

CITY OF SALEM, MASSACHUSETTS

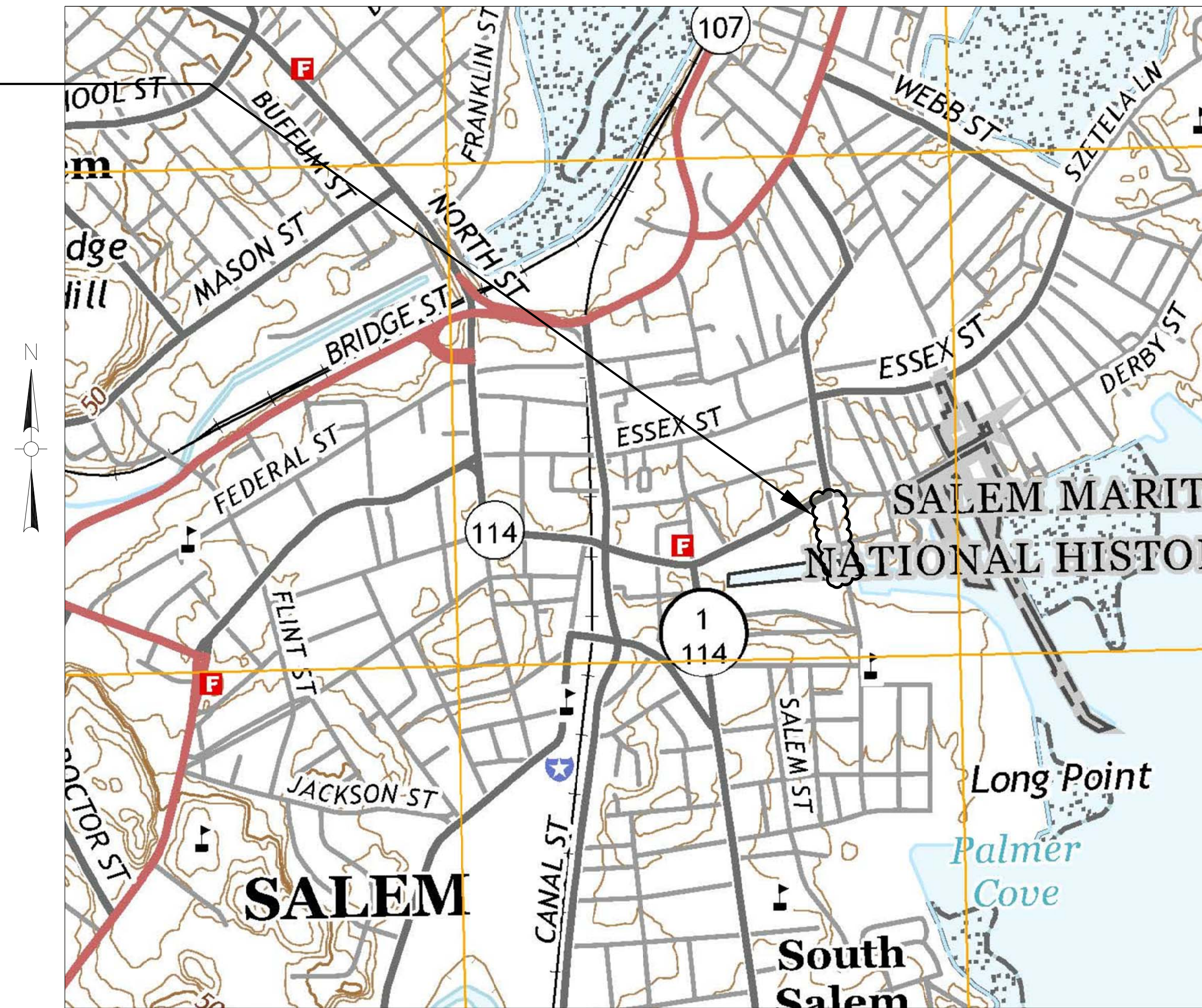
CONGRESS STREET DRAIN REPLACEMENT PROJECT NOVEMBER 2020

IFB NO. 21-18-230

PROJECT LOCATION

CITY OF SALEM
KIMBERLEY DRISCOLL
Mayor

DAVID KNOWLTON, P.E.
City Engineer



LOCUS MAP (NO SCALE)

DRAWING INDEX:

G-1	COVER SHEET
G-2	GENERAL NOTES AND LEGEND
C-1	EXISTING CONDITIONS, DEMOLITION AND RESTORATION
C-2	UTILITY PLAN
C-3	TRAFFIC MANAGEMENT PLAN
D-1 to D-4	DETAILS

NEW ENGLAND CIVIL ENGINEERING CORP.



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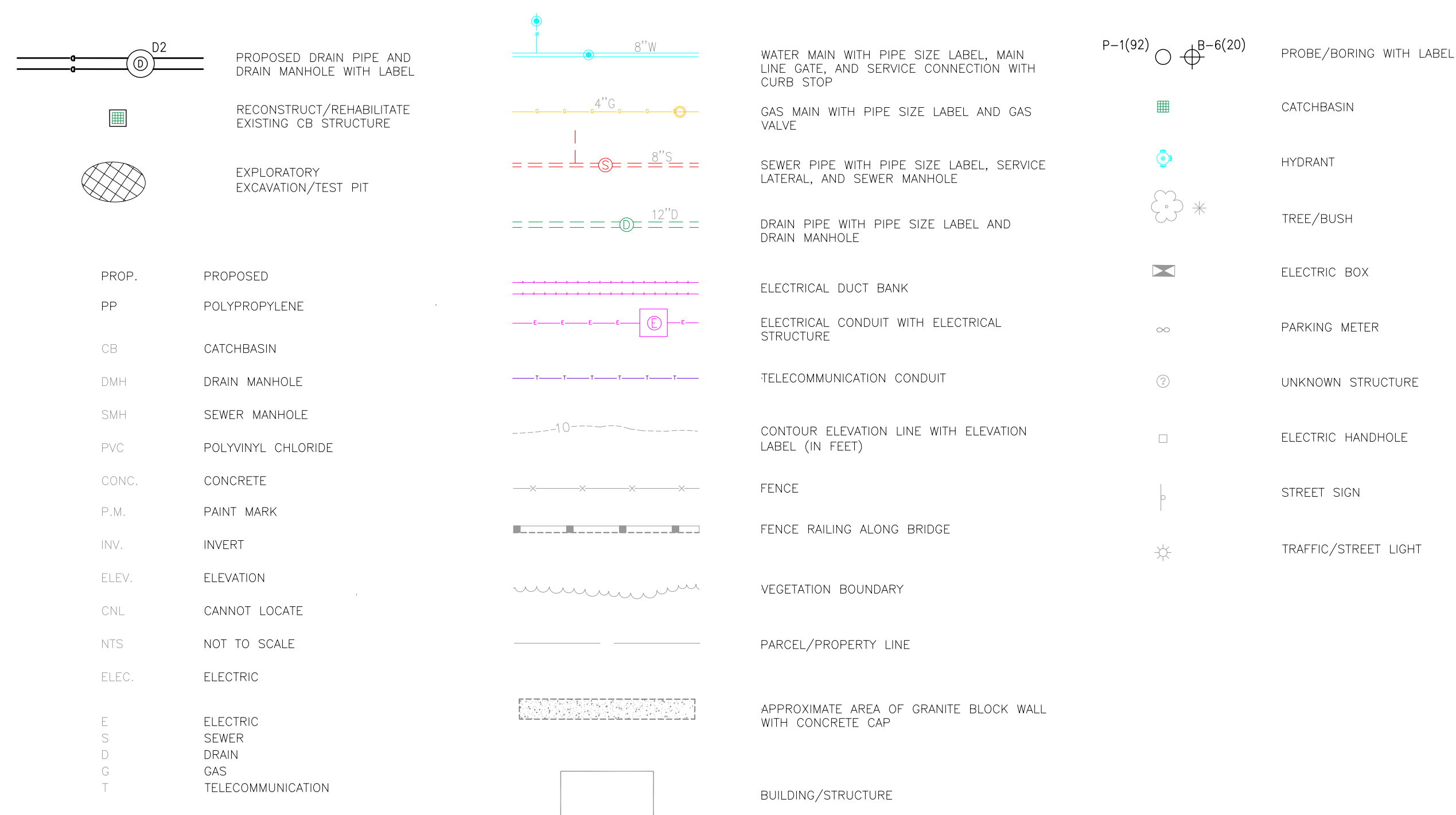
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GENERAL NOTES

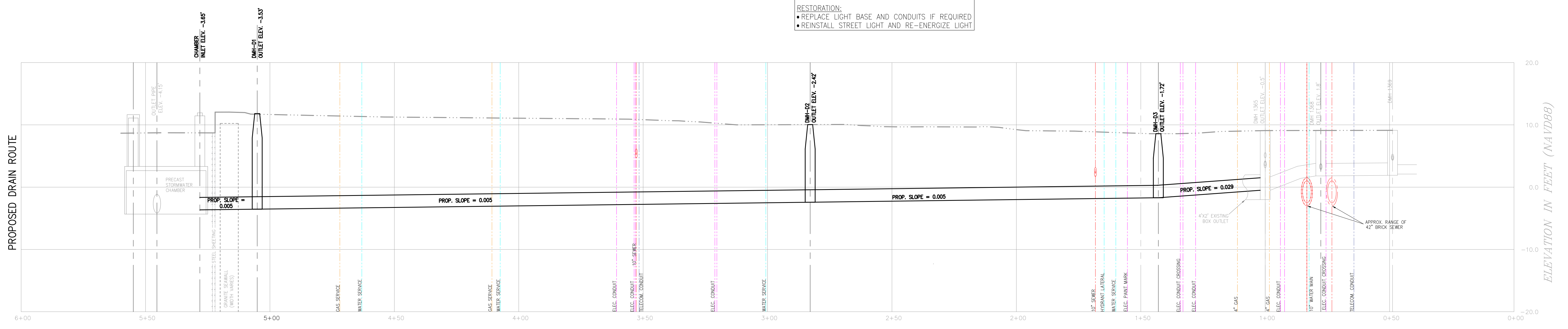
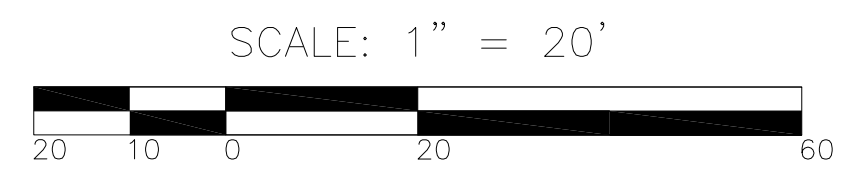
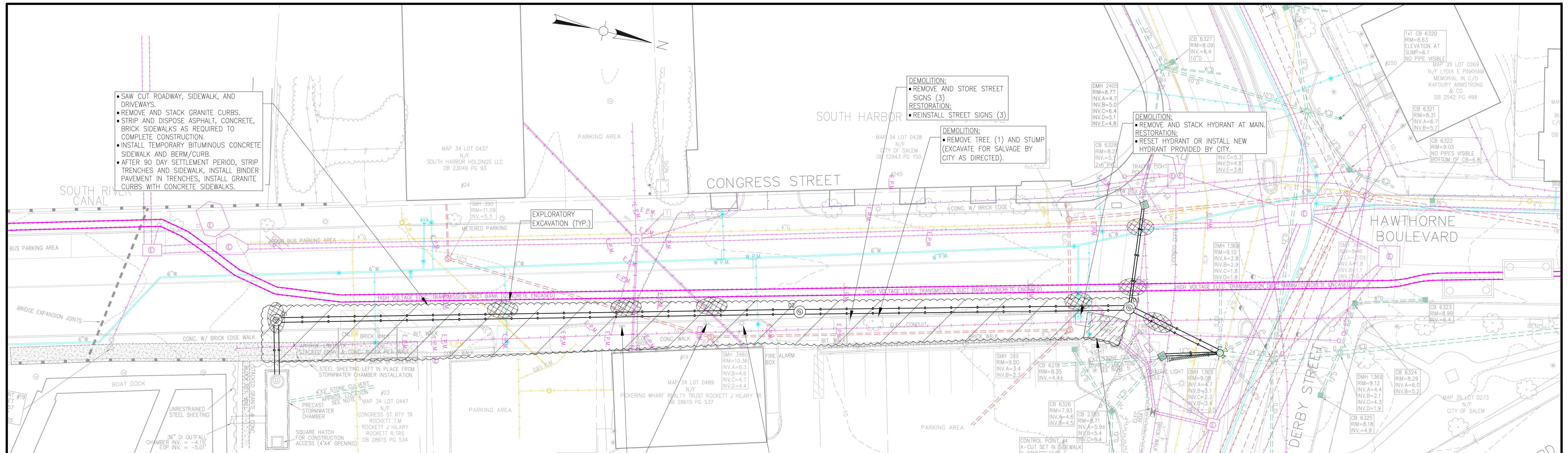
1. HORIZONTAL DATUM BASED ON MASSACHUSETTS MAINLAND COORDINATE SYSTEM, NAD83. VERTICAL DATUM BASED ON NAVD88.
2. BASE SURVEY INFORMATION PROVIDED BY CITY OF SALEM, MASSGIS, AND NATIONAL GRID (NEP).
3. BENCHMARKS ARE NOT PROVIDED BY THE OWNER. CONTRACTOR RESPONSIBLE TO ESTABLISH BENCHMARKS AND MAINTAIN AND RESET BENCHMARKS AS REQUIRED. TEMPORARY BENCHMARKS SHOWN ARE FROM NATIONAL GRID INFORMATION.
4. THE EXISTENCE, SIZE, PIPE MATERIAL, LOCATION, ORIENTATION AND DESCRIPTION OF UTILITIES ARE FROM THE EXISTING INFORMATION PROVIDED, BUT ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES BEFORE EXCAVATING.
5. ALL RIM AND INVERT ELEVATIONS ARE APPROXIMATE AND ARE SHOWN TO WITHIN 0.1 FEET. CONTRACTOR TO COMPLETE INDEPENDENT SURVEY VERIFICATION IN THE FIELD BY PROFESSIONAL LAND SURVEYOR.
6. ALL BURIED ELECTRONIC AND TELECOM CONDUITS ARE SHOWN SCHEMATICALLY AND NOT TO SCALE, CONTRACTOR TO ASSUME ALL BURIED UTILITIES ARE INSTALLED IN MULTIPLE CONDUIT DUCT BANKS AND MAY BE CONCRETE ENCASED. THE HIGH VOLTAGE ELECTRIC TRANSMISSION CONDUIT RUNNING ALONG CONGRESS STREET IS ENCASED IN CONTROLLED DENSITY FILL. CONTRACTOR TO COMPLETE TEST PITS AND ADJUST LAYOUT AND MEANS AND METHODS TO AVOID CONFLICTS.
7. THE LOCATION OF ALL BURIED ELECTRIC, TELECOMMUNICATIONS, AND TRAFFIC SIGNAL CONDUITS, MANHOLES, HANDHOLES, AND WIRES IS NOT KNOWN. NEW OR ADDITIONAL BURIED ELECTRIC, TELECOMMUNICATIONS, AND TRAFFIC SIGNAL CONDUITS AND WIRES MAY HAVE BEEN INSTALLED OR MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS.
8. EXISTING PAVEMENT THICKNESS, SIDEWALK MATERIALS, AND SUBBASE MATERIALS VARY AND MAY INCLUDE MULTIPLE, VARIED PAVEMENT MATERIALS, AND COBBLESTONES.
9. BEFORE EXCAVATING, BLASTING, BACK FILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THESE PLANS. SEE CHAPTER 370, ACT OF 1963, MASSACHUSETTS GENERAL LAWS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACURATELY SHOWN.
10. EXISTING PIPE SIZE AND MATERIAL ARE APPROXIMATE AND MAY HAVE DIFFERING HORIZONTAL AND/OR VERTICAL DIMENSIONS DEPENDING ON THE SHAPE (EGG-SHAPED, TEAR-DROP, ETC.) EXISTING PIPES MAY BE SLIPLINED IN LARGER PIPES OF DIFFERENT MATERIAL. ASBESTOS CEMENT (AC) PIPES ARE NOT KNOWN TO EXIST WITHIN PROJECT AREA, BUT IF ENCOUNTERED CONTRACTOR SHALL IMPLEMENT APPROPRIATE HEALTH AND SAFETY PROVISIONS AND REMOVE AND DISPOSE AS PIPE IN LEGAL MANNER.
11. THE CONTRACTOR SHALL PREMARK THE EXCAVATION AREA IN WHITE PAINT PRIOR TO CALLING THE DIG SAFE CENTER (TEL. NO. 1-888-DIG-SAFE). THE CONTRACTOR SHALL CONTACT THE DIG SAFE CENTER AT LEAST THREE BUSINESS DAYS PRIOR TO ANY EXCAVATION. IN ADDITION, NOTIFICATION SHALL ALSO BE GIVEN TO ALL AFFECTED PRIVATE AND/OR PUBLIC UTILITIES TO PERMIT STREET MARKING OF THEIR LINES. CONTRACTOR SHALL ALSO CALL IN UTILITY MARKOUTS TO THE CITY OF SALEM DEPARTMENT OF PUBLIC WORKS, CITY OF SALEM ELECTRIC DEPARTMENT, AND SOUTH ESSEX SEWERAGE DISTRICT.
12. CONTRACTOR TO COORDINATE WITH GAS COMPANY AND OWNERS OF OTHER UTILITIES TO PROTECT AND SUPPORT (OR REMOVE AND REPLACE) ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION.
13. IF THE CONTRACTOR DAMAGES UTILITY SERVICES, HE SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL IMMEDIATELY REPLACE OR REPAIR.
14. WHERE UTILITY RELOCATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANY AT LEAST 30 DAYS IN ADVANCE OF CONSTRUCTION AND SHALL COORDINATE THE PROPOSED WORK WITH THE UTILITY RELOCATION.
15. THE CONTRACTOR'S ATTENTION IS DIRECTED TO EXISTING LABELED SEWER MANHOLE OR DRAINAGE MANHOLE COVERS SHOWN ON THE PLANS AS THEY MAY NOT ACCURATELY REPRESENT THE UNDERGROUND SERVICE BELOW. ALL DRAINS AND SEWERS ARE TIDALLY INFLUENCED WITH SALT WATER INFLOW / INFILTRATION DURING HIGH TIDES. CONTRACTOR SHALL ANTICIPATE BYPASS PUMPING WILL BE REQUIRED DURING CONSTRUCTION INVOLVING INCREASED BYPASS PUMPING CAPACITY DURING RAINFALL AND HIGH TIDES.
16. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INFORMATION AND REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS TO THE ENGINEER PRIOR TO BEGINNING WORK.
17. EXPLORATORY EXCAVATIONS (TEST PITS) SHALL BE EXCAVATED AT THOSE LOCATIONS INDICATED ON THE PLANS AND WHERE ORDERED AND APPROVED BY THE OWNER. TEST PIT EXCAVATIONS SHALL BE MADE TO DETERMINE THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES, OR SUBSURFACE CONDITIONS IN ADVANCE OF CONSTRUCTION OPERATIONS SO THAT ANY REQUIRED CHANGES IN ALIGNMENT AND/OR GRADE OF THE PROPOSED WORK OR UTILITY LOCATIONS MAY BE DETERMINED. ALL DECISIONS RELATIVE TO UTILITY CONFLICTS AND RELOCATION REQUIREMENTS WILL BE MADE BY THE RESIDENT ENGINEER.
18. PROPOSED INVERT ELEVATIONS AND SLOPES OF NEW OR REPLACEMENT SEWER/DRAIN PIPES AND SERVICES TO BE DETERMINED IN THE FIELD BY THE ENGINEER BASED ON CONTRACTOR'S SURVEY OF EXISTING RIM AND INVERT ELEVATIONS COMPLETED IN CONJUNCTION WITH CONFINED SPACE ENTRY OR TEST PITS. TEST PITS MAY NOT BE COMPLETED TOO FAR IN ADVANCE OF PIPELINE INSTALLATION, AUTHORIZATION REQUIRED FROM ENGINEER TO BEGIN TEST PITS ON EACH STREET OR IN EACH WORK AREA.
19. CONTRACTOR SHALL NOT ORDER PRECAST CONCRETE STRUCTURES OR MANHOLE/CATCH BASIN CASTINGS UNTIL TEST PITS AND CONTRACTOR'S LEVEL SURVEY HAVE BEEN COMPLETED ON ALL EXISTING STRUCTURES AND CONNECTIONS ON EACH STREET OR IN EACH WORK AREA AS DETERMINED BY THE ENGINEER AND THE ENGINEER CAN CONFIRM NUMBER, SIZE, AND TYPE. PIPE OPENINGS IN EACH MANHOLE OR STRUCTURE TO BE FACTORY CAST OR CORED IN FIELD AS DIRECTED BY ENGINEER.
20. DAMAGE OF PROPERTY BEYOND THE WORK LIMITS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
21. WHERE WATER LINES, DRAINAGE PIPES, STRUCTURES, OR CONDUITS ARE ABANDONED IN PLACE, CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, INLETS AND OUTLETS ARE PLUGGED.
22. CONTRACTOR TO PROTECT AND SUPPORT OR REMOVE AND REPLACE SIGNS, POSTS, LIGHT POSTS, HYDRANTS, FENCES, GATES, PARKING METERS, TREES, OR OTHER SURFACE FEATURES THAT OBSTRUCT CONSTRUCTION OPERATIONS OR ARE DAMAGED BY CONSTRUCTION.
23. CONTRACTOR TO PROTECT AND SUPPORT OR REMOVE AND REPLACE SIGNS, POSTS, LIGHT POSTS, HYDRANTS, FENCES, GATES, PARKING METERS, TREES, OR OTHER SURFACE FEATURES THAT OBSTRUCT CONSTRUCTION OPERATIONS OR ARE DAMAGED BY CONSTRUCTION. AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
24. ALL EXISTING MANHOLE FRAMES AND COVERS AND CATCH BASIN FRAMES AND GRATES REMOVED BUT NOT REUSED, AND SELECTED FOR SALVAGE BY THE OWNER, SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE DELIVERED BY THE CONTRACTOR TO A LOCATION DESIGNATED BY THE OWNER. CASTINGS NOT SELECTED BY THE OWNER FOR SALVAGE SHALL BE DISPOSED OF BY THE CONTRACTOR.
25. A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND SEWER (SANITARY OR STORM) MAINS. SEPARATION IS MEASURED FROM EDGE TO EDGE. IN CASES WHERE 10-FOOT SEPARATION CANNOT BE MAINTAINED, WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELVE LOCATED ON ONE SIDE OF THE SEWER AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18-INCHES ABOVE THE TOP OF THE SEWER. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE WITH 18 INCH VERTICAL SEPARATION, WITH WATER MAIN ABOVE SEWER IF AT ALL POSSIBLE.
26. CONTRACTOR SHALL BACKFILL, COMPACT, AND PAVE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MDOT) AND THE CITY OF SALEM, INCLUDING AT A MINIMUM THE REQUIREMENTS SHOWN ON DETAILS.
27. THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT ON A DAILY BASIS AND SHALL MAINTAIN TEMPORARY PAVEMENT FOR A MINIMUM OF 90 DAYS EXCEPT IF TEMPORARY PAVEMENT IS PLACED AFTER OCTOBER 15TH, THEN IT SHALL BE MAINTAINED UNTIL APRIL 15TH OF THE FOLLOWING YEAR UNLESS AUTHORIZED BY THE CITY. TEMPORARY CENTERLINE OR FOGLINE PAVEMENT PAINT SHALL BE PLACED ON THE TEMPORARY PAVEMENT WHEREVER EXISTING PAINT IS DISTURBED DURING CONSTRUCTION.
28. PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15TH AND OCTOBER 15TH OF EACH CALENDAR YEAR UNLESS AUTHORIZED BY THE CITY OUTSIDE THESE DATES.
29. THE CONTRACTOR SHALL PROTECT ALL TRAVELED WAYS AND PEDESTRIAN WAYS FROM CONSTRUCTION DEBRIS AT ALL TIMES.

30. CONTRACTOR SHALL FOLLOW APPROVED TRAFFIC MANAGEMENT PLAN AT ALL TIMES AND PROVIDE ACCESS FOR EMERGENCY VEHICLES AND PEDESTRIANS. CONTRACTOR SHALL COORDINATE TRAFFIC MANAGEMENT PLAN WITH CITY OF SALEM POLICE DEPARTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGEMENT OF TRAFFIC AND PUBLIC SAFETY, INCLUDING SIGNAGE AND DETOURS. TRENCHES MUST BE PASSABLE AND GRAVEL MUST BE MAINTAINED. CONTRACTOR SHALL PREPARE A TRAFFIC MANAGEMENT PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF SALEM POLICE DEPARTMENT IF REQUIRED. CONTRACTOR SHALL REVIEW TRAFFIC MANAGEMENT PLAN WITH THE POLICE DEPARTMENT PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
31. CONTRACTOR IS RESPONSIBLE TO PREVENT STEEL PLATES FROM MOVING, INCLUDING CUTTING PAVEMENT TO RECESS PLATES, UTILIZATION OF STEEL SPIKES AND WEDGES, AND COLD PATCH SHIMS AND RAMPS.
32. CONTRACTOR SHALL NOT BE PROVIDED A STAGING AREA BY THE OWNER, CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY, SECURITY, AND CLEANUP OF EQUIPMENT AND MATERIALS.
33. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. DEVICES SHALL INCLUDE AT A MINIMUM GEOTEXTILE (SILT SACK) IN ALL CATCH BASINS AND A BARRIER CONSISTING OF SILT FENCE OR MULCH SOCK/ STRAW WATTLES AROUND SOIL STOCKPILES AND ALONG PROJECT BOUNDARY AS DIRECTED. ALL CONSTRUCTION DEWATERING WATER MUST BE TREATED WITH A SEDIMENTATION TANK PRIOR TO DISCHARGE UPGRADIENT OF OTHER EROSION AND SEDIMENTATION DEVICES AND CONTROLS.
34. CONTRACTOR SHALL MAINTAIN EDGE OF ROADWAY DRAINAGE PATTERNS INCLUDING REPLACEMENT OF PAVED AND UNPAVED SWALES, BERMS, AND CURBS.
35. DIVERSION AND CONTROL OF EXISTING SANITARY, STORM SEWER, DRAINAGE CULVERTS AND PROCESS DRAIN FLOWS AND DEWATERING ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR'S INTENDED METHODS FOR DIVERSION AND CONTROL AND DEWATERING SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. BYPASS HOSES SHALL NOT BE ALLOWED TO LEAK AND SURFACE WATER RELATING TO CONSTRUCTION OPERATIONS SHALL BE PREVENTED FROM FREEZING.
36. THE CONTRACTOR SHALL PROVIDE METHODS DURING DEWATERING OPERATIONS AND FOR STORM WATER RUNOFF NOT TO ALLOW SILT OR DEBRIS TO ENTER EXISTING DRAINAGE FACILITIES OR CREATE NUISANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING EXISTING OR NEW FACILITIES IF SILTATION OCCURS DUE TO THE CONTRACTOR'S OPERATIONS. CONTRACTOR RESPONSIBLE FOR ALL PERMITTING REQUIREMENTS RELATED TO DEWATERING IF DISCHARGE TO DRAINAGE OR SURFACE WATER WILL BE REQUIRED.
37. THE CONTRACTOR SHALL DISPOSE OF ALL DEMOLISHED MATERIALS, RUBBISH, EXCAVATED MATERIAL AND DEBRIS, UNLESS OTHERWISE NOTED, IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL REQUIRED DISPOSAL PERMITS AND FEES.
38. NO TRASH, GREASE TUBES, OR DEBRIS SHALL BE THROWN INTO CONSTRUCTION TRENCHES PRIOR TO BACKFILL.
39. CONTRACTOR TO MAINTAIN HAZMAT SPILL KITS ON SITE AT ALL TIMES.
40. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST DURING CONSTRUCTION OPERATIONS INCLUDING BUT NOT LIMITED TO REGULAR STREET SWEEPING AND APPLICATIONS OF CALCIUM CHLORIDE OR OTHER APPROVED DUST INHIBITOR.
41. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY COMPANIES DOING WORK IN THE SAME AREA. THE CONTRACTOR SHALL ALLOW THE UTILITY COMPANIES AND THEIR REPRESENTATIVES TO INSTALL OR MAINTAIN THEIR SYSTEMS WITHIN CITY OWNED STREETS AND EASEMENTS. PRIVATE BUILDING CONSTRUCTION MAY TAKE PLACE DURING THE SAME TIME PERIOD OF THIS PROJECT ON AND ADJACENT TO 23 CONGRESS STREET. CONTRACTOR TO COORDINATE HIS WORK SCHEDULE WITH PRIVATE BUILDING COMPANIES AND THEIR REPRESENTATIVES.
42. BACKFLOW PREVENTION DEVICE TO BE PROVIDED BY THE CONTRACTOR AND USED FOR ALL CONSTRUCTION WATER.
43. THE CONTRACTOR SHALL BE AWARE THAT LIMITED BORINGS HAVE BEEN PROVIDED AND THE EXISTING SOIL CONDITIONS AND GROUNDWATER LEVEL ARE NOT KNOWN EXCEPT FOR WHAT IS SHOWN ON THE BORING LOGS. THE TIDE CONDITION DURING EACH BORINGS IS NOT KNOWN, CONTRACTOR SHALL ASSUME INDICATED GROUNDWATER LEVELS IN THE BORING LOGS SHALL REPRESENT THE MINIMUM ELEVATION, AND THAT GROUNDWATER WILL RISE TO THE ELEVATION OF THE HIGHEST MONTHLY TIDE ELEVATION DURING DRY WEATHER AND HIGHER DURING WET WEATHER. GROUNDWATER LEVELS ARE ASSUMED TO BE HIGH AND HIGHLY VARIABLE DUE TO THE ADJACENT PROXIMITY OF THE PROJECT TO SOUTH RIVER CANAL AND TIDAL IMPACTS. UNSUITABLE SOILS ARE KNOWN TO EXIST DUE TO THE PROXIMITY OF THE PROJECT TO WATER. CONTRACTOR SHALL ANTICIPATE THAT REMOVAL AND DISPOSAL OF UNSUITABLE SOILS AND CONSTRUCTION DEWATERING DUE TO GROUNDWATER WILL BE REQUIRED THROUGHOUT THE PROJECT AREA WITH INCREASED DEWATERING REQUIRED DURING RAINFALL AND HIGH TIDE CONDITIONS.
44. CONTRACTOR TO SCHEDULE NEW DRAIN INSTALLATIONS AND ADJUST LAYOUT OF NEW DRAIN PIPE IN THE FIELD TO AVOID CONFLICTS WITH EXISTING SEWERS, DRAINS, GAS, ELECTRIC, AND OTHER UTILITIES.
45. CONTRACTOR SHALL BE AWARE THAT THE PROJECT ROUTE ABUTS TWO PROPERTIES WITH RECORDS OF SOIL AND/OR GROUNDWATER CONTAMINATION (19 CONGRESS ST. AND 283 DERBY ST.) THAT ARE SUBJECT TO ACTIVITY USE LIMITATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF MASSDEP AND THE BUREAU OF WASTE SITE CLEANUP. AS A RESULT, CONTRACTOR SHALL ANTICIPATE MANAGING, HAULING, AND DISPOSING SOILS WITH REPORTABLE CONCENTRATIONS OF CONTAMINANTS.

LEGEND



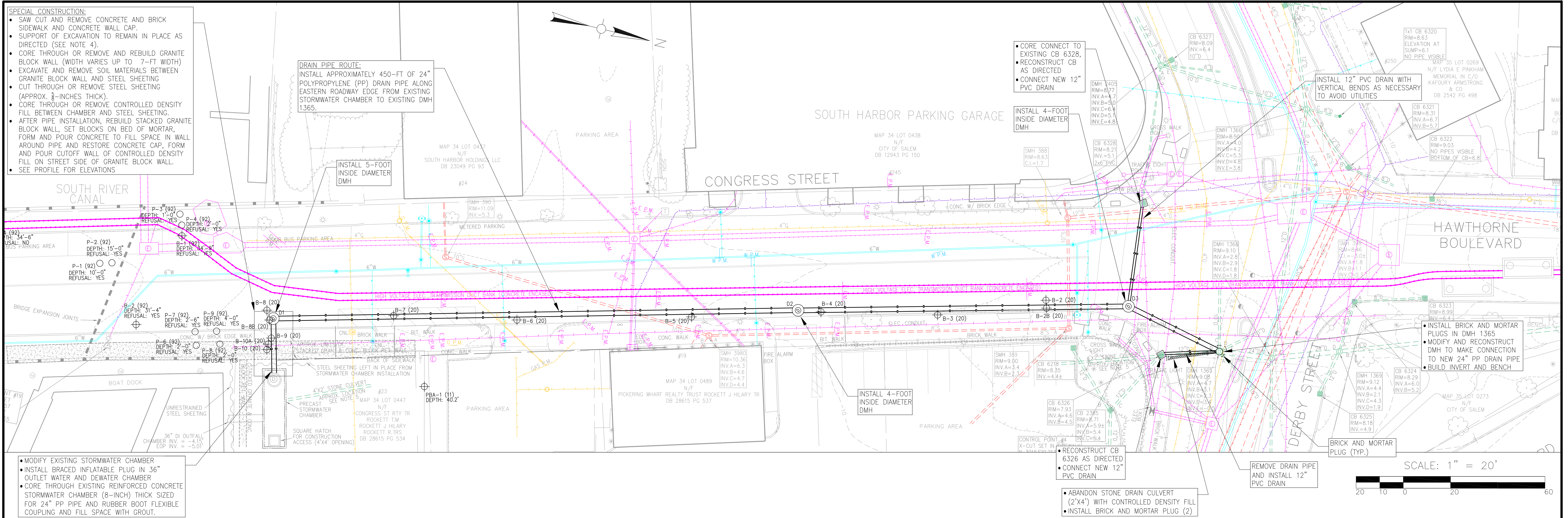
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Project	CONGRESS STREET DRAIN REPLACEMENT			Date	11/12/2020				G-2
				Job	Salem-Drain2020				
				Designed by	WMR				
				Drawn by	RLM				
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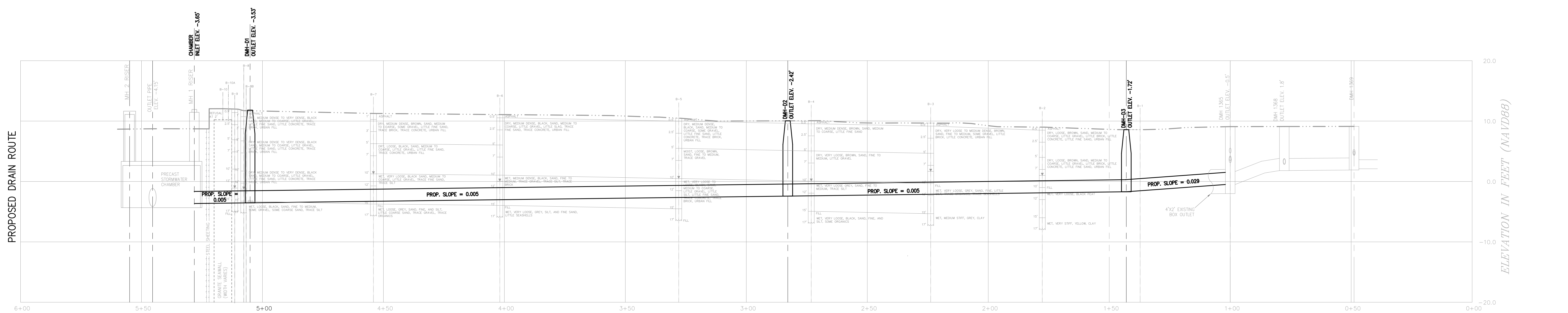
- NOTES:
- HIGH VOLTAGE TRANSMISSION DUCT BANK INSTALLED IN 2015 IS ENCASED IN CONCRETE AND BACKFILLED WITH CONTROL DENSITY FILL (CDF).
 - INTERSECTION HAS BURIED SIGNAL WIRES CONNECTING TO ALL FOUR INTERSECTION CORNERS. CONTRACTOR TO FIELD LOCATE AND PROTECT SIGNAL WIRES.
 - CONTRACTOR TO SURVEY ELEVATIONS OF ALL PIPE CONNECTIONS TO DMH 1365, BASE AND PIPE CONNECTION AND INSIDE BASE ELEVATION OF STORMWATER CHAMBER, AND TOP AND BOTTOM OF UTILITIES AND DUCT BANKS OBSERVED IN TEST PITS. PROPOSED LINE AND GRADE OF DRAIN WILL BE REVISED BY THE ENGINEER BASED ON SURVEY ELEVATIONS. SURVEYOR TO ESTABLISH AT LEAST SIX CONSTRUCTION BENCHMARKS.
 - SUPPORT OF EXCAVATION (S.O.E.) TO BE CUT OFF AT 8 FOOT DEPTH FOLLOWING BACKFILL, AND TO REMAIN IN PLACE AS INDICATED AND/OR AS DIRECTED. BACKFILL AROUND PIPE CONNECTIONS WITH CONTROLLED DENSITY FILL (CDF) IF REQUIRED AS DIRECTED.
 - EXISTING STONE DRAIN CULVERT TO BE ABANDONED EXTENDS FROM DERBY STREET TOWARD THE SOUTH RIVER WHERE IT IS CRUSHED IN THE VICINITY OF THE STORMWATER CHAMBER. THE ROUTE OF THE STONE DRAIN CULVERT ALONG CONGRESS STREET IS UNKNOWN, THE CULVERT MAY BE ENCOUNTERED DURING CONSTRUCTION. THE CULVERT STILL COLLECTS RAINFALL RUNOFF FROM CITY DRAINAGE AND EX-FILTRATES RUNOFF INTO THE GROUND THROUGH JOINTS AND DEFECTS. THE DRAIN CULVERT AND CITY DRAINAGE RECEIVE AND CONVEY TIDAL FLOW AND TIDALLY INFLUENCED GROUNDWATER. PLAN FOR DE-WATERING CONSTRUCTION OF GROUNDWATER, WET WEATHER, AND TIDALLY INFLUENCED GROUNDWATER.

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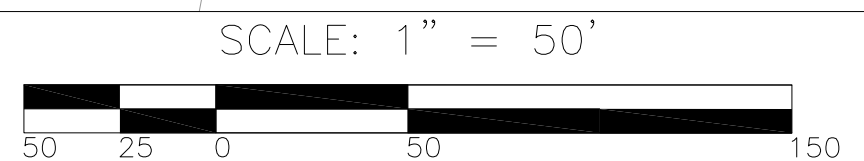
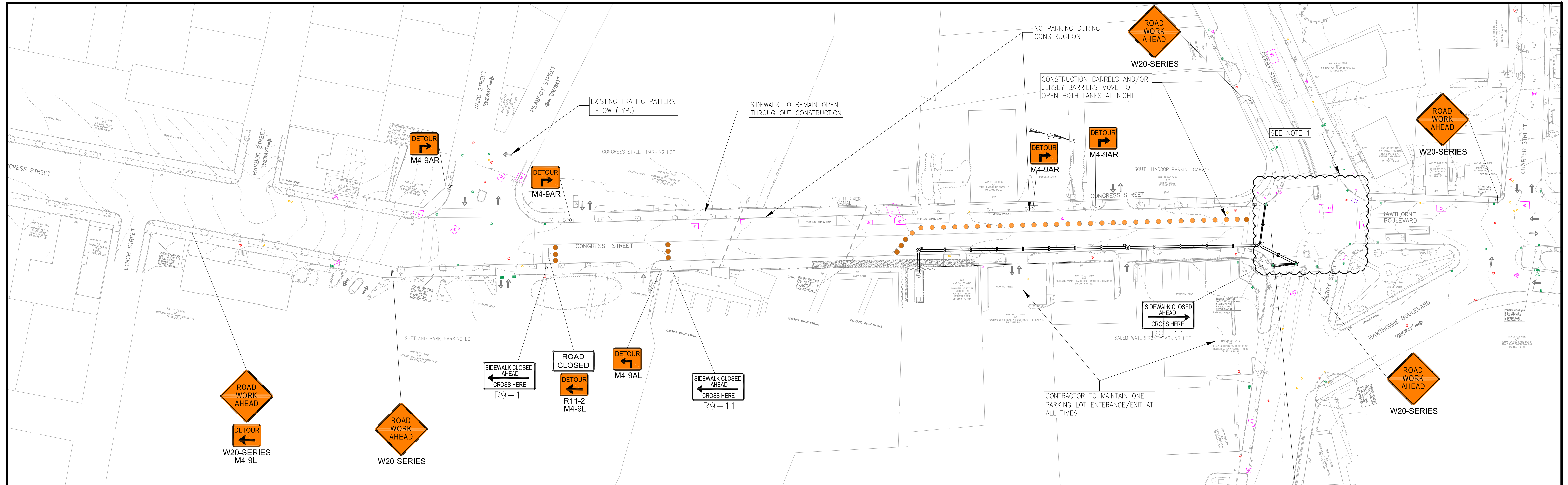


- MODIFY EXISTING STORMWATER CHAMBER
- INSTALL BRACED INFLATABLE PLUG IN 36" OUTLET WATER AND DEWATER CHAMBER
- CORE THROUGH EXISTING REINFORCED CONCRETE STORMWATER CHAMBER (8-INCH) THICK SIZED FOR 24" PP PIPE AND RUBBER BOOT FLEXIBLE COUPLING AND FILL SPACE WITH GROUT.



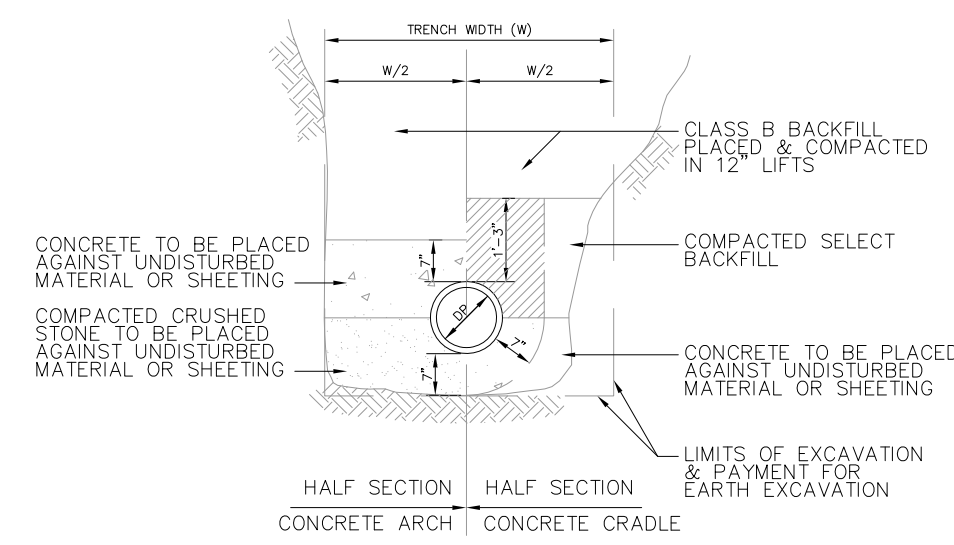
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	UTILITY PLAN	Job	Salem-Drain2020	No. _____ Description _____ Date _____ File: W:\Salem\Derby At Congress\CAD\CongressStreetDrainRelocation.dwg			
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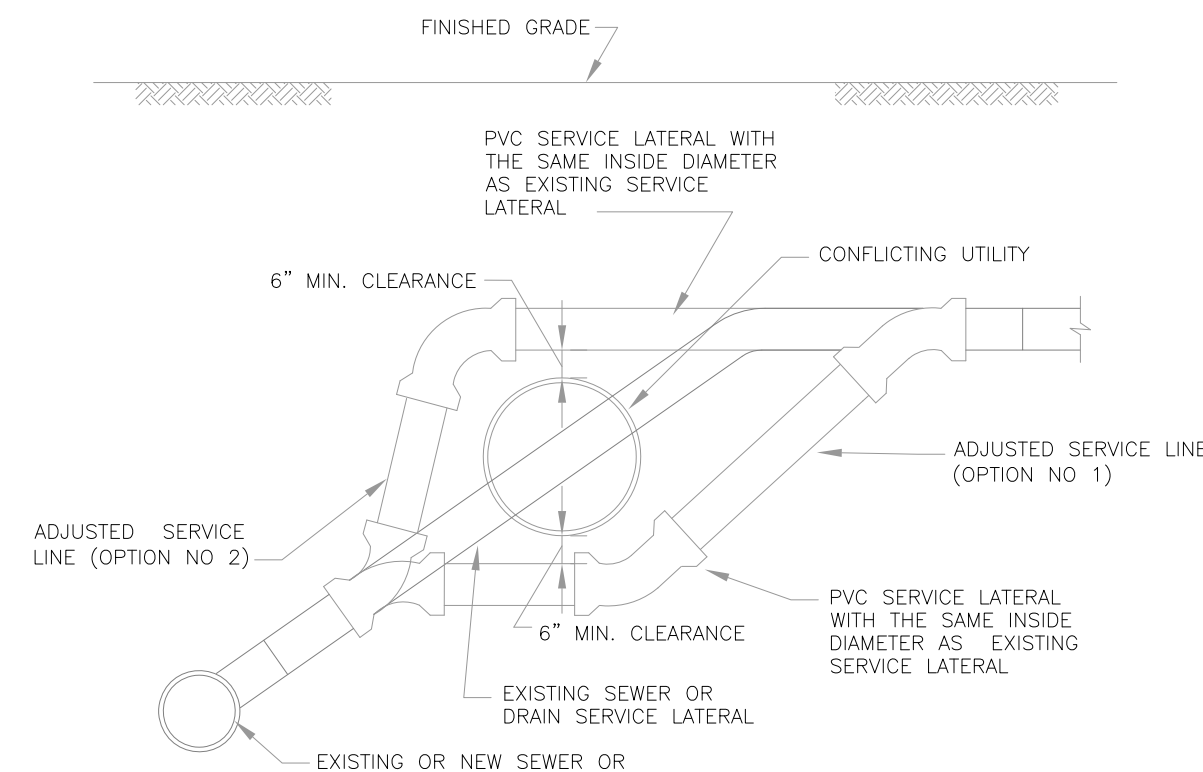


- NOTES:
- 1.) SIGNAGE AND DETOUR FOR WORK IN THE INTERSECTION (CROSSING CONGRESS STREET AND DERBY STREET) SHALL BE PREPARED AND SUBMITTED FOR REVIEW BY THE CITY. WORK IMPACTING TRAFFIC IN THE INTERSECTION SHALL BE COMPLETED AT NIGHT (10:00 P.M. TO 6:00 A.M. AS DIRECTED).
 - 2.) ACCESS TO/FROM PARKING LOTS AND MUNICIPAL PARKING GARAGE SHALL BE MAINTAINED AT ALL TIMES.
 - 3.) WORK ON CONGRESS TO BE COORDINATED TO ALLOW ACCESS TO PROPERTIES AND BUSINESSES INCLUDING TRACTOR TRAILER DELIVERIES.
 - 4.) WORK OUTSIDE TRAFFIC DETOUR WORK ZONE ON CONGRESS TO BE COMPLETED AT NIGHT AND WITH TRAFFIC DETOURS AS APPROVED AND DIRECTED BY THE CITY OF SALEM POLICE DEPARTMENT.
 - 5.) MINIMUM SIGNAGE SHOWN FOR REFERENCE TO SUGGEST OPTION TO DIVERT PEDESTRIAN TRAFFIC AROUND CONSTRUCTION ZONE. CONTRACTOR RESPONSIBLE TO DEVELOP A DETAILED TRAFFIC AND PEDESTRIAN MANAGEMENT PLAN, INCLUDING PROPOSED DETOURS, IN ACCORDANCE WITH MDT SECTION 850 AND MUTCD STANDARDS AND CITY OF SALEM POLICE DEPARTMENT REQUIREMENTS.
 - 6.) ROAD WORK AHEAD SIGNS TO BE INSTALLED IN APPROXIMATE LOCATIONS AS SHOWN, WITH SECOND SIGN IN EACH LOCATION INSTALLED APPROXIMATELY 500 FEET UPSTREAM.
 - 7.) SIGNAGE TO ALSO INCLUDE "POLICE OFFICER AHEAD" SIGNS WHENEVER DETAILS ARE IN USE.
 - 8.) CONTRACTOR TO INSTALL, PROGRAM, MAINTAIN, AND RELOCATE PORTABLE, VARIABLE MESSAGE BOARDS AS REQUIRED.
 - 9.) LANE CLOSURE AND TRAFFIC DETOUR ZONE MUST BE REMOVED AND NORMAL TRAFFIC PATTERNS ESTABLISHED IF CONTRACTOR IS NOT ON SITE WORKING.
 - 10.) SIGNS SHOWN INCLUDE MINIMUM SIGNS REQUIRED. CONTRACTOR TO PROVIDE AND MAINTAIN ADDITIONAL SIGNAGE AS REQUIRED AND DIRECTED.

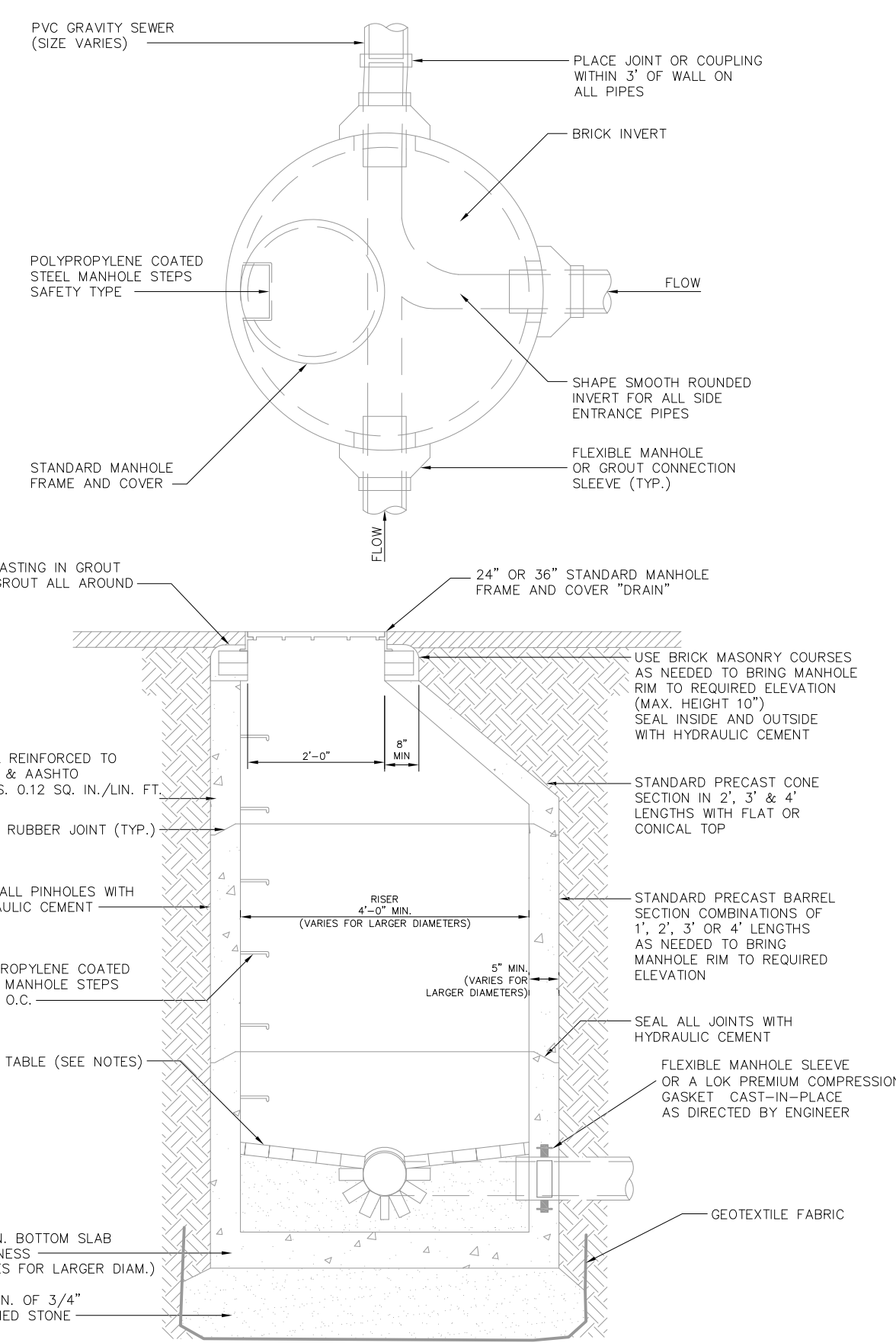
Client	CITY OF SALEM, MASSACHUSETTS	Scale	1"=50"			New England Civil Engineering Corp. 265 Essex Street, Suite 102 SALEM, MASSACHUSETTS	Sheet
Project	CONGRESS STREET DRAIN REPLACEMENT	Date	11/12/2020				
	TRAFFIC MANAGEMENT PLAN	Job	Salem-Drain2020	No. _____ Description _____ Date _____ File: W:\Salem\Derby At Congress\CAD\CongressStreetDrainRelocation.dwg			
		Designed by	WMR				
		Drawn by	RLM				
		Checked by					
		Approved by					



CONCRETE ARCH AND CRADLE DETAIL
NOT TO SCALE

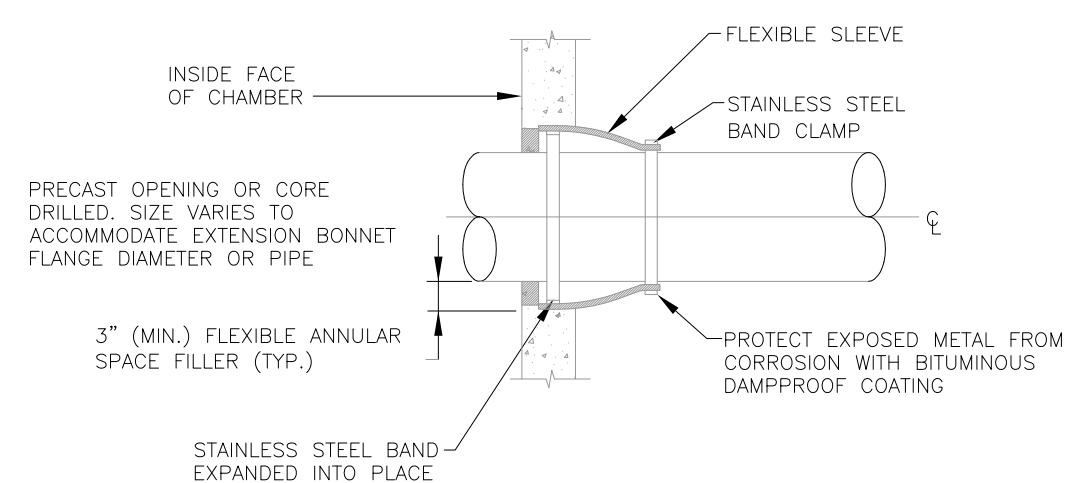


SANITARY SEWER OR DRAIN SERVICE LATERAL RECONNECTION FOR CONFLICTS WITH OTHER UTILITY
NOT TO SCALE



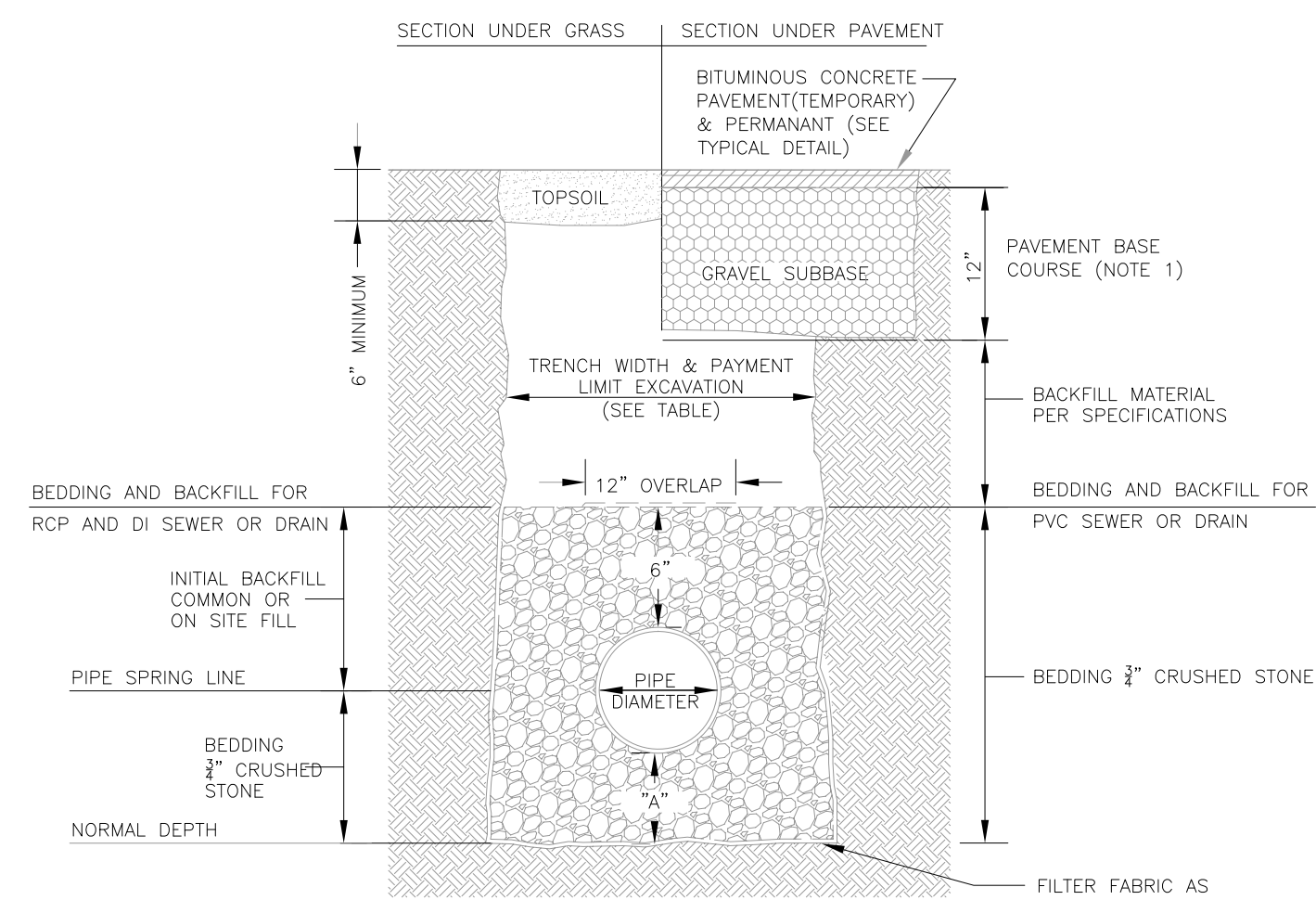
- NOTES:**
- INNER EDGE OF BRICK TABLE TO BE AT ELEVATION OF CROWN OF TOP PIPE. TABLE TO SLOPE AT 1" PER 1' TO INSIDE OF MANHOLE BASE.
 - TYPICAL MANHOLE RISER TO BE 4-FOOT DIAMETER MINIMUM.
 - CONTRACTOR TO SELECT MANHOLE DIAMETER TO ACCOMMODATE NUMBER OF PIPE OPENINGS PER MANUFACTURERS REQUIREMENTS AND INTERNAL DROP PIPING.

TYPICAL MANHOLE DETAIL
NOT TO SCALE



MANHOLE CONNECTION DETAIL

- NOT TO SCALE
- ACCEPTED MATERIALS AS DIRECTED:
- A. LOK PREMIUM COMPRESSION GASKET
 - A. LOK FIELD SLEEVE
 - KOR-N-SEAL RUBBER BOOTS

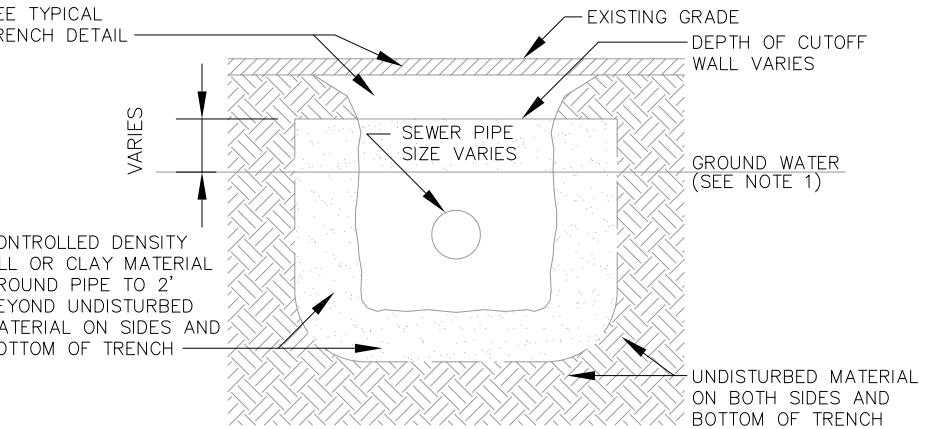
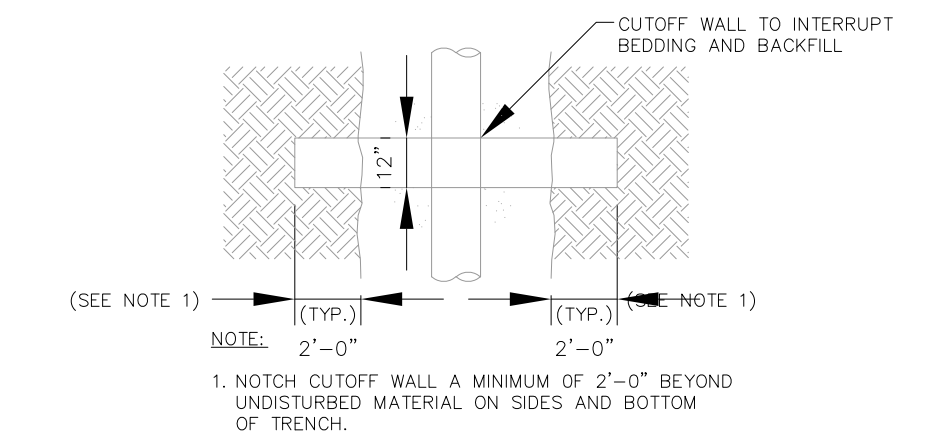


TYPICAL TRENCH DETAIL FOR SEWER/DRAIN PIPES

- NOT TO SCALE
- NOTES:**
- REFER TO SPEC. SECTION 02500-PAVING AND SURFACING, AND PAVEMENT DETAILS FOR PAVEMENT AND BASE COURSE REQUIREMENTS.
 - REFER TO SPEC. SECTION 02210-EARTH EXCAVATION, BACKFILL, FILL, GRADING AND FOR BEDDING AND BACKFILL MATERIAL REQUIREMENTS.
 - FOR USE IN PAYMENT OF ALL ITEMS IN WHICH PAY TRENCH WIDTH IS A VARIABLE FOR THE CALCULATION OF QUANTITIES.
 - BEDDING THICKNESS SHALL BE PER TABLE UNLESS OTHERWISE INDICATED.

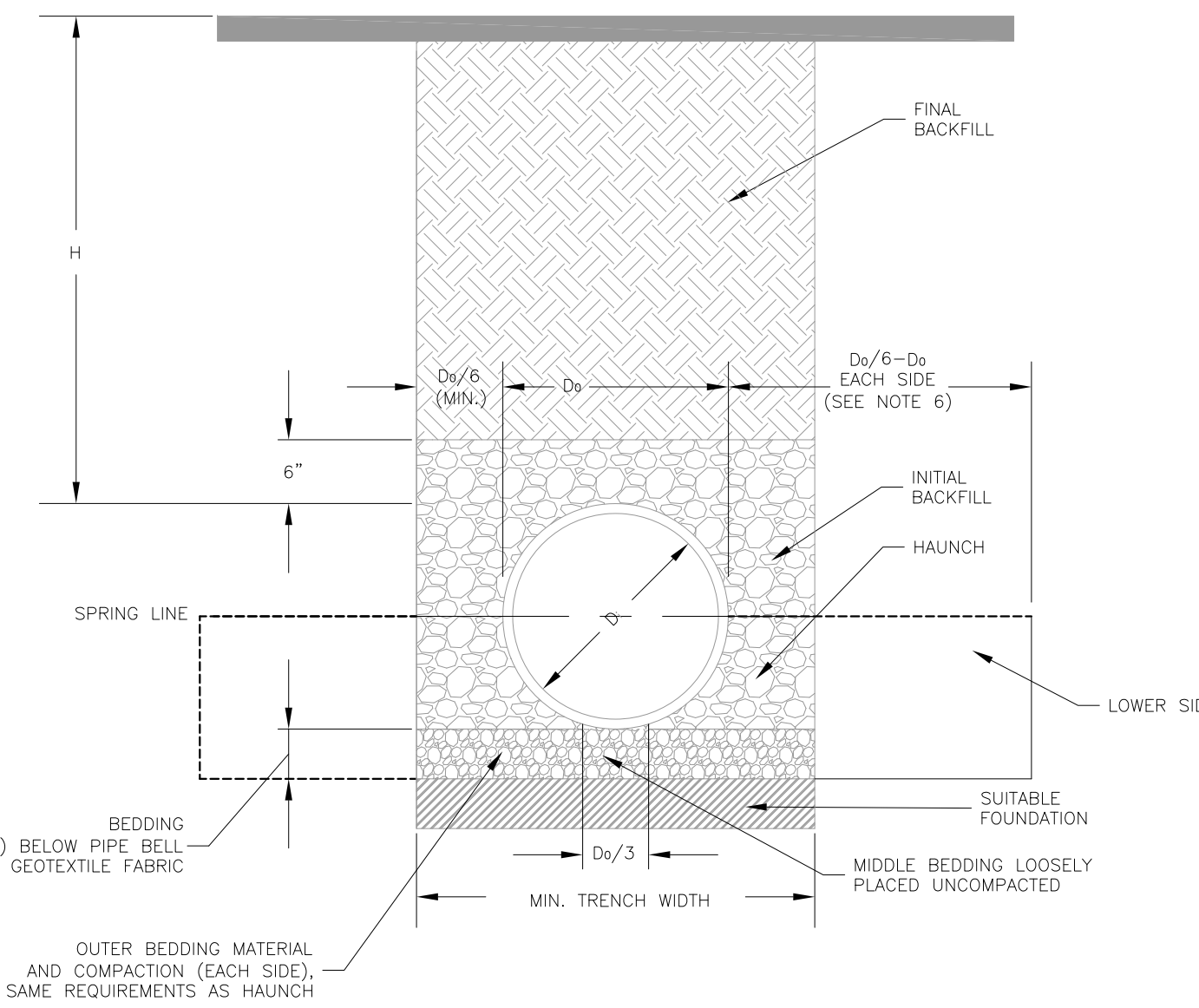
PIPE SIZE OR DUCT BANK SIZE	TRENCH WIDTH	"A"	TRENCH LIMITS OF PAYMENT (DEPTH TO INVERT <math>< 8'</math>)
$\leq 12" \text{ } \phi$ OR DUCT BANK WIDTH	4'	6"	$\leq 12" \text{ } \phi$ OR DUCT BANK WIDTH O.D. DIA. +3'
$> 12" \text{ } \phi$ OR DUCT BANK WIDTH	O.D. DIA. +3'	9"	$> 12" \text{ } \phi$ OR DUCT BANK WIDTH O.D. DIA. +4'
MANHOLES AND ALL STRUCTURES	O.D. DIA. +3'	12"	O.D. DIA. +4'

O.D. = OUTSIDE DIMENSION



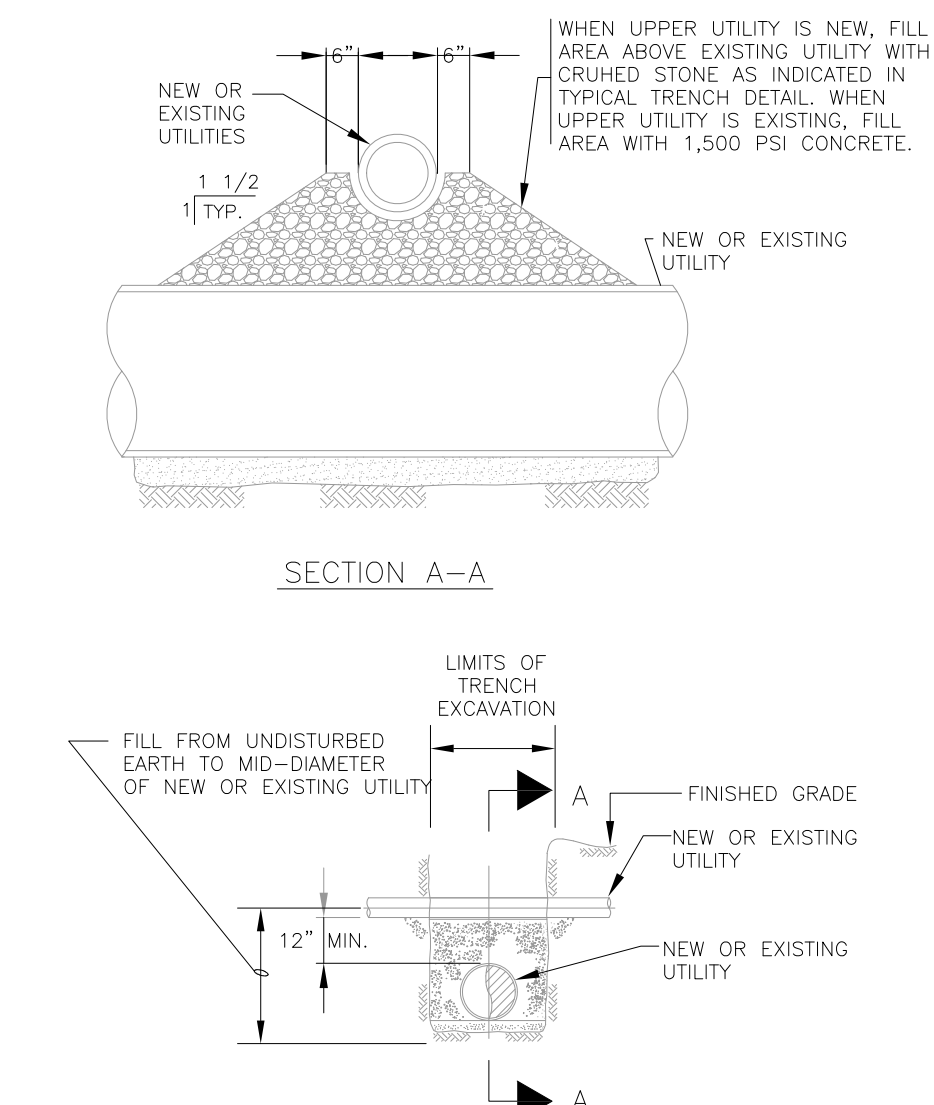
- NOTES:**
- THE TOP OF THE CUTOFF WALL SHALL EXTEND A MINIMUM OF 2'-0" ABOVE THE GROUND WATER LEVEL AND/OR HIGH TIDE LEVEL, AS DETERMINED BY THE NEAREST BORING OR BY THE ENGINEER.
 - CUTOFF WALLS SHOULD ONLY BE INSTALLED WHERE DIRECTED BY THE ENGINEER.

TYPICAL CUTOFF WALL DETAIL
NOT TO SCALE

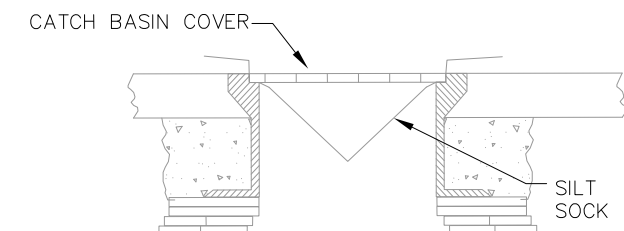


INTERCEPTOR SEWER TRENCH INSTALLATION

- NOT TO SCALE
- NOTES:**
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C-1479, "STANDARD PRACTICE FOR INSTALLATION OF PRECAST CONCRETE SEWER, STORM DRAIN, AND CULVERT PIPE USING STANDARD INSTALLATIONS", LATEST EDITION.
 - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
 - FOUNDATION WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL WITH CRUSHED STONE OR CAST-IN-PLACE CONCRETE SLAB.
 - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II, UNFROZEN, CLEAN, COARSE GRAINED SOILS PER ASTM C-1479. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE IN ACCORDANCE WITH ASTM C-1479 FOR TYPE II BACKFILL. MINIMUM BEDDING THICKNESS SHALL BE 3" BELOW BELL (6" IF ROCK), THE MIDDLE 1/2 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED.
 - BEDDING, HAUNCH, AND LOWER SIDE SOILS TO BE CATEGORY I OR II, UNFROZEN, CLEAN, COARSE, GRAINED SOILS PER ASTM-C1479. COMPACTED IN ACCORDANCE WITH C-1479 FOR TYPE II BACKFILL IN 6" LIFTS WITH TAMPING UNDER HAUNCHES.
 - LOWER SIDE BACKFILL TO BE EXTENDED UP TO D_o WIDTH ON EACH SIDE IF SOFT SOILS EXIST IN TRENCH WALL IN PIPE ZONE AS DIRECTED. EXTENDED LOWER SIDE NOT REQUIRED WHEN S.O.E. IS LEFT IN PLACE.
 - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II, UNFROZEN, CLEAN, COARSE GRAINED SOILS PER ASTM C-1479 IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OR PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM C-1479, LATEST EDITION, COMPACTED IN ONE LIFT, WITH NO STONES LARGER THAN 1/2 LIFT THICKNESS.
 - FINAL BACKFILL SOIL CATEGORY AND COMPACTION IN ACCORDANCE WITH SPECIFICATIONS.
 - FOR DEPTHS H<12- FEET, REFER TO TYPICAL TRENCH DETAIL FOR SEWER/DRAIN PIPES.



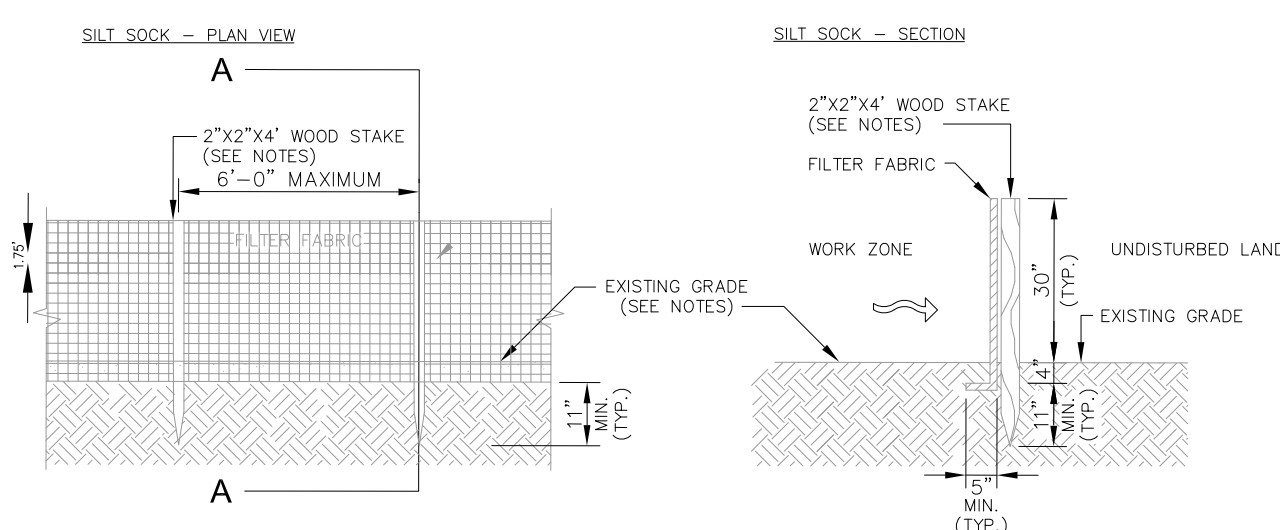
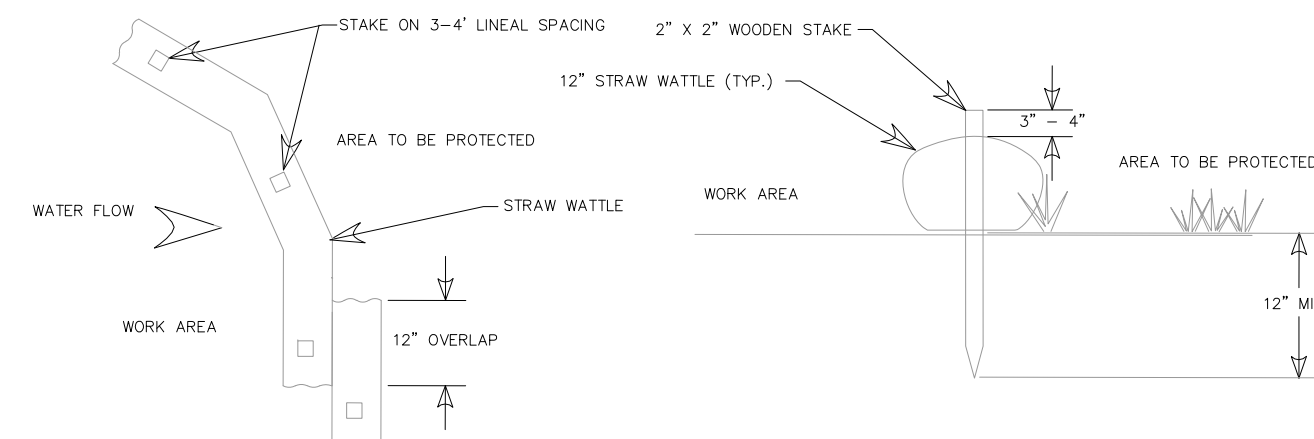
ELEVATION UTILITY CROSSING DETAIL
NOT TO SCALE



INSTALL SEDIMENTATION BARRIER IN EACH CATCH BASIN ALONG THE WATERWAY ROUTE. UPON PAVING OF TRENCH, REMOVE SILT AND DEBRIS THEN REMOVE FILTER FABRIC.

CATCH BASIN SEDIMENTATION BARRIER

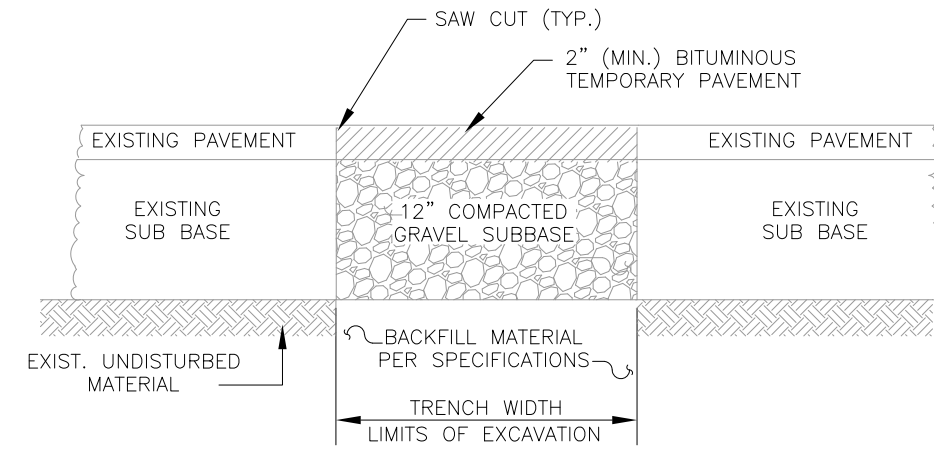
NOT TO SCALE



- NOTES:**
- CONTRACTOR TO INSTALL 12-INCH STRAW WATTLES OR SILT FENCE AS DIRECTED AND APPROVED BY LOCAL CONSERVATION COMMISSION
 - FABRIC FOR FENCES TO BE UV RESISTANT POLYPROPYLENE WITH A MINIMUM WEIGHT OF 2.5 OZ/S.Y. TUBULAR BLACK POLYPROPYLENE FOR STRAW WATTLES SHALL BE PHOTO DEGRADABLE.
 - FABRIC TO BE ATTACHED TO STAKES WITH STAPLES.
 - HAY BALES, WHERE USED, SHALL BE SALT MARCH HAY AS APPROVED BY LOCAL CONSERVATION COMMISSION.
 - WHERE HAY BALES ARE USED, TRENCH A MINIMUM OF 4" INTO EXISTING GRADE.
 - A MINIMUM OF (2) WOODEN OR METAL STAKES PER HAY BALE. DRIVE STAKES A MINIMUM OF 12" INTO GROUND.
 - STRAW MATERIAL TO BE DISPERSED ON SITE OR HAULED OFFSITE AND DISPOSED AS DETERMINED BY THE ENGINEER.
 - CONTRACTOR TO INSTALL GEOTEXTILE (SILT SACK) IN ALL CATCH BASINS PRIOR TO EXCAVATION.
 - ALL CONSTRUCTION DEWATERING MUST BE TREATED WITH A FILTRATION DEVICE (DIRTBAG) AND/OR SEDIMENTATION TANK OR APPROVED TREATMENT DEVICE PRIOR TO DISCHARGE UPGRADIENT OF OTHER EROSION AND SEDIMENTATION DEVICES AND CONTROLS.
 - SEDIMENTATION AND FLOATABLE DEBRIS BARRIER TO BE SIZED AND MAINTAINED TO ACCOMMODATE VARIED WATER LEVELS IN ADJACENT WATER BODIES.

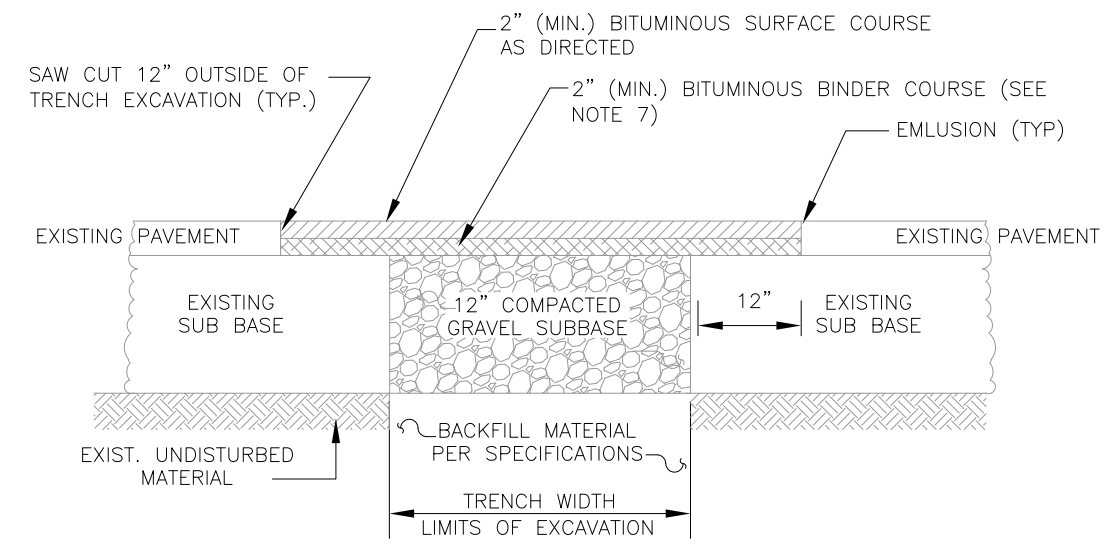
EROSION AND SEDIMENTATION BARRIER

NOT TO SCALE



TEMPORARY TRENCH PAVEMENT DETAIL

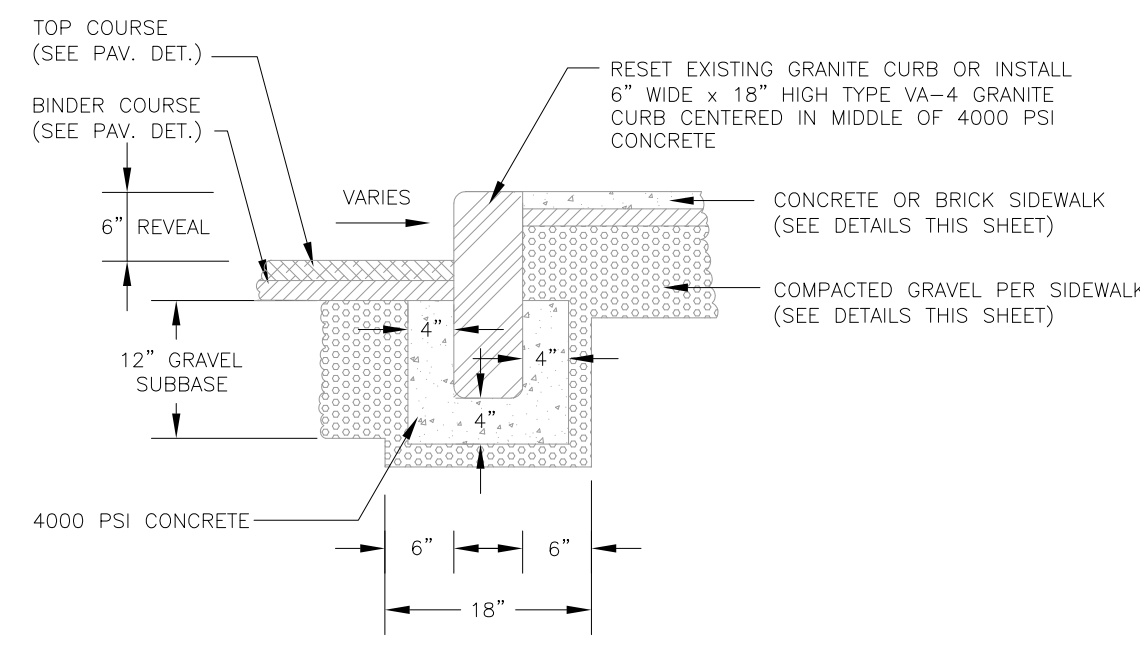
NOT TO SCALE



PERMANENT PAVEMENT DETAIL

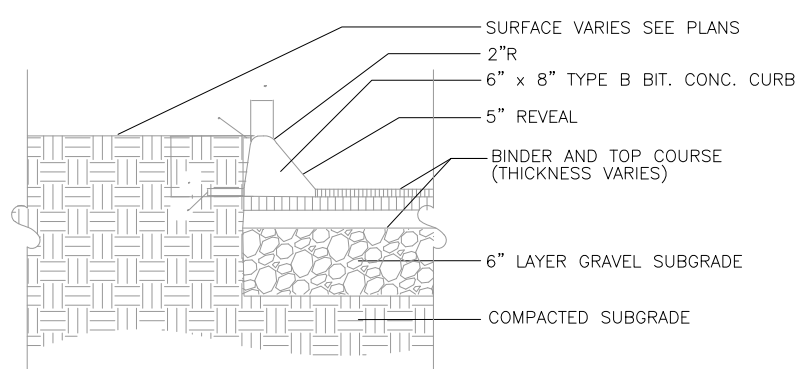
NOT TO SCALE

- GENERAL PAVING NOTES:**
- THE CONTRACTOR SHALL MAINTAIN TEMPORARY PAVEMENT FOR A MINIMUM OF 90 DAYS EXCEPT IF TEMPORARY PAVEMENT IS PLACED AFTER OCTOBER 15, THEN IT SHALL BE MAINTAINED UNTIL APRIL 15 OF THE FOLLOWING YEAR.
 - PERMANENT PAVEMENT SHALL BE PLACED BETWEEN APRIL 15 AND OCTOBER 15 OF EACH CALENDAR YEAR.
 - THE CONTRACTOR SHALL SAW CUT 12" OUTSIDE OF TRENCH EXCAVATION. TEMPORARY PAVEMENT SHALL BE REMOVED AND DISPOSED OF. THE GRAVEL SHALL BE FINE GRADED, EMULSION PLACED ON ALL JOINTS, AND PERMANENT PAVEMENT PLACED IN TWO COURSES.
 - CONTRACTOR SHALL MATCH EXISTING ROADWAY GRADES AND EXISTING THICKNESS UNLESS OTHERWISE DIRECTED.
 - REFER TO SPECIFICATION SECTION 02500 PAVING AND SURFACING FOR ADDITIONAL REQUIREMENTS.
 - PERMANENT PAVEMENT DETAIL TO APPLY TO TRENCH PAVEMENT AND FULL WIDTH ROADWAY RECONSTRUCTION AND/OR PAVEMENT.
 - BITUMINOUS BINDER COURSE FOR SIDEWALK RECONSTRUCTION (CURB TO CURB) TO BE 3-INCH MIN. THICKNESS.



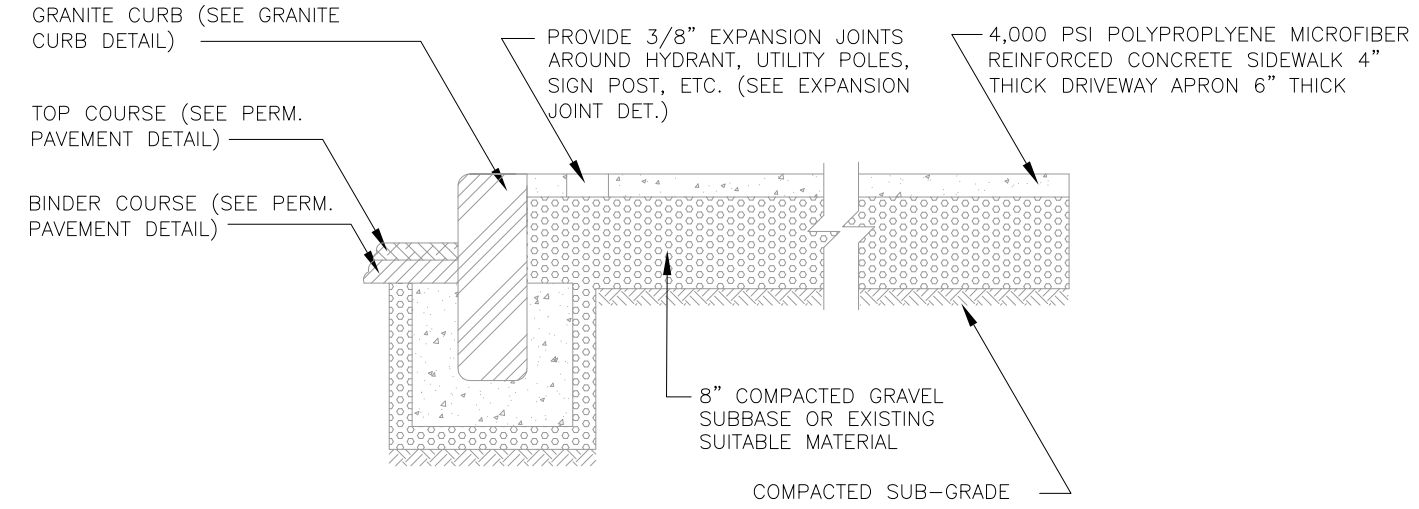
GRANITE CURB DETAIL

NOT TO SCALE



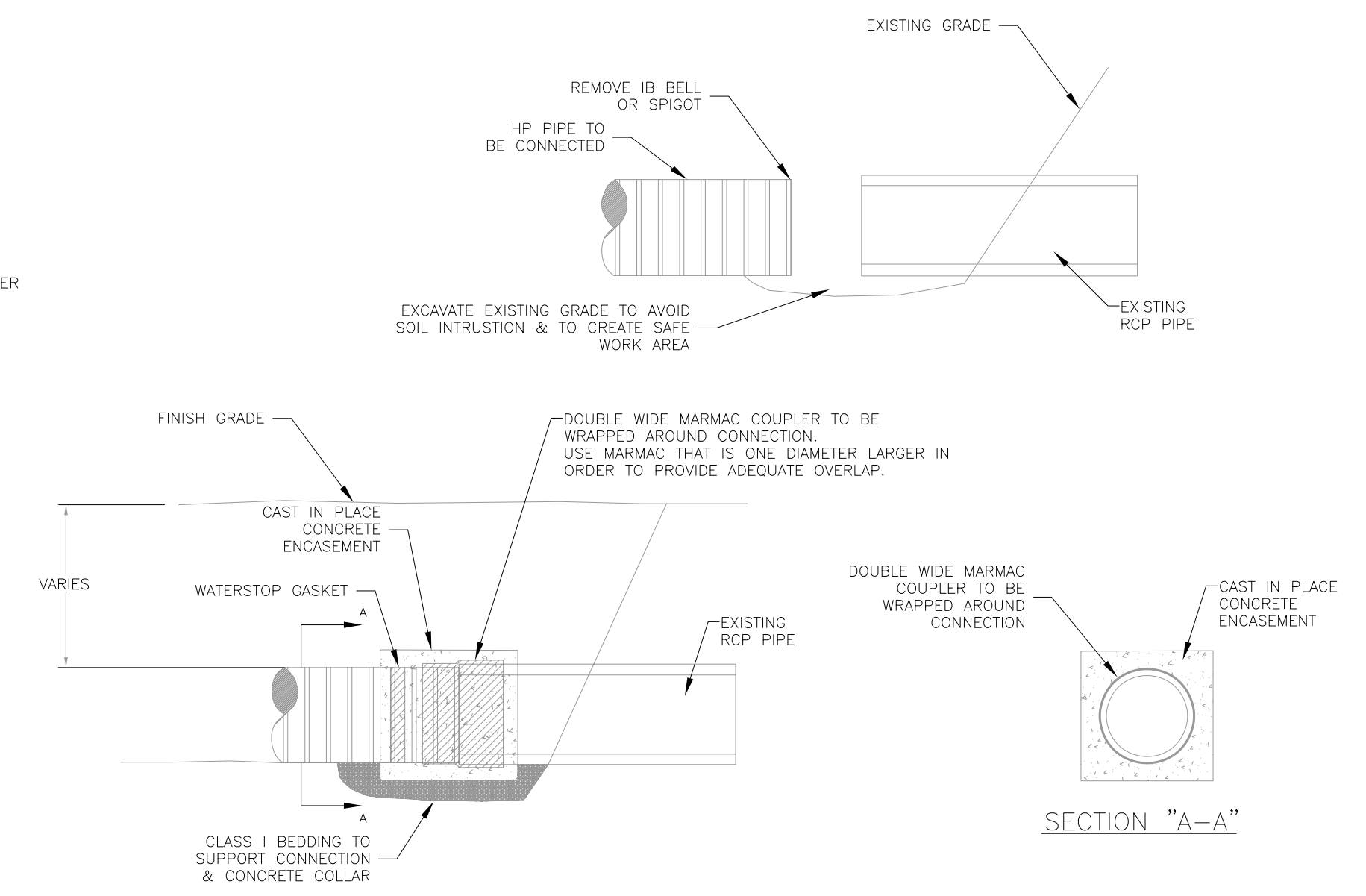
BITUMINOUS CONCRETE CURB/BERM

NOT TO SCALE



CONCRETE SIDEWALK DETAIL

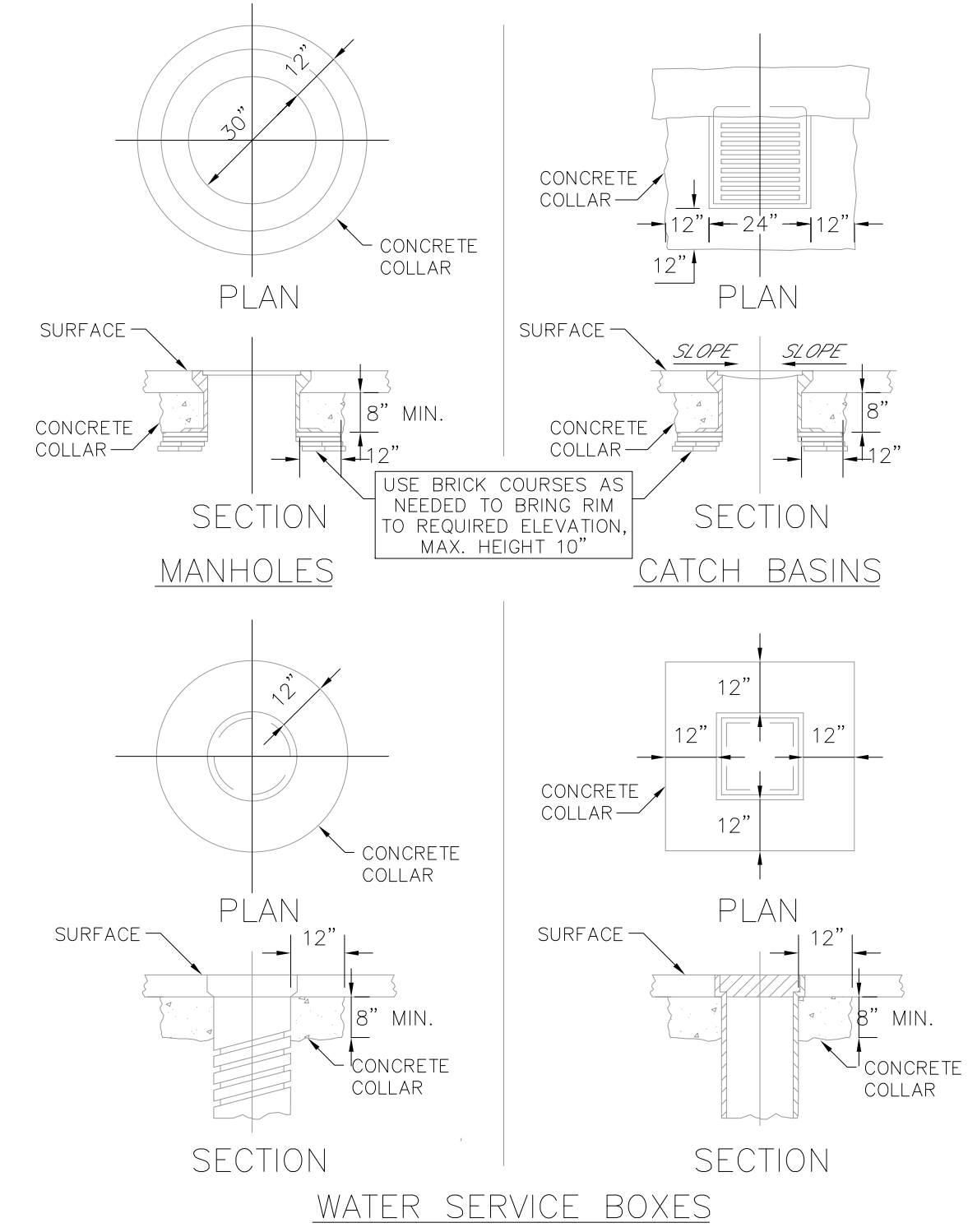
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SANITE HP TO RCP CONNECTION DETAIL (MARMAC)

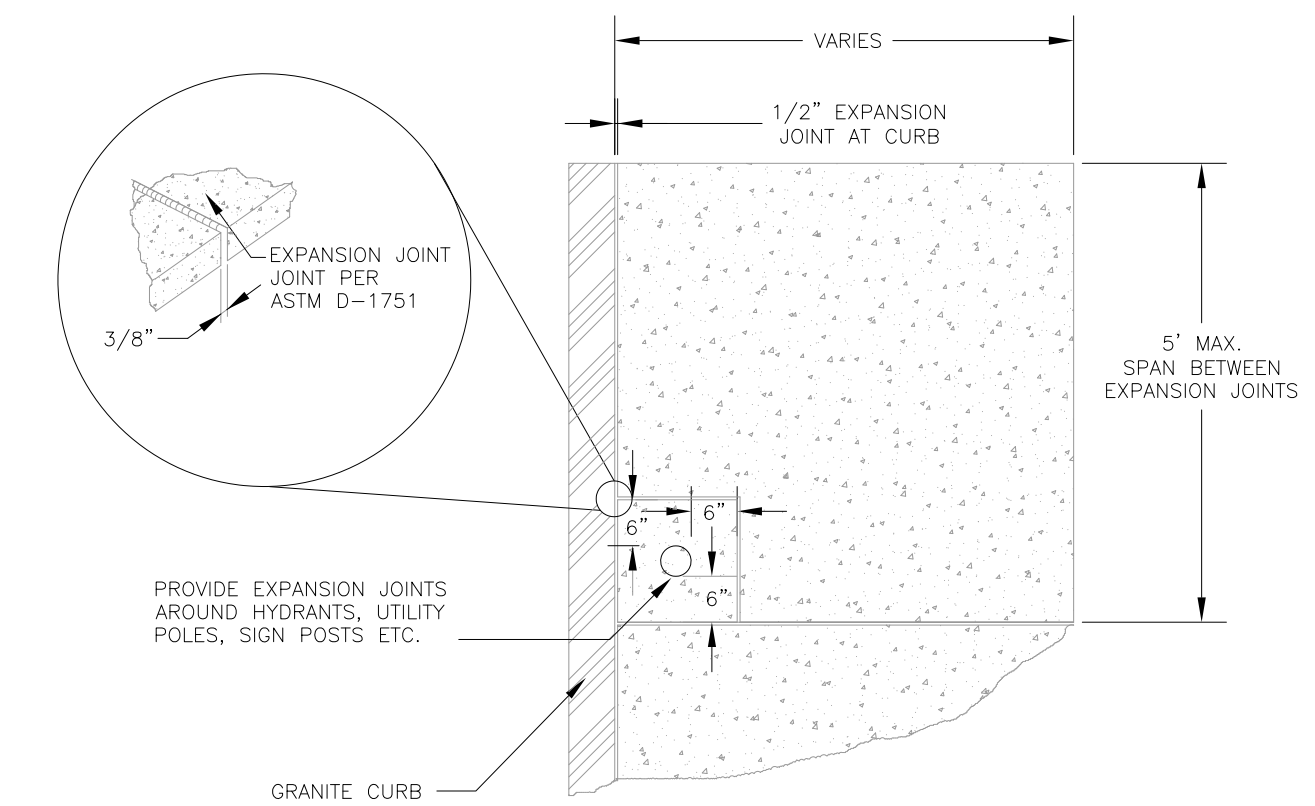
NOT TO SCALE

- NOTES:**
- CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D321, LATEST EDITION.
 - AN INTERNAL CYLINDER MAY BE WELDED TO THE PIPE TO BE INSERTED INTO THE ID OF THE EXISTING PIPE AND MINIMIZE JOINT MOVEMENT. HOWEVER, AN INTERNAL CYLINDER IS NOT RECOMMENDED FOR DOWNSTREAM CONNECTIONS.



DETAILS FOR RAISING CASTINGS

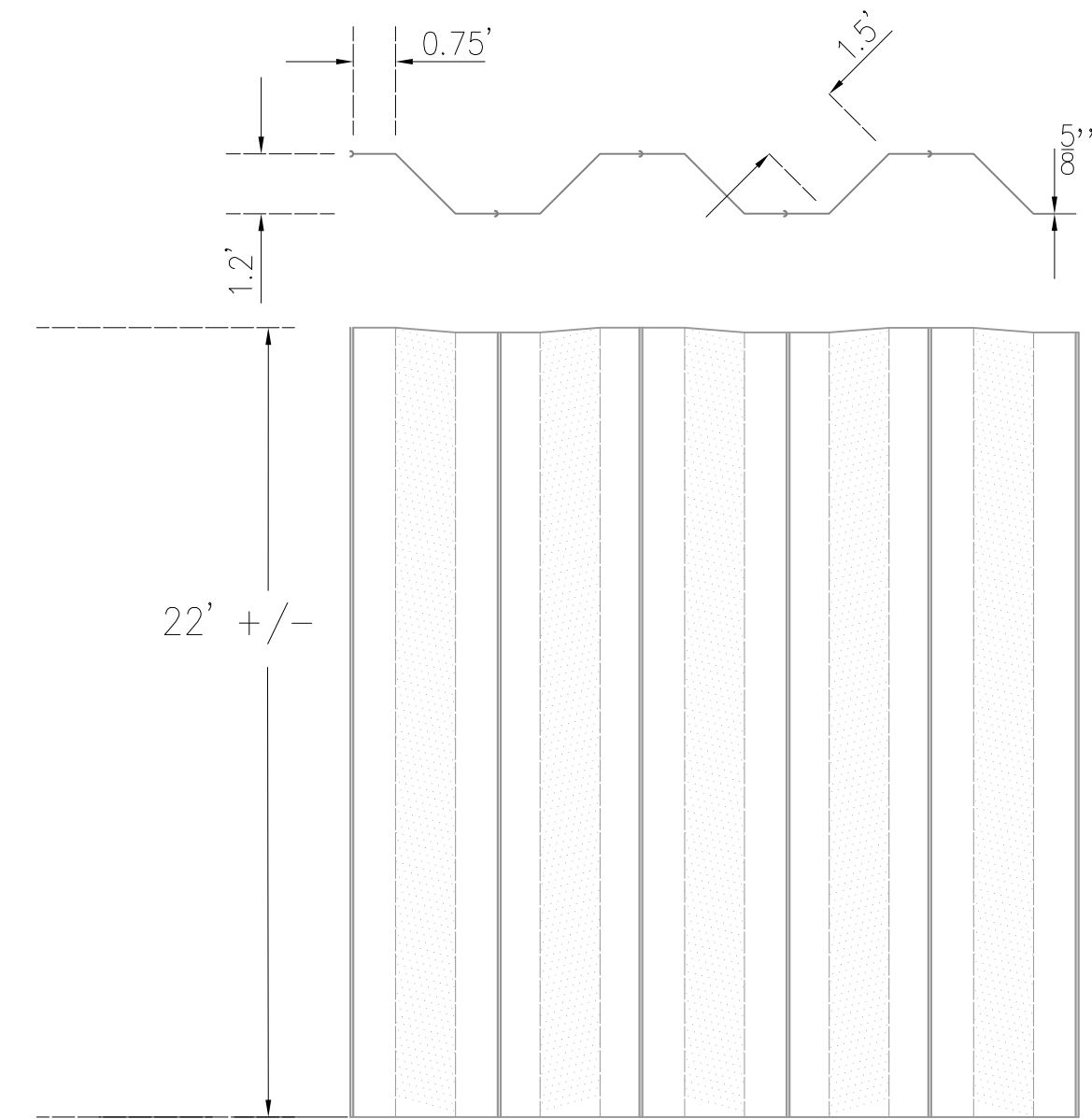
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CONCRETE SIDEWALK EXPANSION JOINT

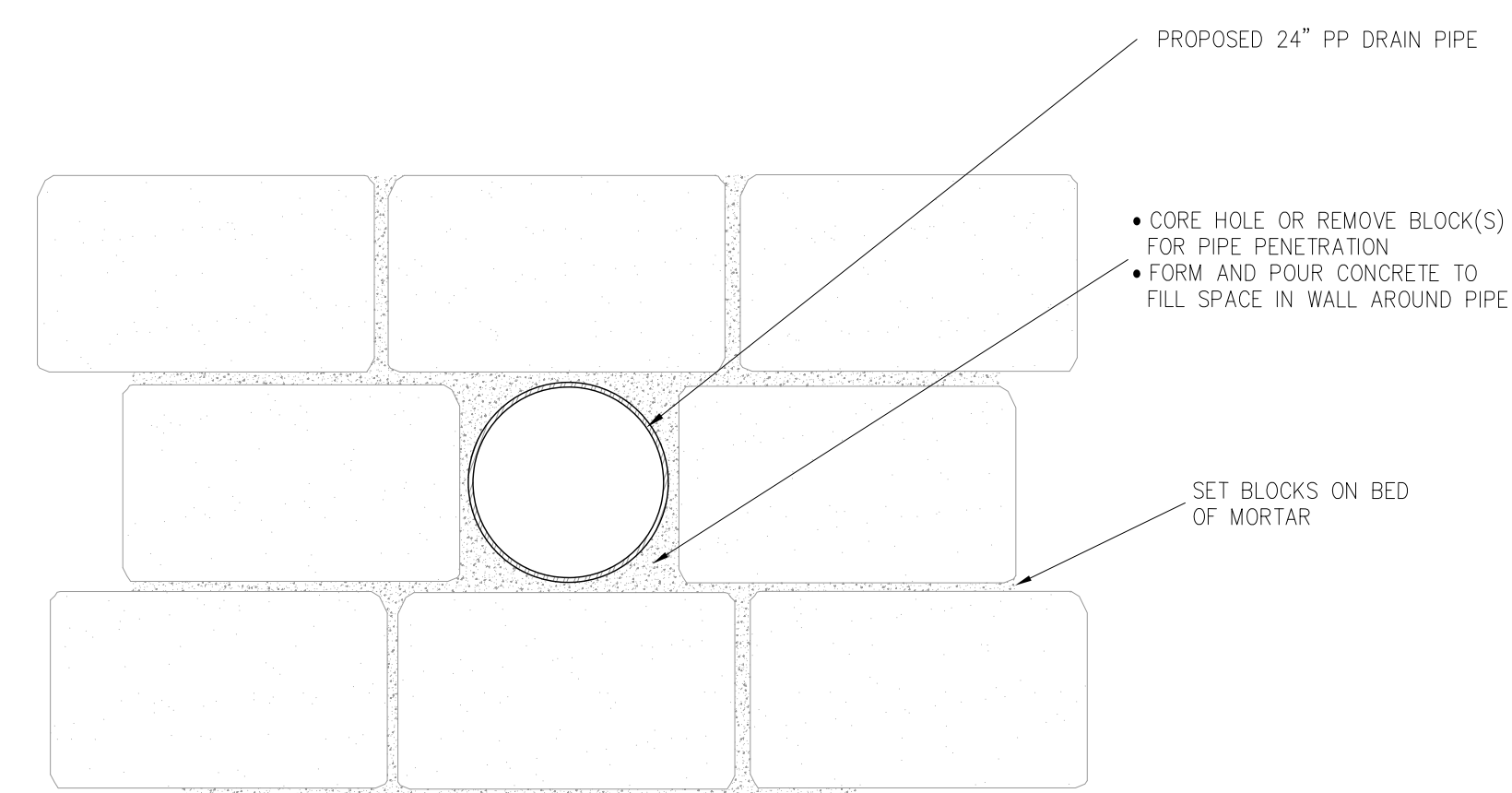
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Client	CITY OF SALEM, MASSACHUSETTS	Scale	NTS		New England Civil Engineering Corp. 265 Essex Street, Suite 102 SALEM, MASSACHUSETTS	Sheet
Project	CONGRESS STREET DRAIN REPLACEMENT	Date	11/12/2020			D-2
		Job	Salem-Drain2020			
		Designed by	WMR			
		Drawn by	RLM			
		Checked by				
		Approved by				
		No.		Description	Date	
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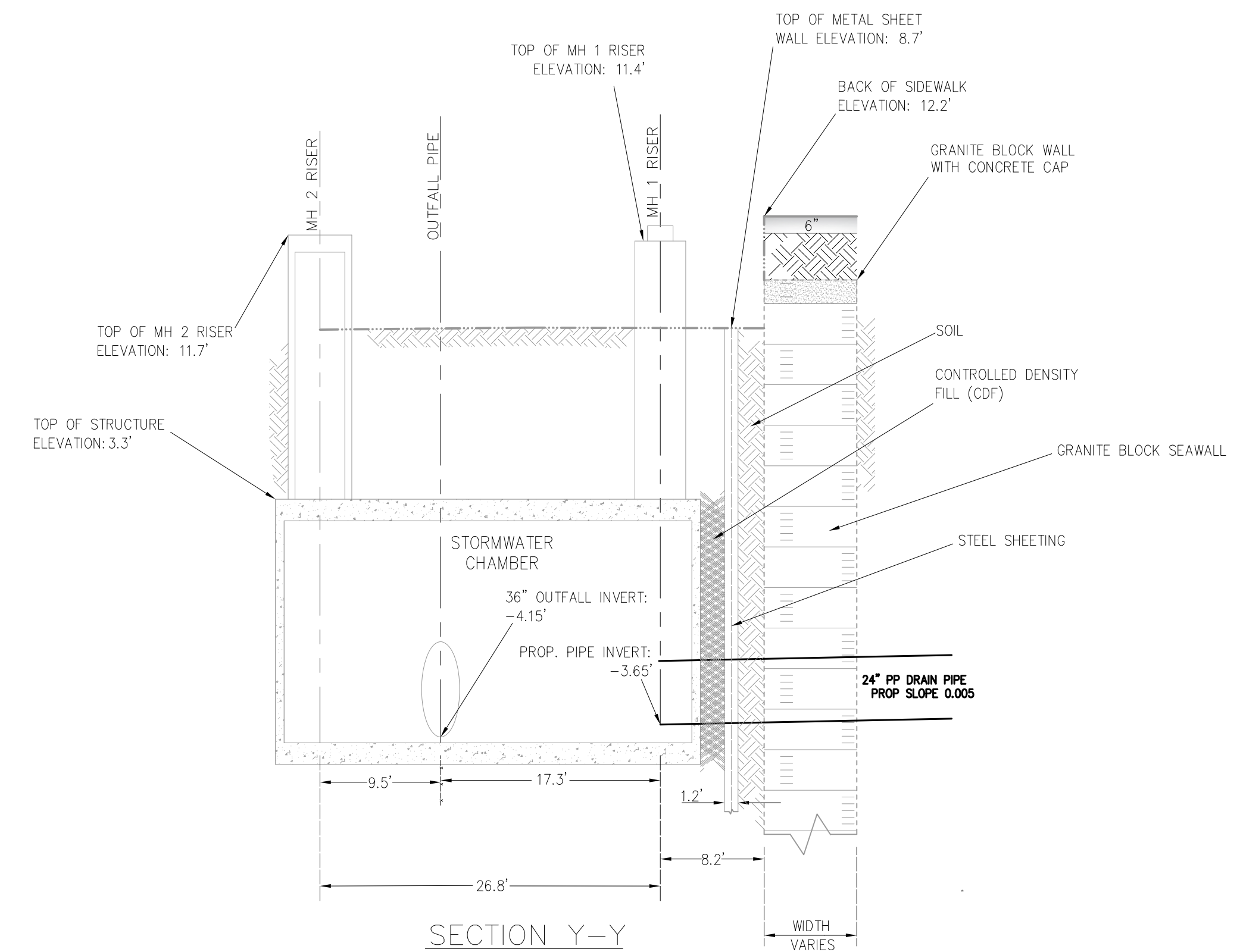


NOTES:
1. SHEETING PREVIOUSLY CUT OFF IN FIELD

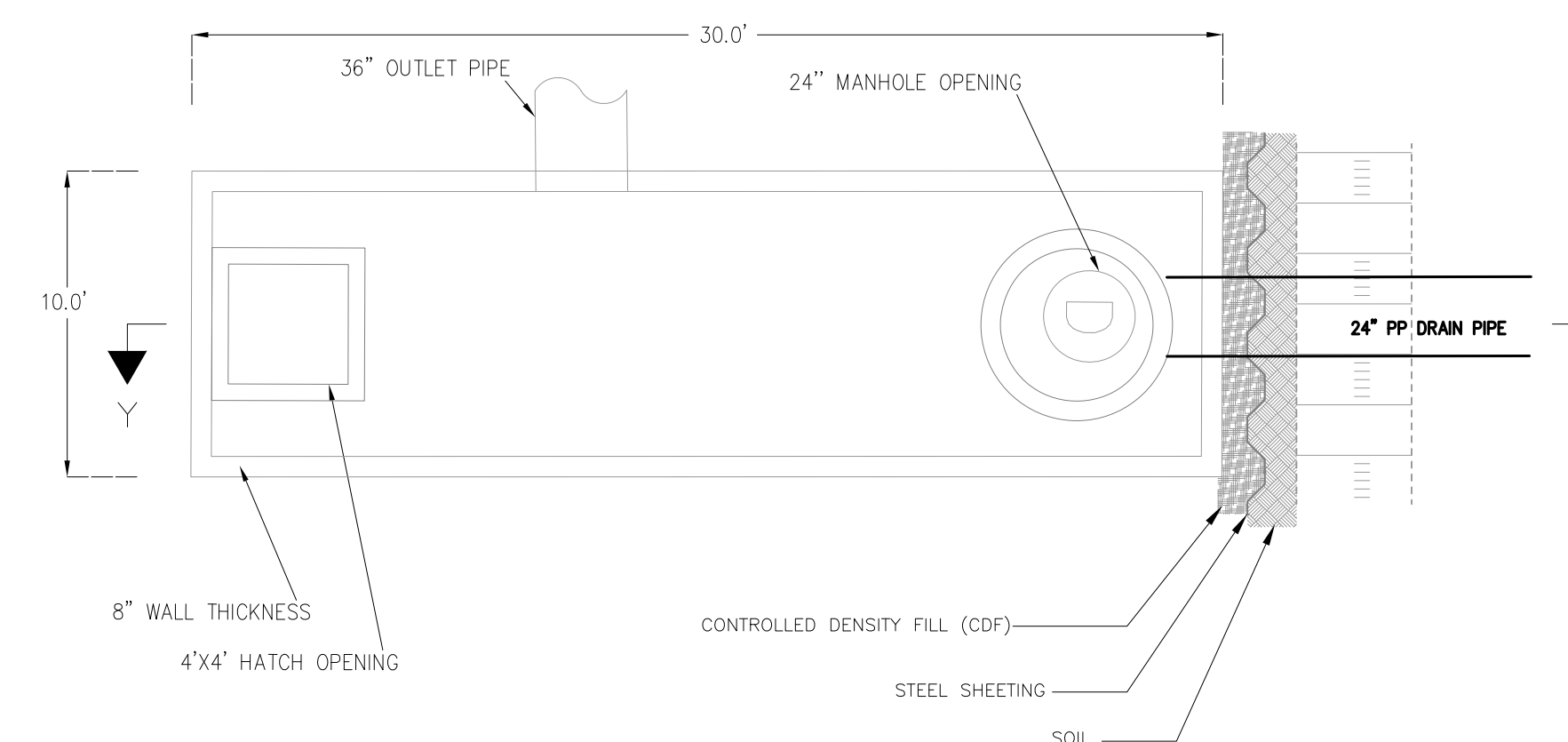
STEEL SHEETING DETAIL
NOT TO SCALE



GRANITE BLOCK WALL REPAIR DETAIL
NOT TO SCALE



SECTION Y-Y

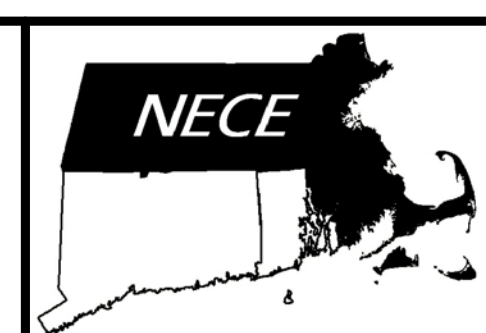
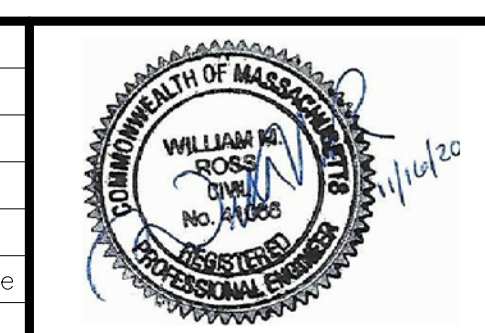


PLAN

STORMWATER CHAMBER STRUCTURE DETAIL
NOT TO SCALE

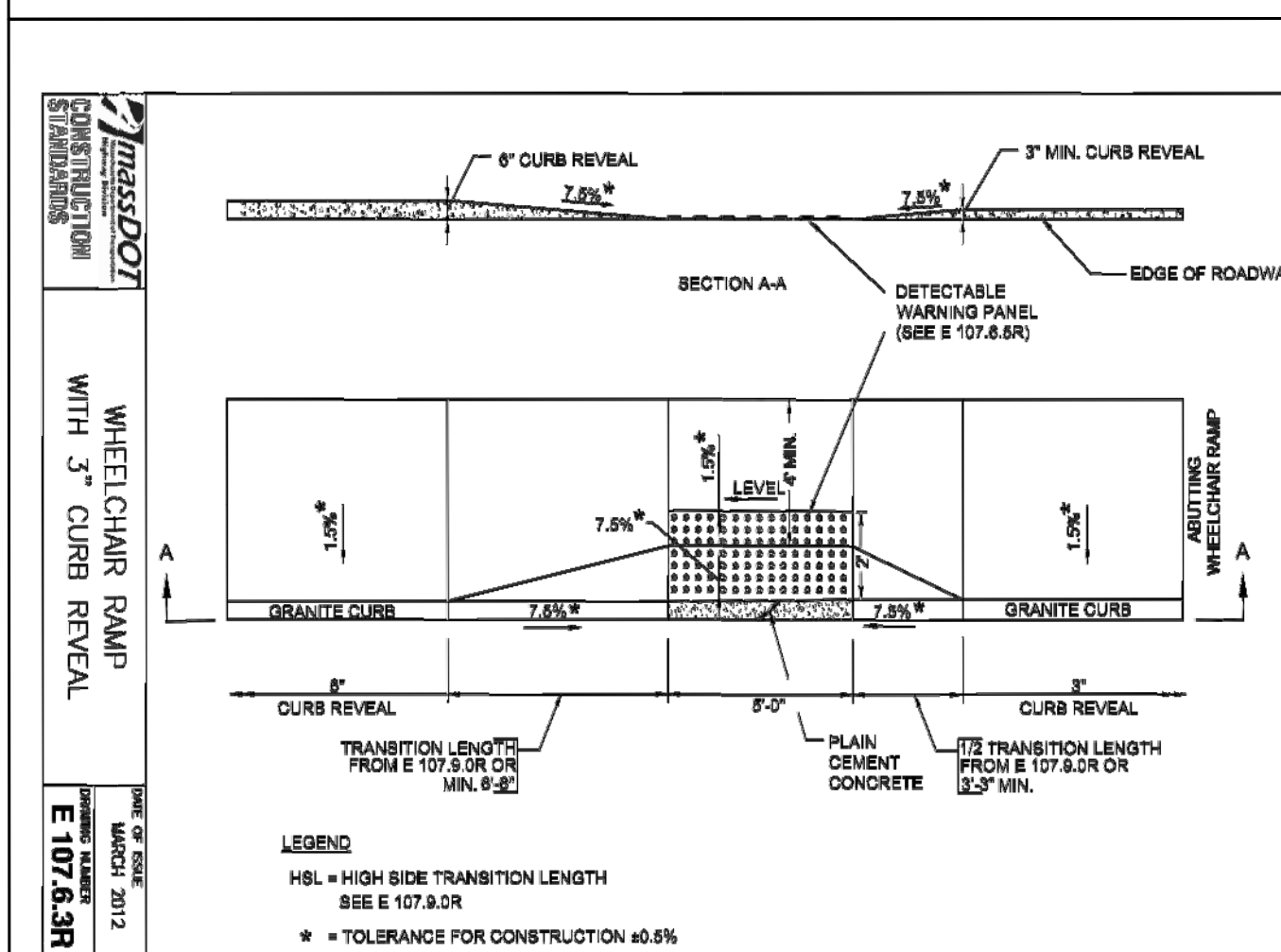
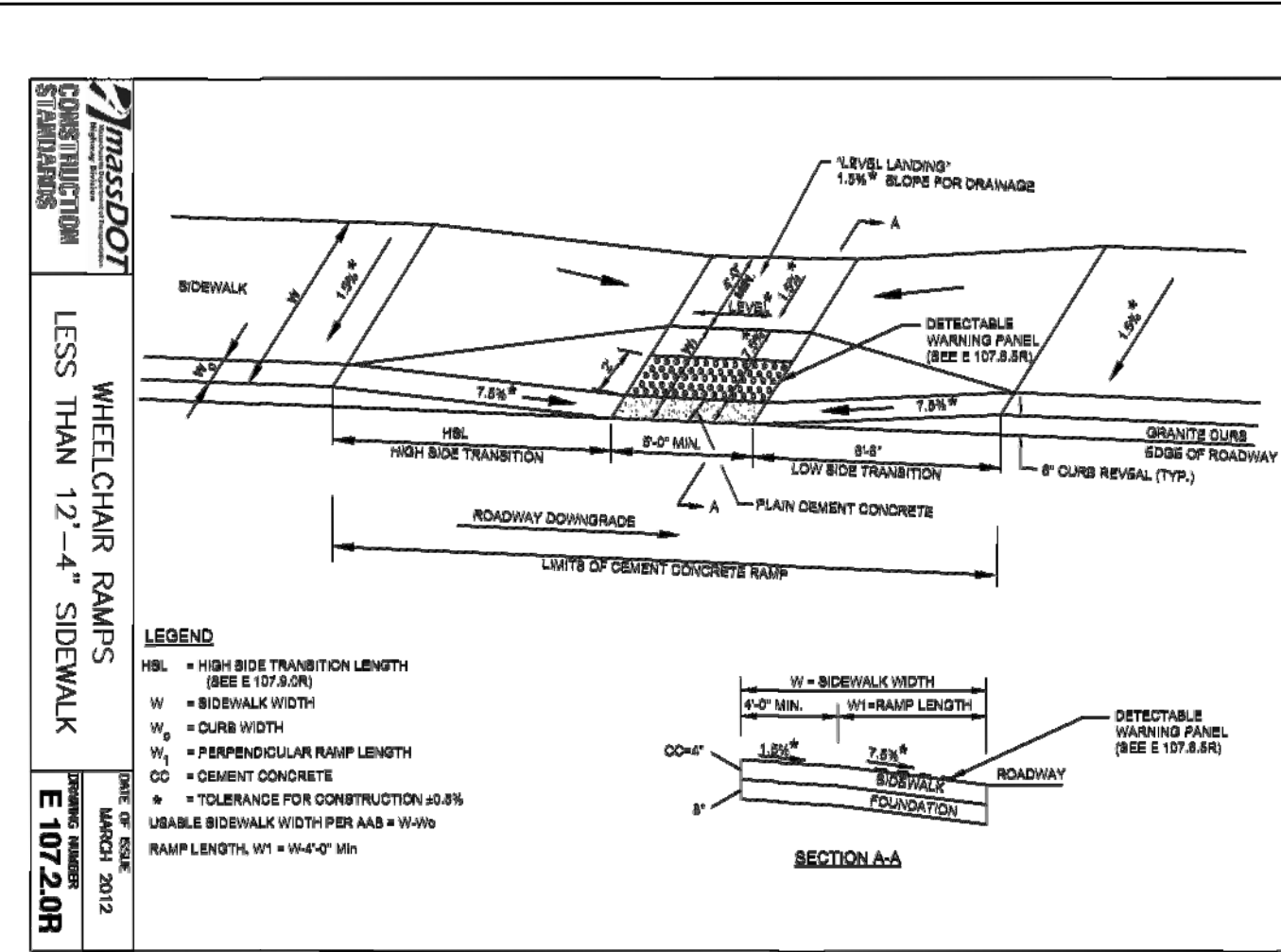
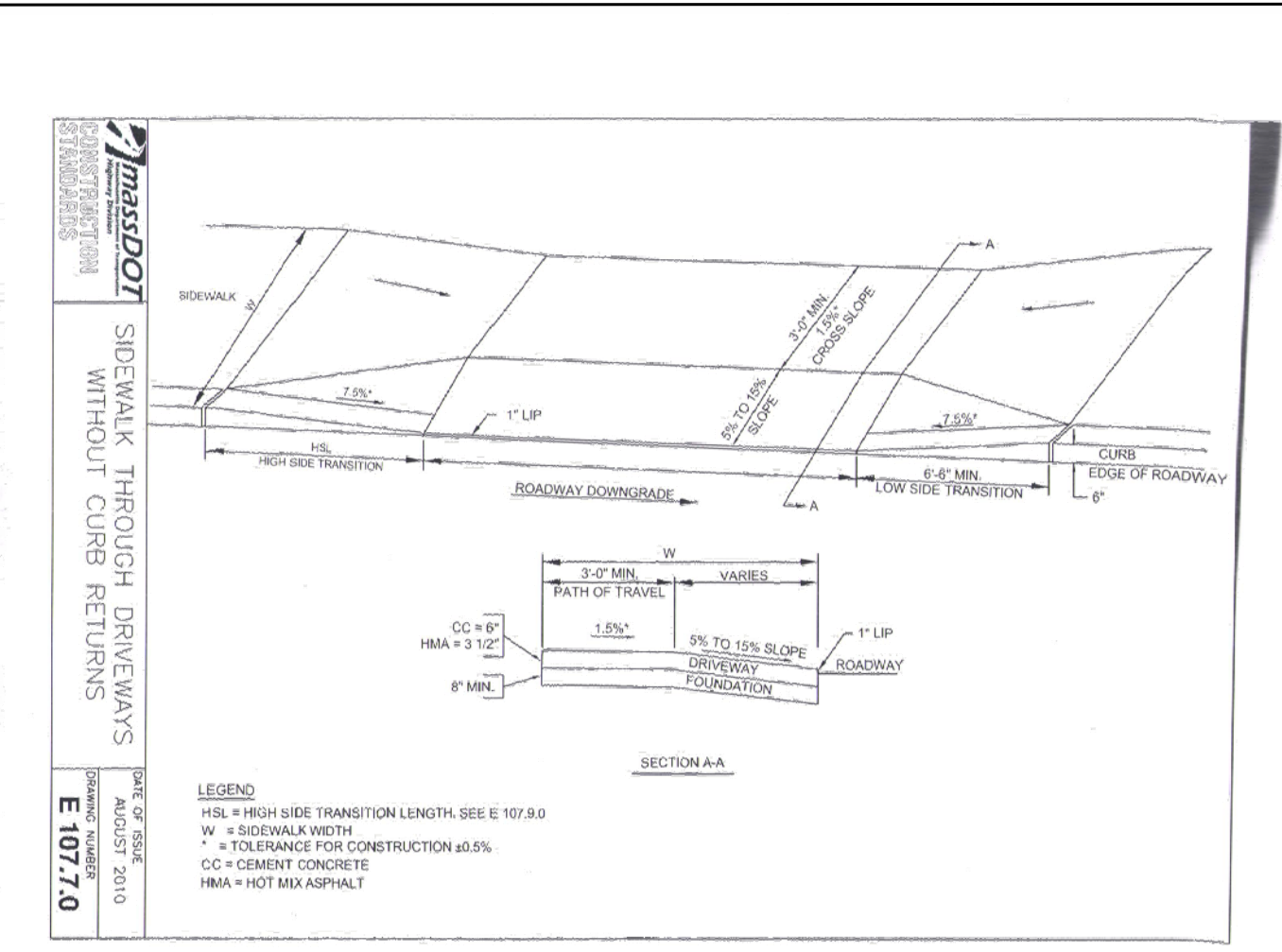
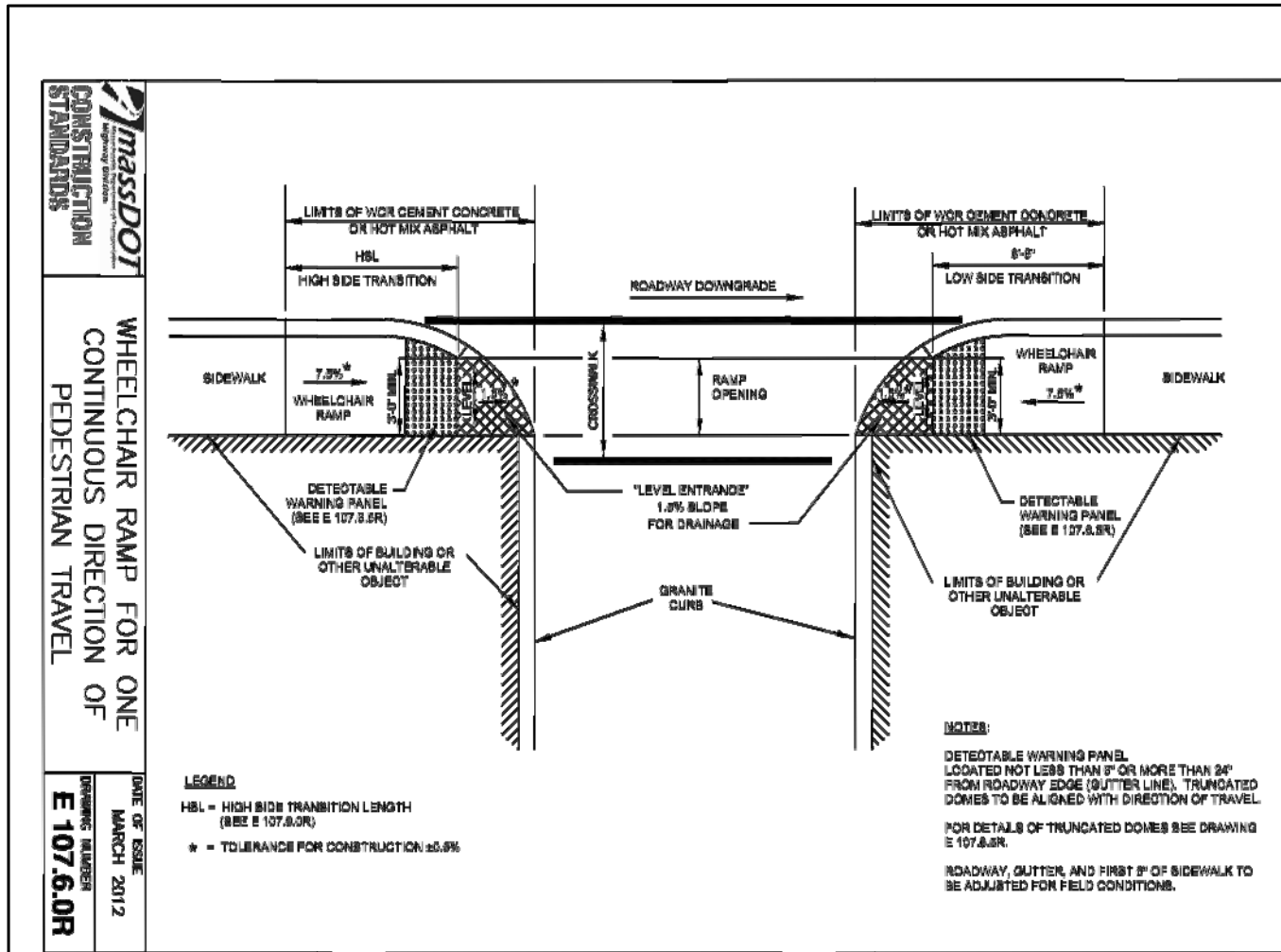
Client	CITY OF SALEM, MASSACHUSETTS
Project	CONGRESS STREET DRAIN REPLACEMENT
	DETAILS

Scale	NTS
Date	11/12/2020
Job	Salem-Drain2020
Designed by	WMR
Drawn by	RLM
Checked by	
Approved by	
No.	
Description	
Date	
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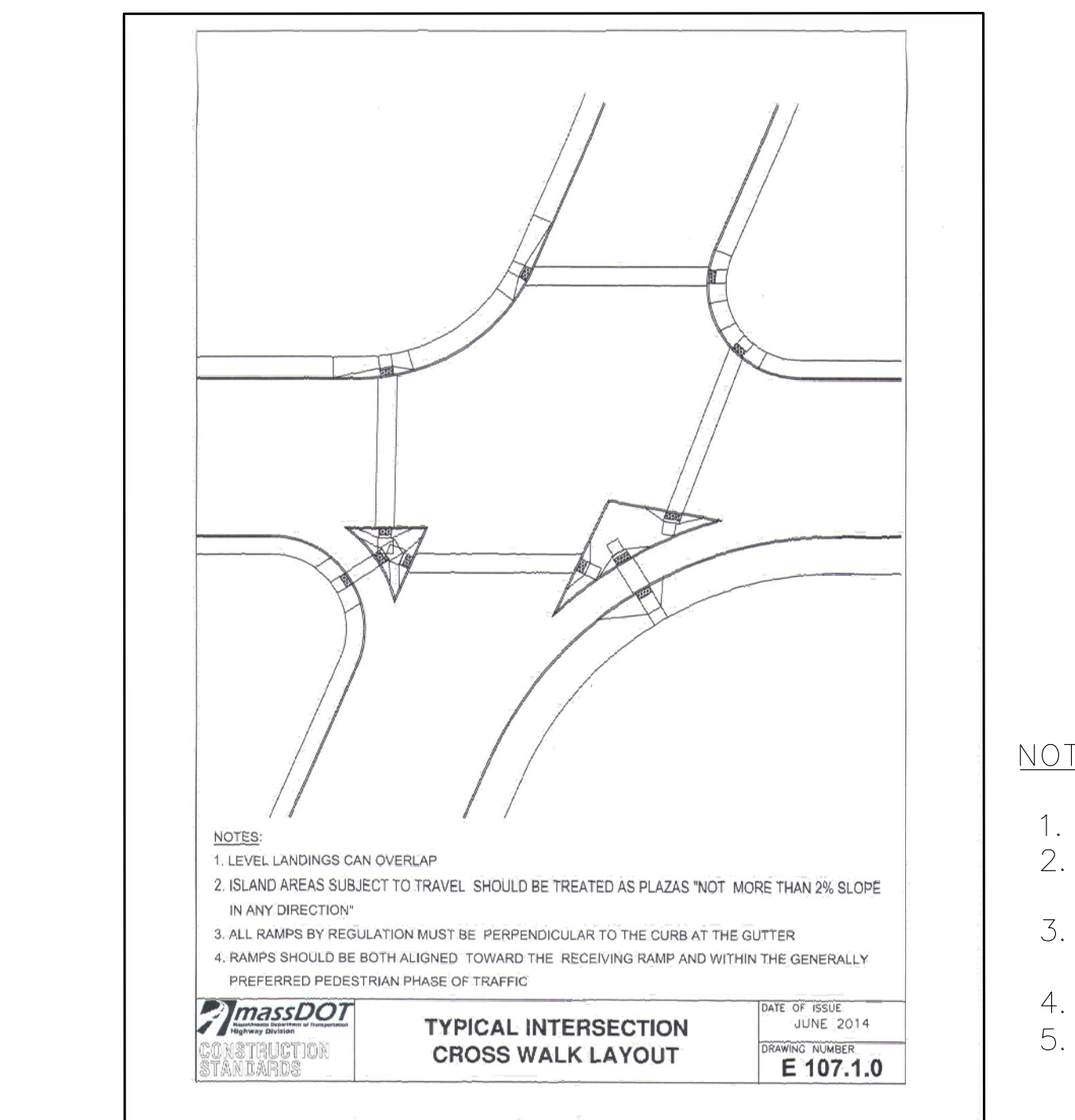
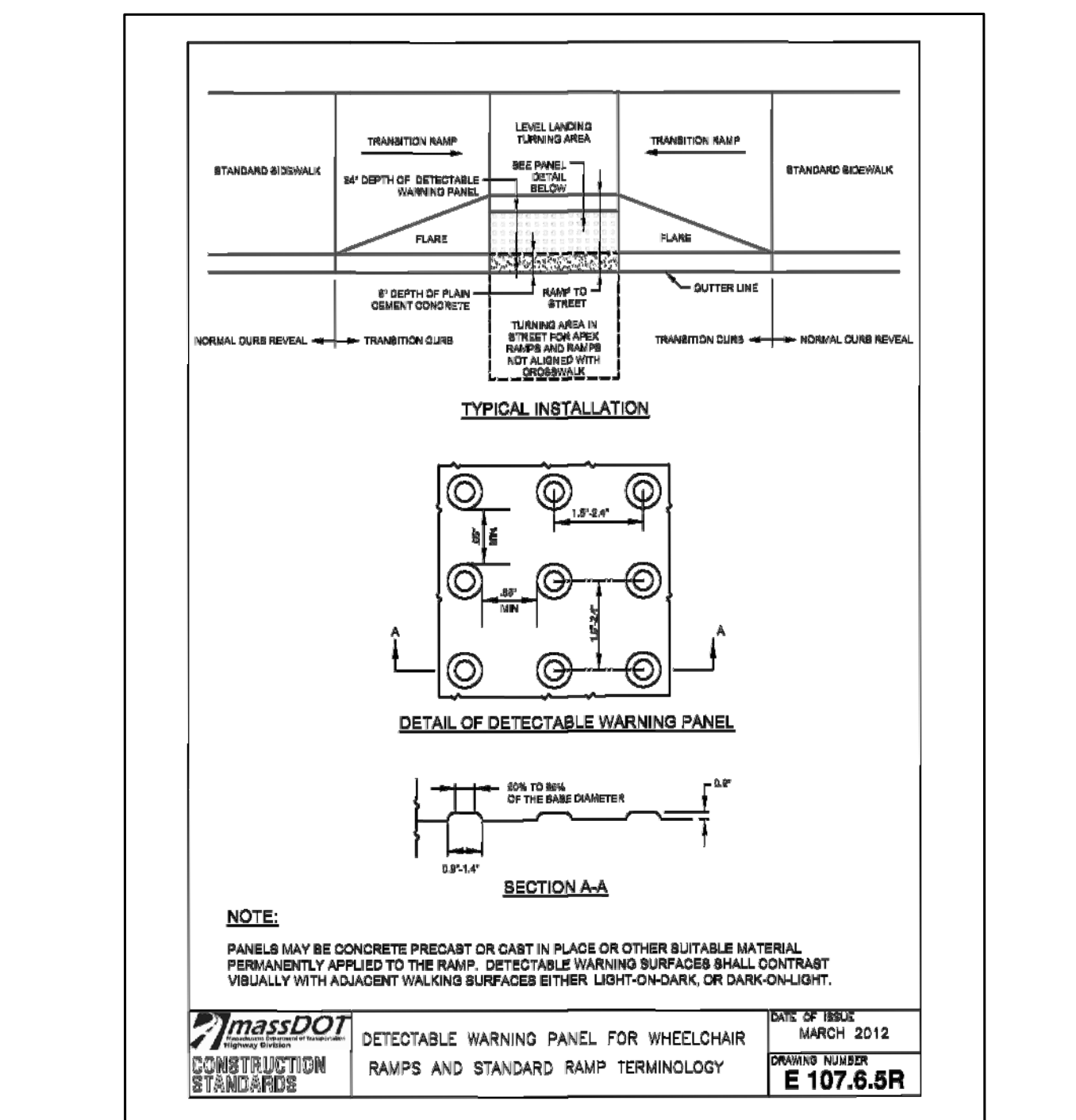
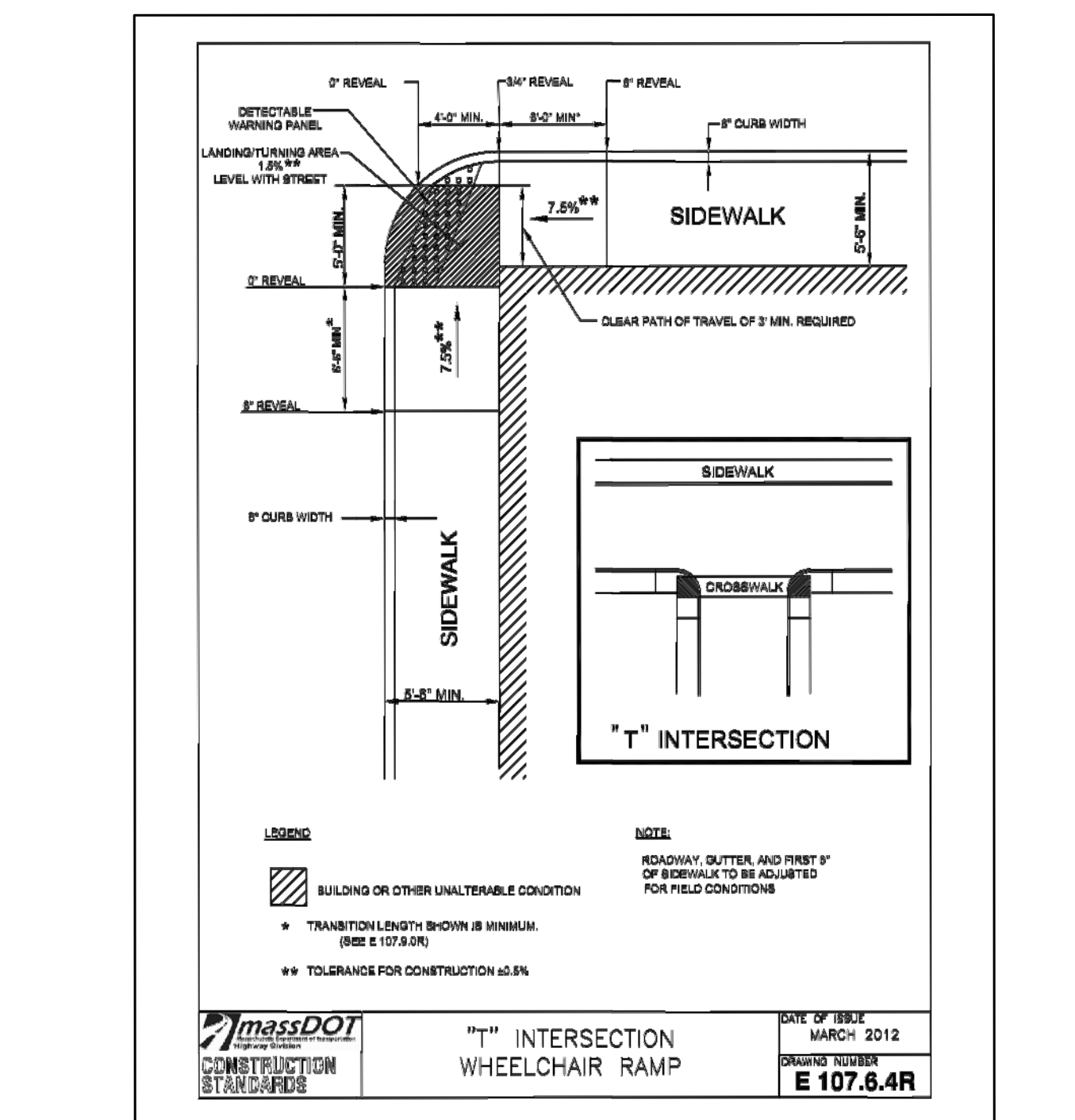
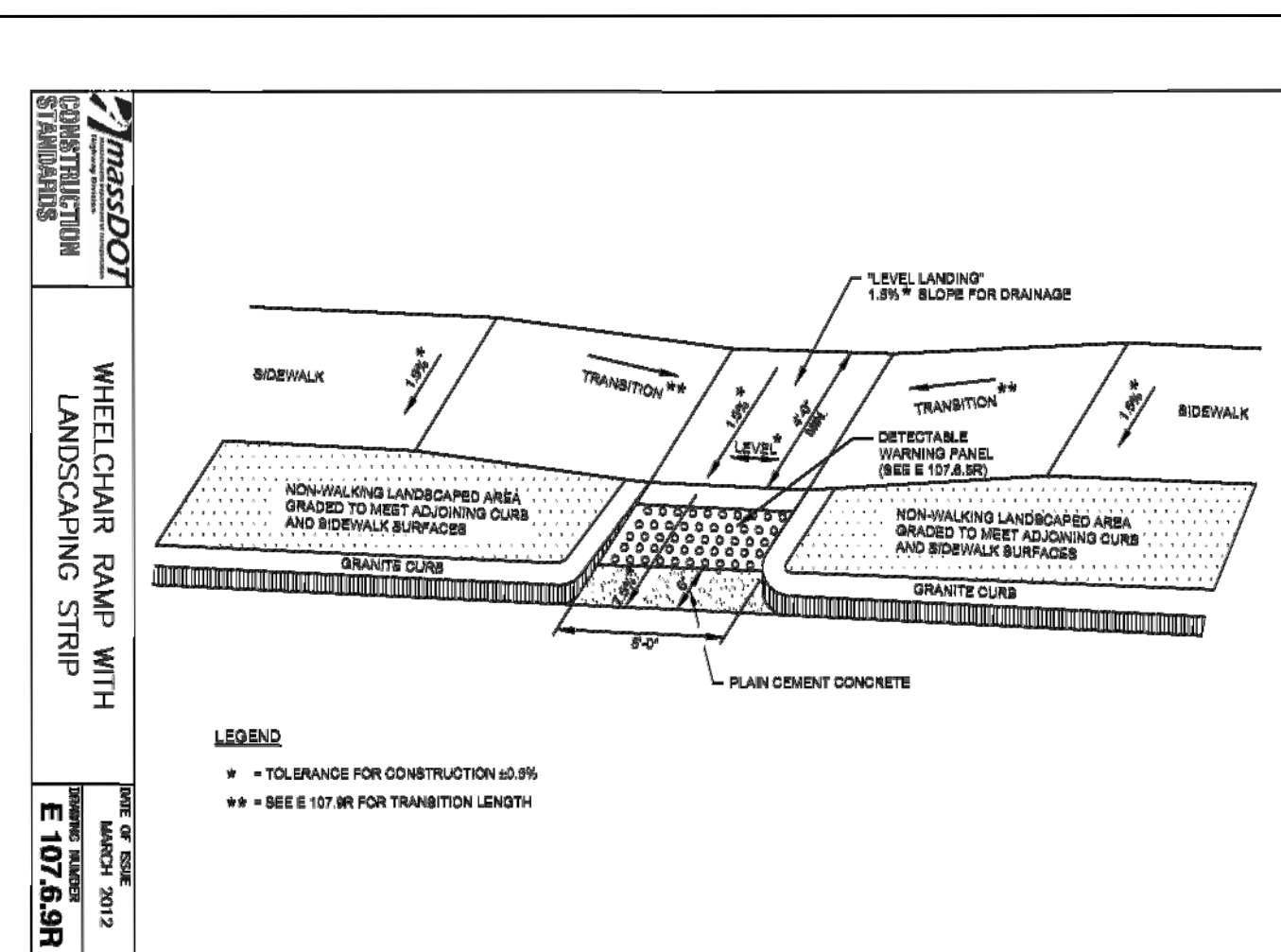
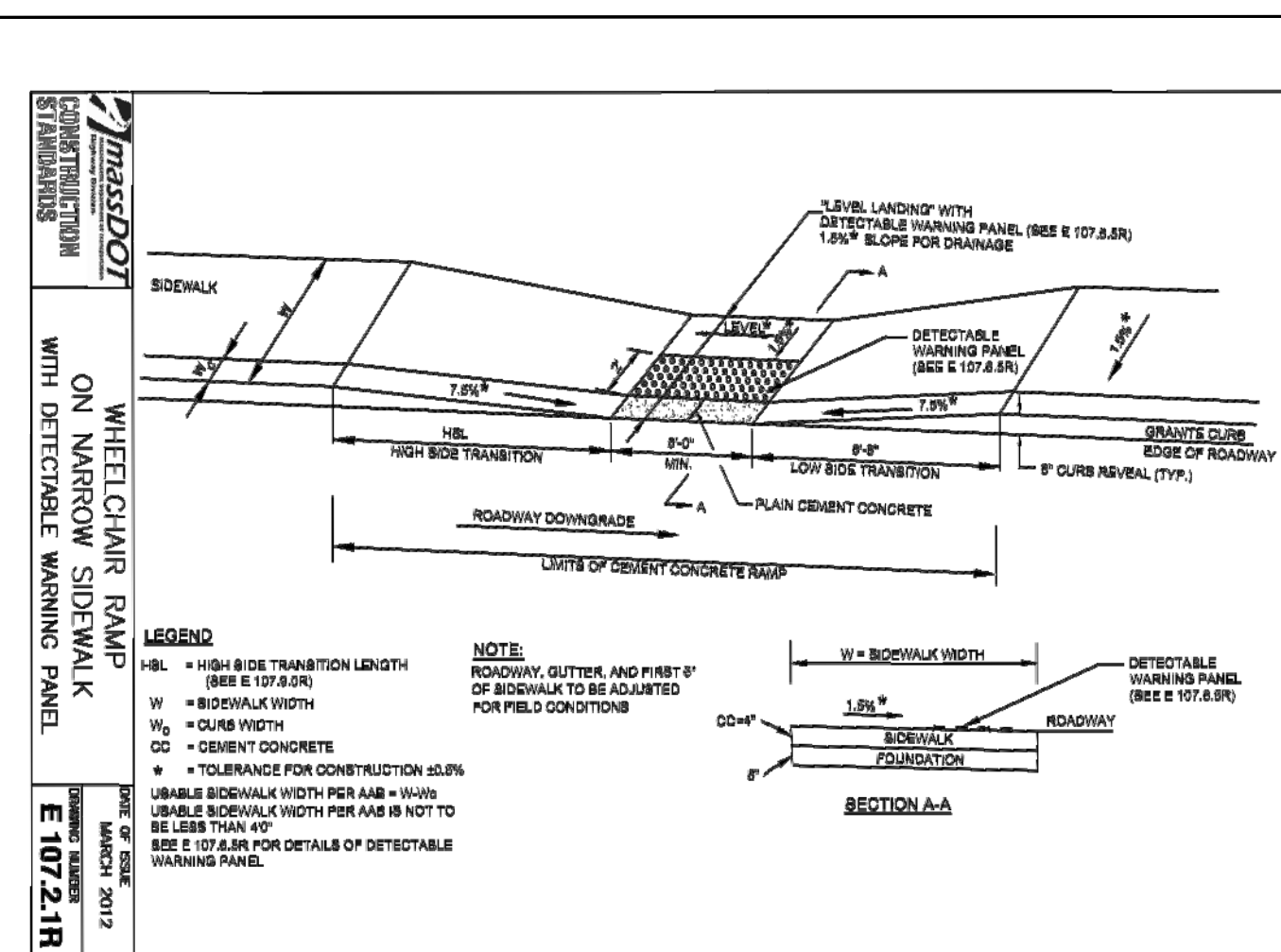
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265 Essex Street, Suite 102
SALEM, MASSACHUSETTS

Sheet
D-3



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".

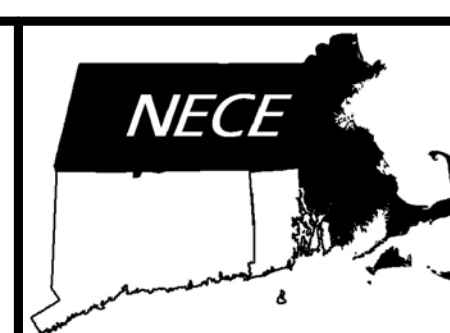
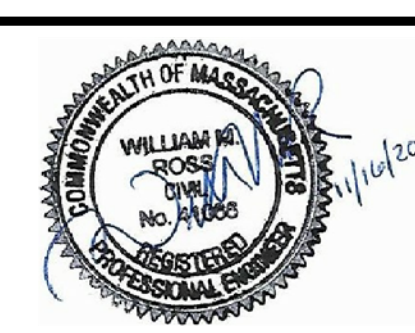


- NOTES:
1. TRAFFIC CONTROL MEASURES SHALL INCLUDE USE OF POLICE DETAILS AS REQUIRED.
 2. TRAFFIC CONTROL SIGNAGE SHALL UTILIZE POLICE OFFICER AHEAD IN LIEU OF FLAGGER AHEAD.
 3. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER OR POLICE DETAIL.
 4. ALL TEMPORARY WALKWAYS SHALL MEET ADA/AAB GUIDELINES.
 5. ADA COMPLIANT PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES AND SHALL INCLUDE ADDITIONAL SIGNAGE WHERE NEEDED TO DIRECT PEDESTRIAN TRAFFIC AROUND WORK ZONE.

Client: CITY OF SALEM, MASSACHUSETTS
 Project: CONGRESS STREET DRAIN REPLACEMENT
 DETAILS

Scale: NTS
 Date: 11/12/2020
 Job: Salem-Drain2020
 Designed by: WMR
 Drawn by: RLM
 Checked by:
 Approved by:

No. _____ Description _____ Date _____
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Sheet: D-4