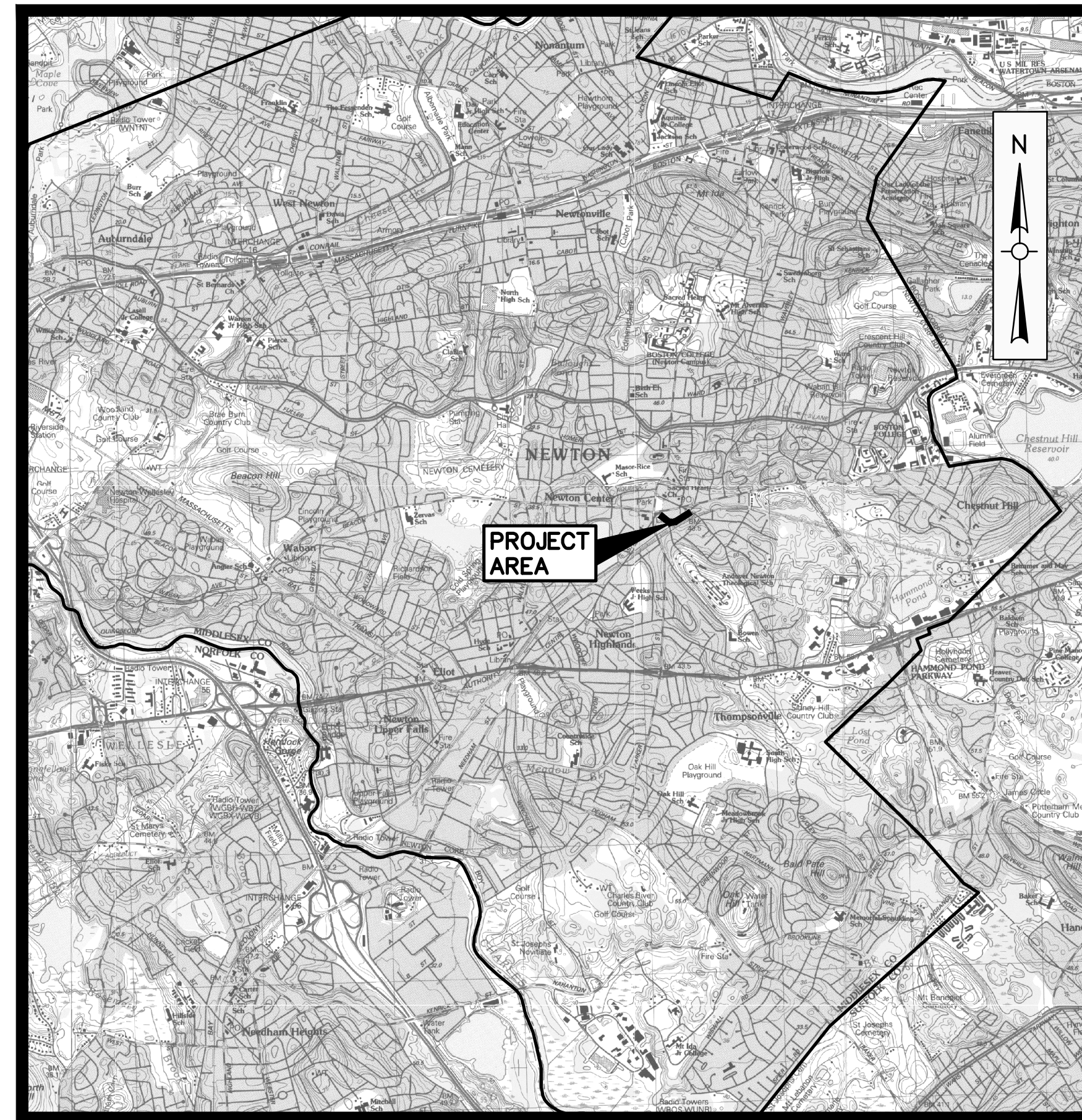


CITY OF NEWTON, MASSACHUSETTS

UNION STREET DRAIN EXTENSION

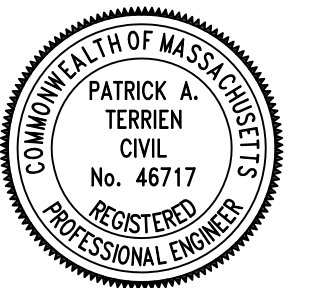
DEPARTMENT OF PUBLIC WORKS: 1000 COMMONWEALTH AVENUE, NEWTON CENTRE, MA 02459



LOCUS MAP
SCALE : 1"=3000'

DRAWING INDEX	
SHEET	TITLE
G000	COVER
G001	ABBREVIATIONS, NOTES AND LEGEND
C101	UNION STREET AND HERRICK ROAD DRAIN - PLAN AND PROFILE STA 0+00 TO STA 7+00
C102	CONSTRUCTION ZONE SAFETY PLAN
C501	DETAILS
C502	DETAILS
C503	DETAILS

Seal:



BID INVITATION #25-22



RUTHANNE FULLER, MAYOR
JAMES MCGONAGLE, COMMISSIONER OF PUBLIC WORKS



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OCTOBER 2024



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Call before you dig.

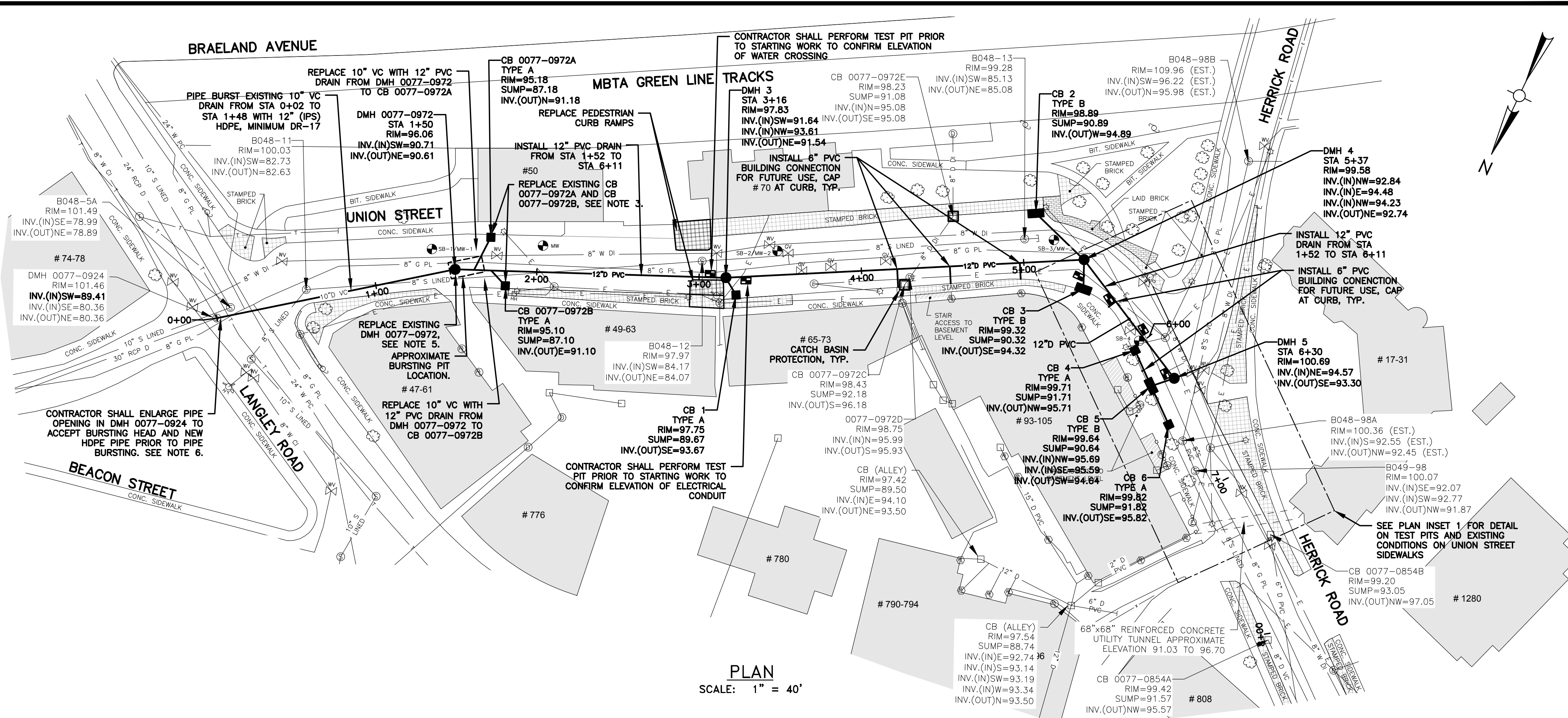
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BID AND CONSTRUCTION

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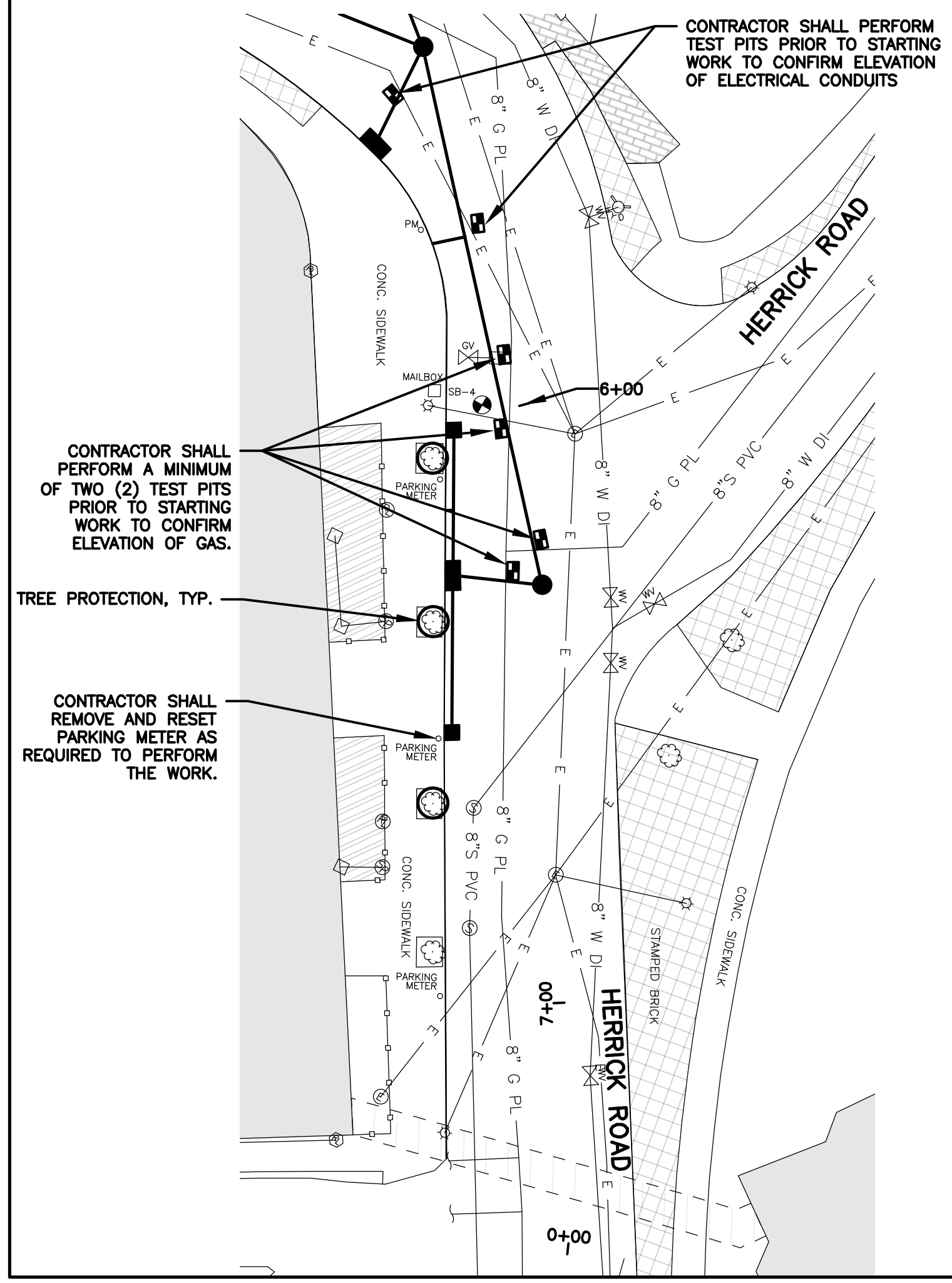
NOTES:

- ALL CATCH BASIN LEADERS SHALL BE 12" PVC.
- CONTRACTOR SHALL PERFORM ALL TEST PITS INDICATED ON THE PLANS PRIOR TO ORDERING MANHOLE OR CATCH BASIN STRUCTURES. CONTRACTOR SHALL CONFIRM PROPOSED INVERT ELEVATIONS WITH THE ENGINEER FOLLOWING TEST PITS, AND PRIOR TO ORDERING MANHOLE OR CATCH BASIN STRUCTURES.
- CONTRACTOR SHALL REPLACE EXISTING CATCH BASINS CB 0077-0972A AND CB 0077-0972B WITH NEW PRECAST CATCH BASINS. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING CATCH BASINS. REMOVAL AND DISPOSAL OF EXISTING CATCH BASINS SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING 10" VC DRAIN PIPE FROM CATCH BASINS 0077-0972A AND 0077-0972B TO DRAIN MANHOLE 0077-0972. REMOVAL AND DISPOSAL OF EXISTING DRAIN PIPES SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT BUT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING DRAIN MANHOLE 0077-0972. REMOVAL AND DISPOSAL OF DRAIN MANHOLE SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
- CONTRACTOR SHALL PIPE BURST FROM DMH 0077-0924. CONTRACTOR SHALL NOT EXCAVATE AT DMH 0077-0924. CONTRACTOR SHALL ENLARGE PIPE OPENING IN MANHOLE DMH 0077-0924 TO ACCEPT BURSTING HEAD AND NEW HDPE PIPE PRIOR TO PIPE BURSTING. CONTRACTOR SHALL ALLOW SUFFICIENT EXCESS LENGTH OF NEW HDPE PIPE IN DMH 0077-0924, BUT NOT LESS THAN FOUR (4) INCHES, NOR MORE THAN SIX (6) INCHES SHALL BE ALLOWED TO PROTRUDE INTO THE MANHOLE. CONTRACTOR SHALL SEAL AROUND NEW HDPE PIPE IN DMH 0077-0924.
- HDPE PIPE SHALL BE A MINIMUM OF DR-17. SEE SPECIFICATION SECTION 02225 (PIPE BURSTING CONSTRUCTION), 1.07 FOR HDPE CALCULATIONS.
- TWO (2) PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE SET UP A MINIMUM OF 7-DAYS PRIOR TO STARTING WORK. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT BUT SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- THE CONTRACTOR SHALL PROTECT ALL UTILITY PIPE CROSSINGS WITHIN TRENCH LIMITS. ANY DAMAGE DONE TO THE EXISTING UTILITIES THROUGH THE CONTRACTORS OPERATIONS SHALL BE REPLACED WITH FULL SECTIONS OF PIPE MATCHING THE DIAMETER AND MATERIAL OF THE EXISTING UTILITY PIPE AT NO ADDITIONAL COST TO THE OWNER. PROTECTION OF EXISTING UTILITIES SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
- ALL INSTALLED PRECAST DRAIN MANHOLES SHALL BE CONSTRUCTED WITH MASONRY BRICK BENCHES AND INVERTS. REFER TO DETAIL.
- THE PROPERTIES AT 43-63 UNION STREET AND 47-61 LANGLEY ROAD ARE A STATE-LISTED DISPOSAL SITE REGULATED UNDER THE MASSACHUSETTS CONTINGENCY PLAN (MCP) FOR THE RELEASE OF CHLORINATED SOLVENTS TO GROUNDWATER. THE SITE HAS BEEN ASSIGNED TWO (2) RELEASE TRACKING NUMBERS (RTNs), 3-23541 AND 3-25755, BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP). WESTON & SAMPSON PERFORMED ENVIRONMENTAL BORINGS (SB-1, SB-2, SB-3, AND SB-4) AND INSTALLED GROUNDWATER MONITORING WELLS (MW-1, MW-2, AND MW-3). THE LOCATION OF ENVIRONMENTAL BORINGS AND GROUNDWATER MONITORING WELLS ARE SHOWN ON THE PLANS. THE RESULTS OF GROUNDWATER SAMPLING ARE INCLUDED IN SPECIFICATION SECTION 02282, HANDLING AND DISPOSAL OF EXCAVATED MATERIALS.
- ALL CAPPED STUBS SHALL BE LAID AT S=0.005.
- ALL 12"x12" WYES SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT BE MEASURED SEPARATELY FOR PAYMENT.

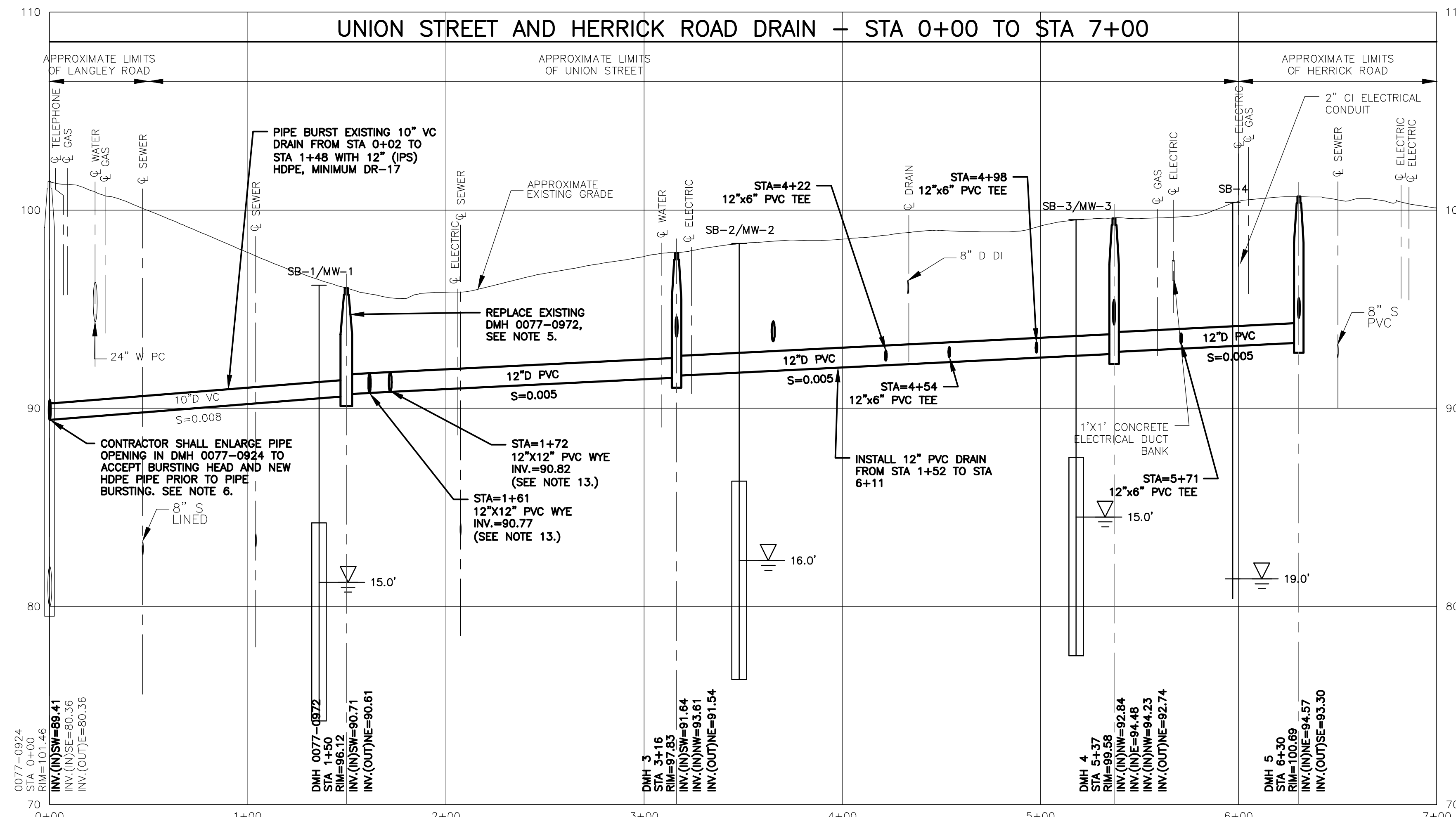


PLAN
SCALE: 1" = 40'

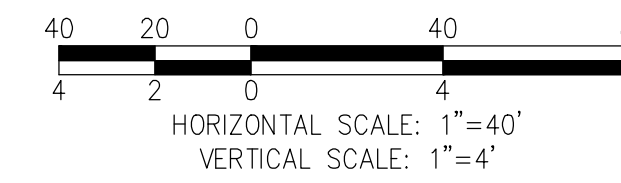
PLAN INSET 1



PLAN
SCALE: 1" = 20'



PROFILE
SCALE: 1" = 40' HORIZ
1" = 4' VERT



Project:
CITY OF NEWTON, MA
UNION STREET GRAVITY DRAIN EXTENSION
DEPARTMENT OF PUBLIC WORKS
1000 COMMONWEALTH AVENUE
NEWTON CENTRE, MA 02459

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Approved By: PAT
W&S Project No.: 2191018
W&S File No.:

Drawing Title:
UNION STREET AND HERRICK ROAD DRAIN - PLAN AND PROFILE STA 0+00 TO STA 7+00

Sheet Number:
C101
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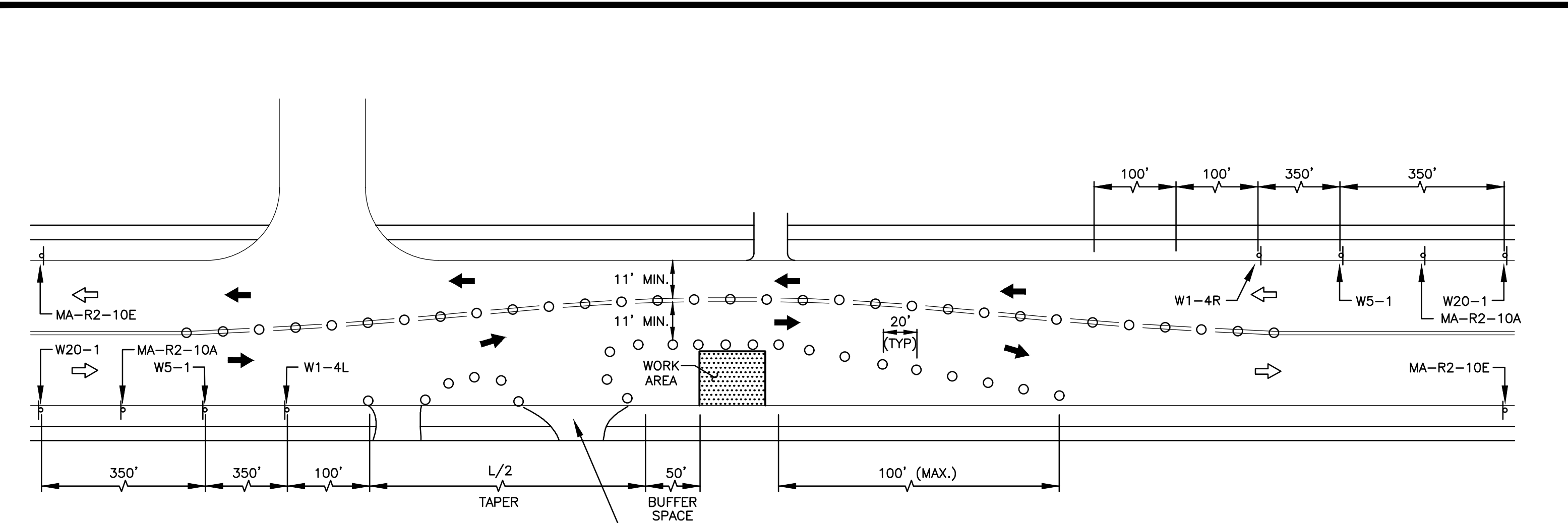
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Date: AUGUST 2024
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 Approved By: PAT

W&S Project No.: 2191018
 W&S File No.:

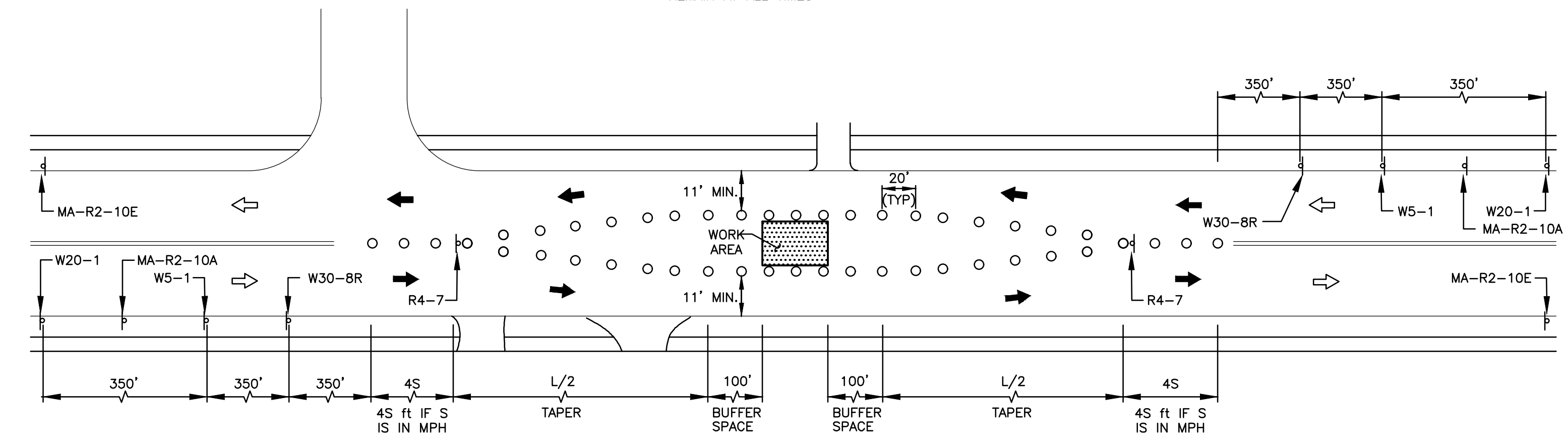
Drawing Title: **CONSTRUCTION ZONE SAFETY PLAN**

Sheet Number: **C102**

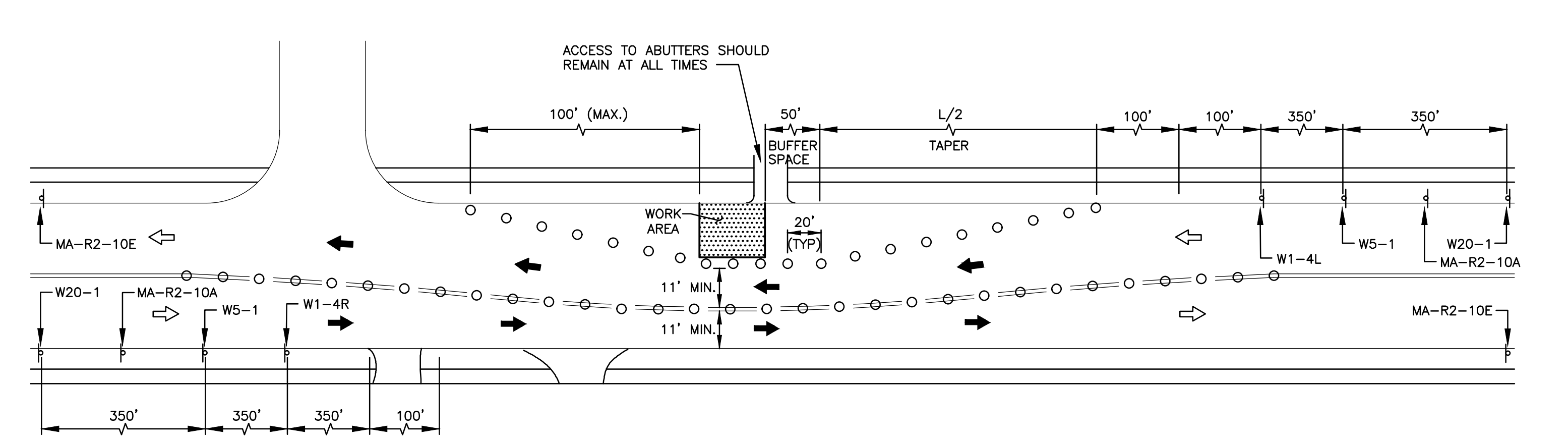


STAGE I

ACCESS TO ABUTTERS SHOULD REMAIN AT ALL TIMES

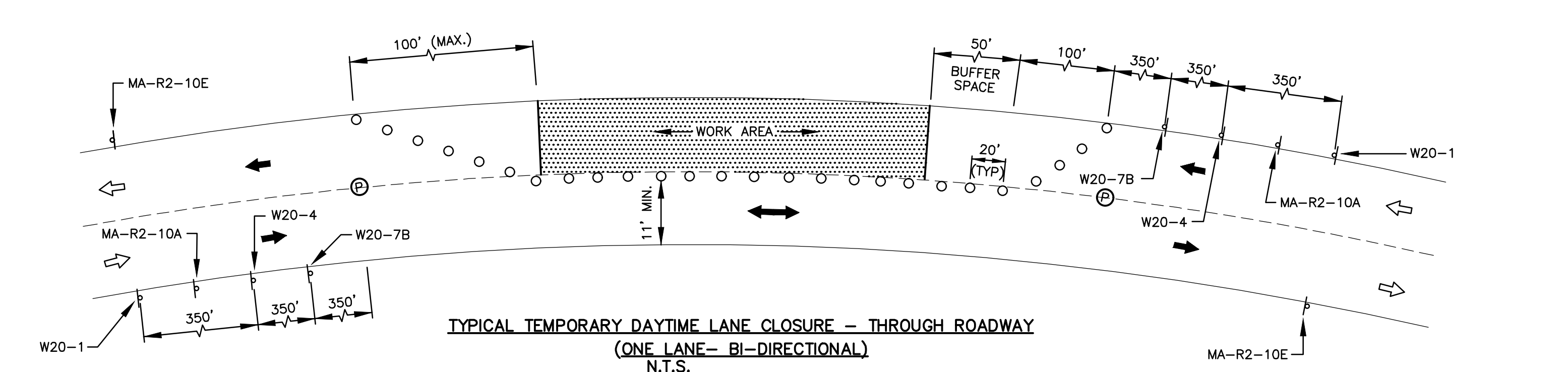


STAGE II

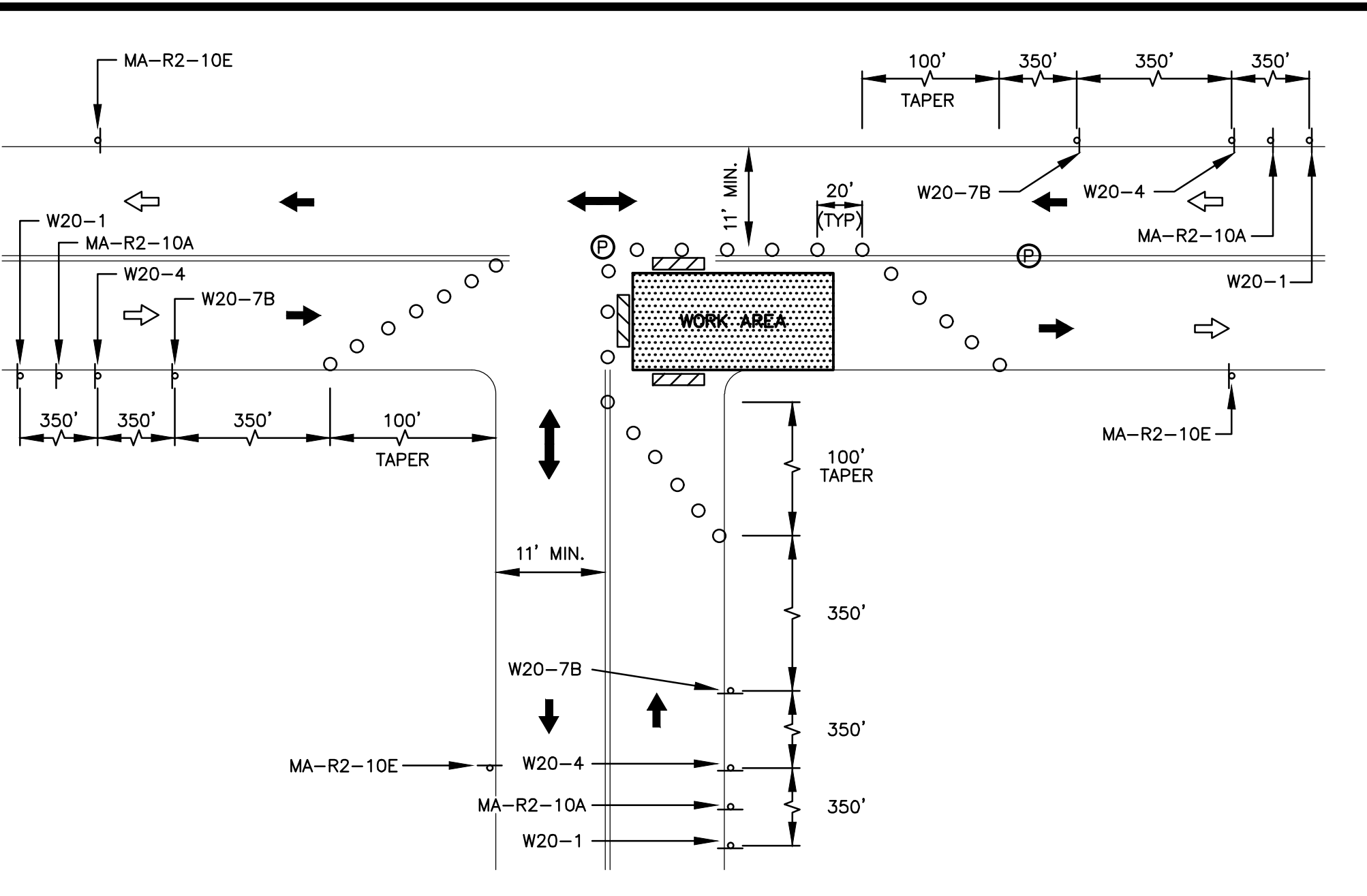


STAGE III

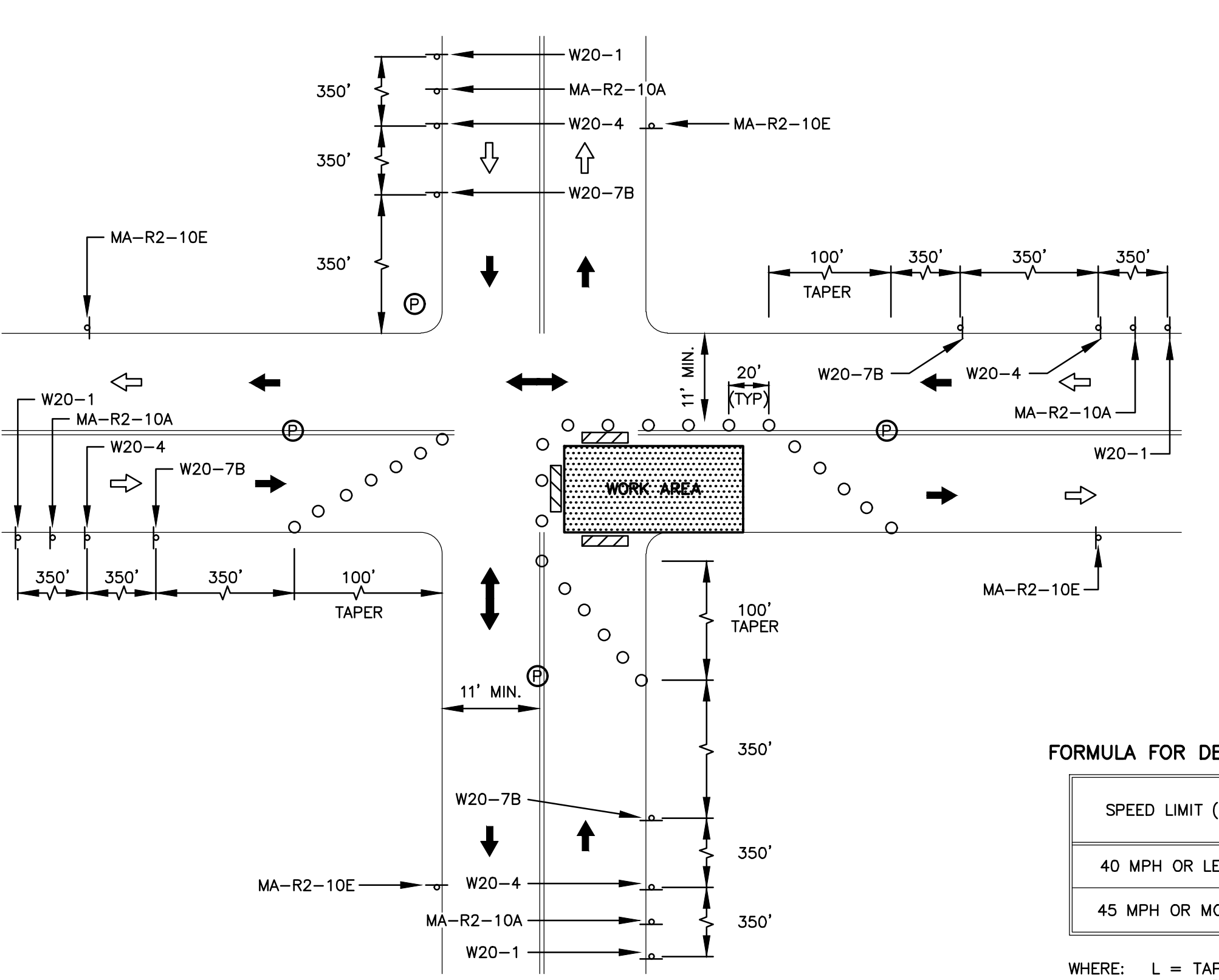
TRAFFIC OPERATION STAGES
 N.T.S.



TYPICAL TEMPORARY DAYTIME LANE CLOSURE - THROUGH ROADWAY
 (ONE LANE - BI-DIRECTIONAL)
 N.T.S.



'T' INTERSECTION LANE CLOSURE
 N.T.S.



CLOSURE AT SIDE OF INTERSECTION
 N.T.S.

TEMPORARY TRAFFIC SIGN SUMMARY

MUTCD CODE	SIZE OF SIGN		SIGN
	WIDTH	HEIGHT	
MA-R2-10A	48"	36"	
MA-R2-10E	36"	48"	
R4-7	24"	30"	
W1-4L	30"	30"	
W1-4R	30"	30"	
W5-1	30"	30"	
W30-8R	36"	36"	
W20-1	36"	36"	
W20-4	36"	36"	
W20-7B	36"	36"	

NOTE:
 1. FOR THE LATEST SPECIFICATION ON TEXT DIMENSIONS AND COLOR, CONTRACTOR SHALL REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION).

LEGEND:
 REFLECTORIZED DRUM
 TRAFFIC FLOW DURING CONSTRUCTION
 NORMAL TRAFFIC FLOW
 POLICE DETAIL OFFICER
 CONSTRUCTION SIGN
 WORK AREA
 TYPE III BARRICADE

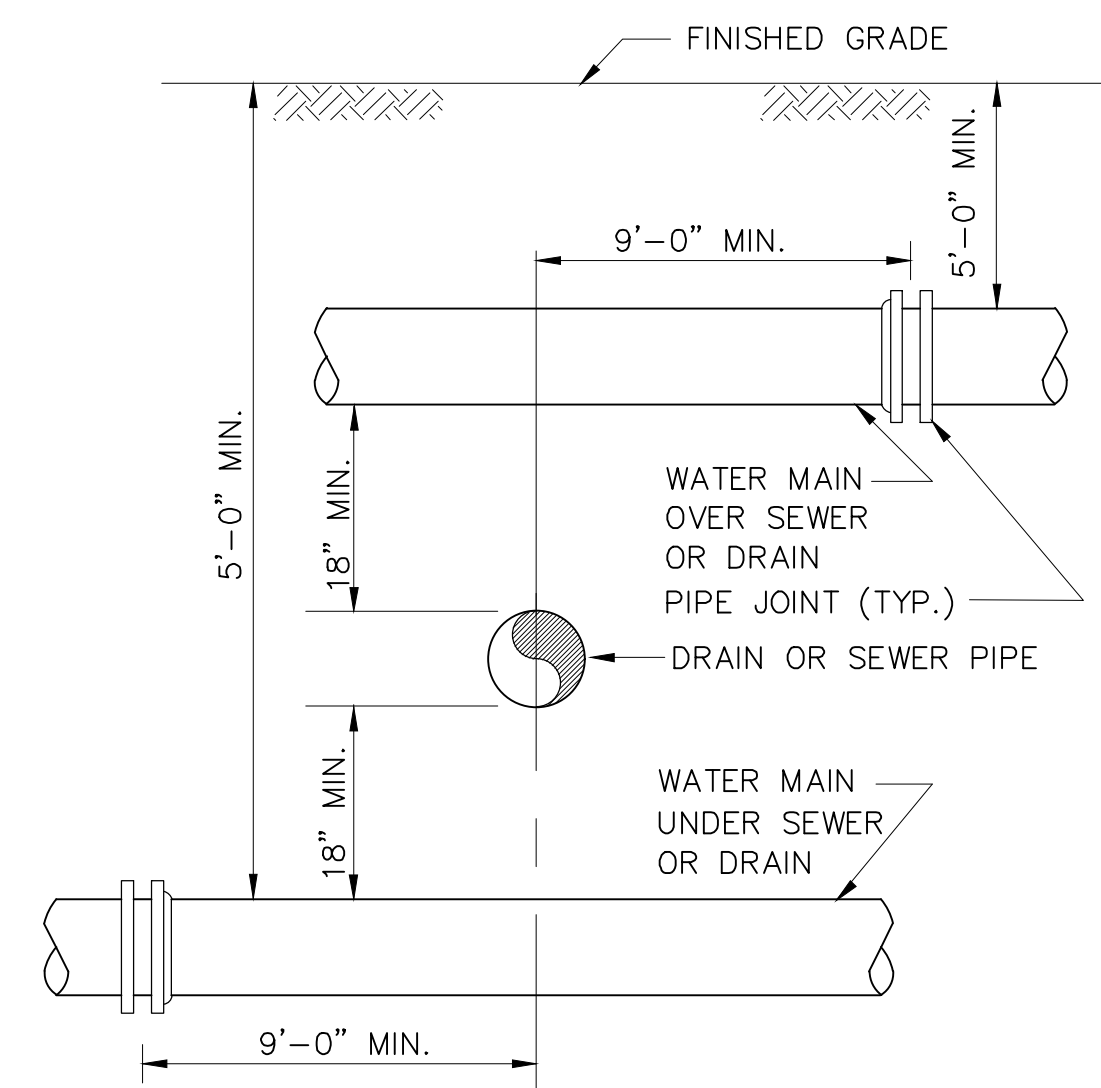
FORMULA FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

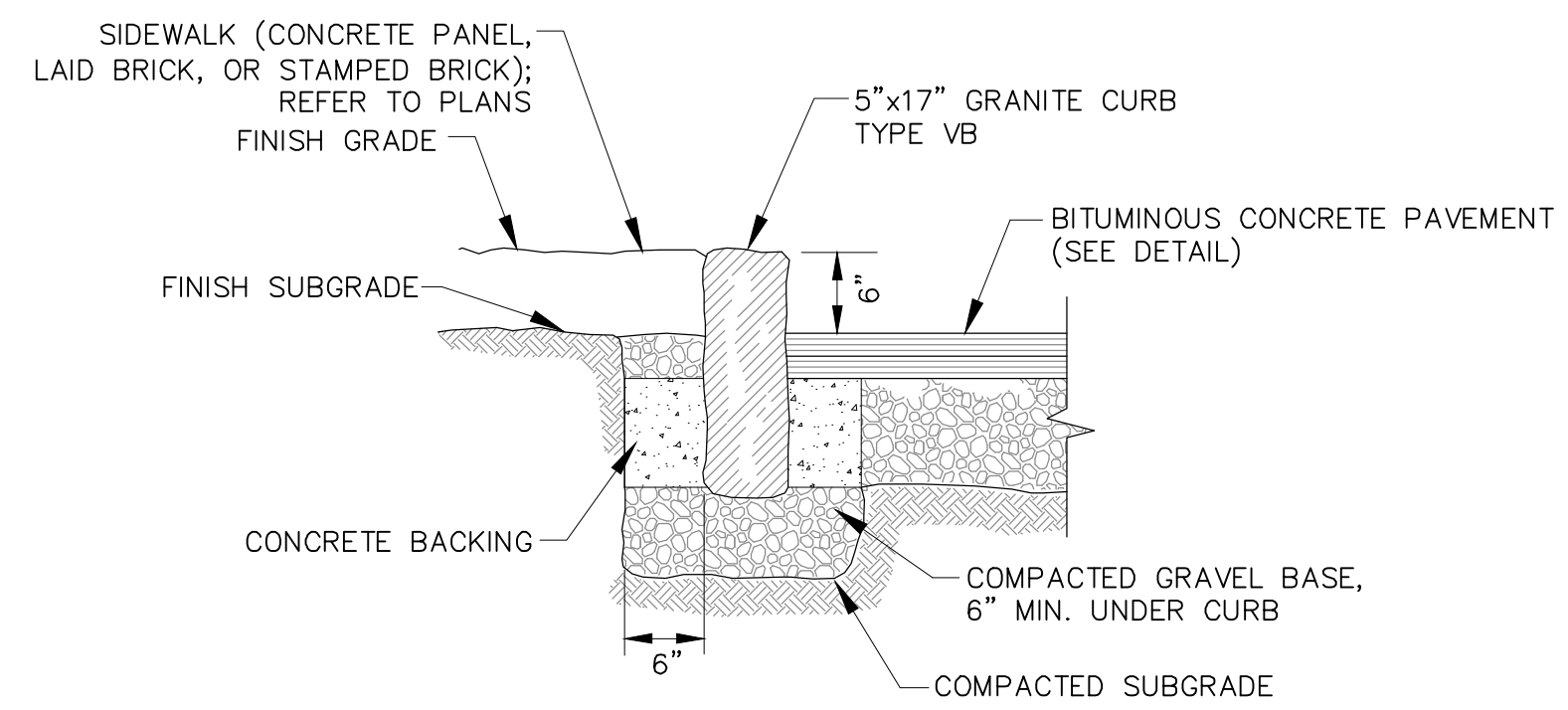
WHERE:
 L = TAPER LENGTH IN FEET
 W = WIDTH OF OFFSET IN FEET
 S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATED SPEED IN MPH

GENERAL NOTES:

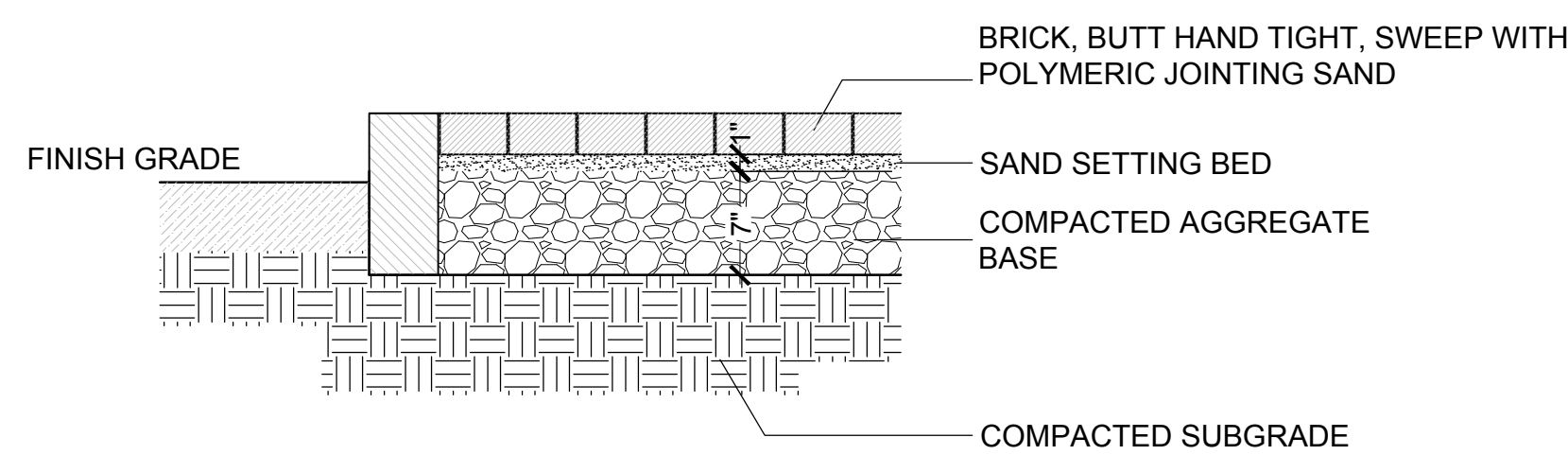
1. PLACEMENT OF ALL CONSTRUCTION SIGNS, DRUMS, BARRICADES, TRAFFIC DEVICES AND THE SHAPE, SIZE & COLOR OF ALL TEMPORARY TRAFFIC SIGNS SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. ADVANCE WARNING SIGN PLACEMENT AND TAPER LENGTH TO BE ADJUSTED ACCORDING TO STREET CONDITIONS AND DRIVEWAY OPENINGS.
3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
4. THE FIRST TEN PLASTIC DRUMS OF TAPER SHALL BE EQUIPPED WITH SEQUENTIAL FLASHING LIGHTS.
5. 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, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
6. NONESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
7. PEDESTRIANS SHALL BE PROVIDED WITH ACCESS AND SAFE PASSAGE THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE AT ALL TIMES.
8. W20-7B SHALL BE TAKEN DOWN OR COVERED AFTER EACH WORKING DAY OR WHEN OTHERWISE NOT APPLICABLE, OR WHEN POLICE OFFICERS ARE NOT PRESENT TO DIRECT TRAFFIC.
9. ADVISORY SPEED PLATES (W13-1 - SEE CURRENT EDITION OF MUTCD) SHALL BE USED IF APPLICABLE AND AS REQUIRED BY THE ENGINEER.
10. NO DIFFERENCE IN ROADWAY LANE ELEVATION WILL BE ALLOWED AT THE END OF THE WORK DAY.
11. SAMPLE TRAFFIC PLANS INCLUDED ON THIS PLAN SHEET ARE BASED ON AN URBAN (LOW SPEED) ROAD TYPE FROM THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
12. DASHED LINES SHOW LANE DESIGNATIONS TO BE USED DURING CONSTRUCTION. IF ANY PAVEMENT MARKINGS ARE TEMPORARILY MODIFIED, EXISTING/ORIGINAL PAVEMENT MARKINGS SHALL BE RESTORED TO ORIGINAL CONDITIONS AFTER WORK IS COMPLETE. USING DRUMS/CONES INSTEAD IS RECOMMENDED. DRUMS/CONES SHALL BE A MINIMUM HEIGHT OF 36".
13. THE CONTRACTOR SHALL SUBMIT ANY REVISIONS TO THE CONSTRUCTION ZONE SAFETY PLAN TO THE ENGINEER FOR APPROVAL.
14. THIS CONSTRUCTION ZONE SAFETY PLAN SHALL NOT RELIEVE THE CONTRACTOR OF HIS SOLE RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.



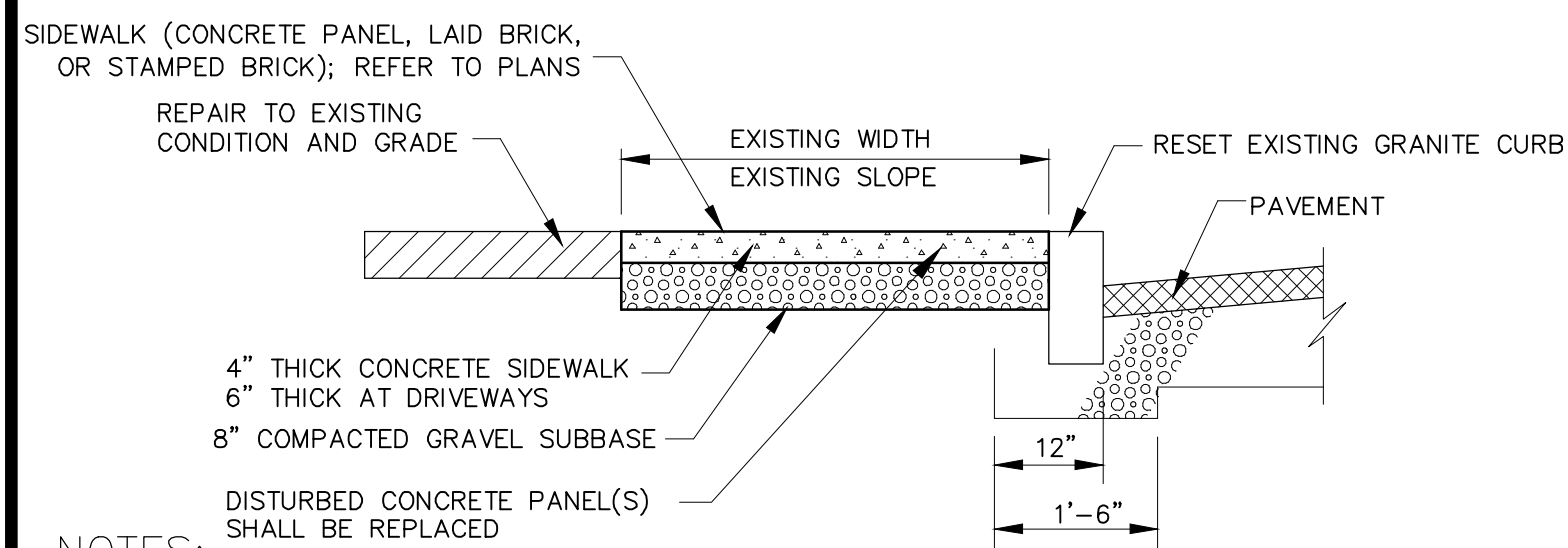
SEWER OR DRAIN CROSSING DETAIL
N.T.S.



GRANITE CURB DETAIL
N.T.S.

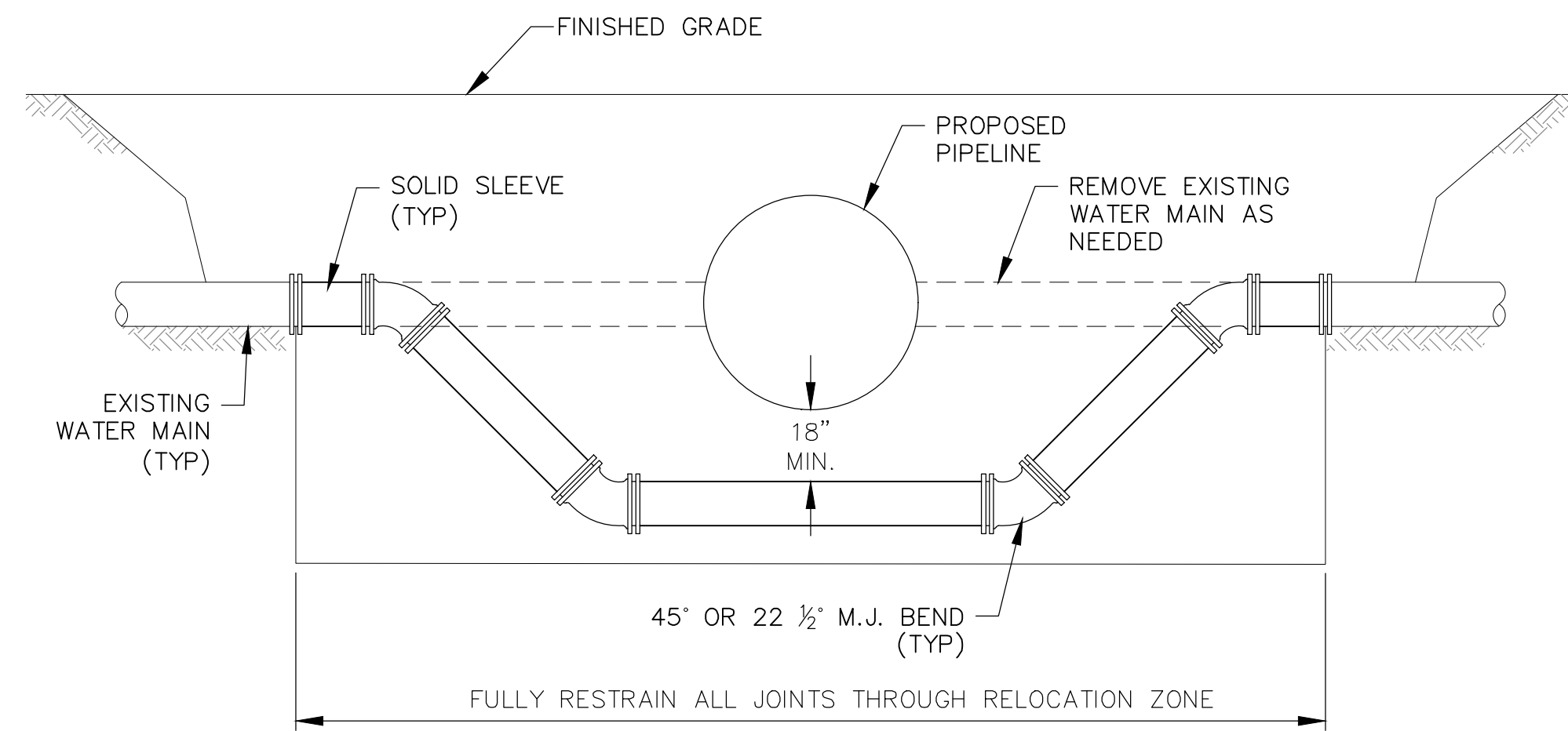


TYPICAL SECTION THROUGH
BRICK SIDEWALK
N.T.S.

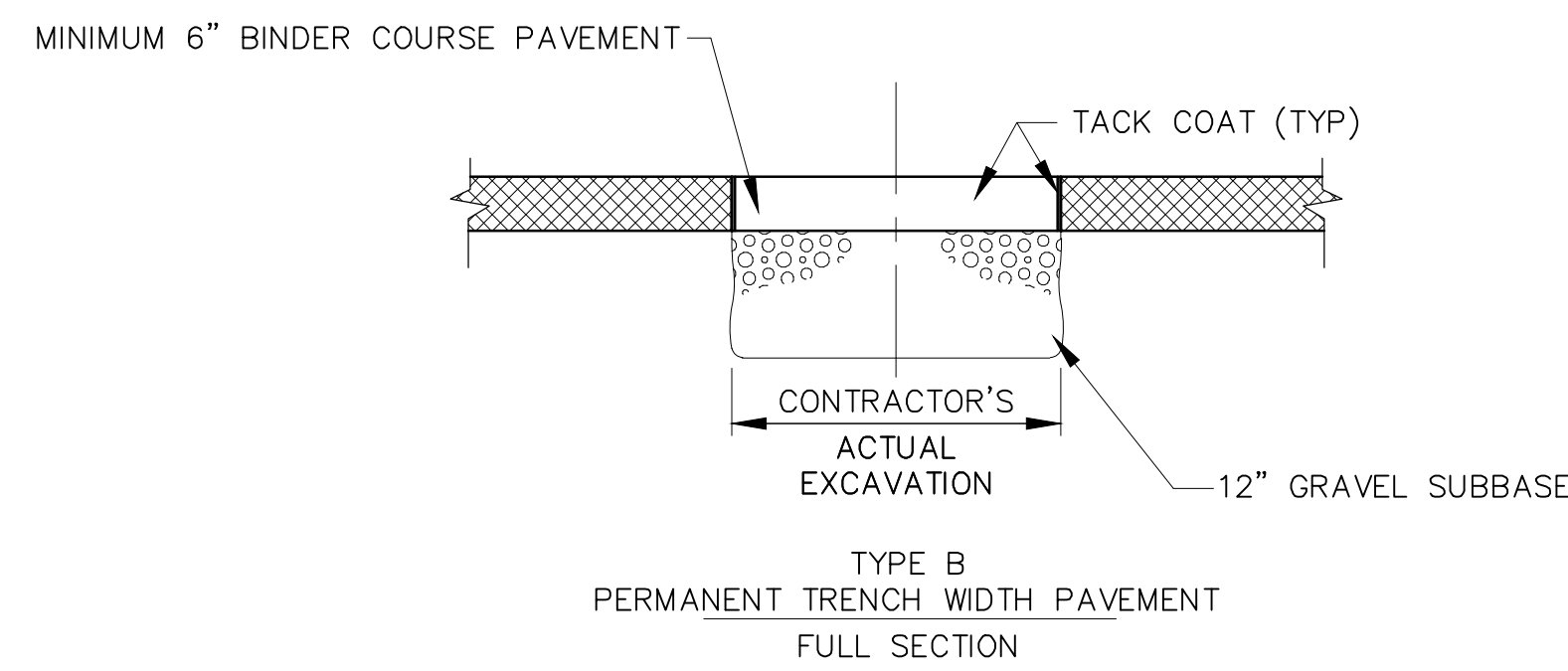


NOTES:
1. LOCATIONS FOR SURFACE FINISHES ARE INDICATED ON THE PLANS. STAMPED BRICK PATTERN AND COLOR SHALL BE INSTALLED TO MATCH EXISTING.

TYPICAL SECTION THROUGH
CONCRETE SIDEWALK
N.T.S.

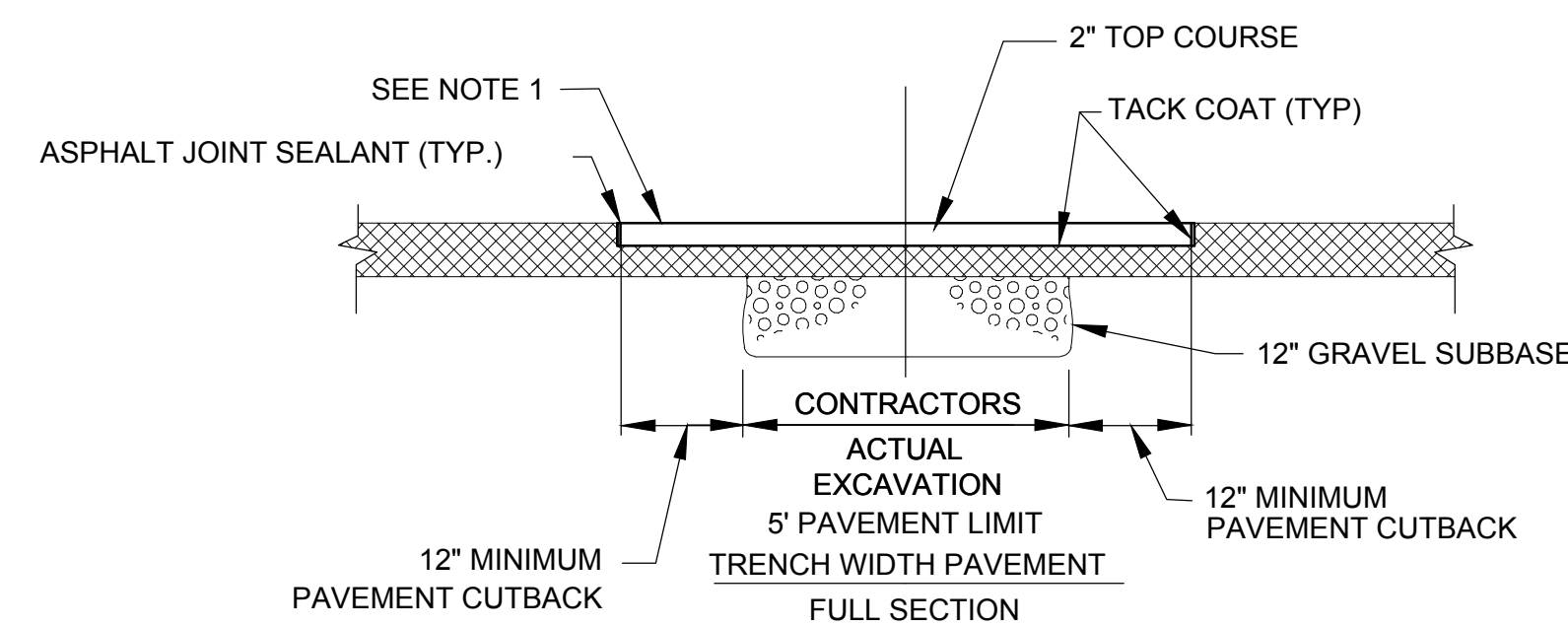


EXISTING WATER MAIN RELOCATION
N.T.S.



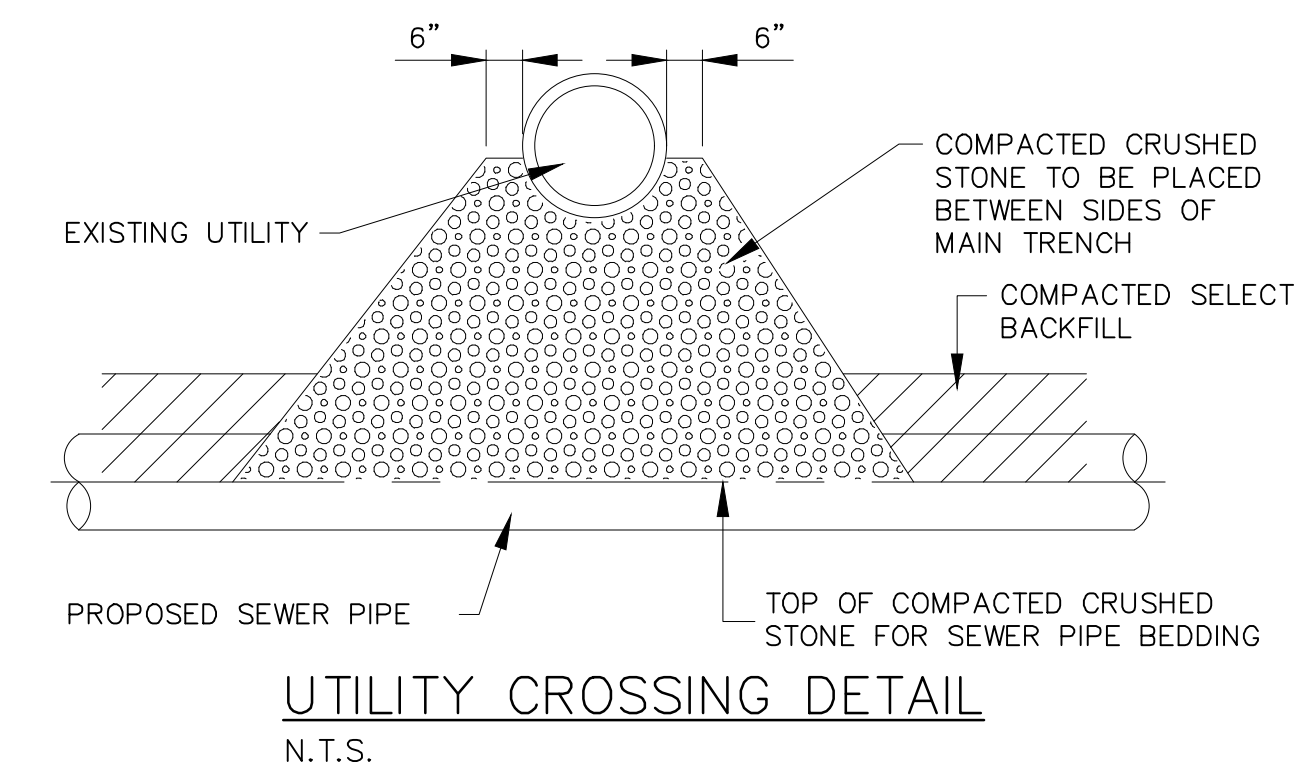
NOTES:
1. MAXIMUM PAVEMENT THICKNESS PER COURSE NOT TO EXCEED 2 INCHES

PERMANENT TRENCH WIDTH BINDER COURSE
PAVEMENT REPLACEMENT DETAILS
N.T.S.

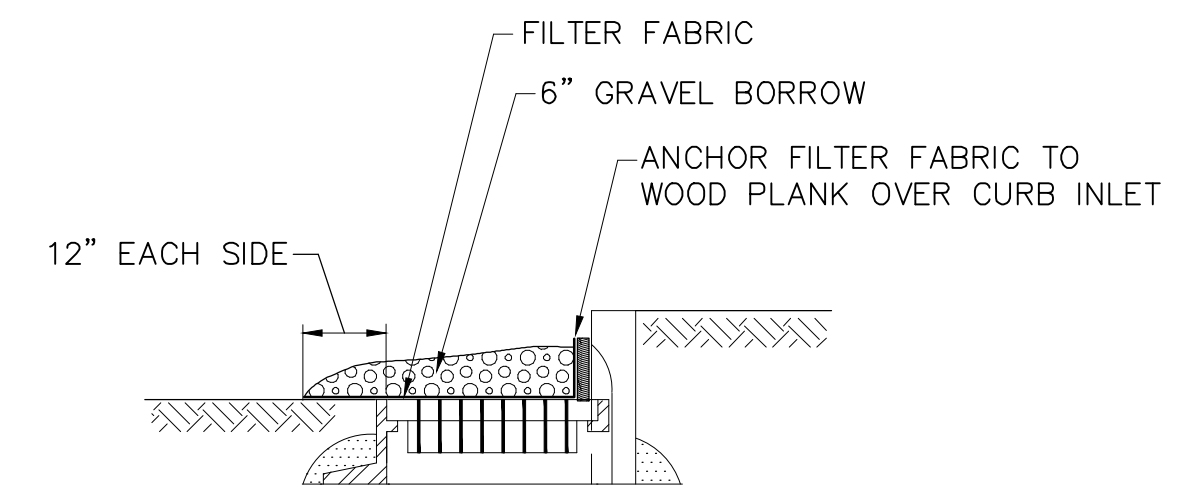


NOTES:
1. CONTRACTOR SHALL COLD PLANE TRENCH WITH 12-INCH MINIMUM CUTBACK ON ALL SIDES, 2" THICK PRIOR TO PLACING TOP COURSE PAVEMENT.

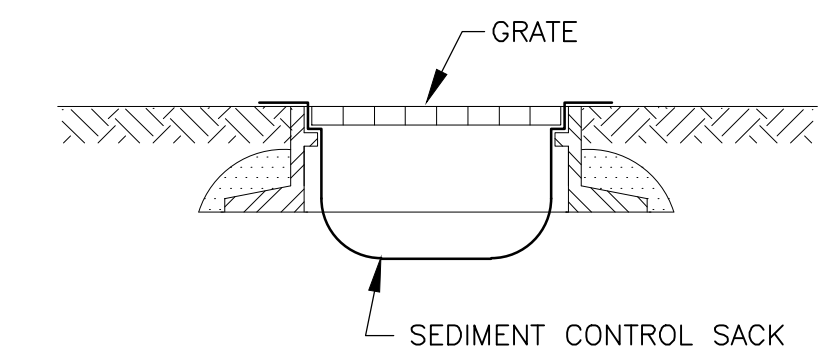
PERMANENT TRENCH WIDTH TOP COURSE PAVEMENT
N.T.S.



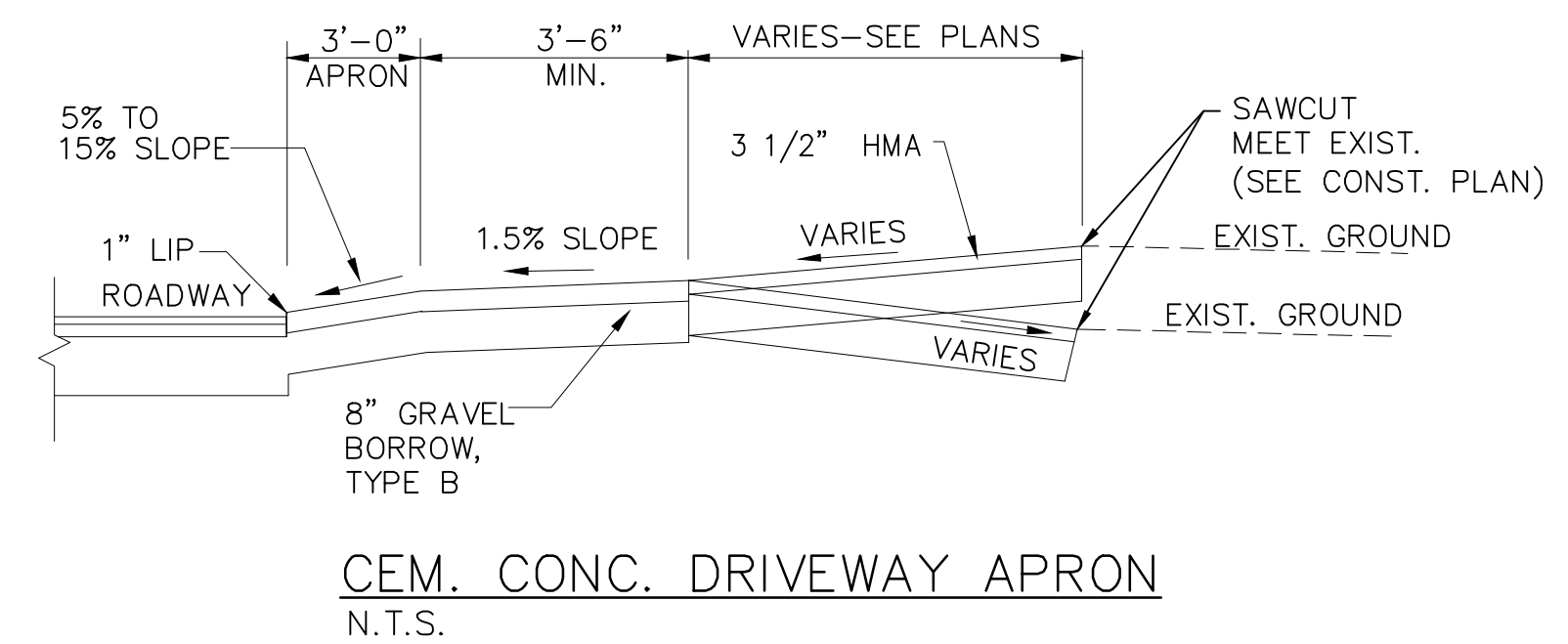
UTILITY CROSSING DETAIL
N.T.S.



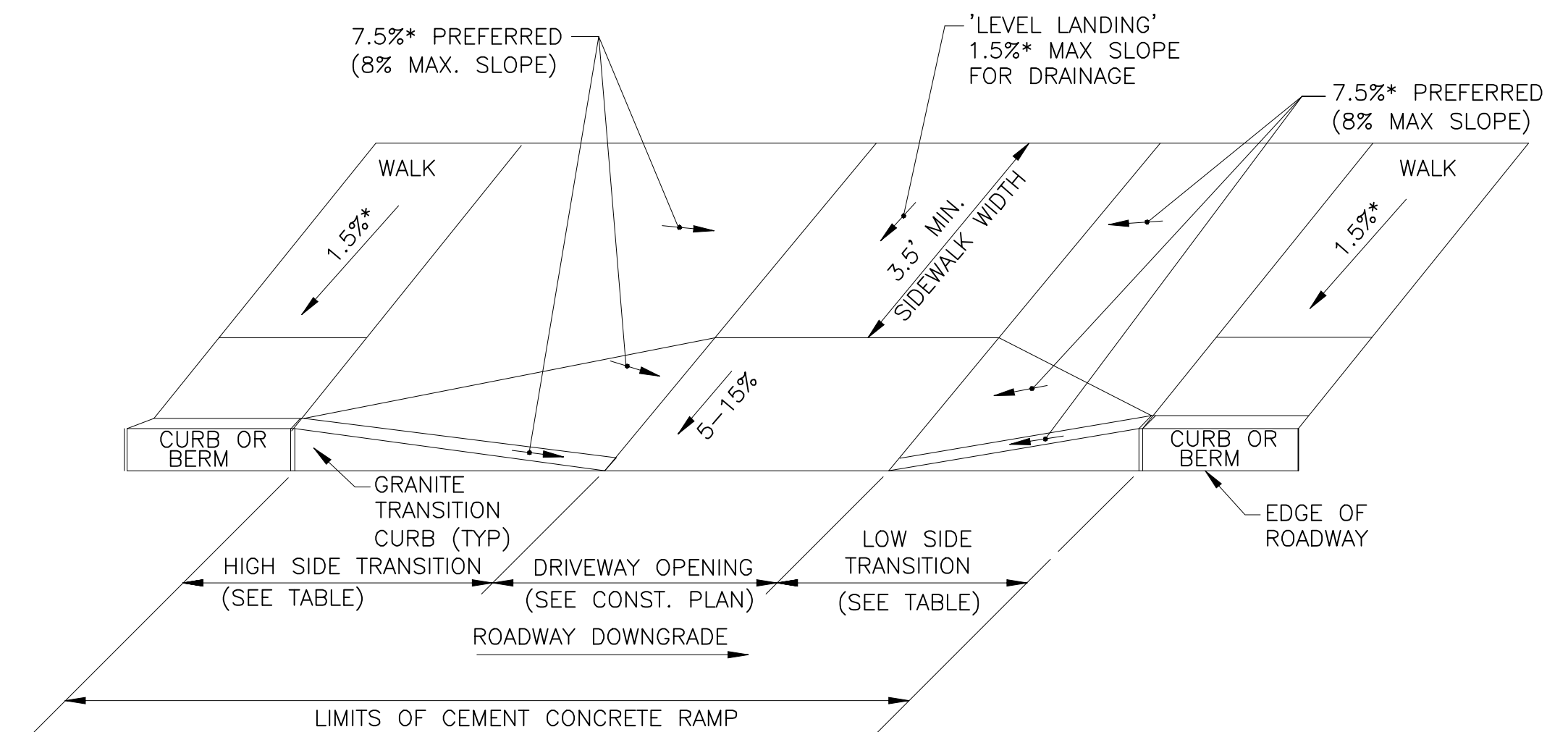
CATCH BASIN INLET
PROTECTION DETAIL
N.T.S.



CATCH BASIN PROTECTION DETAIL
N.T.S.



CEM. CONC. DRIVEWAY APRON
N.T.S.



TYPICAL CEMENT CONCRETE DRIVEWAY ENTRANCE
N.T.S.

Project: CITY OF NEWTON, MA
UNION STREET GRAVITY DRAIN EXTENSION
DEPARTMENT OF PUBLIC WORKS
1000 COMMONWEALTH AVENUE
NEWTON CENTRE, MA 02459

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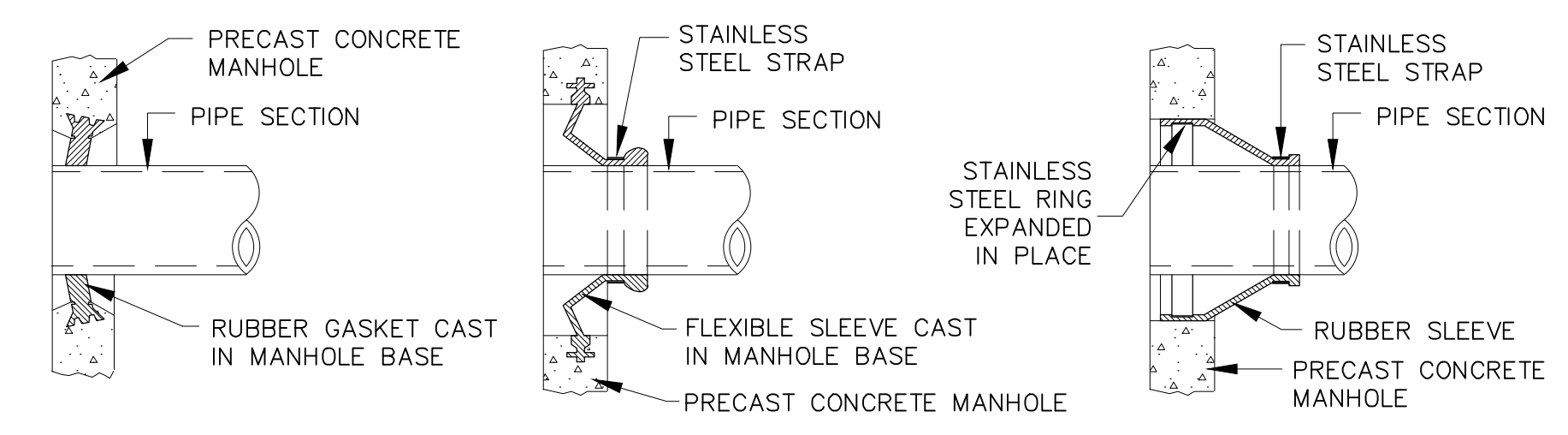
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Drawn By: RJA
Reviewed By: MJD
Approved By: PAT
W&S Project No.: 2191018
W&S File No.:

Drawing Title: **DETAILS I**

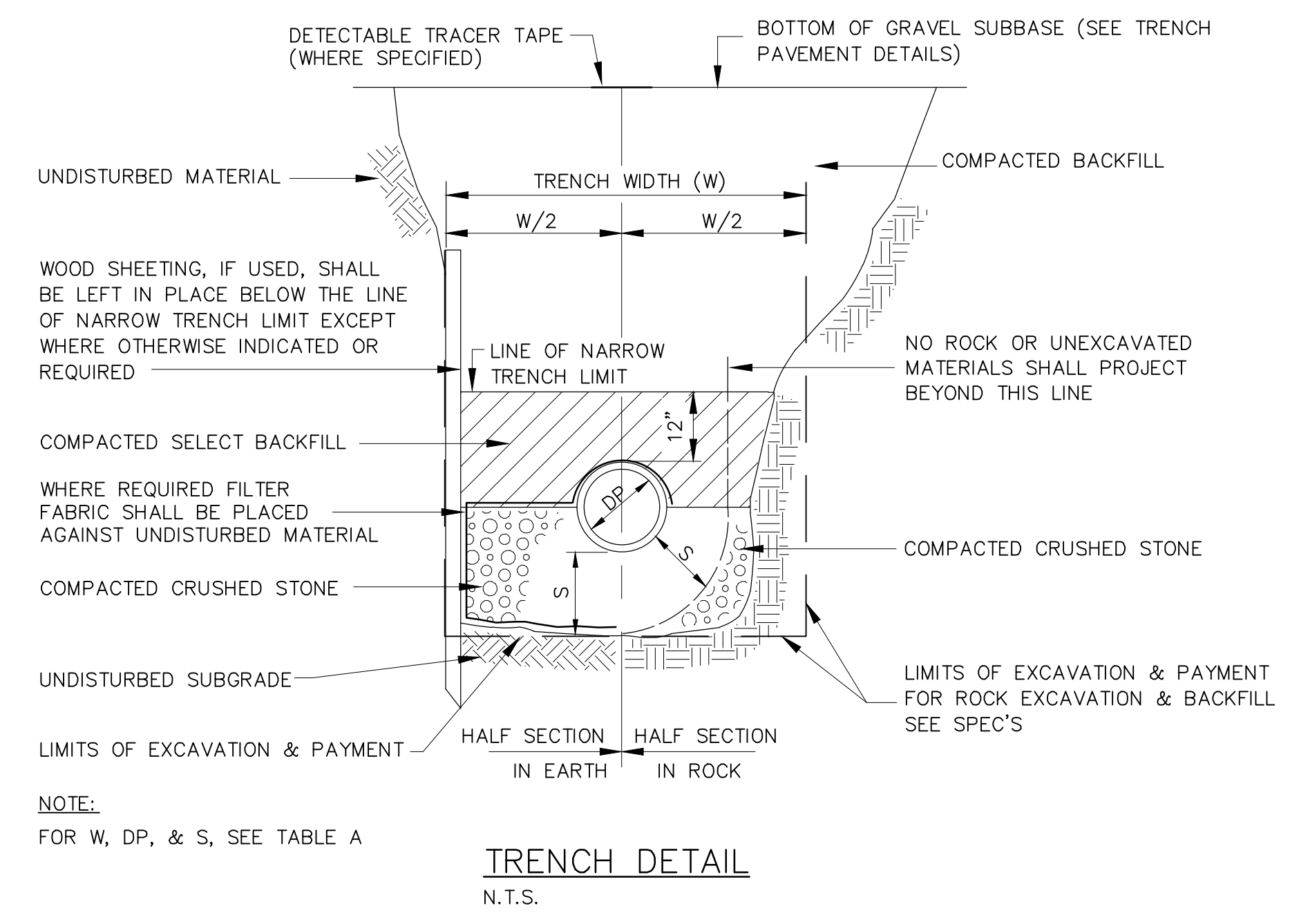
Sheet Number: **C501**

DEPTH TO INVERT	DIAMETER OF PIPE (DP)	MAXIMUM TRENCH WIDTH BELOW LINE OF NARROW TRENCH LIMIT (SHEETED OR UNSHEETED) (W)	MINIMUM CLEARANCE (S)
0-12'	TO 18"	5'	6"
0-12'	21"-24"	5'	7-1/2"
OVER 12'	TO 18"	7'	6"
OVER 12'	21"-24"	7'	7-1/2"

TABLE A

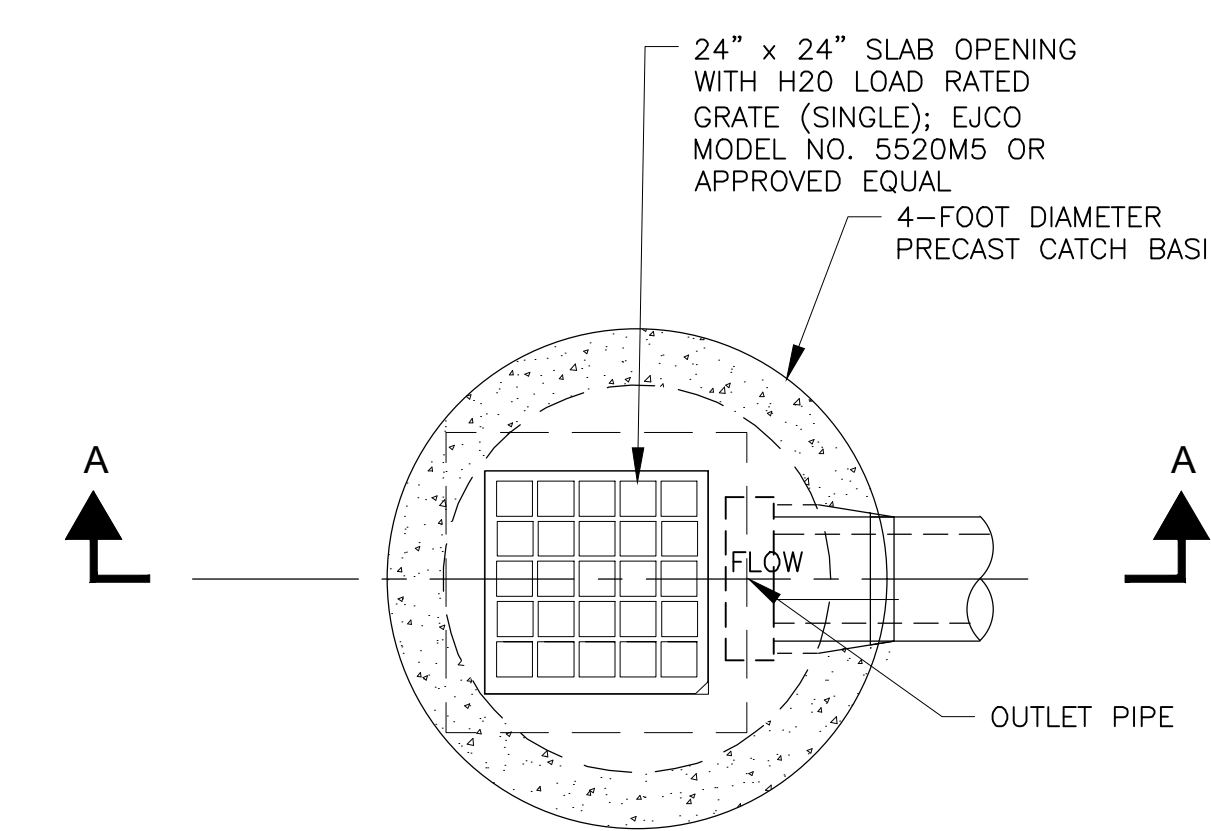


MANHOLE SEAL DETAILS
N.T.S.

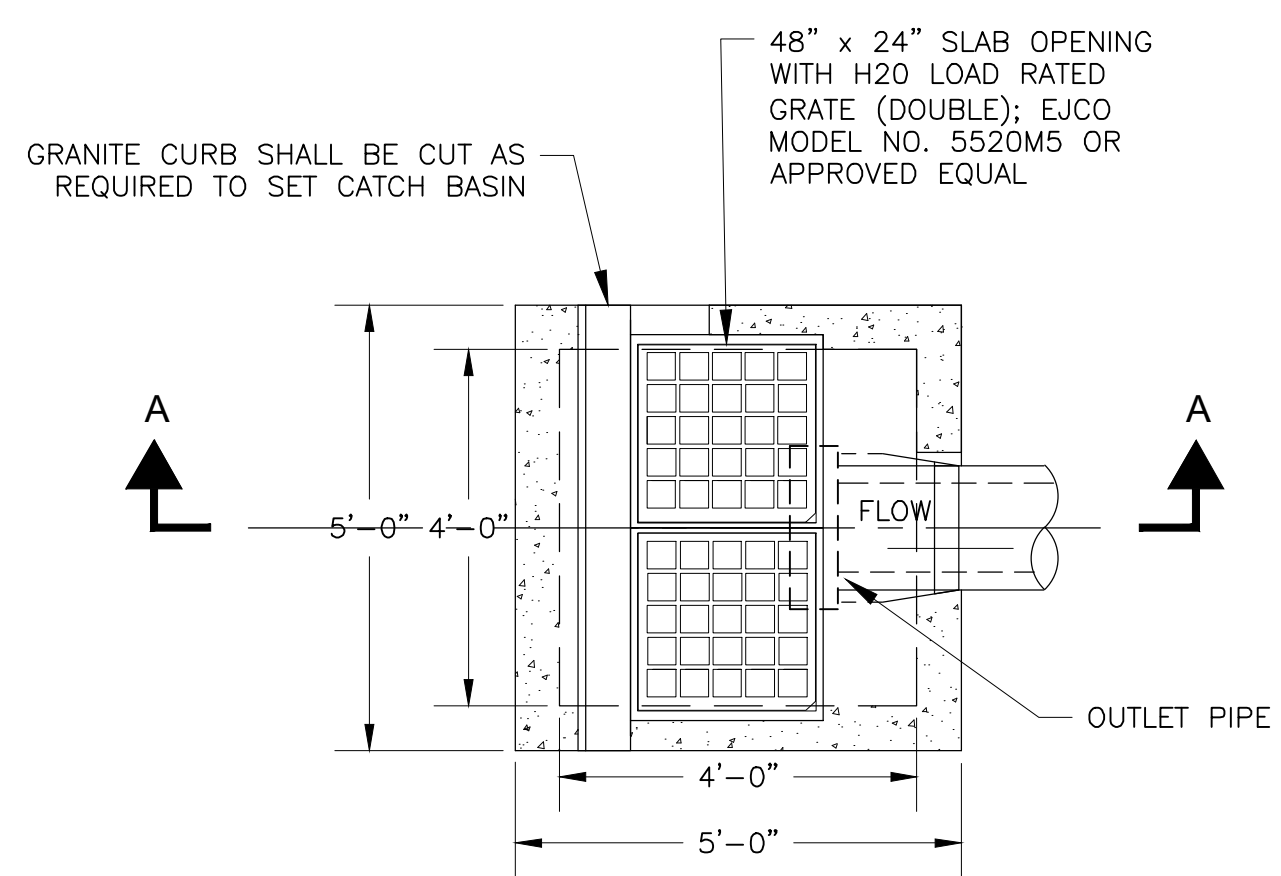


NOTE:
FOR W, DP, & S, SEE TABLE A

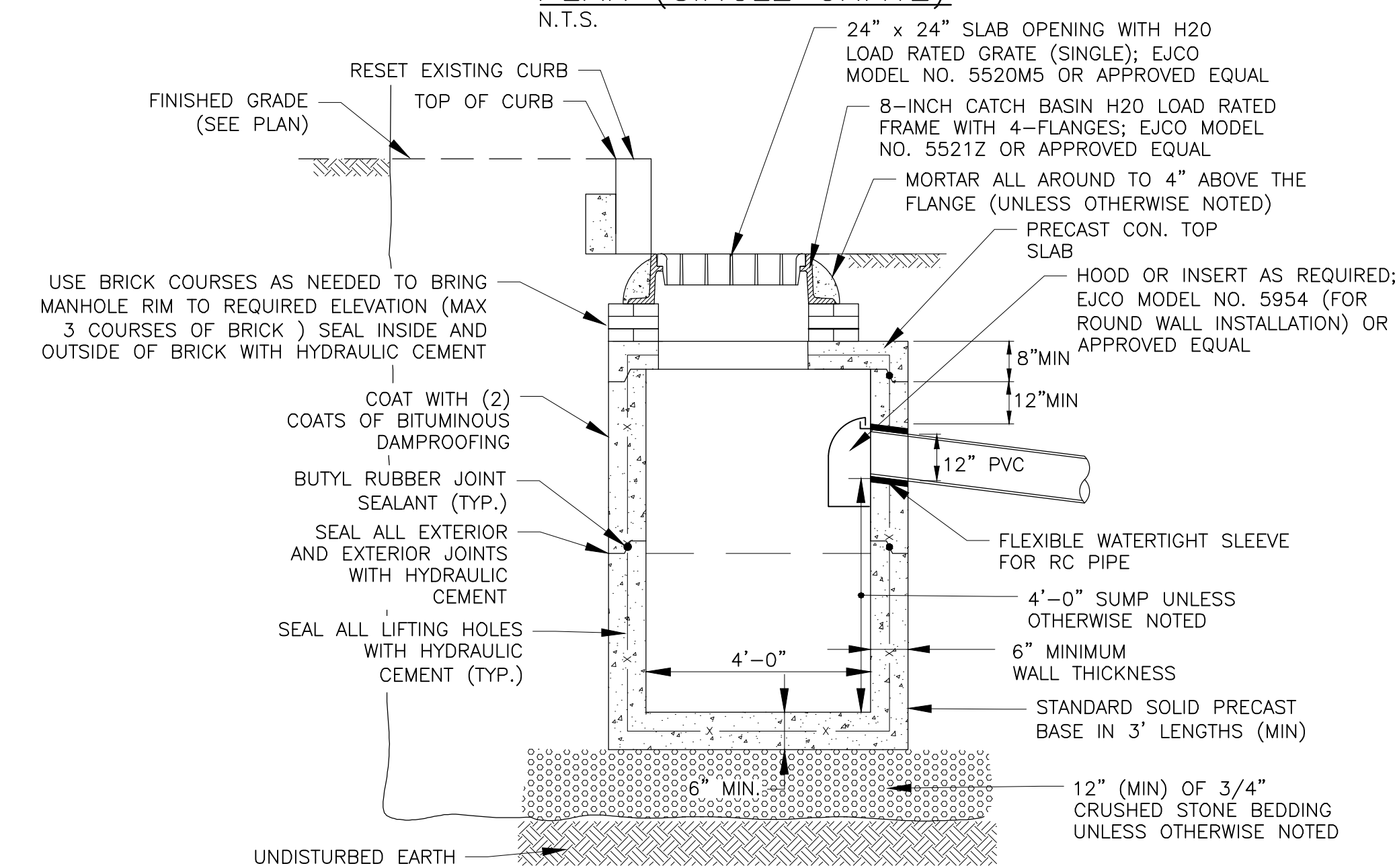
TRENCH DETAIL
N.T.S.



PLAN (SINGLE GRATE)
N.T.S.

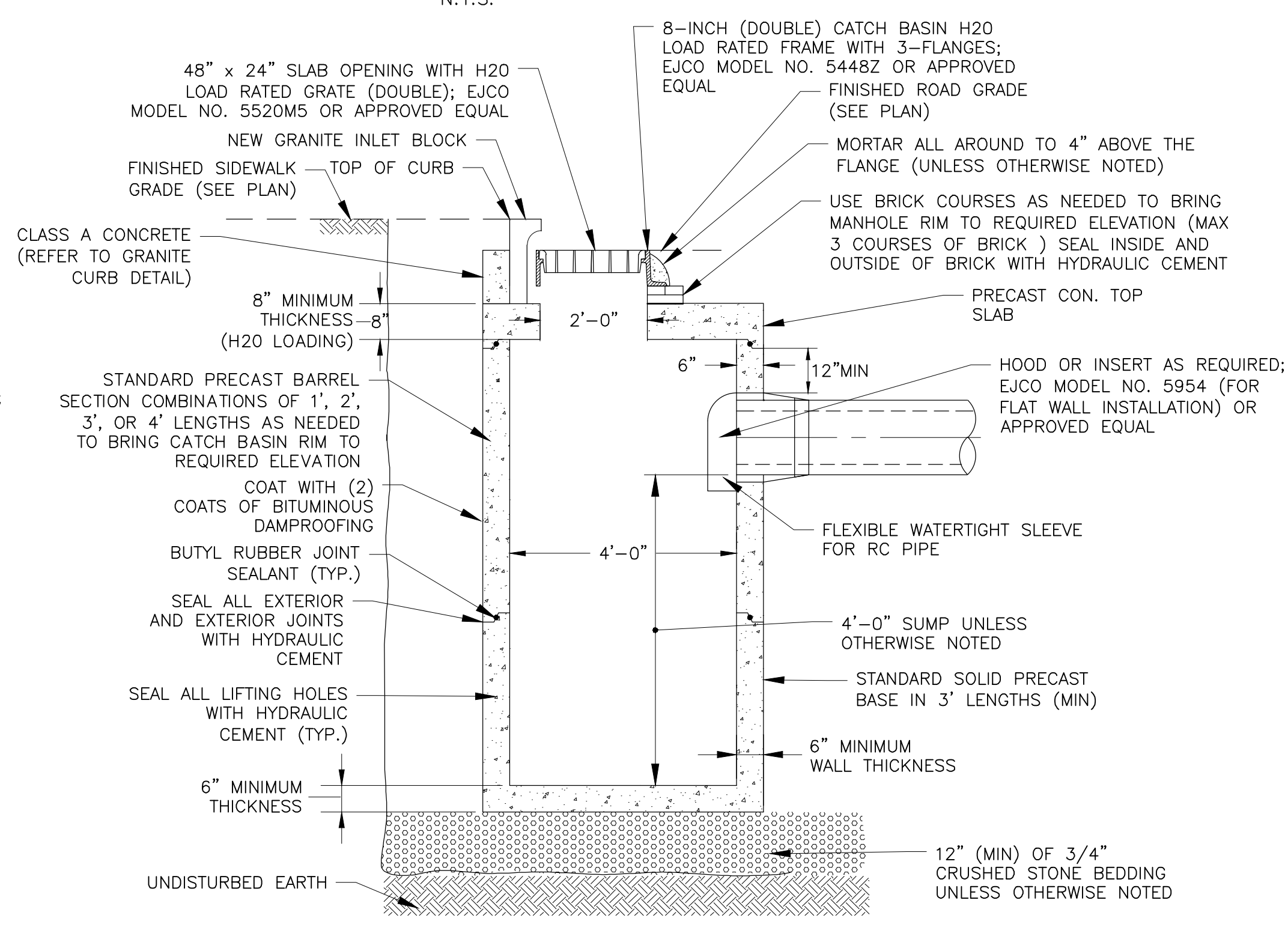


PLAN (DOUBLE GRATE)
N.T.S.



SECTION A-A (SINGLE GRATE)

TYPE A STYLE CATCH BASIN (SINGLE GRATE) DETAIL
N.T.S.



SECTION A-A (DOUBLE GRATE)

TYPE B STYLE CATCH BASIN (DOUBLE GRATE) DETAIL
N.T.S.

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Drawing Title:
DETAILS II

Sheet Number:
C502

Consultants:

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No.	Date	Description

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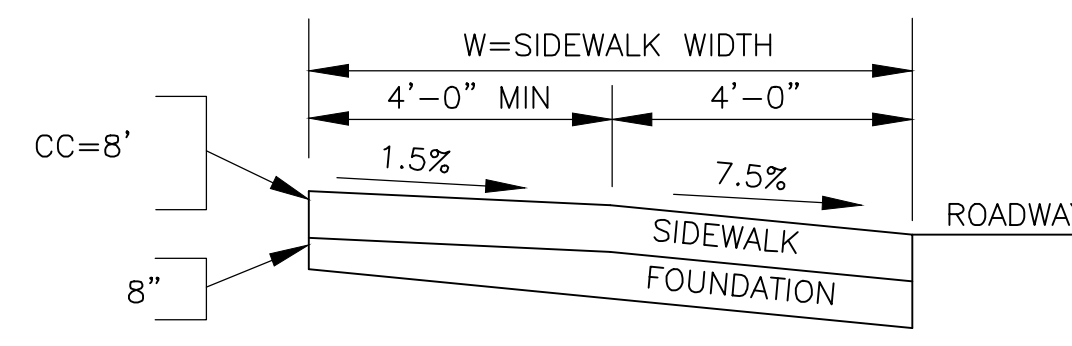
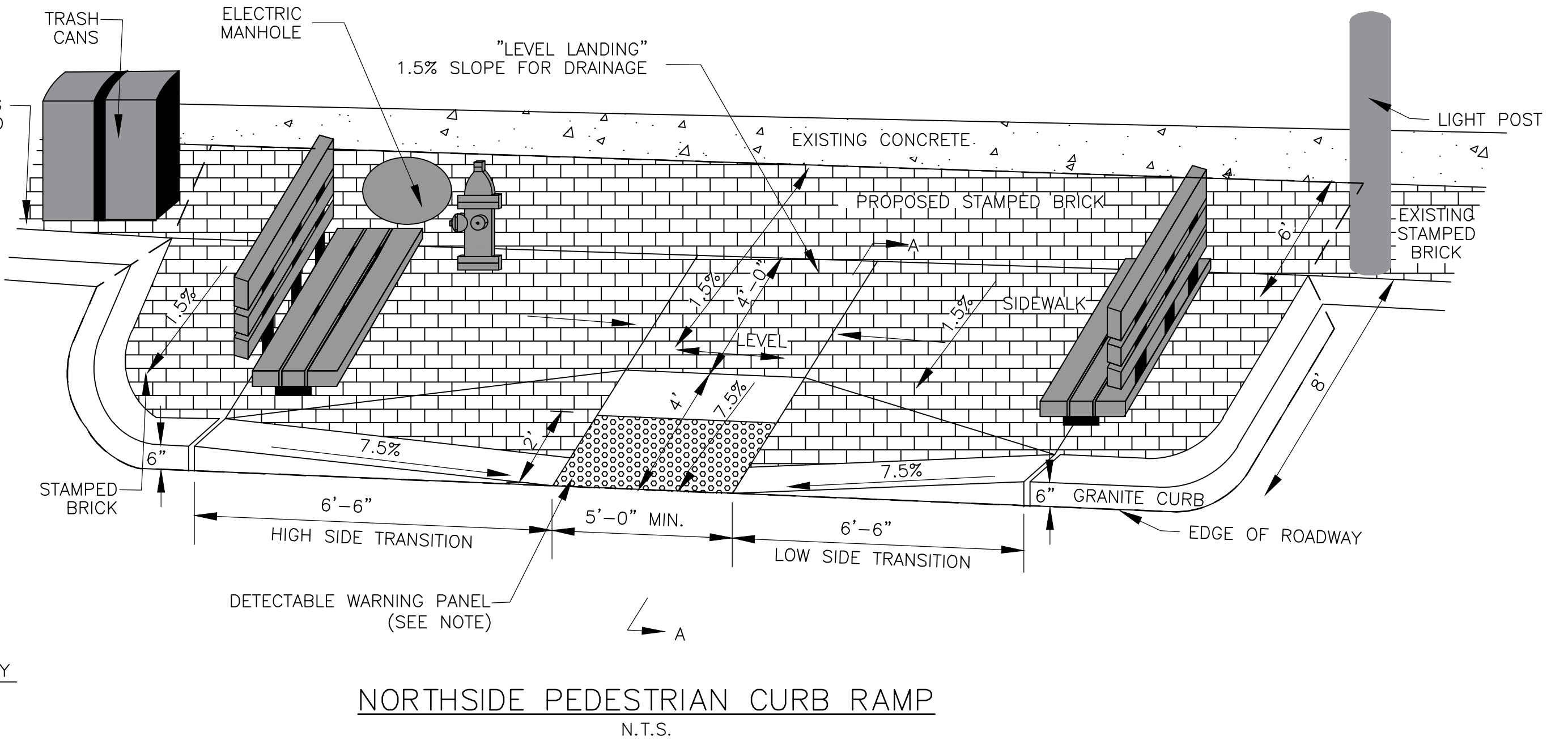
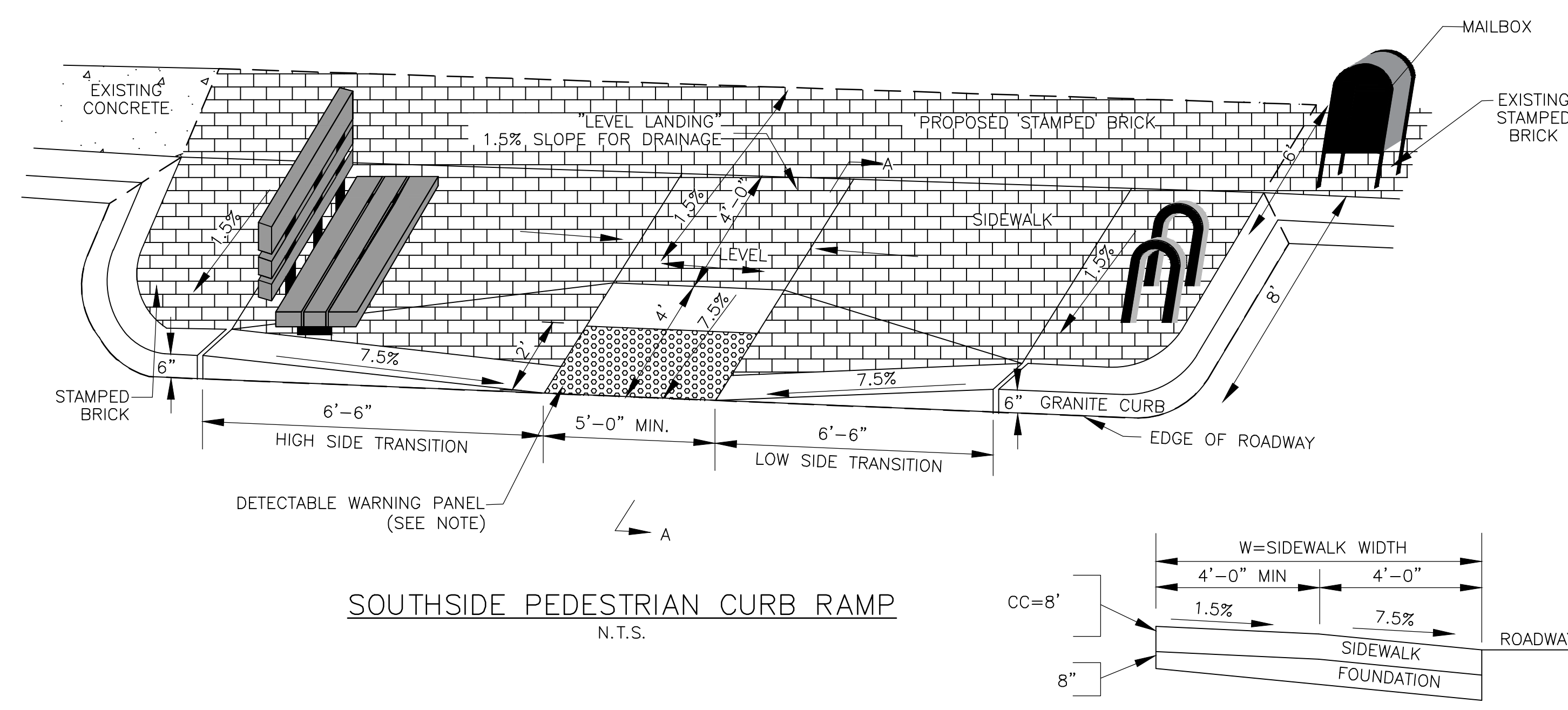


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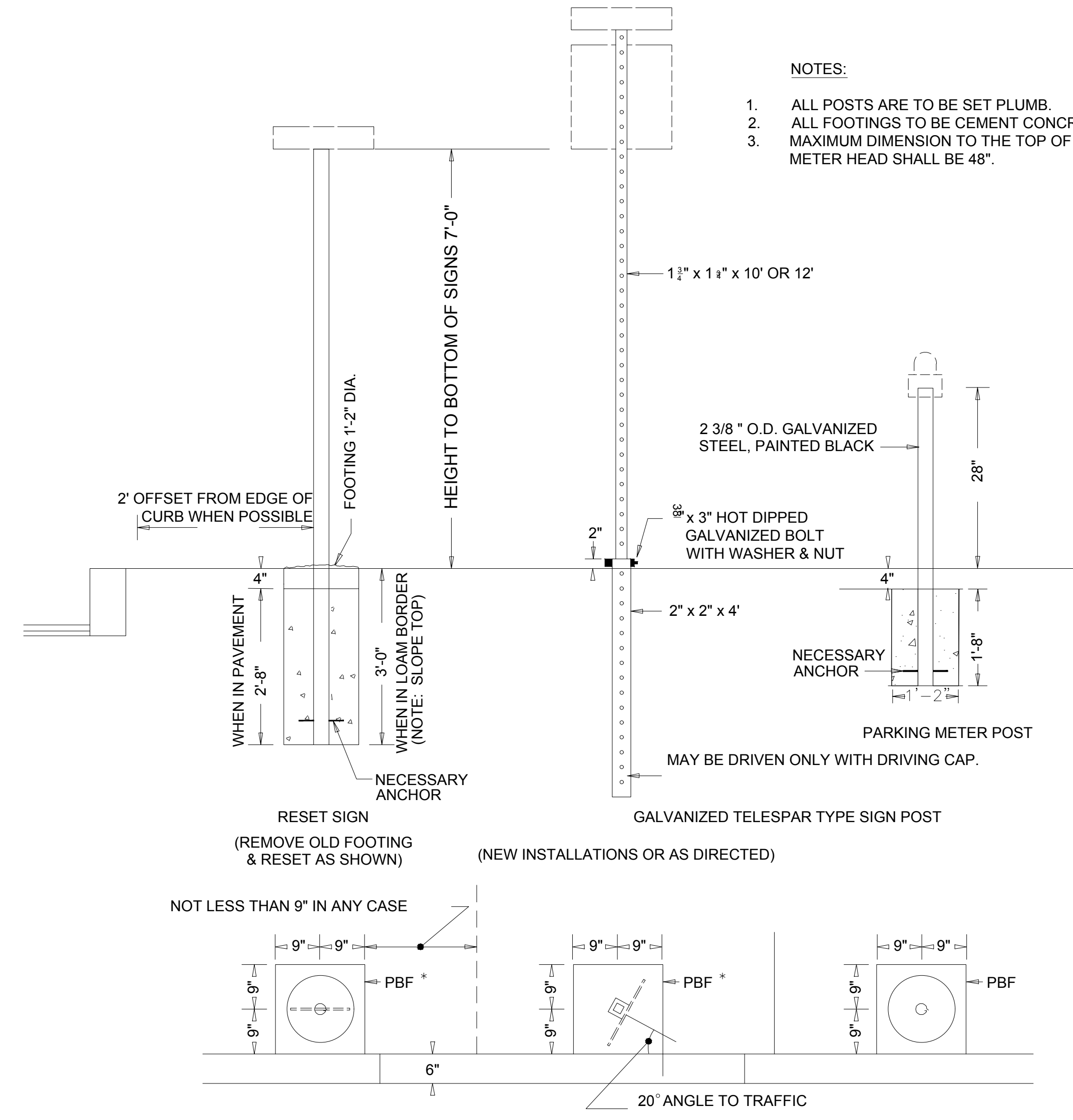
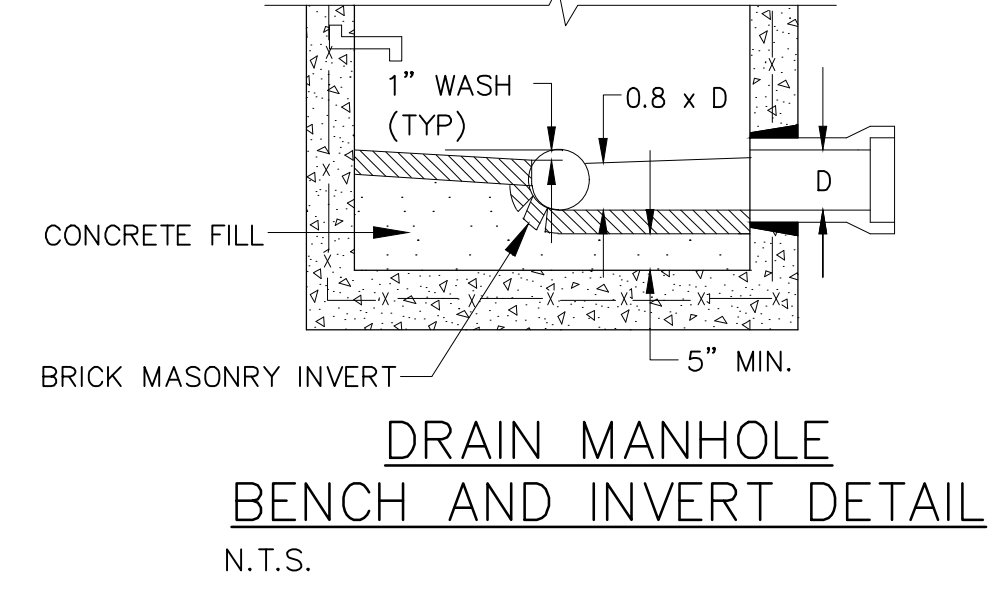
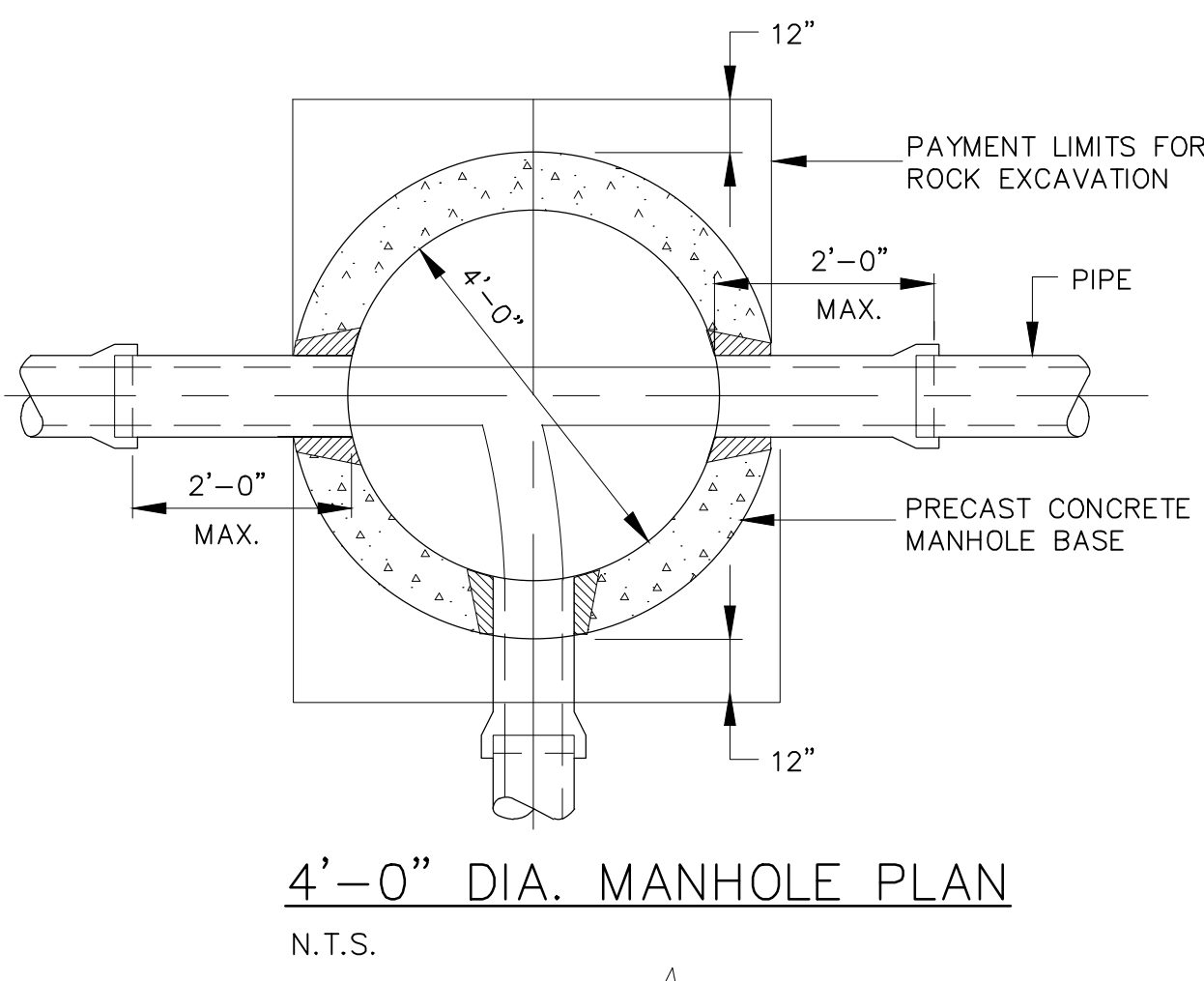
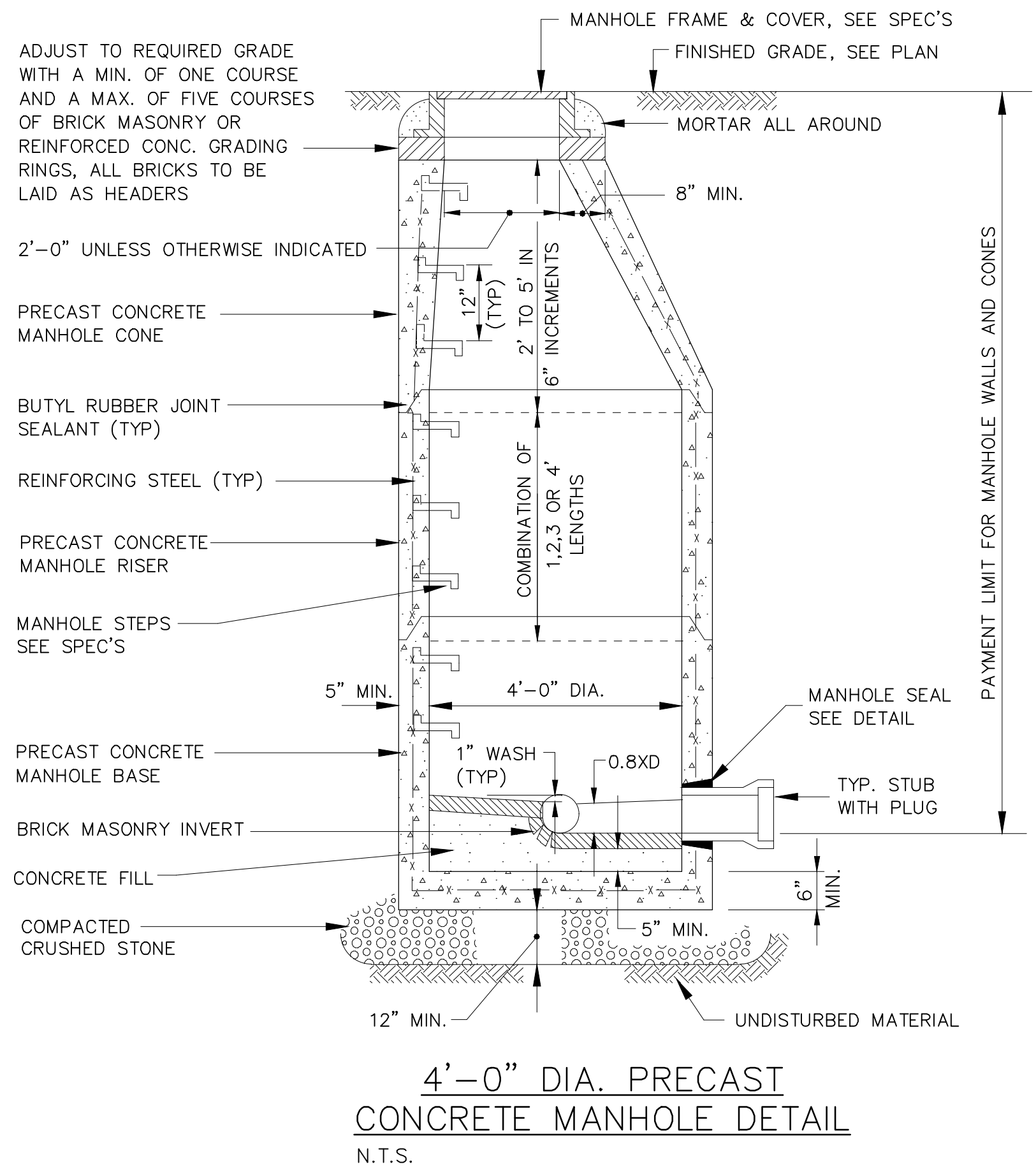
Drawing Title: **DETAILS III**
 Sheet Number:

C503
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- NOTES:**
1. DETECTABLE WARNING PANELS SHALL BE INSTALLED AS DETAILED IN MASSDOT CONSTRUCTION STANDARDS DETAILS E 107.6.5, DATED 2017.
 2. THE TILE SHALL CONFORM TO AMERICANS WITH DISABILITIES ACT ADA SOLUTIONS "WET-SET" REPLACEABLE COMPOSITE TACTILE PANELS, 60 INCHES BY 24 INCHES, AND THE COLOR SHALL BE FEDERAL YELLOW.
 3. CONTRACTOR SHALL REMOVE AND RESET EXISTING BENCHES AND BICYCLE RACKS.

- NOTES:**
1. ALL POSTS ARE TO BE SET PLUMB.
 2. ALL FOOTINGS TO BE CEMENT CONCRETE.
 3. MAXIMUM DIMENSION TO THE TOP OF THE PARKING METER HEAD SHALL BE 48".



- NOTES:**
1. MIN. 0.91 GA. EXTRUDED ALUMINUM SIGN BLADE WITH HIGH INTENSITY SHEETING (GREEN BACKGROUND WITH 4" MIN SILVER COPY AND 3/8" SILVER BORDER.)
 2. EACH SIGN SHALL HAVE LEGEND ON BOTH SIDES.
 3. POSTS SHALL HAVE A MIN. 0.64" WALL ON BOTH SIDES
 4. WHEN APPLICABLE: STREET SIGNS ARE REQUIRED TO BE INSTALLED BY THE DEVELOPER, FOLLOWING THE INSTALLATION OF THE BASE COURSE OF THE ROADWAY.
 5. ALL SIGNS SHALL BE MAINTAINED BY THE DEVELOPER OR CONTRACTOR UNTIL ALL WAYS ARE ACCEPTED BY THE CITY.
 6. ALL POSTS ARE TO BE SET PLUMB.
 7. ALL FOOTINGS ARE TO BE CEMENT CONCRETE CLASS B MIN.