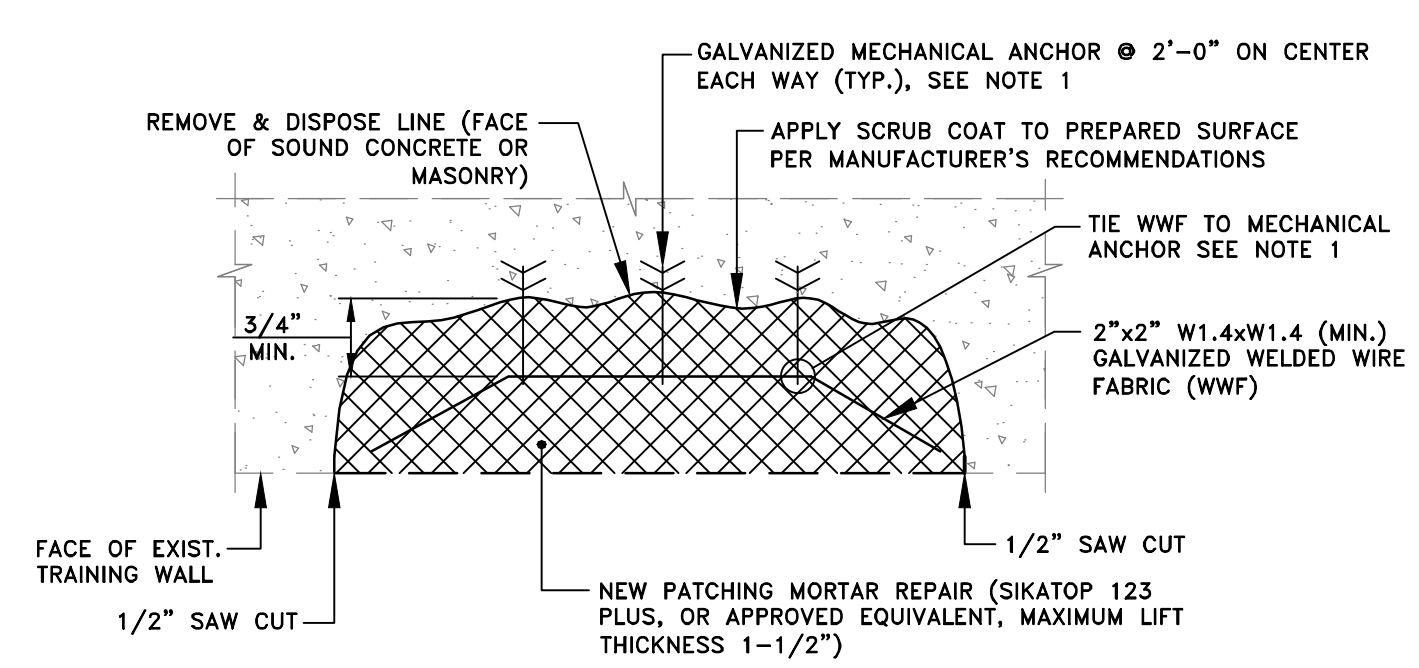


SCOUR REPAIR DETAIL
NOT TO SCALE

- SCOUR REPAIR NOTES:**
1. SCOUR REPAIR SHALL BE MAPPED AND REVIEWED WITH THE ENGINEER PRIOR TO IMPLEMENTATION.
 2. SCOUR REPAIR SHALL BE COMPLETED IN ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS.
 3. PRIOR TO APPLYING THE REPAIR MATERIAL THE CONTRACTOR SHALL APPLY A SCRUB COAT OF THE REPAIR MATERIAL, OR SIKA ARMATEC 110 EPOCEM, OR APPROVED EQUAL.
 4. THE SURFACE OF THE SCOUR SHALL BE ADEQUATELY CLEANED PRIOR TO A UNIFORM APPLICATION OF SIKATOP 122 PLUS, SIKATOP 123 PLUS, OR APPROVED EQUAL, FOLLOWED BY 550W OR APPROVED EQUAL.



SLOPE PROTECTION AT DAM
NOT TO SCALE

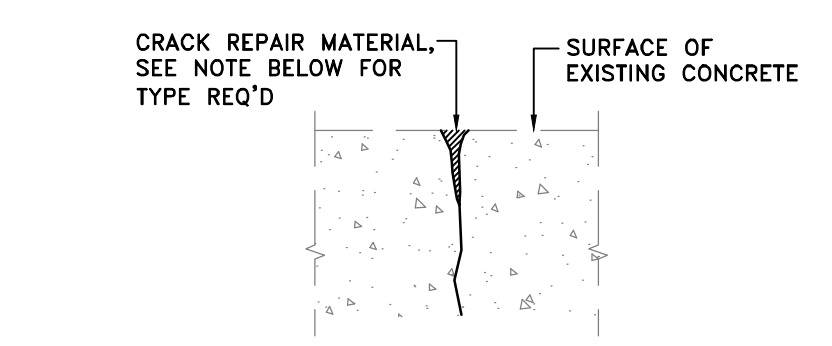


- TYPE II SPALL REPAIR NOTES:**
1. DETAIL APPLIES FOR ALL HAND APPLIED CONCRETE REPAIRS 1 1/2" OR GREATER. FOR REPAIRS THAT NEED TO BE FORMED AND POURED, THE CONTRACTOR SHALL USE SIKACRETE 211 SCC PLUS OR APPROVED EQUIVALENT. ALL SURFACE PREPARATION AND REPAIR MATERIAL INSTALLATION SHALL COMPLY WITH THE MORTAR MANUFACTURER'S TECHNICAL DATA SHEETS AND SPECIFICATIONS.
 2. MATERIAL USED TO REPAIR CONCRETE SPALLS SHALL MATCH THE COLOR AND TEXTURE OF THE EXISTING MATERIAL.
 3. MORTAR SHALL BE APPLIED IN A MANNER AS TO COMPLETELY FILL THE VOIDS AND PROVIDE A SMOOTH SURFACE EVEN WITH THE EXISTING FACE OF CONCRETE.

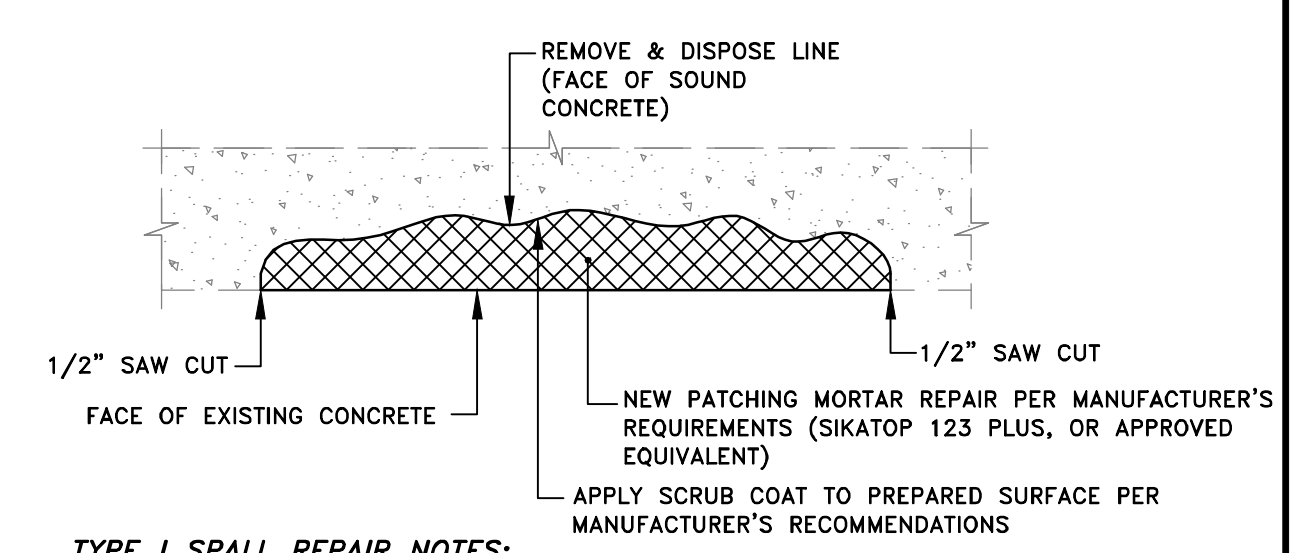
TYPE II CONCRETE SPALL REPAIR DETAIL
NOT TO SCALE



- CONCRETE CLEANING NOTES: (ALL REPAIR TYPES)**
1. PRESSURE WASH ENTIRE WALL AND WIRE BRUSH SPALLED AREAS.
 2. CLEAN ALL CRACKS AND SURFACES PER MANUFACTURERS RECOMMENDATIONS PRIOR TO SEALING.
 3. REMOVE ALL LOOSE CONCRETE TO A SOUND SURFACE.

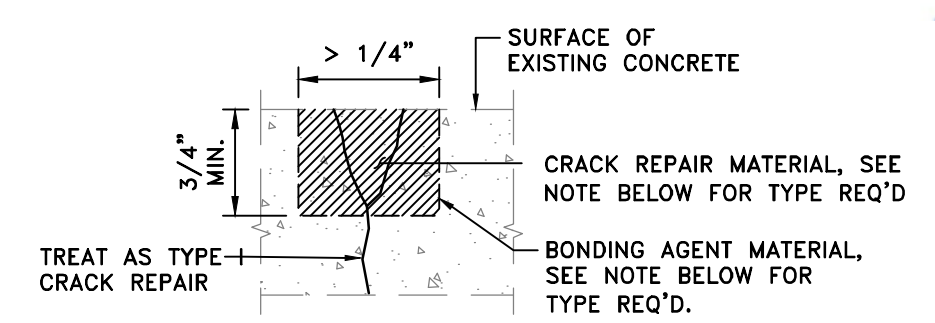


TYPE I CONCRETE CRACK REPAIR DETAIL
NOT TO SCALE



- TYPE I SPALL REPAIR NOTES:**
1. DETAIL APPLIES FOR ALL HAND APPLIED CONCRETE REPAIRS LESS THAN 1 1/2" IN DEPTH. FOR REPAIRS THAT NEED TO BE FORMED AND POURED, THE CONTRACTOR SHALL USE SIKACRETE 211 SCC PLUS OR APPROVED EQUIVALENT. ALL SURFACE PREPARATION AND REPAIR MATERIAL INSTALLATION SHALL COMPLY WITH THE MORTAR MANUFACTURER'S TECHNICAL DATA SHEETS AND SPECIFICATIONS.
 2. MATERIAL USED TO REPAIR CONCRETE SPALLS SHALL MATCH THE COLOR AND TEXTURE OF THE EXISTING MATERIAL.
 3. MORTAR SHALL BE APPLIED IN A MANNER AS TO COMPLETELY FILL THE VOIDS AND PROVIDE A SMOOTH SURFACE EVEN WITH THE EXISTING FACE OF CONCRETE.

TYPE I CONCRETE SPALL REPAIR DETAIL
NOT TO SCALE



TYPE II CONCRETE CRACK REPAIR DETAIL
NOT TO SCALE

- TYPE II CRACK REPAIR NOTES:**
1. SAW CUT LOOSE CONCRETE TO A 3/4" MINIMUM DEPTH OR UNTIL THE CRACK WIDTH IS LESS THAN 1/16", WHICHEVER IS DEEPER.
 2. PRIOR TO APPLYING THE REPAIR MATERIAL THE CONTRACTOR SHALL APPLY A SIKA ARMATEC 110 EPOCEM, OR APPROVED EQUAL.
 3. PATCH CRACK WITH SIKATOP 123 PLUS OR APPROVED EQUAL.
 4. CRACK REPAIR SHALL BE COMPLETED IN ACCORDANCE WITH ALL MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION OF THE APPROVED SEALANT.
 5. THE CONTRACTOR SHALL PROVIDE MEASURES TO PROTECT SURROUNDING AREAS FROM EXCESS REPAIR MATERIAL.
 6. EXCESS REPAIR MATERIAL SHALL BE REMOVED FROM THE FACE OF THE EXISTING CONCRETE.
 7. CONTRACTOR SHALL NOTIFY ENGINEER AFTER THE CRACK IS CLEANED BUT PRIOR TO REPAIR MATERIAL INSTALLATION.



SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON ORIGINAL DRAWING

FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY



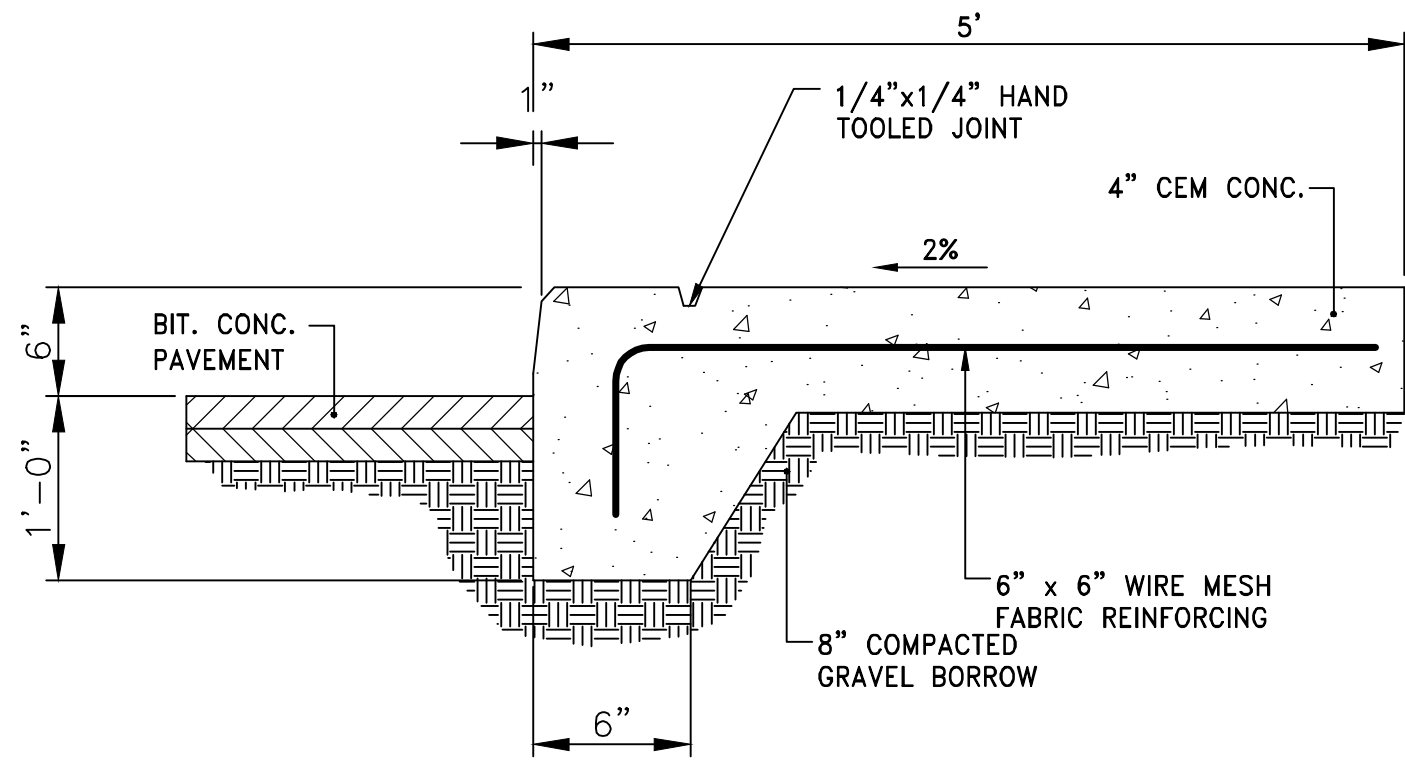
PROJECT NO.: 21200.00
DATE: APRIL 2, 2024
SCALE: AS NOTED
DESIGNED BY: MLP
CHECKED BY: MAM / MED
DRAWN BY: AWL / LMC
APPROVED BY: ARO
DRAWING TITLE:
PLEASURE POND (AT PARK) DAM REPAIRS

DRAWING NO.:
8.0

SHEET NO. 10 OF 14

ISSUED FOR PERMITTING

Y:\JOBS\21 Jobs\21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg 9.0 MISC DETAILS.dwg, 3/28/2024 9:57:29 AM
PLA085.21 Job 21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg 9.0 MISC DETAILS.dwg

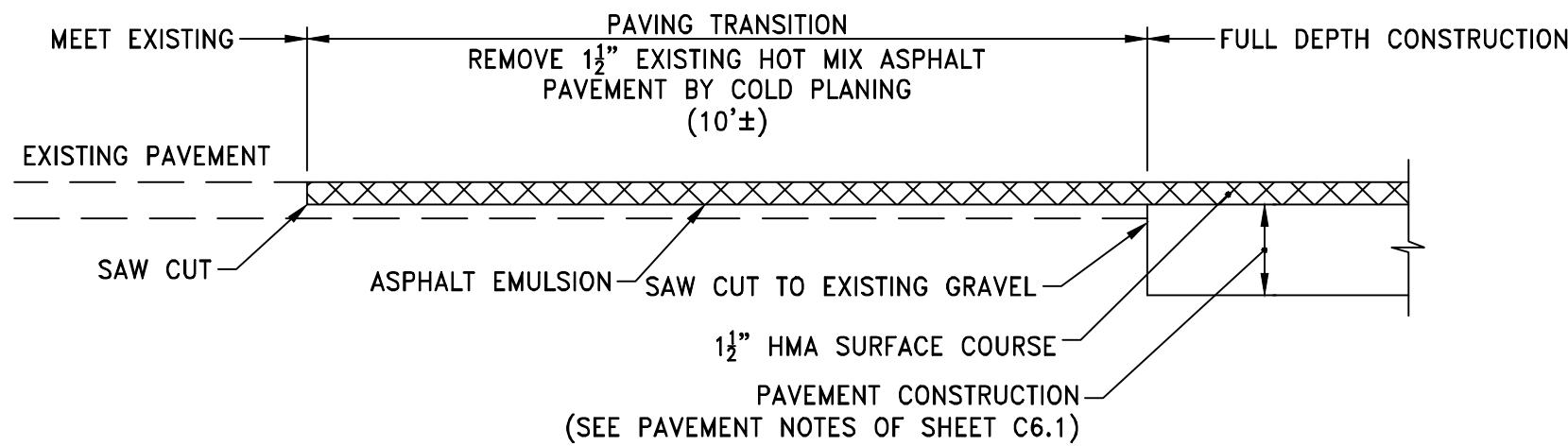


NOTES:

1. CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 701 OF THE MASSDOT STANDARD SPECIFICATIONS.
2. WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH SECTION M8.01.2 OF THE MASSDOT STANDARD SPECIFICATIONS.
3. CURB RAMP, TRANSITIONS, AND DETECTABLE STRIP SHALL COMPLY WITH ADA STANDARDS.

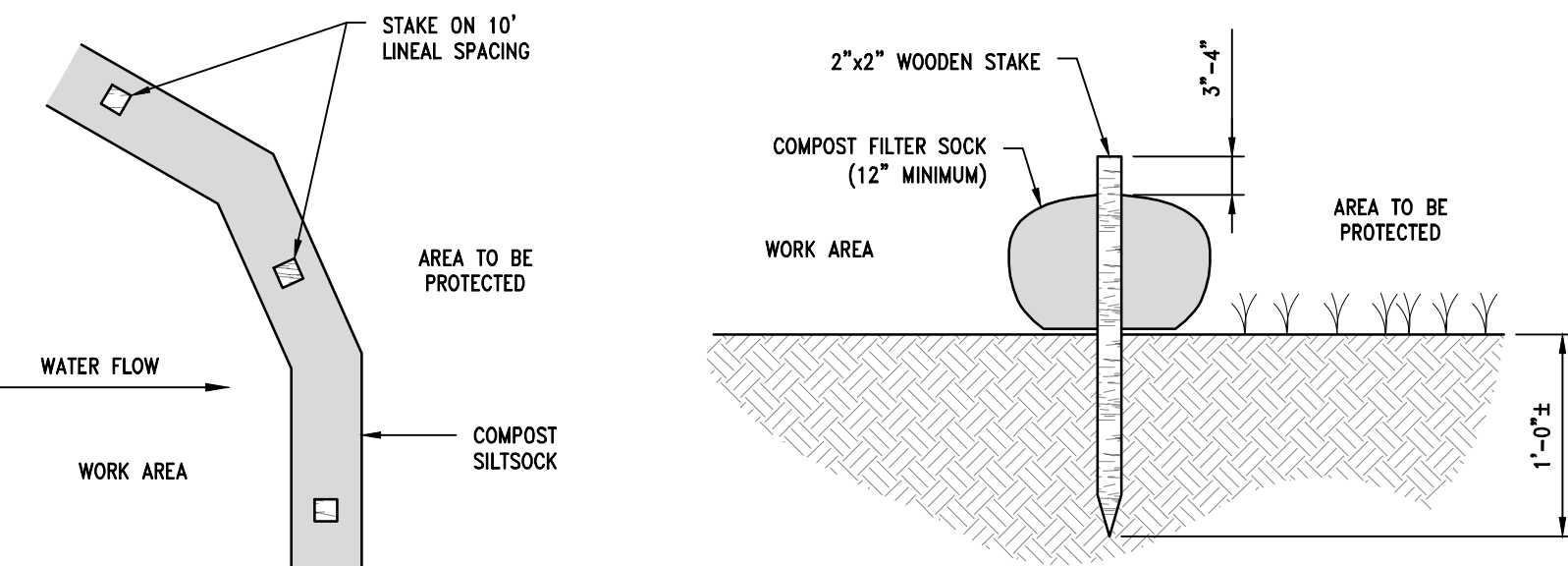
CEMENT CONCRETE SIDEWALK WITH INTEGRAL CURB

NOT TO SCALE



FULL DEPTH CONSTRUCTION TRANSITION

NOT TO SCALE

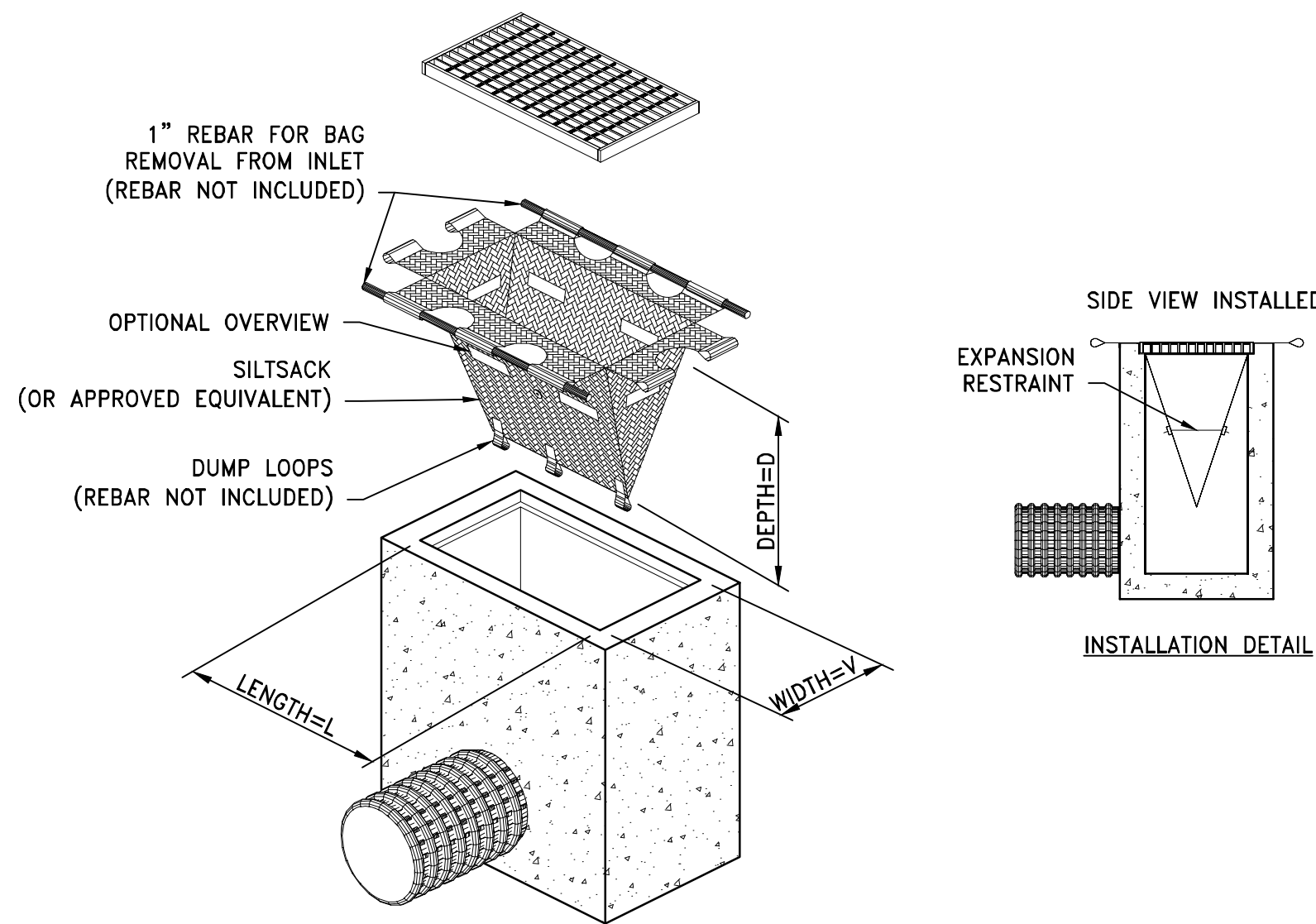


NOTES:

1. COMPOST/ SOIL/ ROCK/ SEED FILL TO MEET APPLICATION REQUIREMENTS.
2. COMPOST MATERIAL TO BE REMOVED OR DISPERSED ON SITE AS DETERMINED BY ENGINEER.
3. IF SOCK NETTING MUST BE JOINED, FIT BEGINNING OF NEW SOCK OVER END OF OLD SOCK, OVERLAPPING BY 2 FEET AND STACK OVERLAP. IF SOCK NETTING IS NOT JOINED, OVERLAP OLD SOCK WITH NEW ONE BY MINIMUM OF 2 FEET.

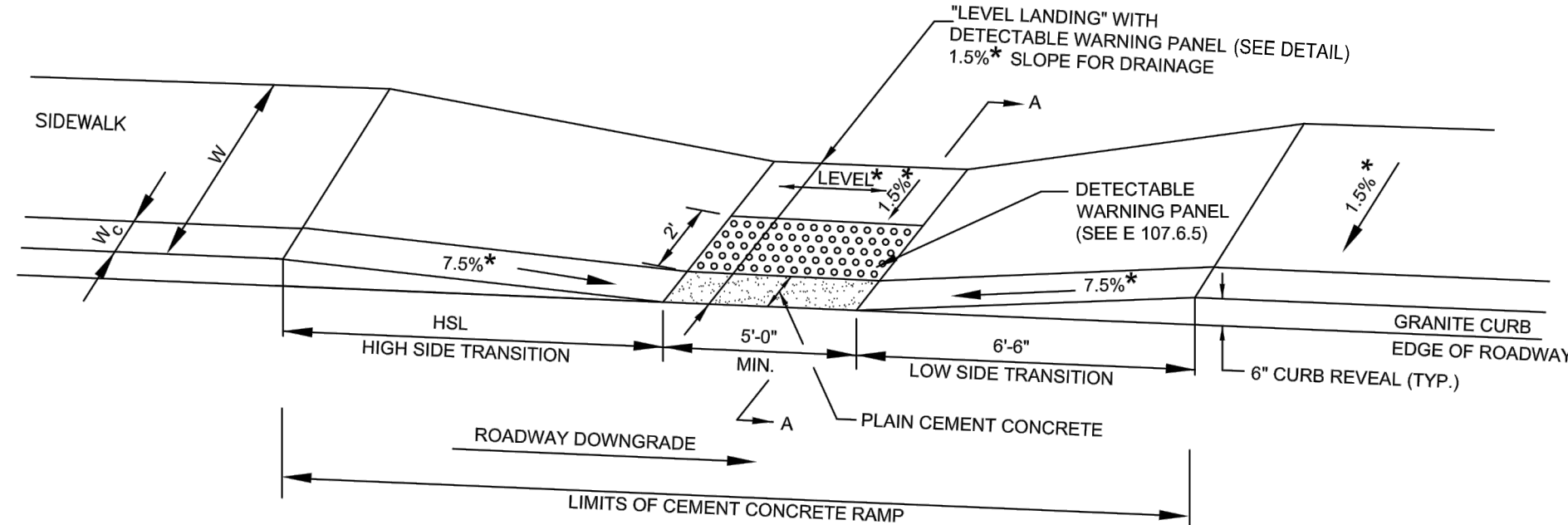
COMPOST FILTER SOCK DETAIL

NOT TO SCALE



TEMPORARY INLET PROTECTION

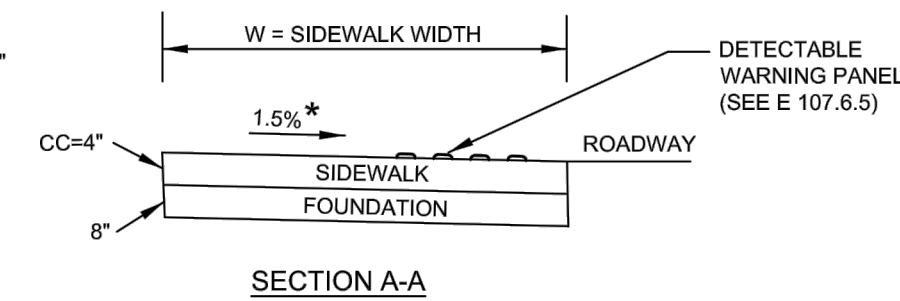
NOT TO SCALE



LEGEND

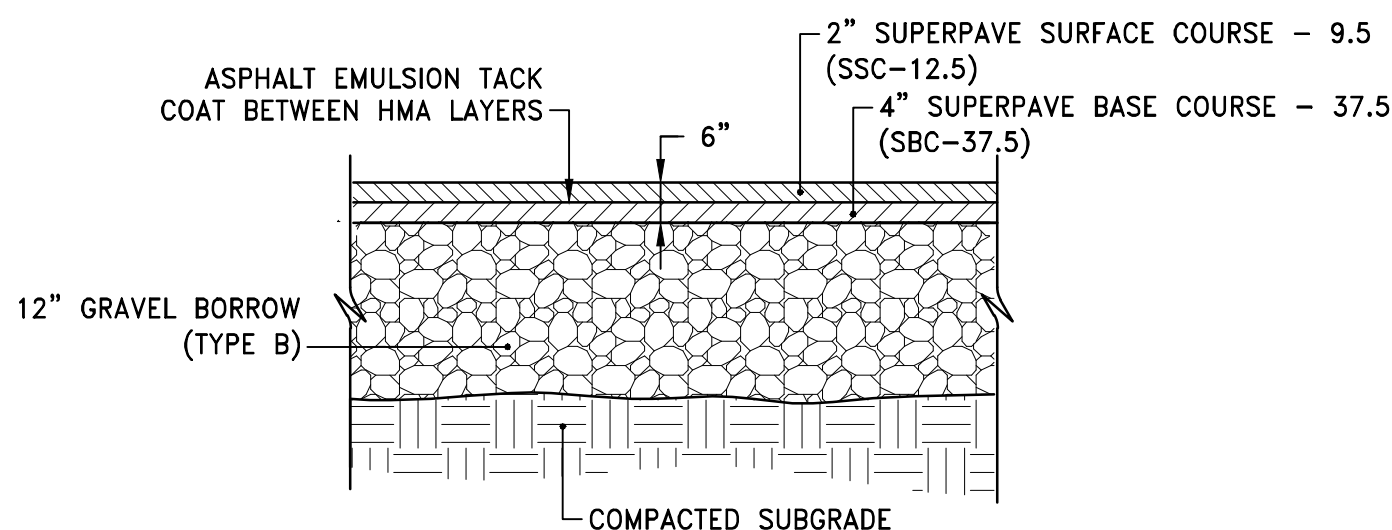
- HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)
W = SIDEWALK WIDTH
W_C = CURB WIDTH
CC = CEMENT CONCRETE
* = TOLERANCE FOR CONSTRUCTION ±0.5%
USABLE SIDEWALK WIDTH PER AAB = W-W_C
USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'-0"
SEE E 107.6.5 FOR DETAILS OF DETECTABLE WARNING PANEL

NOTE:
ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS



WHEELCHAIR RAMP WITH DETECTABLE WARNING PANEL

NOT TO SCALE

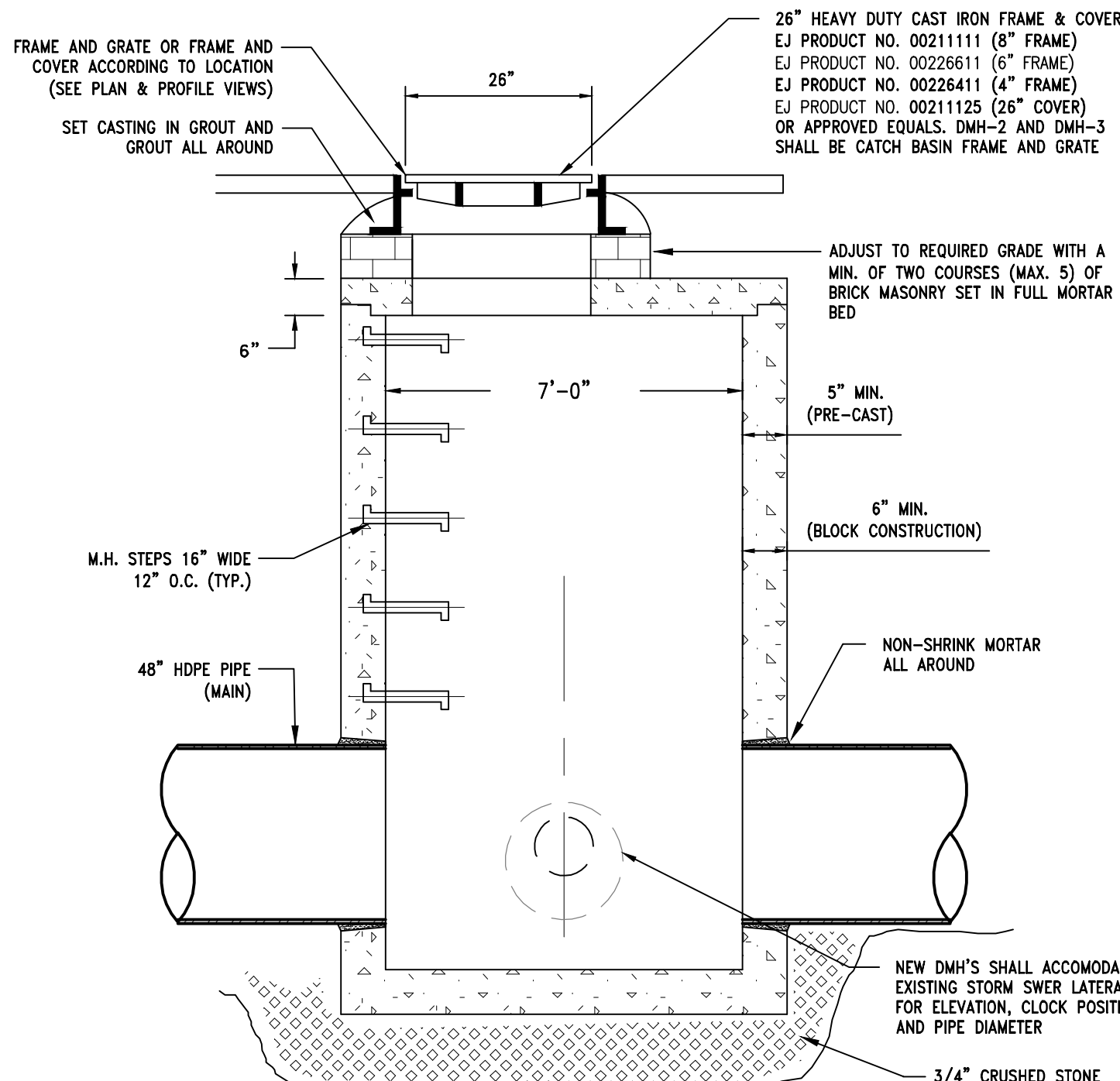


NOTE:

1. SUBMIT JOB MIX FORMULAS TO ENGINEER FOR APPROVAL PRIOR TO PLACEMENT.
2. GRAVEL SHALL BE IN ACCORDANCE WITH SECTION M1.03.0 OF THE MASSDOT STANDARD SPECIFICATIONS.
3. HOT MIX ASPHALT PAVEMENTS SHALL BE IN ACCORDANCE WITH SECTION 460 OF THE MASSDOT STANDARD SPECIFICATIONS.

HOT MIX ASPHALT PAVEMENT

NOT TO SCALE



NOTES:

1. TYPE, ALIGNMENT, AND INVERTS OF ALL EXISTING DRAIN LINES TO BE TIED INTO THE MANHOLE ARE APPROXIMATED AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO MANHOLE FABRICATIONS.
2. SEAL ALL HOLES AND INTERIOR/EXTERIOR JOINTS WITH HYDRAULIC CEMENT.
3. MANUFACTURED TO MEET OR EXCEED LATEST ASTM C-478 & AASHTO M 199 SPECS.
4. CEMENT CONCRETE SHALL BE TYPE I/II, 4,000 PSI, 3/4-INCH, 610 LB., PER ASTM C-478 (6.1).
5. REINFORCED TO MEET OR EXCEED H-20 LOADING. REINFORCED STEEL TO MEET OR EXCEED LATEST ASTM A 185 SPECS.
6. BUTYL RUBBER JOINT SEALANT PER ASTM C-990 & AASHTO M-198.
7. INCLUDE ANTI-FLOATATION COLLARS OR SPECIAL BASE SECTION AS REQUIRED.
8. GENERAL CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR EACH DRAIN MANHOLE PRIOR TO ORDERING AND MANUFACTURING AND SHALL INCLUDE STRUCTURE NUMBER AND STATIONING ACCORDING TO ENGINEER'S CONSTRUCTION PLAN.

TYPICAL DRAIN MANHOLE DETAIL

NOT TO SCALE

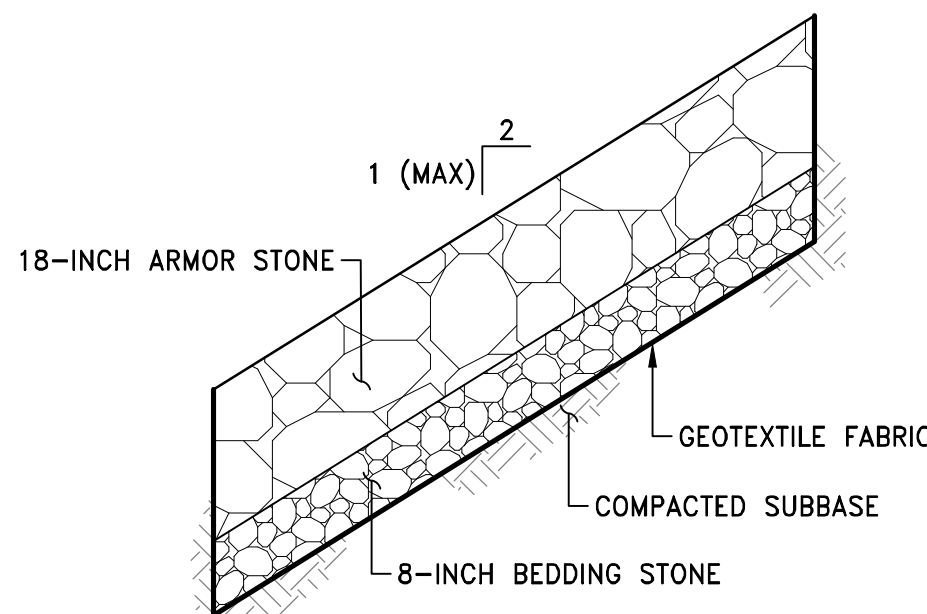
ROADWAY PROFILE GRADE	* HIGH SIDE TRANSITION LENGTH
%	ENGLISH UNITS
=0%	6'-6"
>0% TO 1%	7'-8"
>1% TO 2%	9'-0"
>2% TO 3%	11'-0"
>3% TO 4%	14'-0"
>4% TO 5%	15'-0" Max

NOTE:

- * BASED ON A DESIGN SLOPE OF 7.5% AND A REVEAL OF 6".

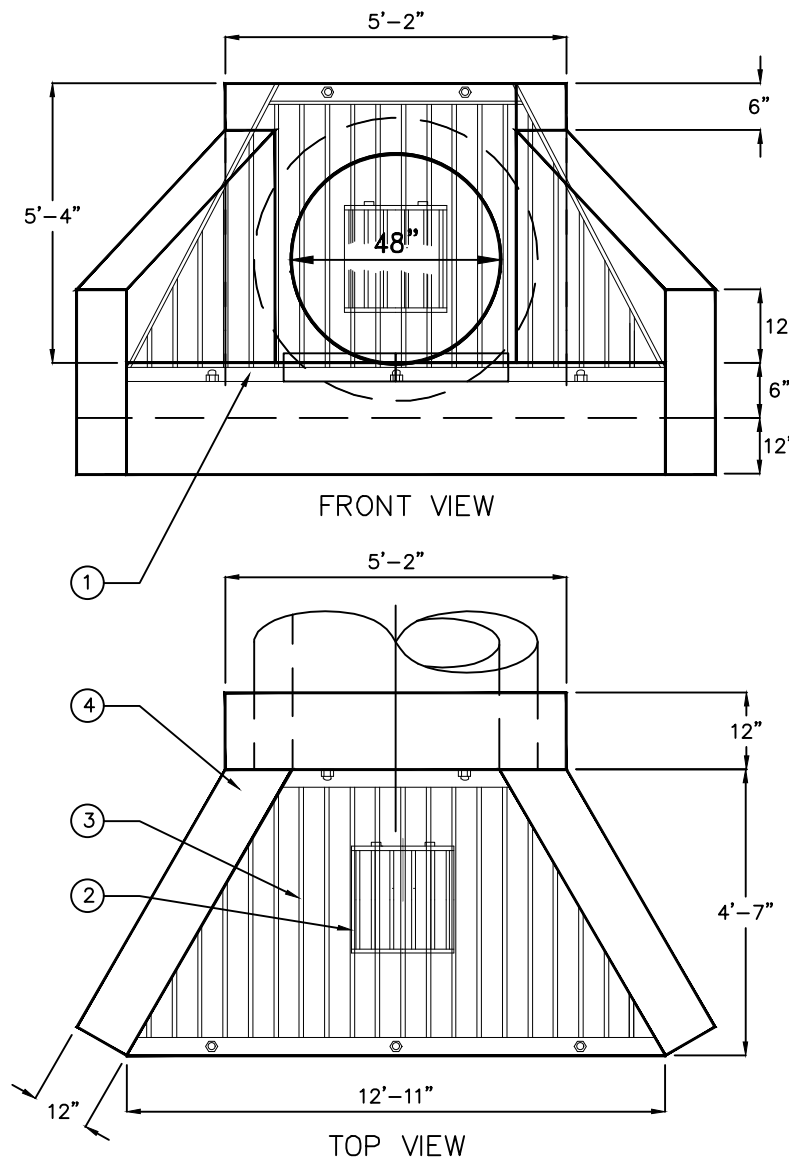
CURB TRANSITION LENGTH

NOT TO SCALE



SLOPE PROTECTION AT DAM

NOT TO SCALE

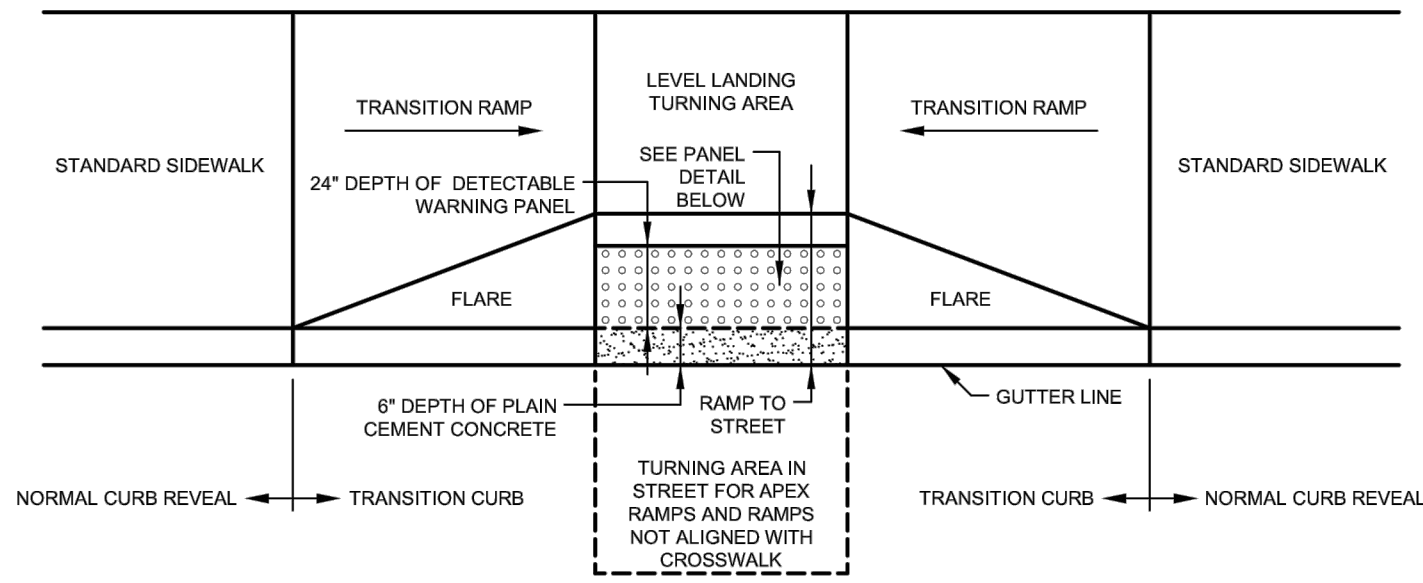


NOTE:

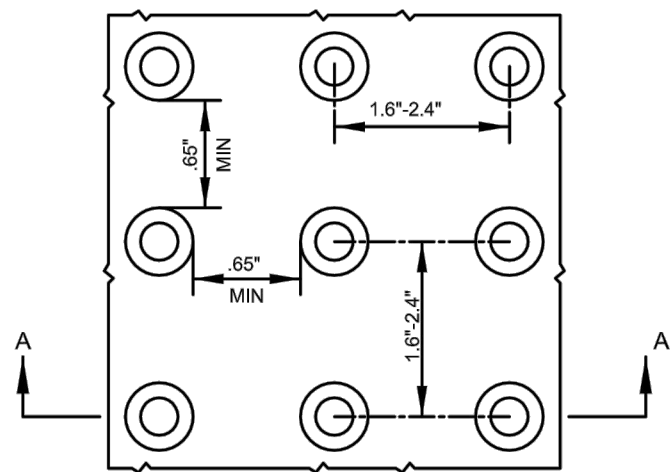
1. PRECAST CEMENT CONCRETE FLARED END TO INCLUDE HEADWALL, WINGWALLS, FOOTING, AND REMOVABLE DEBRIS RACK.
2. CEMENT CONCRETE SHALL BE CLASS I/II CONCRETE, 4000 PSI AT 28 DAY, MONOLITHIC STRUCTURE.
3. GRADE 60 STEEL REINFORCEMENT, NO 4, CONFORMS TO ASTM A615.
4. DEBRIS RACK STEEL AND HARDWARE SHALL BE ASTM A36 CARBON STEEL, HOT DIPPED GALVANIZED STEEL.
5. MANUFACTURERS INCLUDE PARK PRODUCTS, SHEA CONCRETE PRODUCTS, ARROW CONCRETE PRODUCTS, OR EQUAL.
6. PRECAST FLARED END SHALL BE INSTALLED AT FRIEND STREET INLET AND AMESBURY PARK DISCHARGE LOCATION (PLEASURE POND).

PRECAST FLARED END SECTION WITH TRASH RACK DETAIL

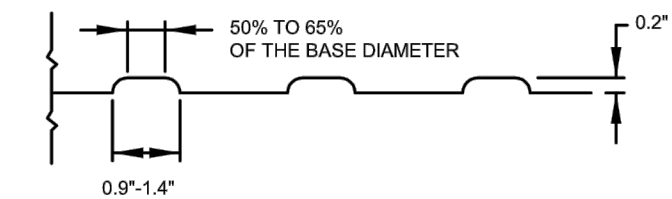
NOT TO SCALE



TYPICAL INSTALLATION



DETAIL OF DETECTABLE WARNING PANEL



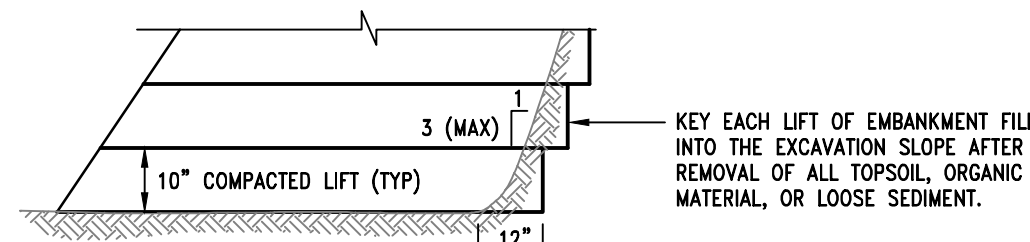
SECTION A-A

NOTE:

- PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

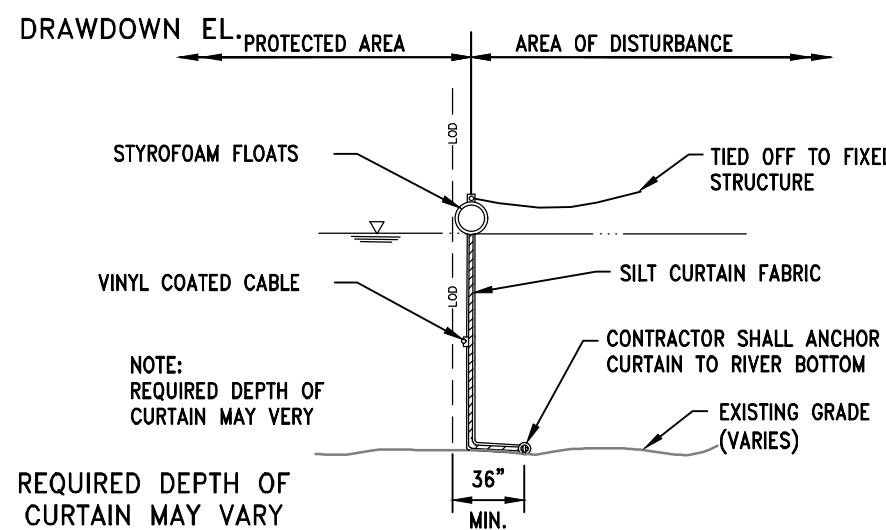
DETECTABLE WARNING PANEL

NOT TO SCALE



PLACEMENT OF FILL MATERIALS

NOT TO SCALE



TYPICAL TURBIDITY BARRIER

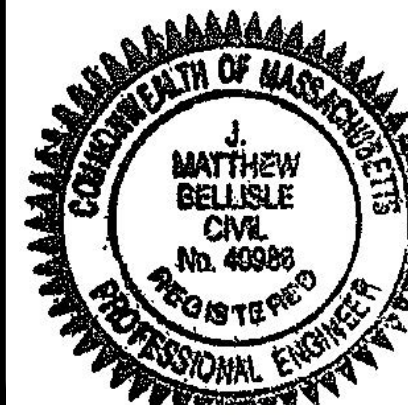
NOT TO SCALE

ISSUED FOR PERMITTING



FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY

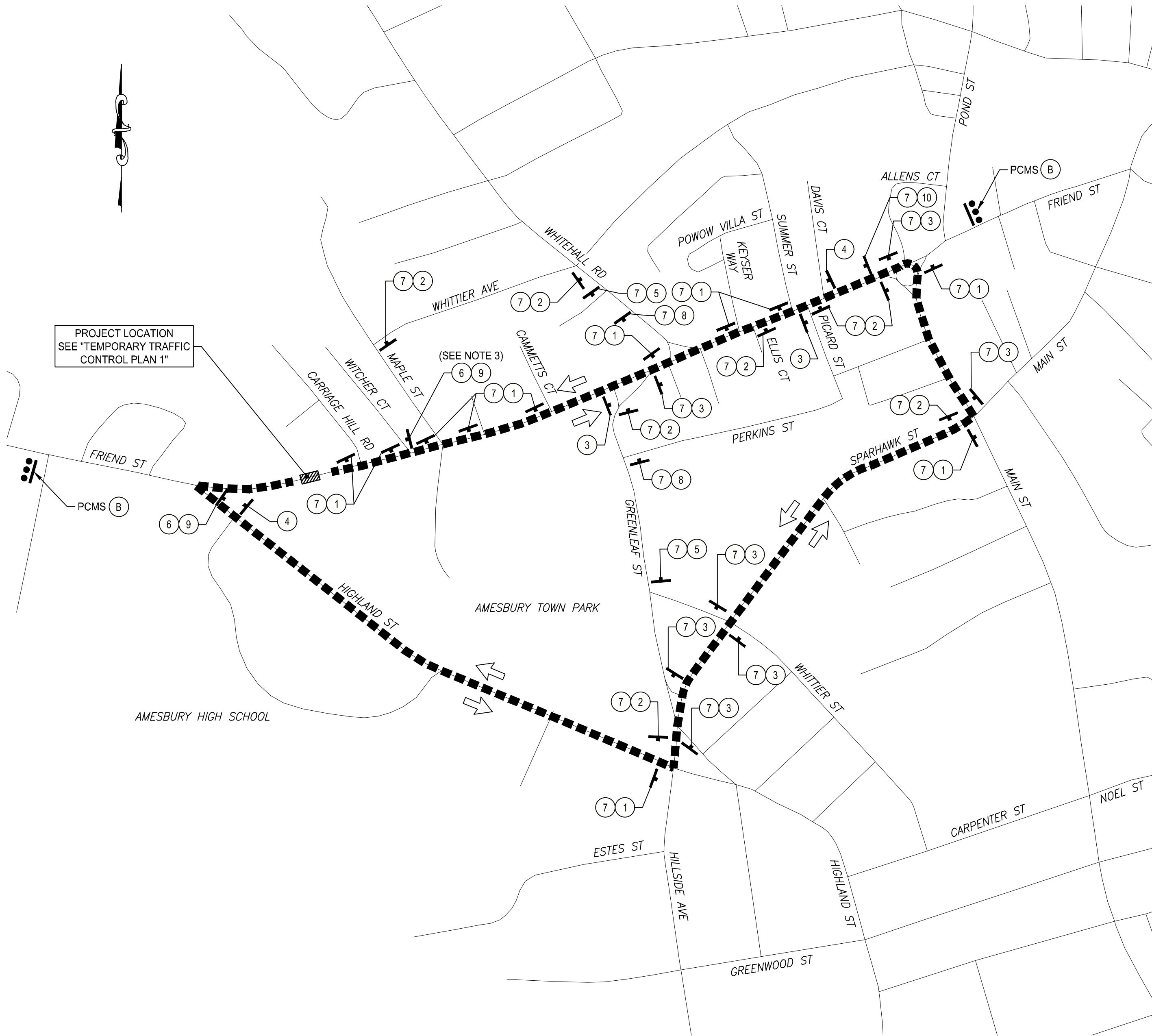


PROJECT NO.: 21200.00
DATE: APRIL 2, 2024
SCALE: AS NOTED
DESIGNED BY: MLP
CHECKED BY: MAM / MED
DRAWN BY: AWL / LMC
APPROVED BY: ARO
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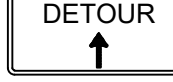
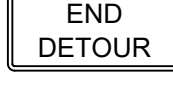
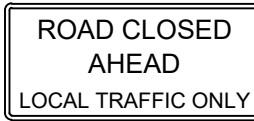
MISCELLANEOUS
DETAILS - 1

DRAWING NO.:
9.0
SHEET NO. 11 OF 14

Y:\JOBS\21 Jobs\21200.00 Amesbury-FriendStDrainageImprovements-MA.dwg, 10.1 TTCP PLAN 2.dwg, 3/28/2024 9:59:00 AM



DETOUR MAP
SCALE: 1"=300'

DETOUR TRAFFIC SIGN SUMMARY															
SYMBOL	IDENTI- FICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)					NUMBER OF SIGNS REQUIRED	COLOR			UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
		WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK- GROUND	LEGEND		BORDER				
1	M4-9L	30	24		MUTCD STANDARD					11	FLR ORANGE	BLACK	BLACK	5.0	55.0
2	M4-9R	30	24							8				5.0	40.0
3	M4-9V	30	24							9				5.0	45.0
4	M4-8a	24	18							2				3.0	6.0
5	W20-3	36	36							2				9.0	18.0
6	R11-4	60	30							2	WHITE	BLACK	BLACK	12.5	25.0
7	SP-1	24	18		6	4	—			30	FLR ORANGE	BLACK	BLACK	3.0	90.0
8	SP-2	36	36		MUTCD STANDARD					2	FLR ORANGE	BLACK	BLACK	9.0	18.0
9	M4-10R	48	18							2	WHITE	BLACK	BLACK	6.0	12.0
10	M4-10L	48	18							1	WHITE	BLACK	BLACK	6.0	6.0
TOTAL AREA OF SIGNS (SQUARE FEET)													315.00		

NOTES

- SEE "TEMPORARY TRAFFIC CONTROL PLAN 1" FOR ALL NOTES PERTAINING TO THIS SHEET.
- SEE "TEMPORARY TRAFFIC CONTROL PLAN 1" FOR PEDESTRIAN DETOUR.
- TRAFFIC CONTOL AND SIGN SET-UP SHALL MIMIC THAT SHOWN ON TEMPORARY TRAFFIC CONTROL PLAN 1.



SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON
ORIGINAL DRAWING

FRIEND ST DRAINAGE IMPROVEMENTS

CITY OF AMESBURY



Matthew Bellisle

PROJECT NO.: 21200.00
DATE: APRIL 2, 2024
SCALE: AS NOTED
DESIGNED BY: KS
CHECKED BY: MAM / KS
DRAWN BY: AWL / RB
APPROVED BY: KM
DRAWING TITLE:

TEMPORARY TRAFFIC
CONTROL PLAN 2

DRAWING NO.:

10.1

SHEET NO. 14 OF 14

ISSUED FOR PERMITTING