



**322 HAYES MEMORIAL DRIVE**

HAYES MEMORIAL DRIVE  
 MARLBOROUGH, MA  
 ASSESSOR'S MAP NO. 99  
 PARCEL NO. 01

**SITE PERMIT PLANS**

**APRIL 5, 2022**

COVER SHEET

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**SITE PLAN REVIEW COMMITTEE RECOMMENDATION:**

BUILDING COMMISSIONER \_\_\_\_\_

CITY ENGINEER \_\_\_\_\_

CONSERVATION AGENT \_\_\_\_\_

POLICE CHIEF \_\_\_\_\_

FIRE CHIEF \_\_\_\_\_

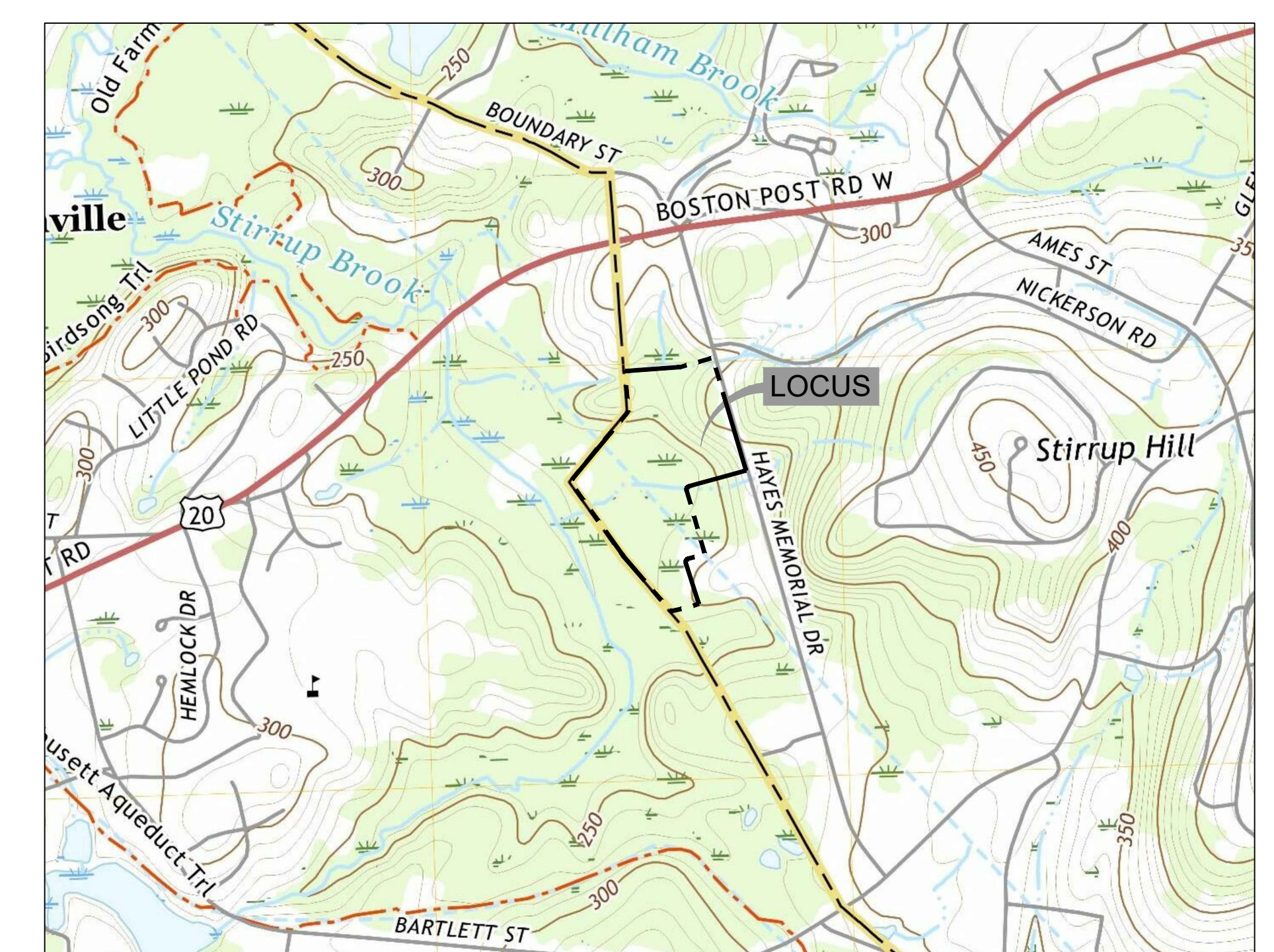
BOARD OF HEALTH \_\_\_\_\_

**PROJECT TEAM:**

**LAND OWNER**  
 MARLBOROUGH/NORTHBOROUGH  
 LAND REALTY TRUST  
 200 SUMMIT DRIVE, SUITE 400  
 BURLINGTON, MA 01803

**APPLICANT / DEVELOPER**  
 MARLBOROUGH/NORTHBOROUGH  
 LAND REALTY TRUST  
 200 SUMMIT DRIVE, SUITE 400  
 BURLINGTON, MA 01803

**CIVIL ENGINEER / LANDSCAPE ARCHITECT**  
 SYMMES MAINI & MCKEE ASSOCIATES  
 1000 MASSACHUSETTS AVE.  
 CAMBRIDGE, MA 02138

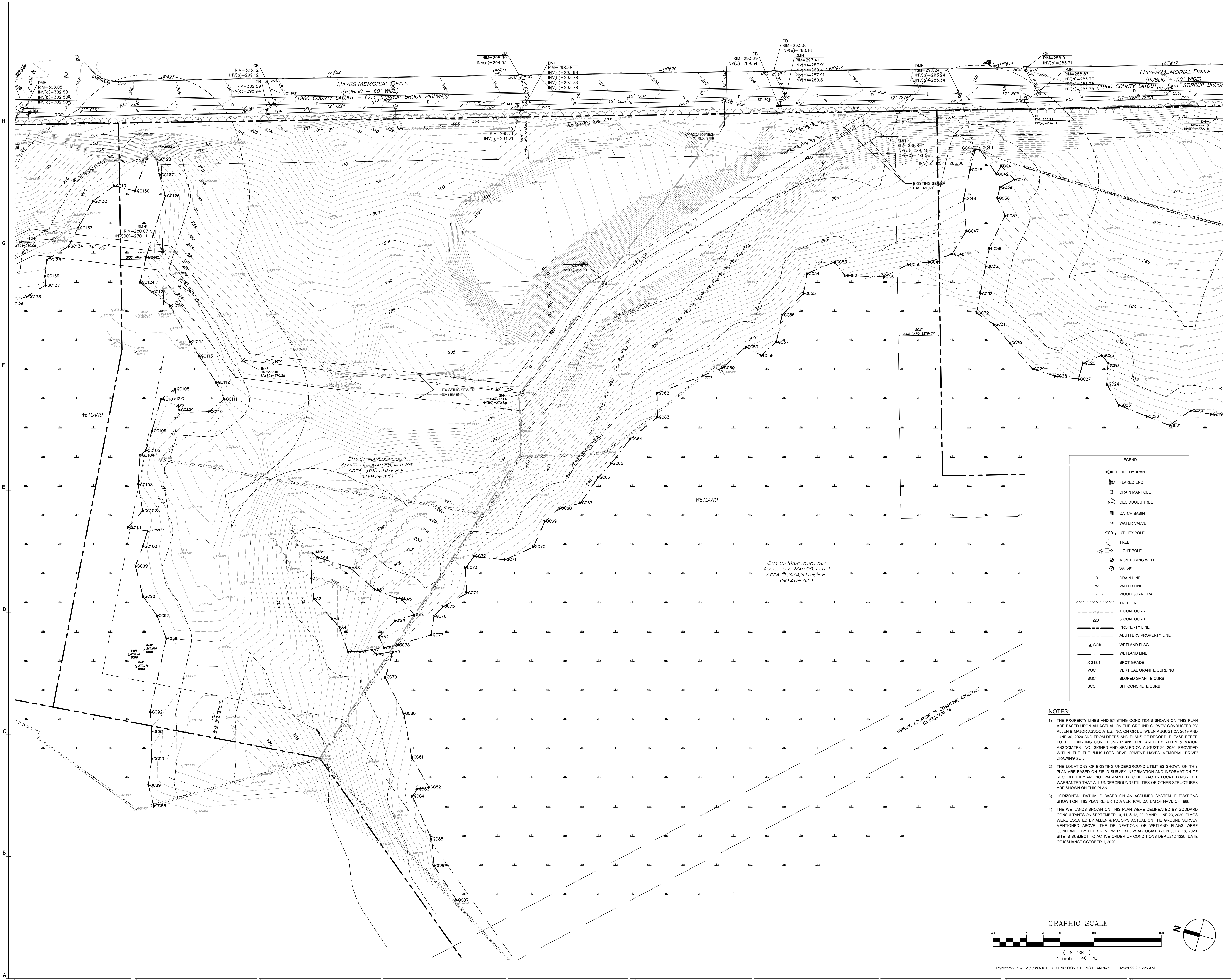


**USGS-LOCUS**  
 SCALE: 1"=1,000'



Cambridge | Chapel Hill | Providence

ARCHITECTURE  
 ENGINEERING  
 PLANNING  
 INTERIORS

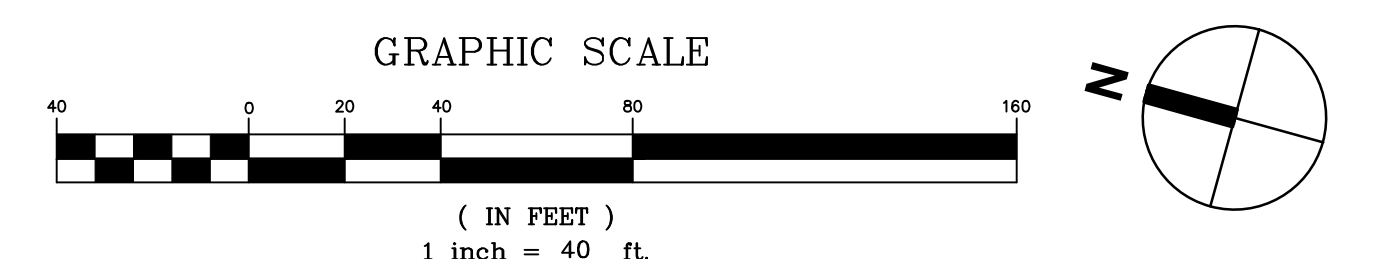


**LEGEND**

- ⊕ F.H. FIRE HYDRANT
- ⊕ FLARED END
- ⊕ DRAIN MANHOLE
- ⊕ DECIDUOUS TREE
- ⊕ CATCH BASIN
- ⊕ WATER VALVE
- ⊕ UTILITY POLE
- ⊕ TREE
- ⊕ LIGHT POLE
- ⊕ MONITORING WELL
- ⊕ VALVE
- D DRAIN LINE
- W WATER LINE
- WGR WOOD GUARD RAIL
- T TREE LINE
- 1' CONTOURS
- 5' CONTOURS
- PROPERTY LINE
- ABUTTERS PROPERTY LINE
- ▲ GC# WETLAND FLAG
- WETLAND LINE
- X 218.1 SPOT GRADE
- VGC VERTICAL GRANITE CURBING
- SGC SLOPED GRANITE CURB
- BCC BIT CONCRETE CURB

**NOTES:**

- 1) THE PROPERTY LINES AND EXISTING CONDITIONS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON THE GROUND SURVEY CONDUCTED BY ALLEN & MAJOR ASSOCIATES, INC. ON OR BETWEEN AUGUST 27, 2019 AND JUNE 30, 2020 AND FROM DEEDS AND PLANS OF RECORD. PLEASE REFER TO THE EXISTING CONDITIONS PLANS PREPARED BY ALLEN & MAJOR ASSOCIATES, INC. SIGNED AND SEALED ON AUGUST 28, 2020, PROVIDED WITHIN THE "MLK LOTS DEVELOPMENT HAYES MEMORIAL DRIVE" DRAWING SET.
- 2) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEY INFORMATION AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
- 3) HORIZONTAL DATUM IS BASED ON AN ASSUMED SYSTEM. ELEVATIONS SHOWN ON THIS PLAN REFER TO A VERTICAL DATUM OF NAVD 1988.
- 4) THE WETLANDS SHOWN ON THIS PLAN WERE DELINEATED BY GODDARD CONSULTANTS ON SEPTEMBER 10, 11, & 12, 2019 AND JUNE 23, 2020. FLAGS WERE LOCATED BY ALLEN & MAJORS ACTUAL. ON THE GROUND SURVEY MENTIONED ABOVE. THE DELINEATIONS OF WETLAND FLAGS WERE CONFIRMED BY PEER REVIEWER OXBOW ASSOCIATES ON JULY 18, 2020. SITE IS SUBJECT TO ACTIVE ORDER OF CONDITIONS DEP #212-1229, DATE OF ISSUANCE OCTOBER 1, 2020.

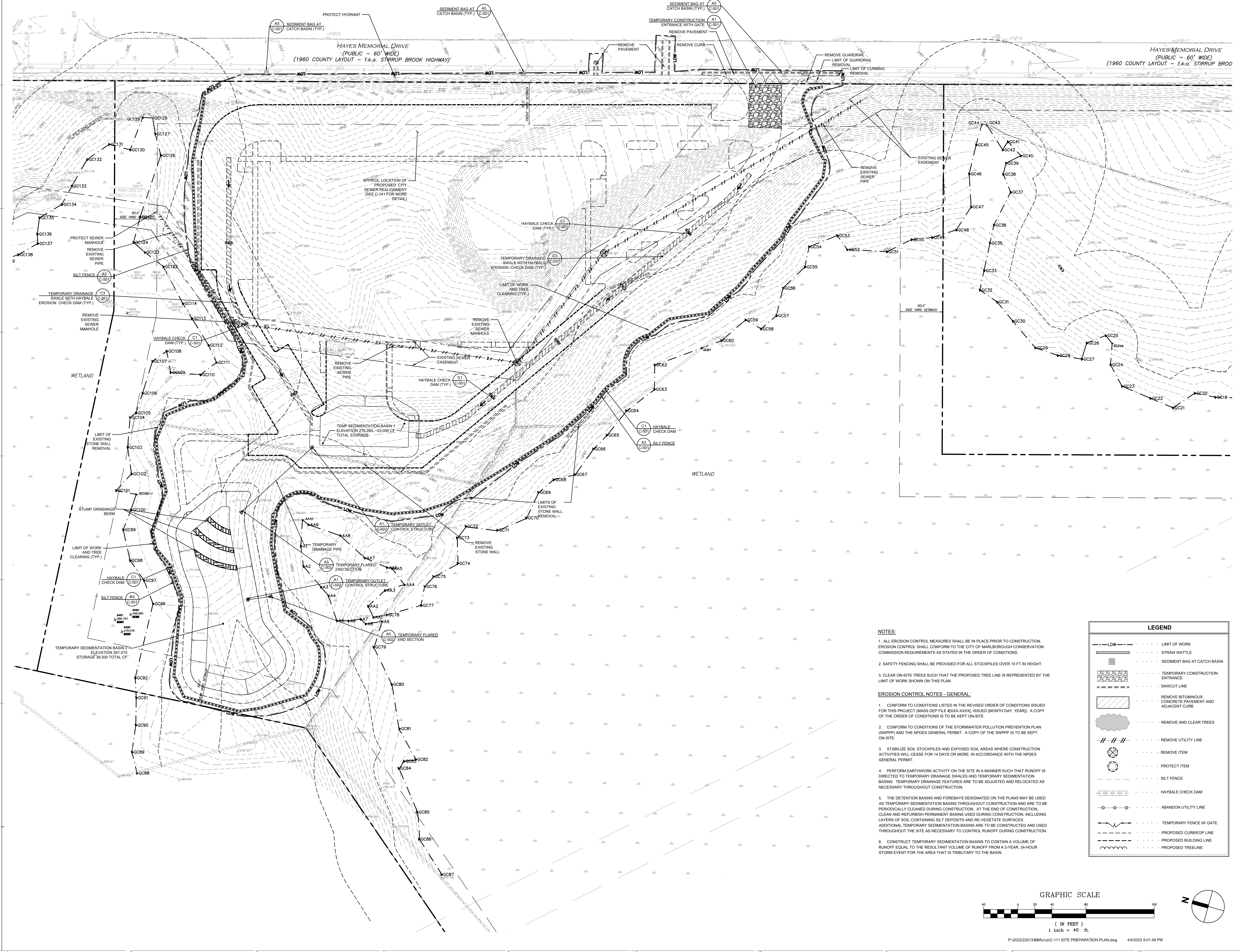


MARK	DATE	DESCRIPTION
1	04/05/2022	SITE PERMIT PLANS
		ISSUE LOG
		△ = CLOUDED CHANGE

SCALE 1" = 40'

DRAWN BY	WJP
CHECK BY	
PROJ. ARCH/ENGR.	JAH
PROD. MGR.	SAV
JOB NO.	22013.00
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**EXISTING CONDITIONS PLAN**

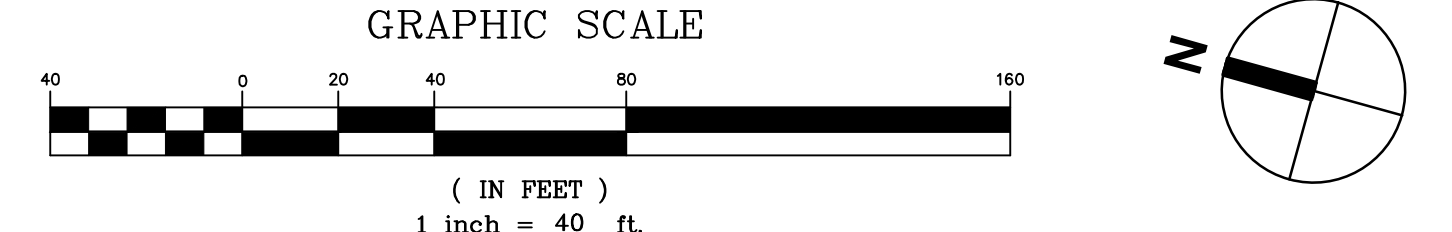
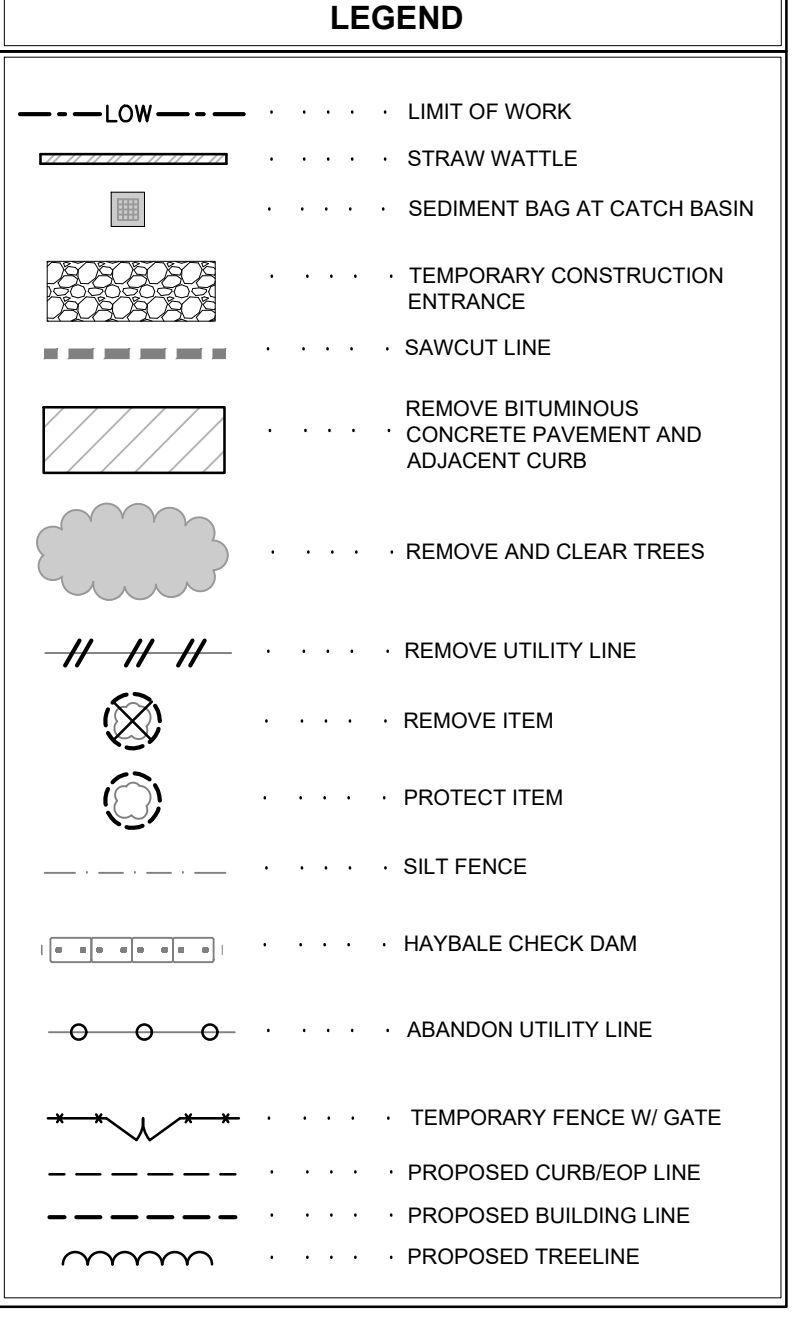


**NOTES:**

1. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION. EROSION CONTROL SHALL CONFORM TO THE CITY OF MARLBOROUGH CONSERVATION COMMISSION REQUIREMENTS AS STATED IN THE ORDER OF CONDITIONS.
2. SAFETY FENCING SHALL BE PROVIDED FOR ALL STOCKPILES OVER 10 FT IN HEIGHT.
3. CLEAR ON-SITE TREES SUCH THAT THE PROPOSED TREE LINE IS REPRESENTED BY THE LIMIT OF WORK SHOWN ON THIS PLAN.

**EROSION CONTROL NOTES - GENERAL:**

1. CONFORM TO CONDITIONS LISTED IN THE REVISED ORDER OF CONDITIONS ISSUED FOR THIS PROJECT (MASS DEP FILE #POX-XXXX), ISSUED (MONTH DAY, YEAR). A COPY OF THE ORDER OF CONDITIONS IS TO BE KEPT ON-SITE.
2. CONFORM TO CONDITIONS OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND THE NPDES GENERAL PERMIT. A COPY OF THE SWPPP IS TO BE KEPT ON-SITE.
3. STABILIZE SOIL STOCKPILES AND EXPOSED SOIL AREAS WHERE CONSTRUCTION ACTIVITIES WILL CEASE FOR 14 DAYS OR MORE, IN ACCORDANCE WITH THE NPDES GENERAL PERMIT.
4. PERFORM EARTHWORK ACTIVITY ON THE SITE IN A MANNER SUCH THAT RUNOFF IS DIRECTED TO TEMPORARY DRAINAGE SWALES AND TEMPORARY SEDIMENTATION BASINS. TEMPORARY DRAINAGE FEATURES ARE TO BE ADJUSTED AND RELOCATED AS NECESSARY THROUGHOUT CONSTRUCTION.
5. THE DETENTION BASINS AND FOREBAYS DESIGNATED ON THE PLANS MAY BE USED AS TEMPORARY SEDIMENTATION BASINS THROUGHOUT CONSTRUCTION AND ARE TO BE PERIODICALLY CLEANED DURING CONSTRUCTION. AT THE END OF CONSTRUCTION, CLEAN AND REVEGETATE PERMANENT BASINS USED DURING CONSTRUCTION, INCLUDING LAYERS OF SOIL CONTAINING SILT DEPOSITS AND RE-VEGETATE SURFACES. ADDITIONAL TEMPORARY SEDIMENTATION BASINS ARE TO BE CONSTRUCTED AND USED THROUGHOUT THE SITE AS NECESSARY TO CONTROL RUNOFF DURING CONSTRUCTION.
6. CONSTRUCT TEMPORARY SEDIMENTATION BASINS TO CONTAIN A VOLUME OF RUNOFF EQUAL TO THE RESULTANT VOLUME OF RUNOFF FROM A 2-YEAR, 24-HOUR STORM EVENT FOR THE AREA THAT IS TRIBUTARY TO THE BASIN.



MARK	DATE	DESCRIPTION
1	04/05/2022	SITE PERMIT PLANS

ISSUE LOG

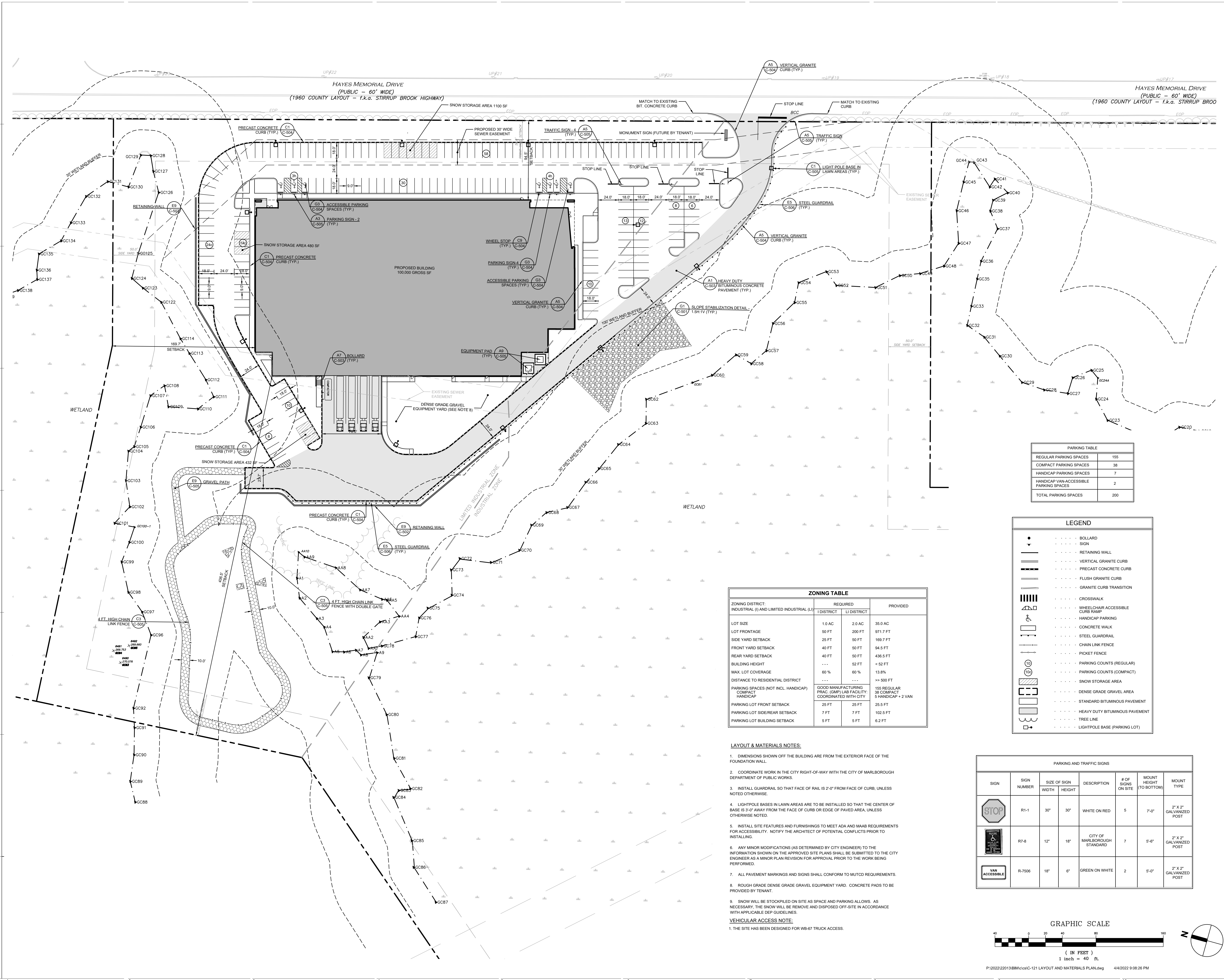
△ = CLOUDED CHANGE



SCALE	1" = 40'
DRAWN BY	WJP
CHECK BY	
PROJ.ARCH.ENGR.	JAH
PROD.MRG.	SAV
JOB NO.	22013.00

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**SITE PREPARATION PLAN**



PARKING TABLE	
REGULAR PARKING SPACES	155
COMPACT PARKING SPACES	38
HANDICAP PARKING SPACES	7
HANDICAP VAN-ACCESSIBLE PARKING SPACES	2
<b>TOTAL PARKING SPACES</b>	<b>200</b>

LEGEND	
	BOLLARD
	SIGN
	RETAINING WALL
	VERTICAL GRANITE CURB
	PRECAST CONCRETE CURB
	FLUSH GRANITE CURB
	GRANITE CURB TRANSITION
	CROSSWALK
	WHEELCHAIR ACCESSIBLE CURB RAMP
	HANDICAP PARKING
	CONCRETE WALK
	STEEL GUARDRAIL
	CHAIN LINK FENCE
	PICKET FENCE
	PARKING COUNTS (REGULAR)
	PARKING COUNTS (COMPACT)
	SNOW STORAGE AREA
	DENSE GRADE GRAVEL AREA
	STANDARD BITUMINOUS PAVEMENT
	HEAVY DUTY BITUMINOUS PAVEMENT
	TREE LINE
	LIGHTPOLE BASE (PARKING LOT)

ZONING TABLE			
ZONING DISTRICT: INDUSTRIAL (I) AND LIMITED INDUSTRIAL (LI)	REQUIRED		PROVIDED
	DISTRICT	LI DISTRICT	
LOT SIZE	1.0 AC	2.0 AC	35.0 AC
LOT FRONTAGE	50 FT	200 FT	971.7 FT
SIDE YARD SETBACK	25 FT	50 FT	169.7 FT
FRONT YARD SETBACK	40 FT	50 FT	94.5 FT
REAR YARD SETBACK	40 FT	50 FT	436.5 FT
BUILDING HEIGHT	---	52 FT	< 52 FT
MAX. LOT COVERAGE	60 %	60 %	13.8%
DISTANCE TO RESIDENTIAL DISTRICT	---	---	>> 500 FT
PARKING SPACES (NOT INCL. HANDICAP) COMPACT HANDICAP	GOOD MANUFACTURING PRAC. (GMP) LAB FACILITY COORDINATED WITH CITY	155 REGULAR 38 COMPACT 5 HANDICAP + 2 VAN	
PARKING LOT FRONT SETBACK	25 FT	25 FT	25.5 FT
PARKING LOT SIDEREAR SETBACK	7 FT	7 FT	102.5 FT
PARKING LOT BUILDING SETBACK	5 FT	5 FT	6.2 FT

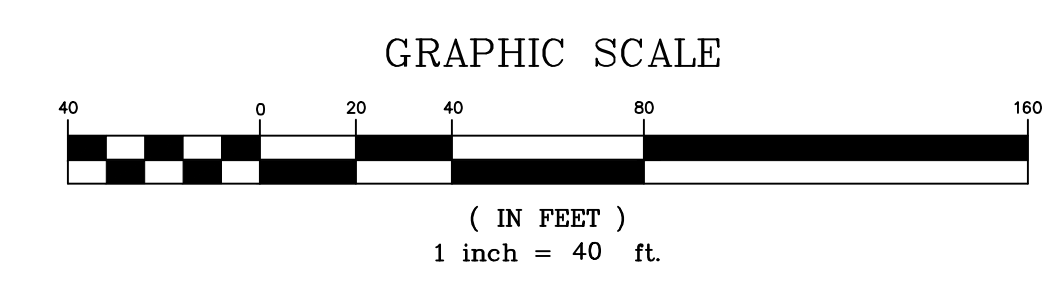
**LAYOUT & MATERIALS NOTES:**

- DIMENSIONS SHOWN OFF THE BUILDING ARE FROM THE EXTERIOR FACE OF THE FOUNDATION WALL.
- COORDINATE WORK IN THE CITY RIGHT-OF-WAY WITH THE CITY OF MARLBOROUGH DEPARTMENT OF PUBLIC WORKS.
- INSTALL GUARDRAIL SO THAT FACE OF RAIL IS 2'-0" FROM FACE OF CURB, UNLESS NOTED OTHERWISE.
- LIGHTPOLE BASES IN LAWN AREAS ARE TO BE INSTALLED SO THAT THE CENTER OF BASE IS 3'-0" AWAY FROM THE FACE OF CURB OR EDGE OF PAVED AREA, UNLESS OTHERWISE NOTED.
- INSTALL SITE FEATURES AND FURNISHINGS TO MEET ADA AND MAAB REQUIREMENTS FOR ACCESSIBILITY. NOTIFY THE ARCHITECT OF POTENTIAL CONFLICTS PRIOR TO INSTALLING.
- ANY MINOR MODIFICATIONS (AS DETERMINED BY CITY ENGINEER) TO THE INFORMATION SHOWN ON THE APPROVED SITE PLANS SHALL BE SUBMITTED TO THE CITY ENGINEER AS A MINOR PLAN REVISION FOR APPROVAL PRIOR TO THE WORK BEING PERFORMED.
- ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO MUTCD REQUIREMENTS.
- ROUGH GRADE DENSE GRADE GRAVEL EQUIPMENT YARD. CONCRETE PADS TO BE PROVIDED BY TENANT.
- SNOW WILL BE STOCKPILED ON SITE AS SPACE AND PARKING ALLOWS. AS NECESSARY, THE SNOW WILL BE REMOVE AND DISPOSED OFF-SITE IN ACCORDANCE WITH APPLICABLE DEP GUIDELINES.

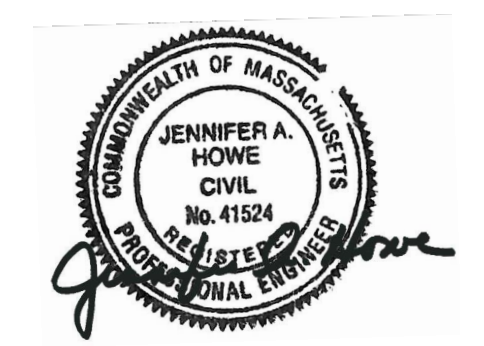
**VEHICULAR ACCESS NOTE:**

- THE SITE HAS BEEN DESIGNED FOR WB-67 TRUCK ACCESS.

PARKING AND TRAFFIC SIGNS							
SIGN	SIGN NUMBER	SIZE OF SIGN		DESCRIPTION	# OF SIGNS ON SITE	MOUNT HEIGHT (TO BOTTOM)	MOUNT TYPE
		WIDTH	HEIGHT				
	R1-1	30"	30"	WHITE ON RED	5	7'-0"	2" x 2" GALVANIZED POST
	R7-8	12"	18"	CITY OF MARLBOROUGH STANDARD	7	5'-0"	2" x 2" GALVANIZED POST
	R7506	18"	6"	GREEN ON WHITE	2	5'-0"	2" x 2" GALVANIZED POST

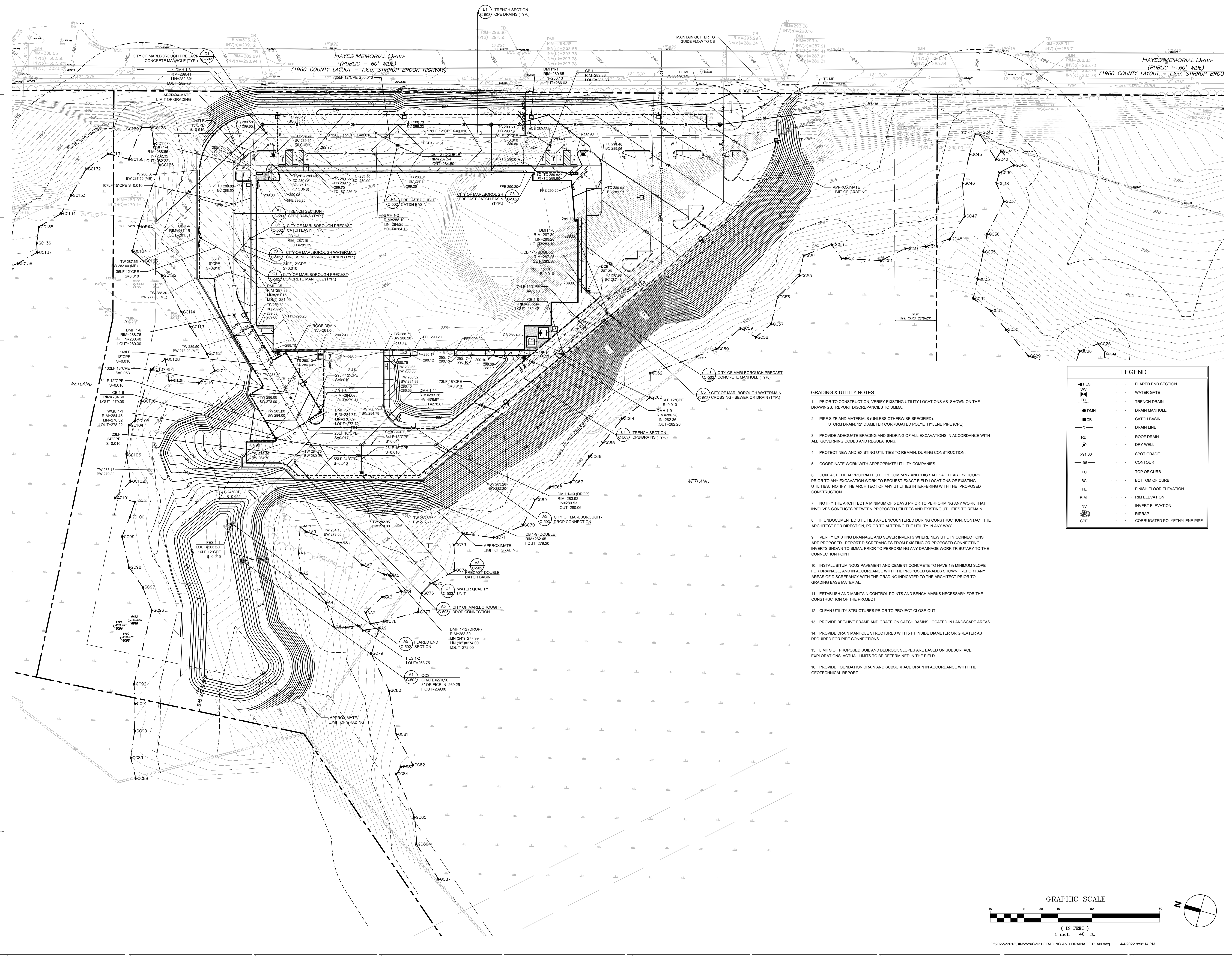


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**LAYOUT AND MATERIALS PLAN**

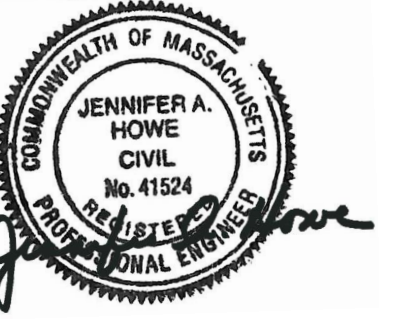


- GRADING & UTILITY NOTES:**
- PRIOR TO CONSTRUCTION, VERIFY EXISTING UTILITY LOCATIONS AS SHOWN ON THE DRAWINGS. REPORT DISCREPANCIES TO SMMA.
  - PIPE SIZE AND MATERIALS (UNLESS OTHERWISE SPECIFIED):  
STORM DRAIN: 12" DIAMETER CORRUGATED POLYETHYLENE PIPE (CPE)
  - PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH ALL GOVERNING CODES AND REGULATIONS.
  - PROTECT NEW AND EXISTING UTILITIES TO REMAIN, DURING CONSTRUCTION.
  - COORDINATE WORK WITH APPROPRIATE UTILITY COMPANIES.
  - CONTACT THE APPROPRIATE UTILITY COMPANY AND 'DIG SAFE' AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. NOTIFY THE ARCHITECT OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION.
  - NOTIFY THE ARCHITECT A MINIMUM OF 5 DAYS PRIOR TO PERFORMING ANY WORK THAT INVOLVES CONFLICTS BETWEEN PROPOSED UTILITIES AND EXISTING UTILITIES TO REMAIN.
  - IF UNDOCUMENTED UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION, CONTACT THE ARCHITECT FOR DIRECTION, PRIOR TO ALTERING THE UTILITY IN ANY WAY.
  - VERIFY EXISTING DRAINAGE AND SEWER INVERTS WHERE NEW UTILITY CONNECTIONS ARE PROPOSED. REPORT DISCREPANCIES FROM EXISTING OR PROPOSED CONNECTING INVERTS SHOWN TO SMMA, PRIOR TO PERFORMING ANY DRAINAGE WORK TRIBUTARY TO THE CONNECTION POINT.
  - INSTALL BITUMINOUS PAVEMENT AND CEMENT CONCRETE TO HAVE 1% MINIMUM SLOPE FOR DRAINAGE, AND IN ACCORDANCE WITH THE PROPOSED GRADES SHOWN. REPORT ANY AREAS OF DISCREPANCY WITH THE GRADING INDICATED TO THE ARCHITECT PRIOR TO GRADING BASE MATERIAL.
  - ESTABLISH AND MAINTAIN CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE CONSTRUCTION OF THE PROJECT.
  - CLEAN UTILITY STRUCTURES PRIOR TO PROJECT CLOSE-OUT.
  - PROVIDE BEE-HIVE FRAME AND GRATE ON CATCH BASINS LOCATED IN LANDSCAPE AREAS.
  - PROVIDE DRAIN MANHOLE STRUCTURES WITH 5 FT INSIDE DIAMETER OR GREATER AS REQUIRED FOR PIPE CONNECTIONS.
  - LIMITS OF PROPOSED SOIL AND BEDROCK SLOPES ARE BASED ON SUBSURFACE EXPLORATIONS. ACTUAL LIMITS TO BE DETERMINED IN THE FIELD.
  - PROVIDE FOUNDATION DRAIN AND SUBSURFACE DRAIN IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

**LEGEND**

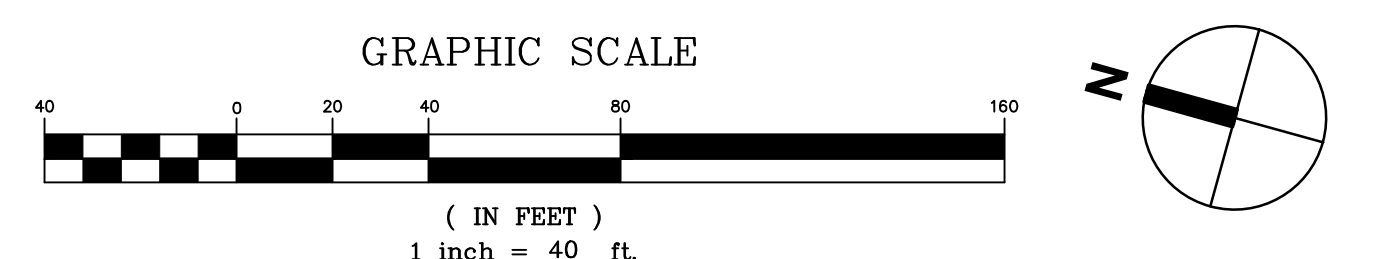
	FLARED END SECTION
	WATER GATE
	TRENCH DRAIN
	DRAIN MANHOLE
	CATCH BASIN
	DRAIN LINE
	ROOF DRAIN
	DRY WELL
	SPOT GRADE
	CONTOUR
	TOP OF CURB
	BOTTOM OF CURB
	FINISH FLOOR ELEVATION
	RIM ELEVATION
	INVERT ELEVATION
	RIPRAP
	CORRUGATED POLYETHYLENE PIPE

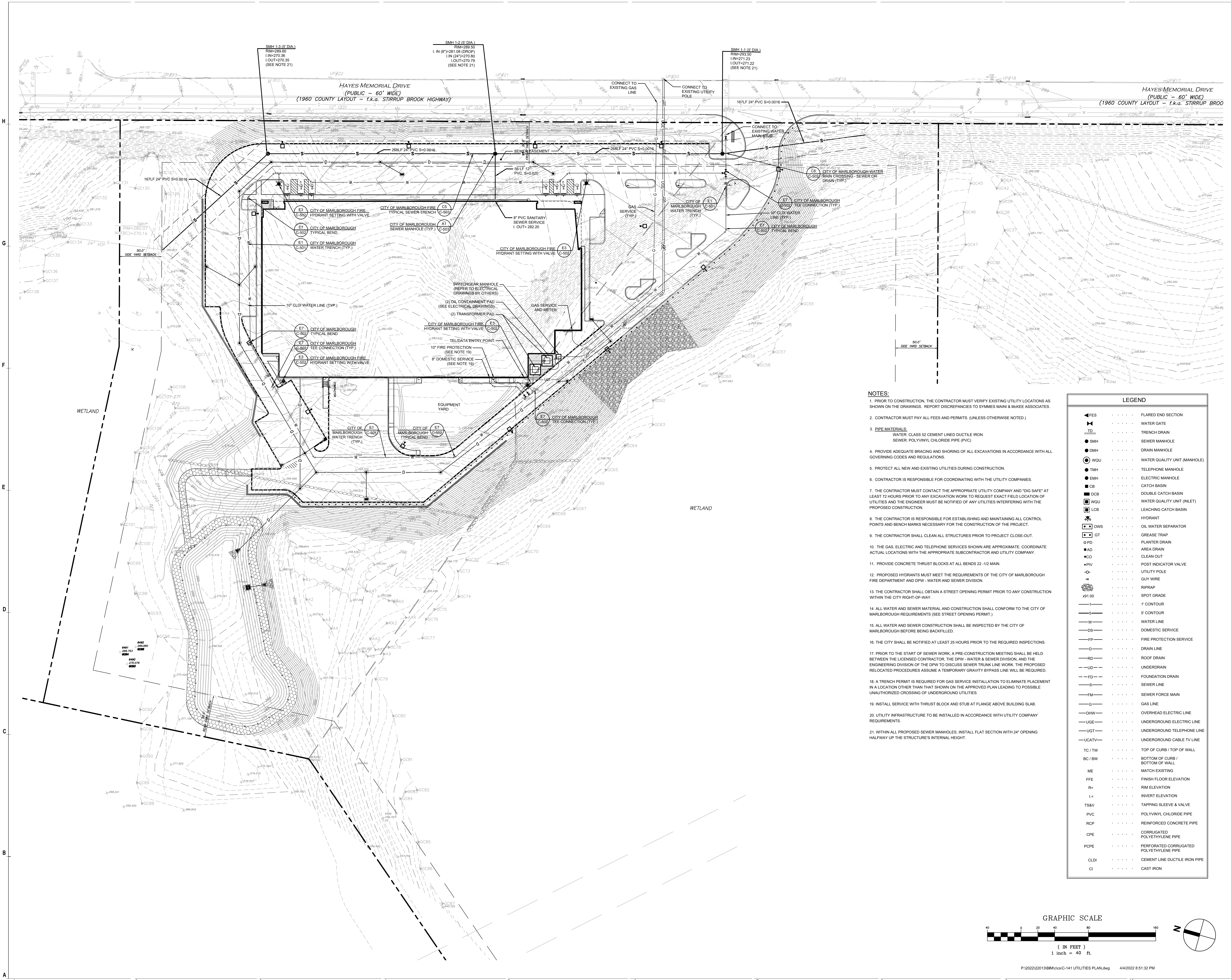
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**GRADING AND DRAINAGE PLAN**



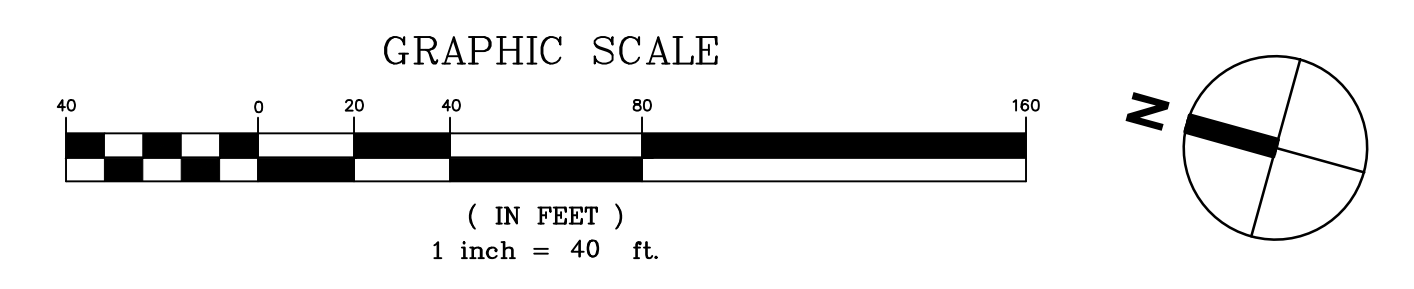


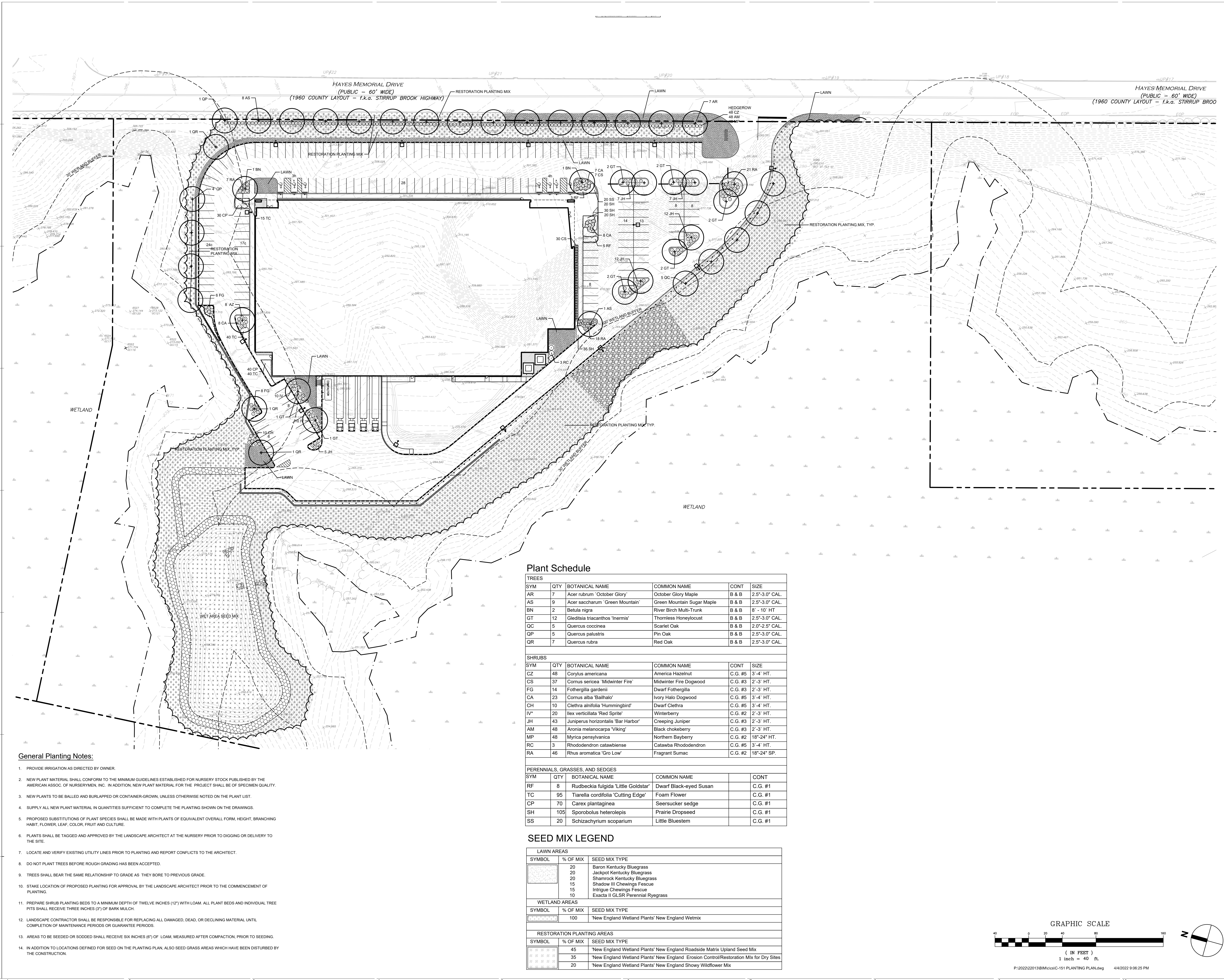
NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST VERIFY EXISTING UTILITY LOCATIONS AS SHOWN ON THE DRAWINGS. REPORT DISCREPANCIES TO SYMMES MAIN & MCKEE ASSOCIATES.
2. CONTRACTOR MUST PAY ALL FEES AND PERMITS, (UNLESS OTHERWISE NOTED.)
3. PIPE MATERIALS:  
WATER: CLASS 52 CEMENT LINED DUCTILE IRON  
SEWER: POLYVINYL CHLORIDE PIPE (PVC)
4. PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH ALL GOVERNING CODES AND REGULATIONS.
5. PROTECT ALL NEW AND EXISTING UTILITIES DURING CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES.
7. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY AND 'DIG SAFE' AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER MUST BE NOTIFIED OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE CONSTRUCTION OF THE PROJECT.
9. THE CONTRACTOR SHALL CLEAN ALL STRUCTURES PRIOR TO PROJECT CLOSE-OUT.
10. THE GAS, ELECTRIC AND TELEPHONE SERVICES SHOWN ARE APPROXIMATE. COORDINATE ACTUAL LOCATIONS WITH THE APPROPRIATE SUBCONTRACTOR AND UTILITY COMPANY.
11. PROVIDE CONCRETE THRUST BLOCKS AT ALL BENDS 22-1/2 MAIN.
12. PROPOSED HYDRANTS MUST MEET THE REQUIREMENTS OF THE CITY OF MARLBOROUGH FIRE DEPARTMENT AND DPW - WATER AND SEWER DIVISION.
13. THE CONTRACTOR SHALL OBTAIN A STREET OPENING PERMIT PRIOR TO ANY CONSTRUCTION WITHIN THE CITY RIGHT-OF-WAY.
14. ALL WATER AND SEWER MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF MARLBOROUGH REQUIREMENTS (SEE STREET OPENING PERMIT.)
15. ALL WATER AND SEWER CONSTRUCTION SHALL BE INSPECTED BY THE CITY OF MARLBOROUGH BEFORE BEING BACKFILLED.
16. THE CITY SHALL BE NOTIFIED AT LEAST 25 HOURS PRIOR TO THE REQUIRED INSPECTIONS.
17. PRIOR TO THE START OF SEWER WORK, A PRE-CONSTRUCTION MEETING SHALL BE HELD BETWEEN THE LICENSED CONTRACTOR, THE DPW - WATER & SEWER DIVISION, AND THE ENGINEERING DIVISION OF THE DPW TO DISCUSS SEWER TRUNK LINE WORK. THE PROPOSED RELOCATED PROCEDURES ASSUME A TEMPORARY GRAVITY BYPASS LINE WILL BE REQUIRED.
18. A TRENCH PERMIT IS REQUIRED FOR GAS SERVICE INSTALLATION TO ELIMINATE PLACEMENT IN A LOCATION OTHER THAN THAT SHOWN ON THE APPROVED PLAN LEADING TO POSSIBLE UNAUTHORIZED CROSSING OF UNDERGROUND UTILITIES.
19. INSTALL SERVICE WITH THRUST BLOCK AND STUB AT FLANGE ABOVE BUILDING SLAB.
20. UTILITY INFRASTRUCTURE TO BE INSTALLED IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS.
21. WITHIN ALL PROPOSED SEWER MANHOLES, INSTALL FLAT SECTION WITH 24" OPENING HALFWAY UP THE STRUCTURE'S INTERNAL HEIGHT.

LEGEND

	FLARED END SECTION
	WATER GATE
	TRENCH DRAIN
	SEWER MANHOLE
	DRAIN MANHOLE
	WATER QUALITY UNIT (MANHOLE)
	TELEPHONE MANHOLE
	ELECTRIC MANHOLE
	CATCH BASIN
	DOUBLE CATCH BASIN
	WATER QUALITY UNIT (INLET)
	LEACHING CATCH BASIN
	HYDRANT
	OIL WATER SEPARATOR
	GREASE TRAP
	PLANTER DRAIN
	AREA DRAIN
	CLEAN OUT
	POST INDICATOR VALVE
	UTILITY POLE
	GUY WIRE
	RIPRAP
	SPOT GRADE
	1' CONTOUR
	5' CONTOUR
	WATER LINE
	DOMESTIC SERVICE
	FIRE PROTECTION SERVICE
	DRAIN LINE
	ROOF DRAIN
	UNDERDRAIN
	FOUNDATION DRAIN
	SEWER LINE
	SEWER FORCE MAIN
	GAS LINE
	OVERHEAD ELECTRIC LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND TELEPHONE LINE
	UNDERGROUND CABLE TV LINE
	TOP OF CURB / TOP OF WALL
	BOTTOM OF CURB / BOTTOM OF WALL
	MATCH EXISTING
	FINISH FLOOR ELEVATION
	RIM ELEVATION
	INVERT ELEVATION
	TAPPING SLEEVE & VALVE
	POLYVINYL CHLORIDE PIPE
	REINFORCED CONCRETE PIPE
	CORRUGATED POLYETHYLENE PIPE
	PERFORATED CORRUGATED POLYETHYLENE PIPE
	CEMENT LINE DUCTILE IRON PIPE
	CAST IRON





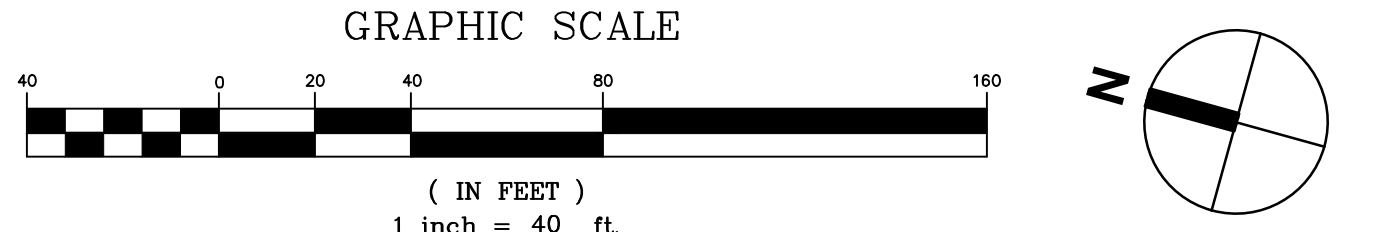
### Plant Schedule

TREES					
SYM	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE
AR	7	Acer rubrum 'October Glory'	October Glory Maple	B & B	2.5'-3.0" CAL.
AS	9	Acer saccharum 'Green Mountain'	Green Mountain Sugar Maple	B & B	2.5'-3.0" CAL.
BN	2	Betula nigra	River Birch Multi-Trunk	B & B	8' - 10' HT
GT	12	Gleditsia triacanthos 'Inermis'	Thornless Honeylocust	B & B	2.5'-3.0" CAL.
QC	5	Quercus coccinea	Scarlet Oak	B & B	2.0'-2.5" CAL.
QP	5	Quercus palustris	Pin Oak	B & B	2.5'-3.0" CAL.
QR	7	Quercus rubra	Red Oak	B & B	2.5'-3.0" CAL.
SHRUBS					
SYM	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE
CZ	48	Corylus americana	America Hazelnut	C.G. #5	3'-4' HT.
CS	37	Cornus sericea 'Midwinter Fire'	Midwinter Fire Dogwood	C.G. #3	2'-3' HT.
FG	14	Fothergilla gardenii	Dwarf Fothergilla	C.G. #3	2'-3' HT.
CA	23	Cornus alba 'Ballhalo'	Ivory Halo Dogwood	C.G. #5	3'-4' HT.
CH	10	Clethra alnifolia 'Hummingbird'	Dwarf Clethra	C.G. #5	3'-4' HT.
IV	20	Ilex verticillata 'Red Sprite'	Winterberry	C.G. #2	2'-3' HT.
JH	43	Juniperus horizontalis 'Bar Harbor'	Creeping Juniper	C.G. #3	2'-3' HT.
AM	48	Aronia melanocarpa 'Viking'	Black chokeberry	C.G. #3	2'-3' HT.
MP	48	Myrica pensylvanica	Northern Bayberry	C.G. #2	18"-24" HT.
RC	3	Rhododendron catawbiense	Catawba Rhododendron	C.G. #5	3'-4' HT.
RA	46	Rhus aromatica 'Gro Low'	Fragrant Sumac	C.G. #2	18"-24" SP.
PERENNIALS, GRASSES, AND SEDGES					
SYM	QTY	BOTANICAL NAME	COMMON NAME	CONT	
RF	8	Rudbeckia fulgida 'Little Goldstar'	Dwarf Black-eyed Susan	C.G. #1	
TC	95	Tiarella cordifolia 'Cutting Edge'	Foam Flower	C.G. #1	
CP	70	Carex plantaginea	Seersucker sedge	C.G. #1	
SH	105	Sporobolus heterolepis	Prairie Dropseed	C.G. #1	
SS	20	Schizachyrium scoparium	Little Bluestem	C.G. #1	

### SEED MIX LEGEND

LAWN AREAS		
SYMBOL	% OF MIX	SEED MIX TYPE
[Symbol]	20	Baron Kentucky Bluegrass
[Symbol]	20	Jackpot Kentucky Bluegrass
[Symbol]	20	Shamrock Kentucky Bluegrass
[Symbol]	15	Shadow III Chewings Fescue
[Symbol]	15	Intrigue Chewings Fescue
[Symbol]	10	Exakta II GLSR Perennial Ryegrass
WETLAND AREAS		
SYMBOL	% OF MIX	SEED MIX TYPE
[Symbol]	100	'New England Wetland Plants' New England Wetmix
RESTORATION PLANTING AREAS		
SYMBOL	% OF MIX	SEED MIX TYPE
[Symbol]	45	'New England Wetland Plants' New England Roadside Matrix Upland Seed Mix
[Symbol]	35	'New England Wetland Plants' New England Erosion Control/Restoration Mix for Dry Sites
[Symbol]	20	'New England Wetland Plants' New England Showy Wildflower Mix

- ### General Planting Notes:
1. PROVIDE IRRIGATION AS DIRECTED BY OWNER.
  2. NEW PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOC. OF NURSERYMEN, INC. IN ADDITION, NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
  3. NEW PLANTS TO BE BALLED AND BURLAPPED OR CONTAINER-GROWN, UNLESS OTHERWISE NOTED ON THE PLANT LIST.
  4. SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS.
  5. PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE.
  6. PLANTS SHALL BE TAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO THE SITE.
  7. LOCATE AND VERIFY EXISTING UTILITY LINES PRIOR TO PLANTING AND REPORT CONFLICTS TO THE ARCHITECT.
  8. DO NOT PLANT TREES BEFORE ROUGH GRADING HAS BEEN ACCEPTED.
  9. TREES SHALL BEAR THE SAME RELATIONSHIP TO GRADE AS THEY BORE TO PREVIOUS GRADE.
  10. STAKE LOCATION OF PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING.
  11. PREPARE SHRUB PLANTING BEDS TO A MINIMUM DEPTH OF TWELVE INCHES (12") WITH LOAM. ALL PLANT BEDS AND INDIVIDUAL TREE PITS SHALL RECEIVE THREE INCHES (3") OF BARK MULCH.
  12. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED, DEAD, OR DECLINING MATERIAL UNTIL COMPLETION OF MAINTENANCE PERIODS OR GUARANTEE PERIODS.
  13. AREAS TO BE SEEDED OR SODDED SHALL RECEIVE SIX INCHES (6") OF LOAM, MEASURED AFTER COMPACTION, PRIOR TO SEEDING.
  14. IN ADDITION TO LOCATIONS DEFINED FOR SEED ON THE PLANTING PLAN, ALSO SEED GRASS AREAS WHICH HAVE BEEN DISTURBED BY THE CONSTRUCTION.



MARK	DATE	DESCRIPTION
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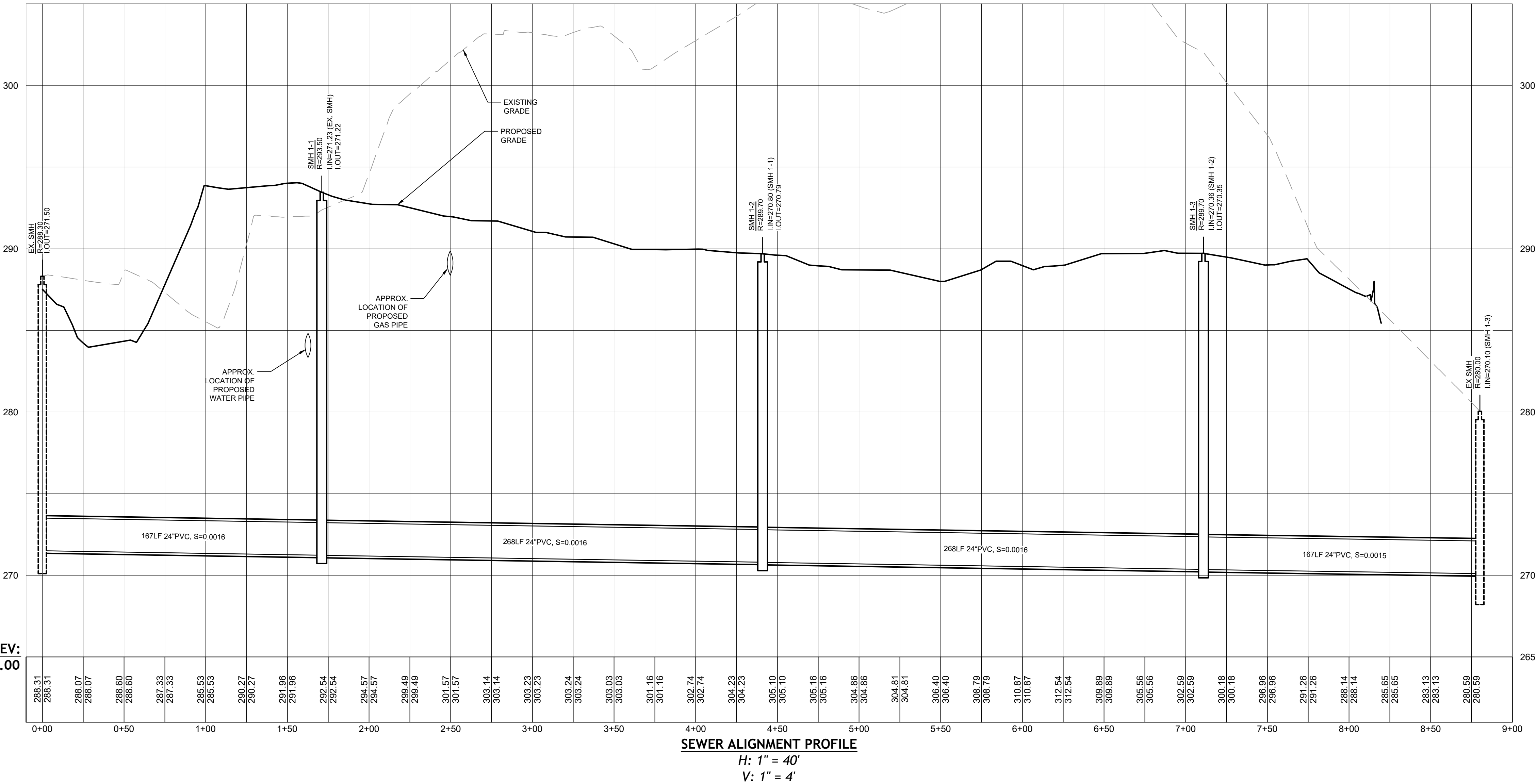
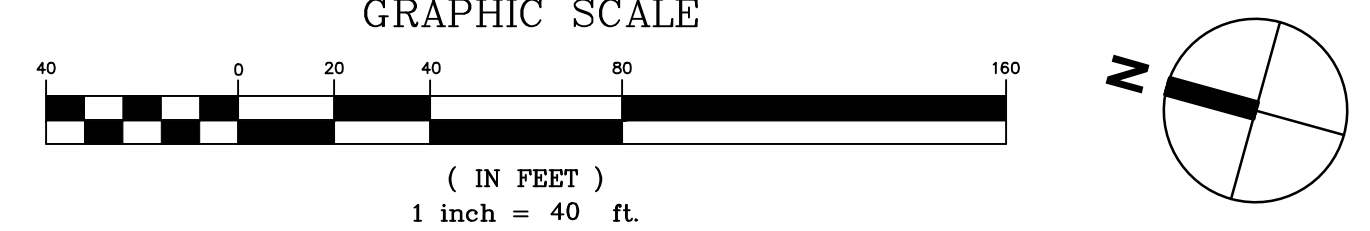
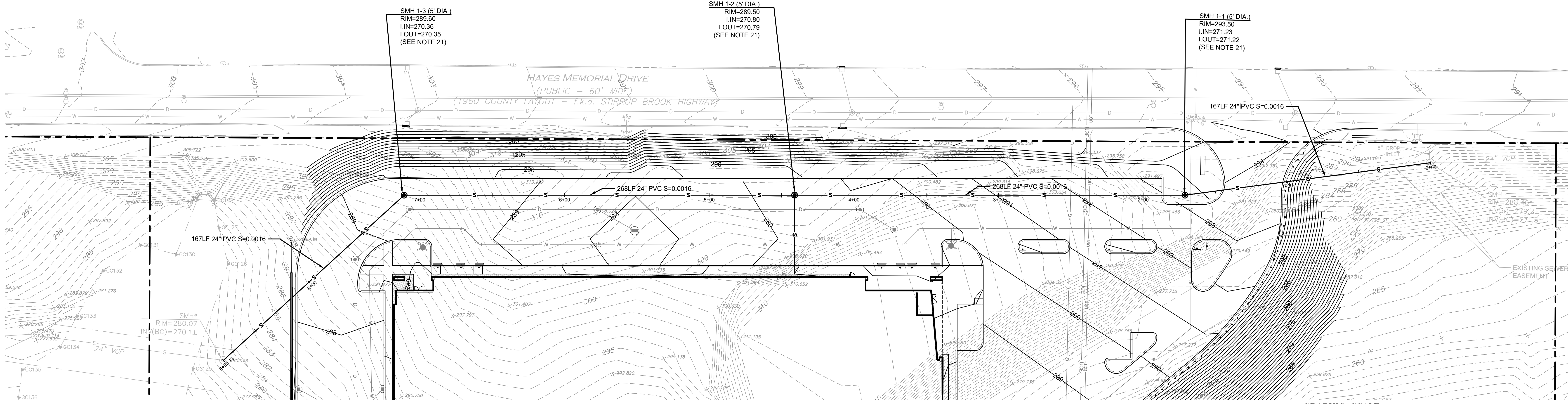
ISSUE LOG

△ = CLOUDED CHANGE



SCALE	1" = 40'
DRAWN BY	AVE
CHECK BY	WJP
PROJ. ARCH. ENGR.	JAH
PROD. MGR.	SAV
JOB NO.	22013.00

### PLANTING PLAN



322 HMD  
322 HAYES MEMORIAL DRIVE  
MARLBOROUGH, MA 01752

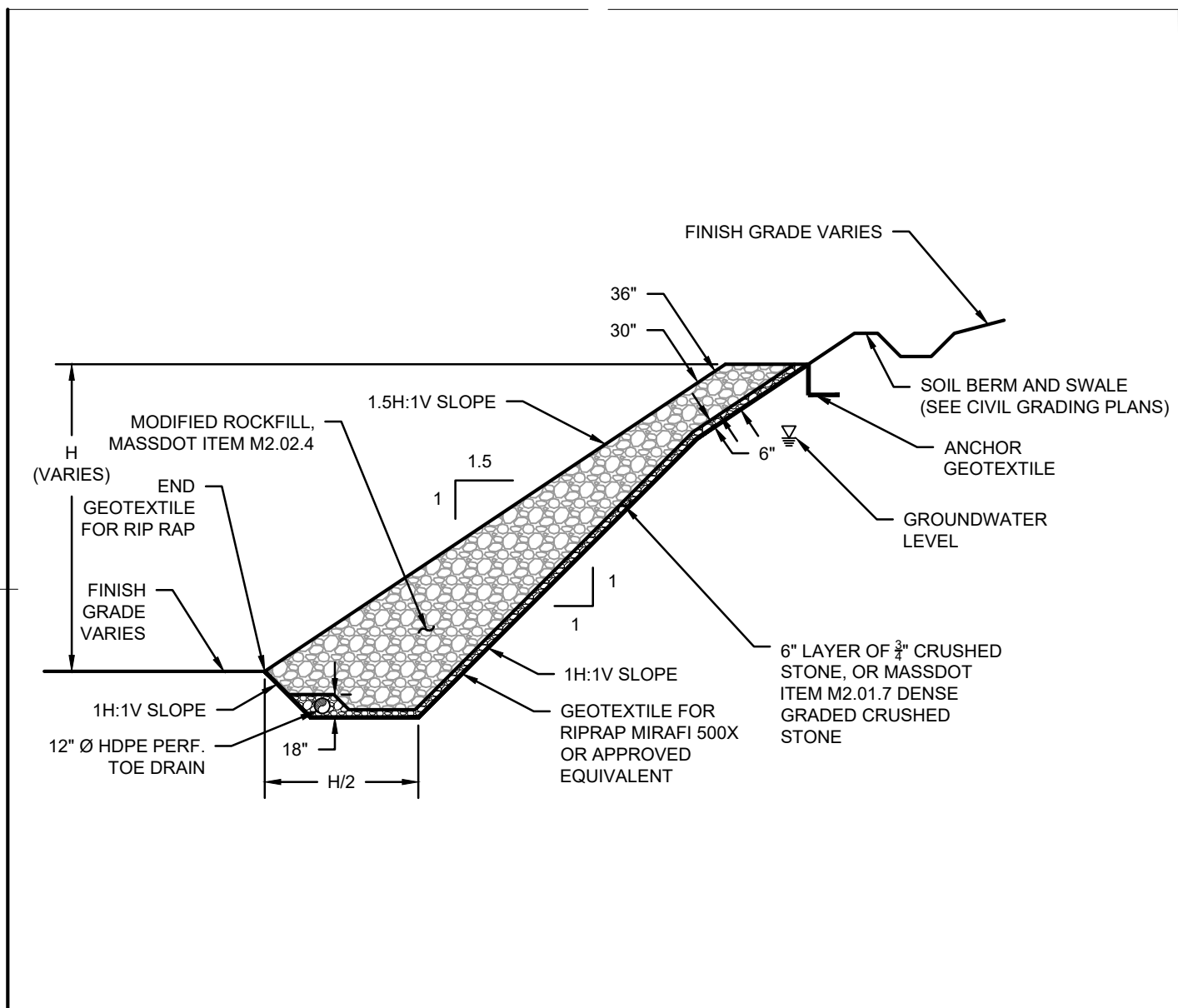
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MARK	DATE	DESCRIPTION
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△	CLOUDED CHANGE	



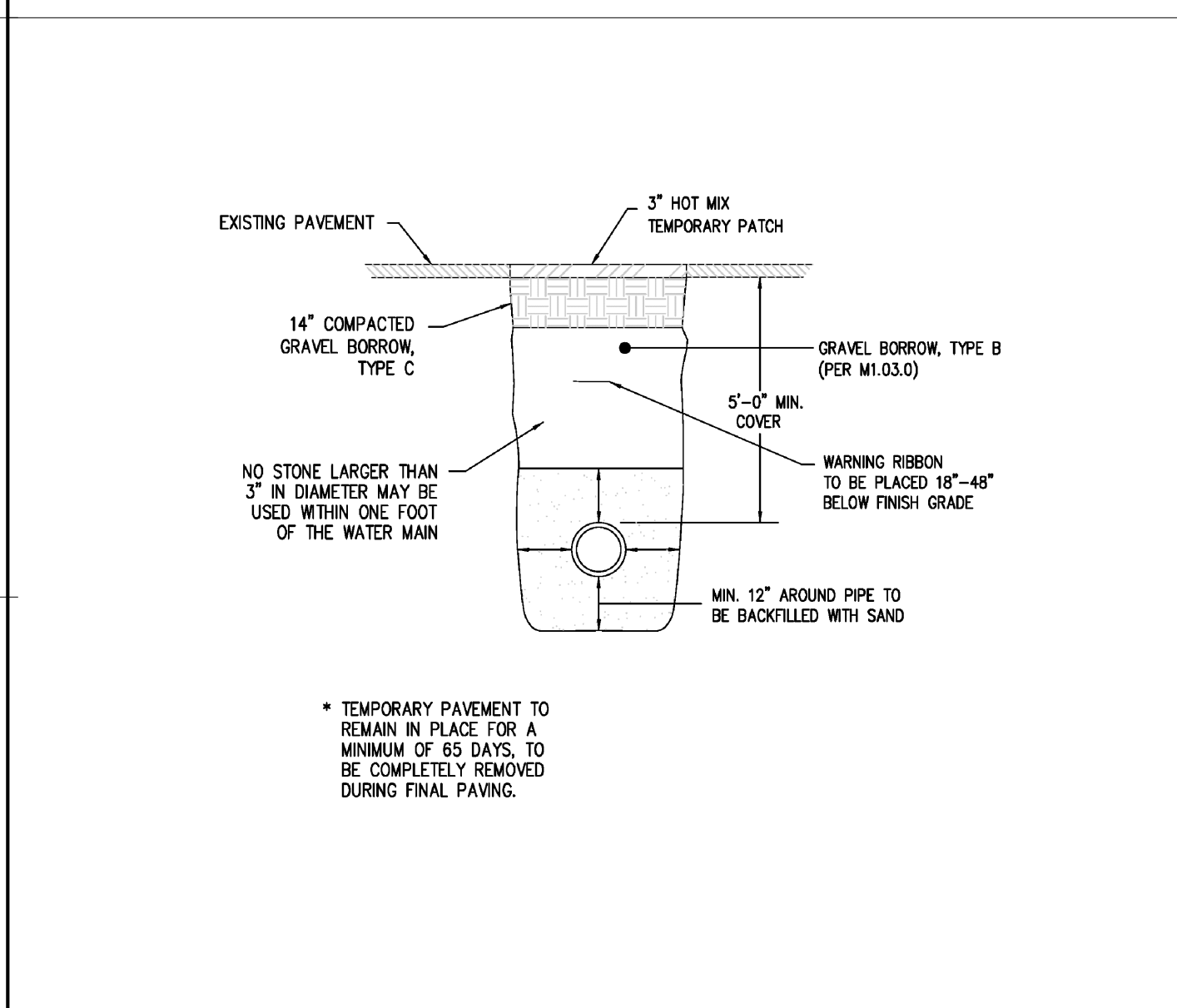
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CHECK BY  
PROJ.ARCH/ENGR. JAH  
PROD. MGR. SAV  
JOB NO. 22013.00  
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SEWER PROFILES





**G1 SLOPE STABILIZATION DETAIL - 1.5H:1V**  
N.T.S. (PREPARED BY SANBORN | HEAD)



**E1 CITY OF MARLBOROUGH - WATER TRENCH**  
N.T.S.

**CONSTRUCTION NOTES**  
THE FOLLOWING DESCRIBES MATERIALS AND METHODS AS THEY PERTAIN TO ROAD OPENING WORK. ALL WORK SHALL CONFORM TO THE 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, AND ALL SUBSEQUENT SUPPLEMENTAL SPECIFICATIONS THERETO.

**BACKFILL MATERIALS**  
EXCAVATIONS IN THE STREET PAVEMENT AREAS SHALL BE CAREFULLY BACKFILLED WITH LAYERS OF SUITABLE GRAVEL. THE TWELVE (12) INCHES OF BEDDING MATERIAL AROUND PIPES SHALL BE SAND (M1.04.0) FOR WATER, 3\"/>

**COMPACTION OF BACKFILL**  
BACKFILL SHALL BE UNIFORMLY DISTRIBUTED IN SUCCESSIVE LAYERS, EACH LAYER BEING THOROUGHLY COMPACTED BEFORE THE SUCCEEDING LAYER IS PLACED. THE ENTIRE WIDTH OF THE TRENCH SHALL BE MECHANICALLY OR HAND TAMPED IN SIX (6) INCH LIFTS, A MINIMUM OF TWO (2) FEET ABOVE THE UTILITY INSTALLATION, AND MECHANICALLY TAMPED THE REMAINDER OF THE FILL IN LIFT DEPTHS NOT GREATER THAN SIX (6) INCHES. THE TOP LAYER OF BACKFILL SHALL BE FOURTEEN (14) INCHES (IN A TEMPORARY TRENCH), AND TWELVE (12) INCHES (IN A PERMANENT TRENCH) OF GRAVEL COMPACTED TO 97% OF MAXIMUM DENSITY.

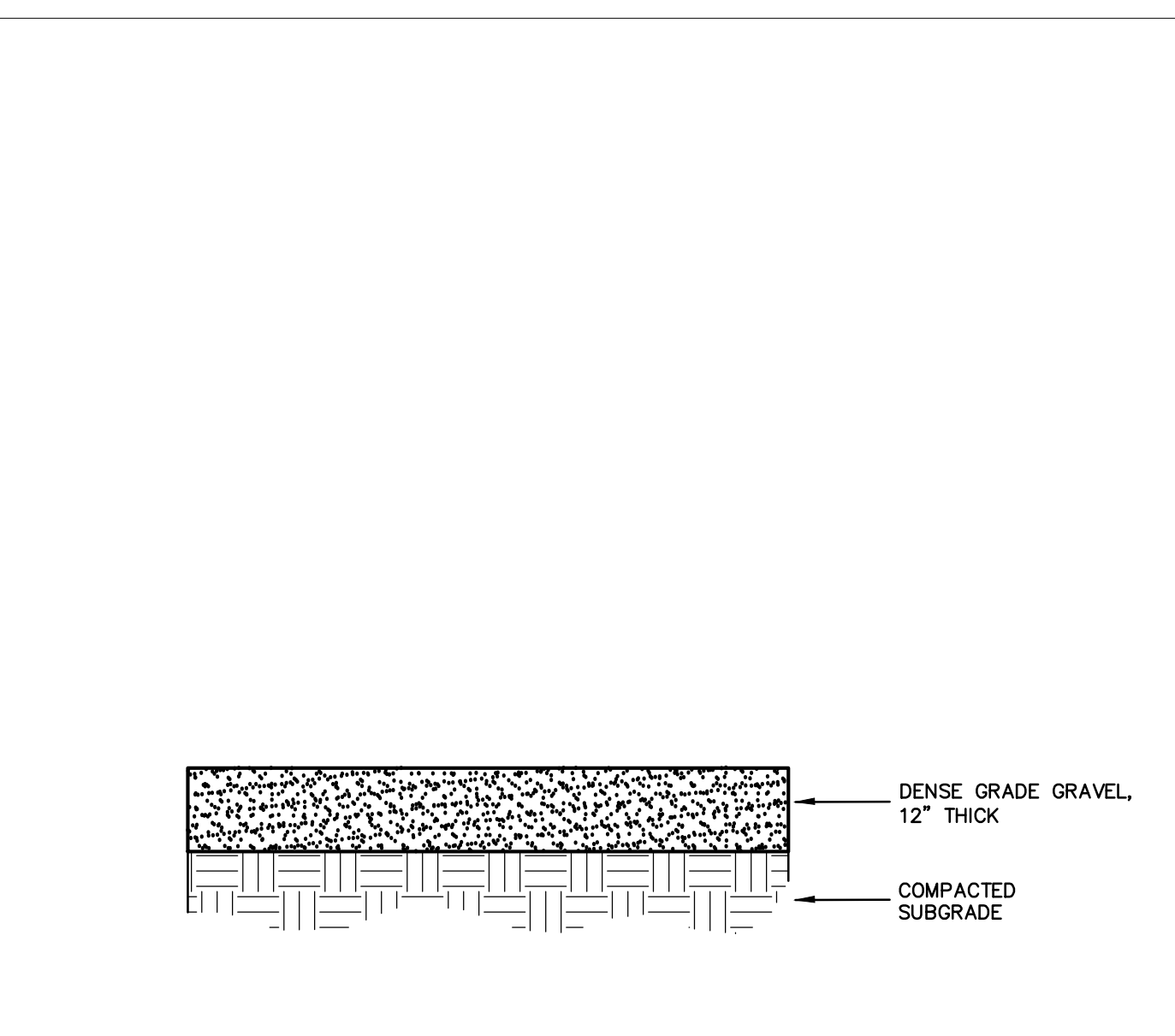
**E3 CITY OF MARLBOROUGH - TRENCH DETAIL NOTES 1**  
N.T.S.

**GRADING ROLLING AND FINISHING**  
PAVEMENT PLACED SHALL BE PLACED AND RAKED TO A UNIFORM SURFACE, ROLLED TO THE REQUIRED THICKNESS AND TO A GRADE THAT WILL MATCH THE EXISTING BITUMINOUS ROAD SURFACE. THE PERMITEE SHALL MAINTAIN THE SURFACING AND SHALL PROMPTLY FILL WITH SIMILAR MATERIAL ANY DEPRESSION AND HOLES THAT MAY OCCUR SO AS TO KEEP THE SURFACING IN A SAFE AND SATISFACTORY CONDITION FOR TRAFFIC.

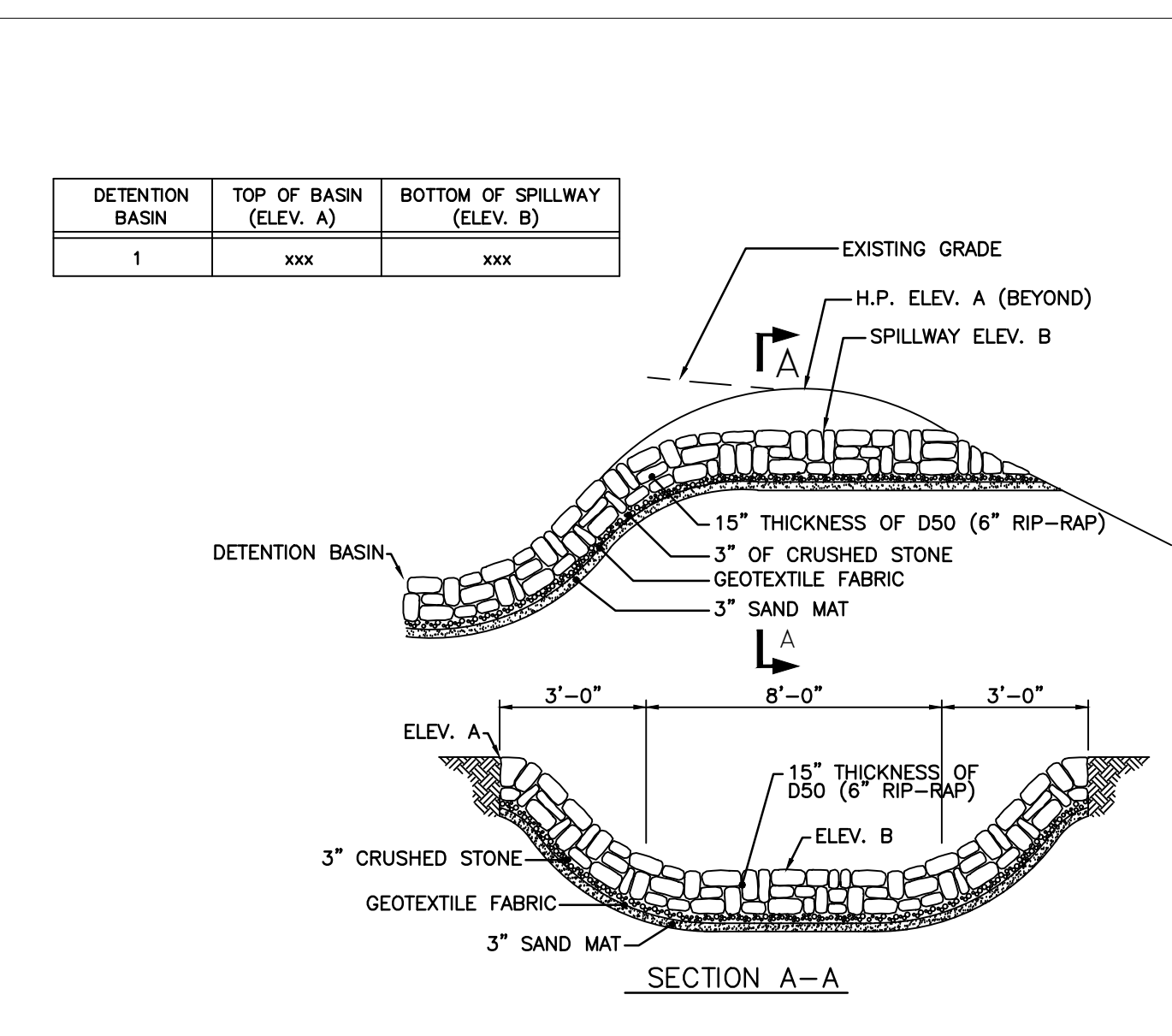
**TEMPORARY PAVEMENT**  
A TEMPORARY PAVEMENT SHALL BE PLACED ON THE SURFACE OF THE FILL AND THOROUGHLY COMPACTED. A TEMPORARY PAVEMENT SHALL BE CLASS I BITUMINOUS CONCRETE TYPE I-1 THREE (3) INCHES THICK (SEE EXCAVATION TRENCH DETAIL). "SOLD PATCH" MAY BE ALLOWED IF APPROVED BY THE COMMISSIONER OF PUBLIC WORKS DUE TO ADVERSE WEATHER CONDITIONS. IF PLATES ARE USED THEY SHALL BE RAMMED TO MATCH THE EXISTING PAVEMENT. TEMPORARY PAVING OR STEEL PLATING SHALL IMMEDIATELY FOLLOW THE BACKFILLING OPERATION.

**PERMANENT PAVING**  
THE FINAL BITUMINOUS CONCRETE SURFACE SHALL NOT BE PLACED ANY EARLIER THAN 60 DAYS OR NO LATER THAN 90 DAYS FROM THE DATE OF COMPLETION OF THE TEMPORARY SURFACE WITHOUT APPROVAL FROM THE COMMISSIONER OF PUBLIC WORKS. THE TEMPORARY PAVEMENT AND SUB-BASE SHALL BE EXCAVATED TO THE GRADE REQUIRED BY THE PERMIT PRIOR TO PLACEMENT OF THE FINAL BITUMINOUS CONCRETE SURFACE. THE BINDER COURSE SHALL NOT BE LESS THAN THE EXISTING ROADWAY BINDER COURSE AND SHALL NOT BE LESS THAN THREE AND ONE-HALF (3 1/2) INCHES IN DEPTH AND THE TOP COURSE SHALL BE ONE AND ONE-HALF (1 1/2) INCHES IN DEPTH. IN SOME INSTANCES, BEYOND A SIMPLE TRENCH EXCAVATION, PAVEMENT DETAILS AND RESURFACING REQUIREMENTS WILL BE INCLUDED AS A SPECIAL CONDITION IN THE PERMIT (E.G. PAVEMENT REQUIREMENTS ON ROUTE 65).

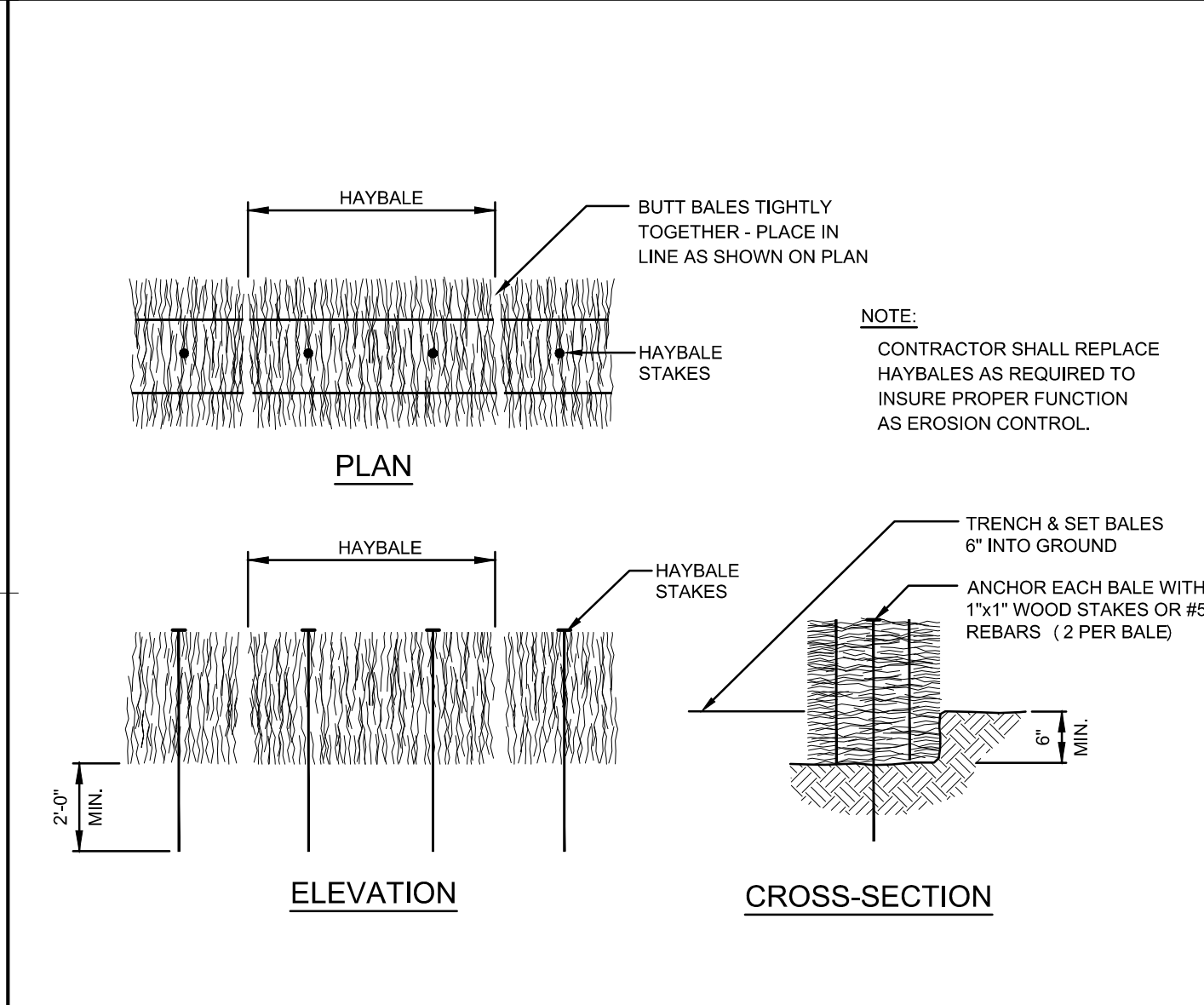
**E3 CITY OF MARLBOROUGH - TRENCH DETAIL NOTES 2**  
N.T.S.



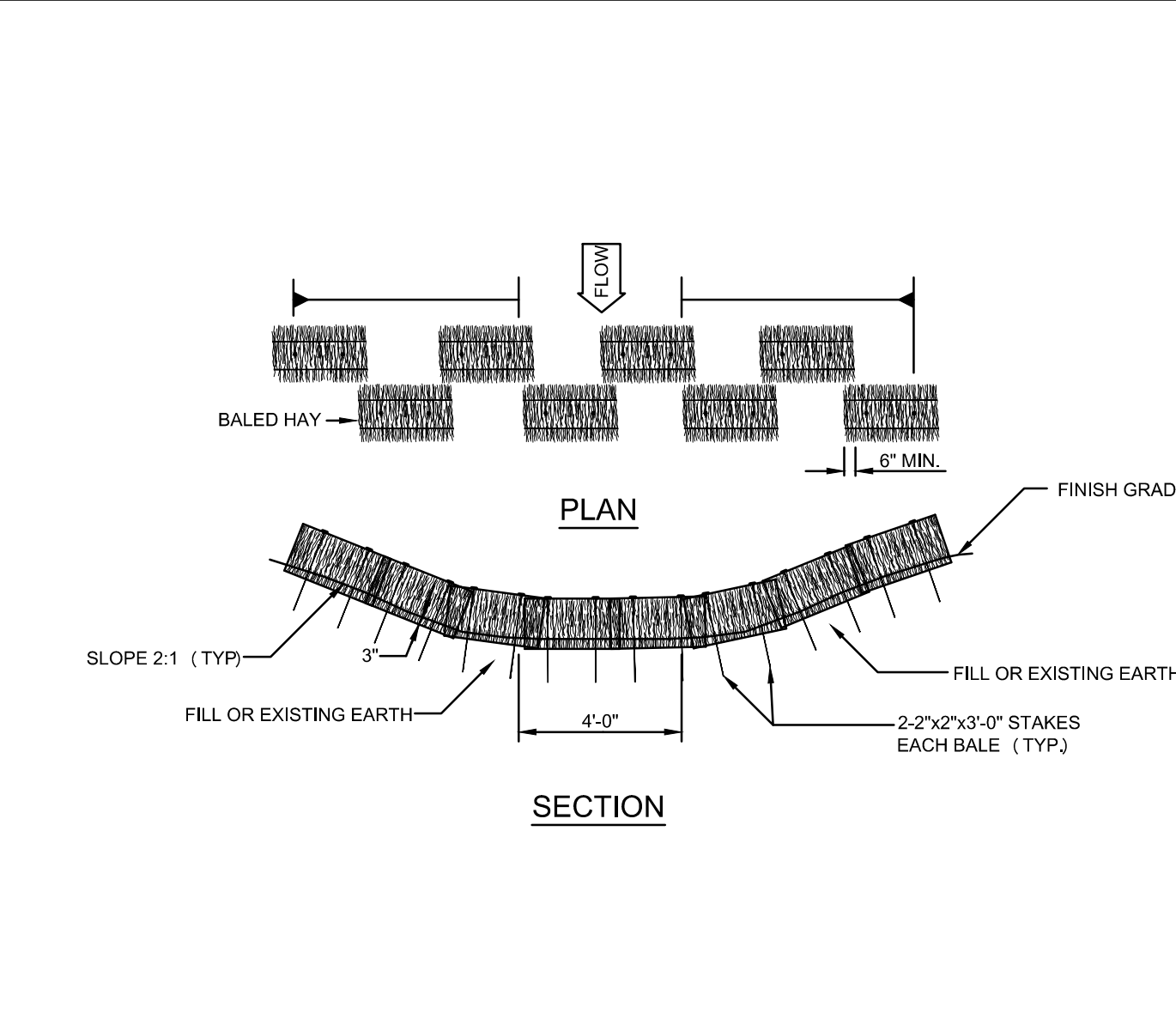
**E7 DENSE GRADE GRAVEL EQUIPMENT YARD**  
N.T.S.



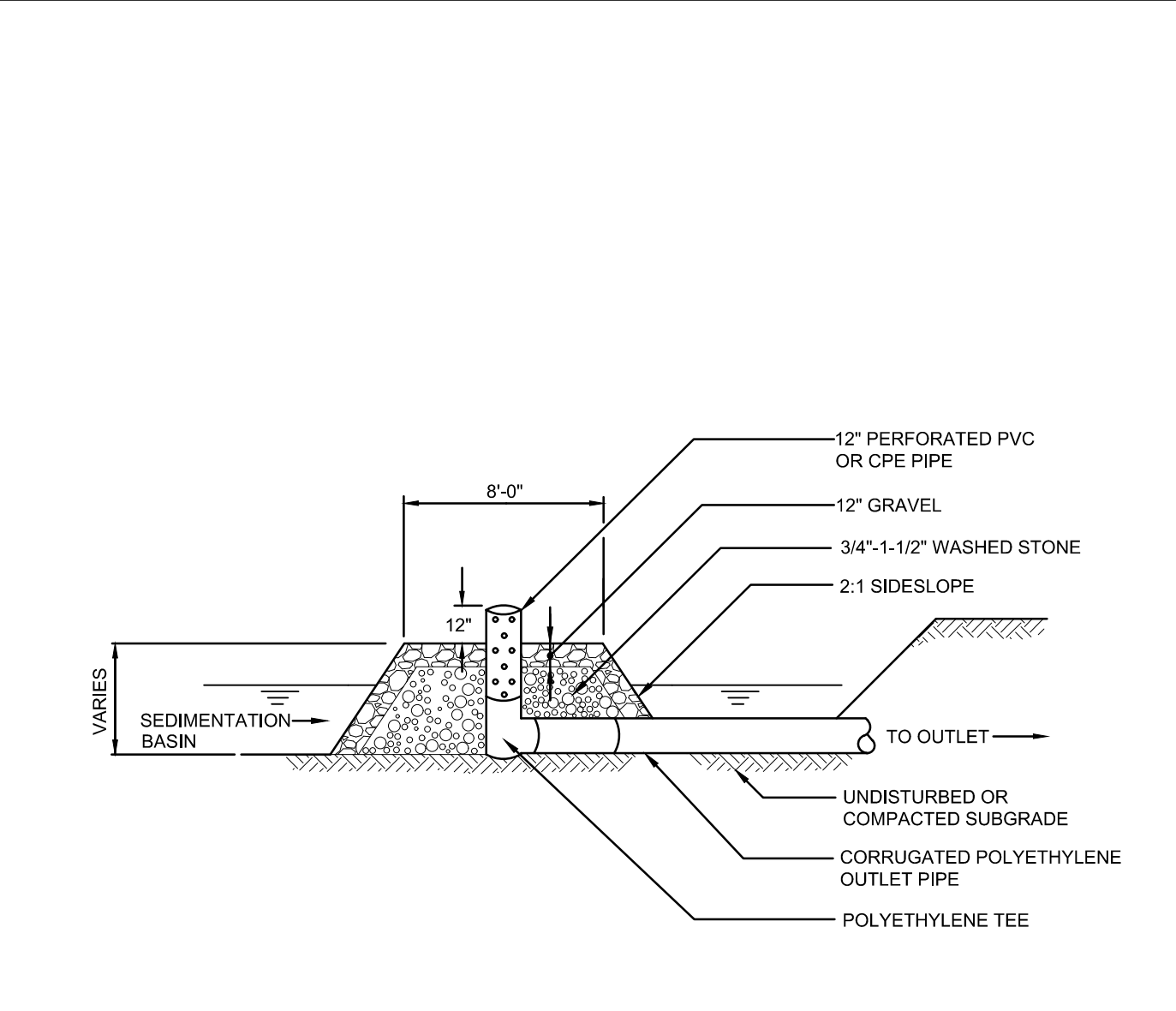
**E9 DETENTION BASIN SPILLWAY OUTLET**  
N.T.S.



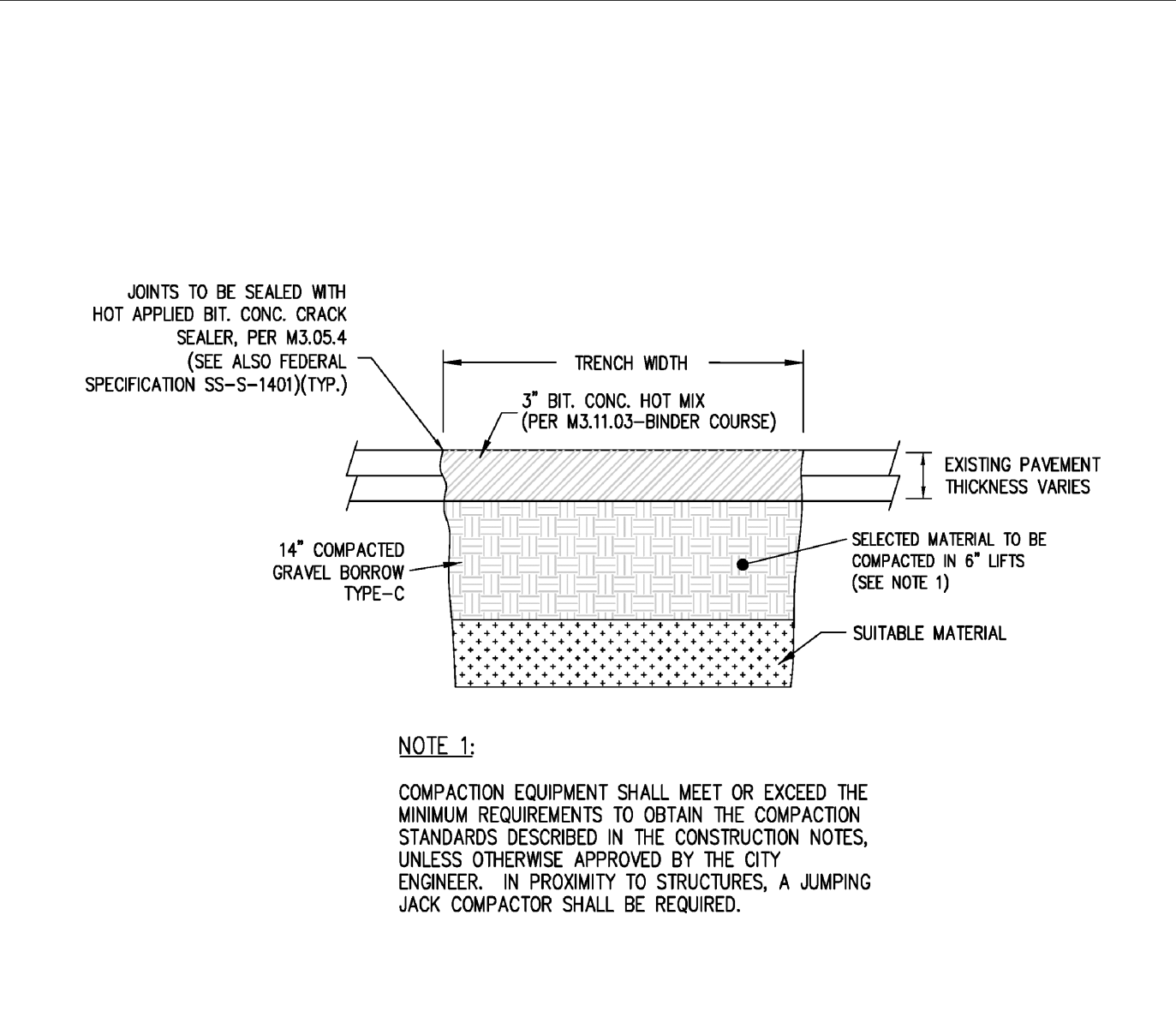
**C1 HAYBALE CHECK DAM**  
N.T.S.



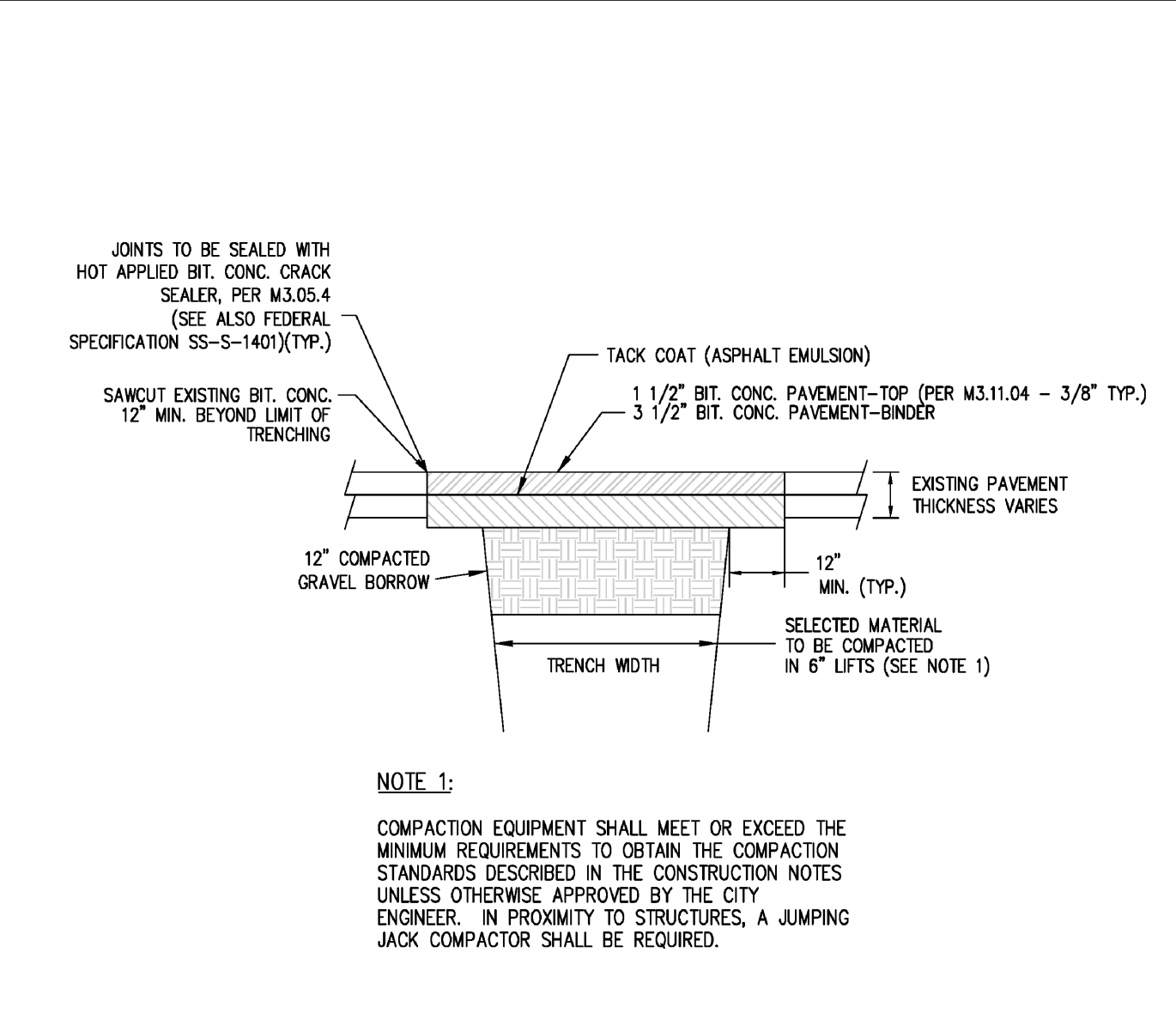
**C3 TEMPORARY DRAINAGE SWALE WITH HAYBALE EROSION CHECK DAM**  
N.T.S.



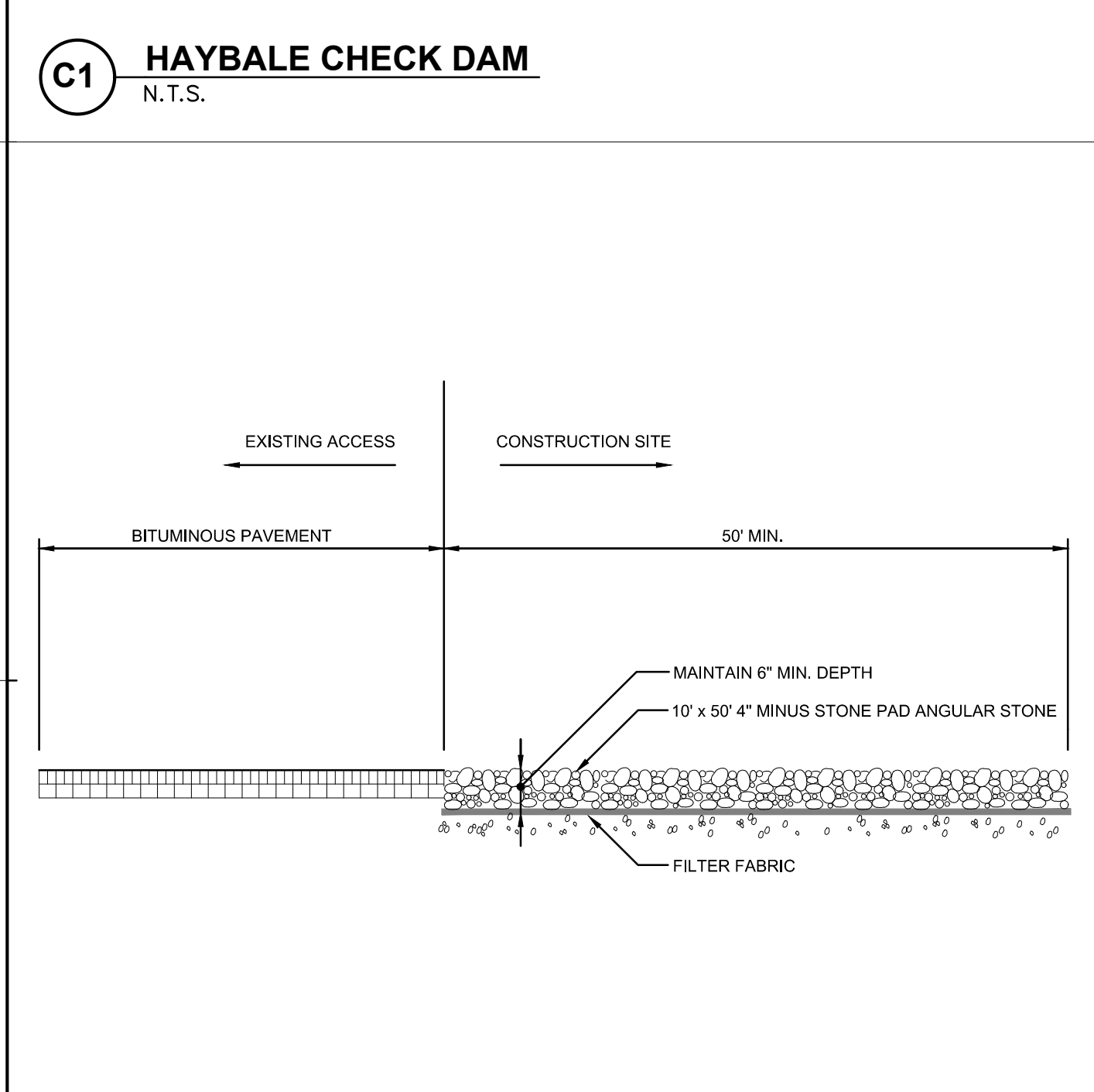
**C5 TEMPORARY OUTLET STRUCTURE**  
N.T.S.



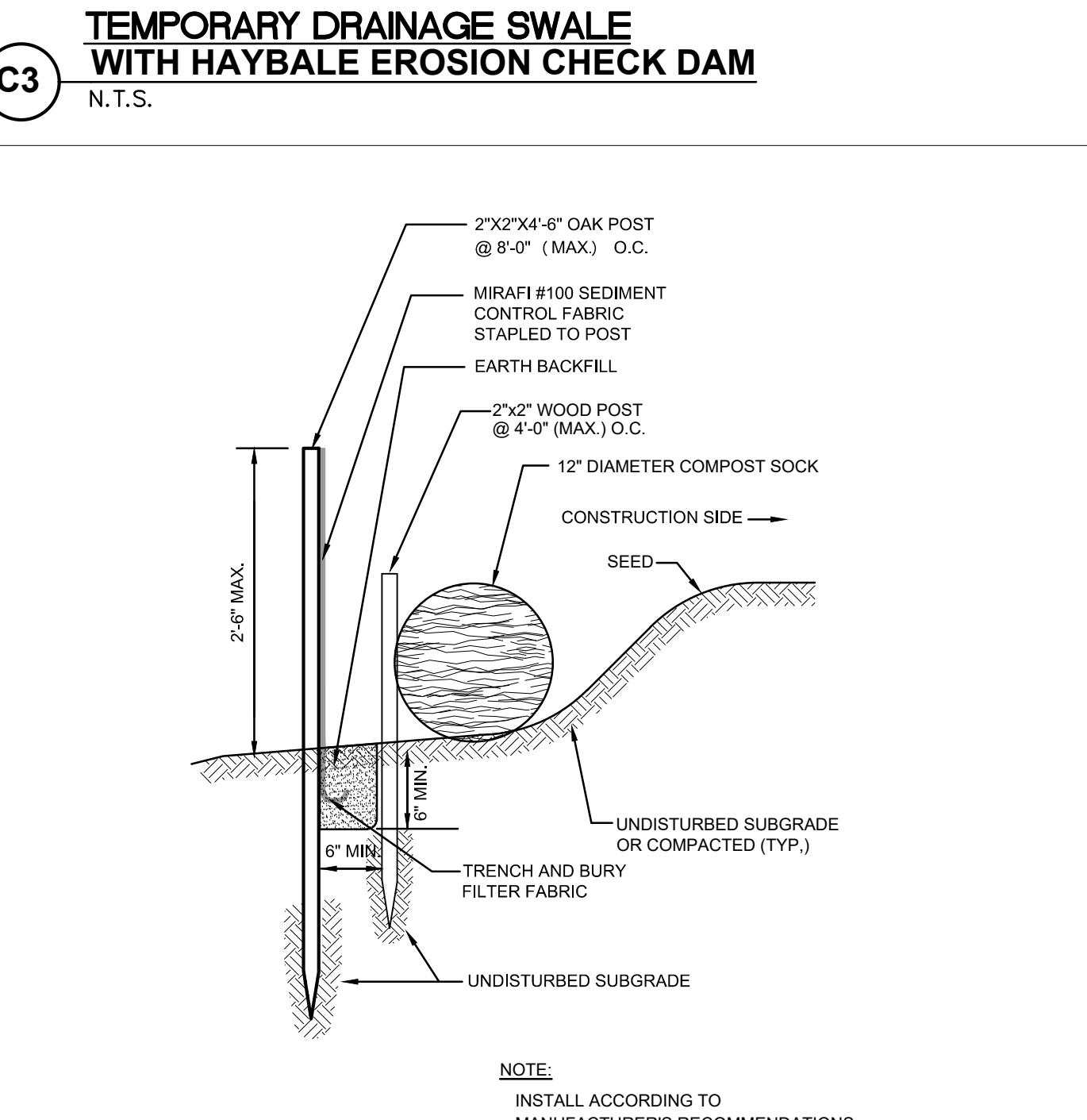
**C7 CITY OF MARLBOROUGH - TEMPORARY TRENCH PAVING**  
N.T.S.



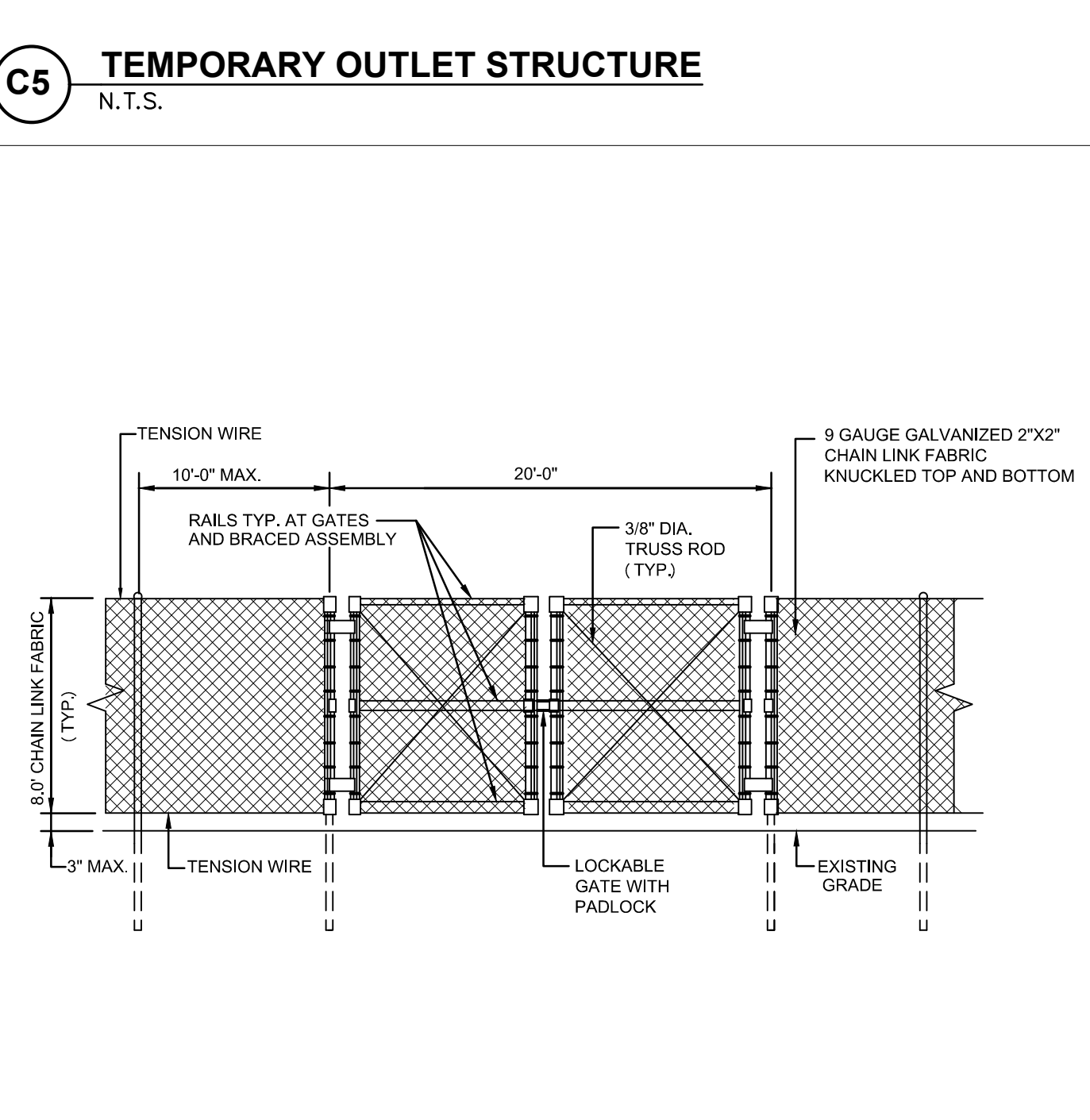
**C9 CITY OF MARLBOROUGH - FINAL TRENCH PAVING**  
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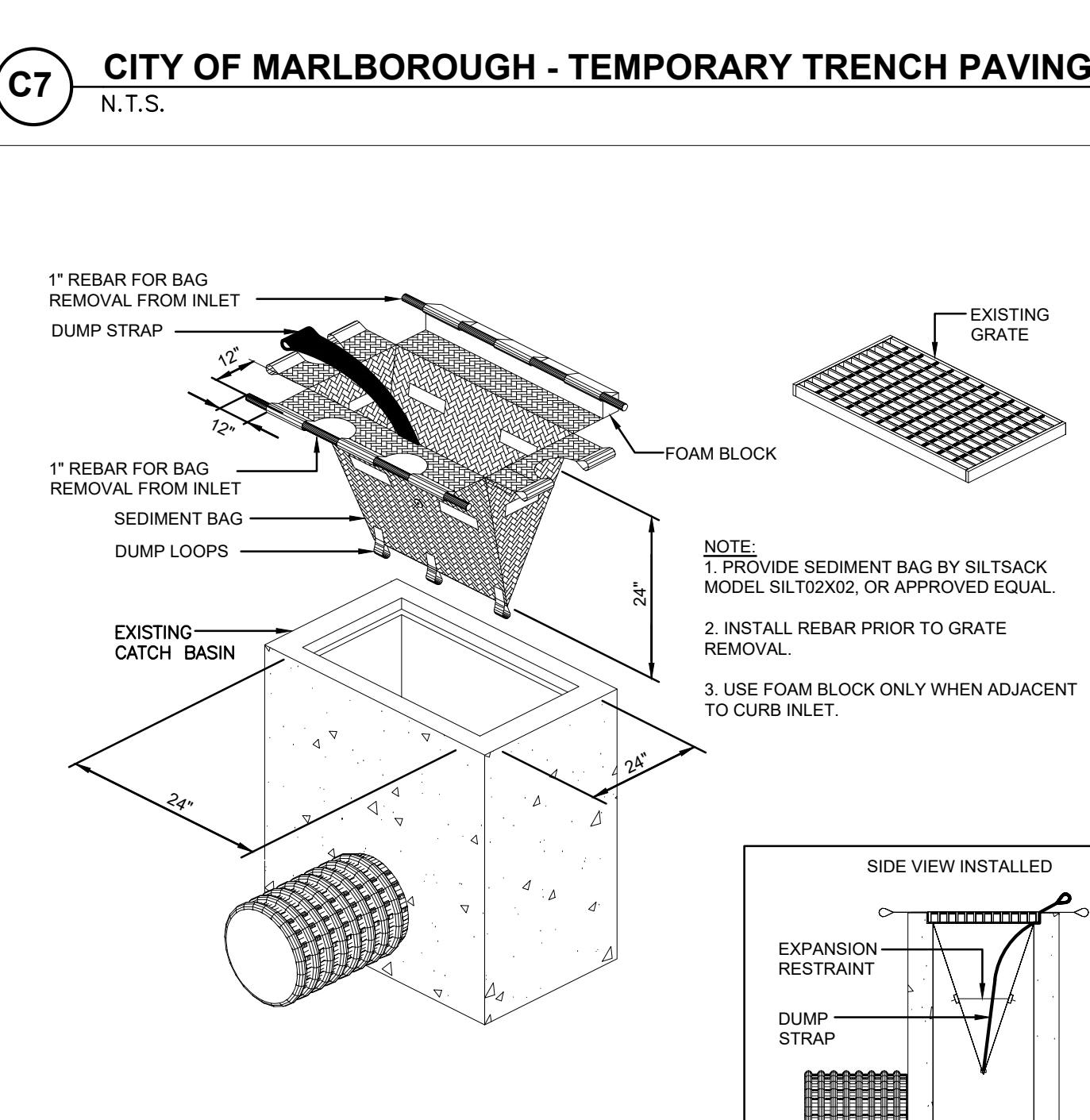
**A1 TEMPORARY CONSTRUCTION ENTRANCE**  
N.T.S.



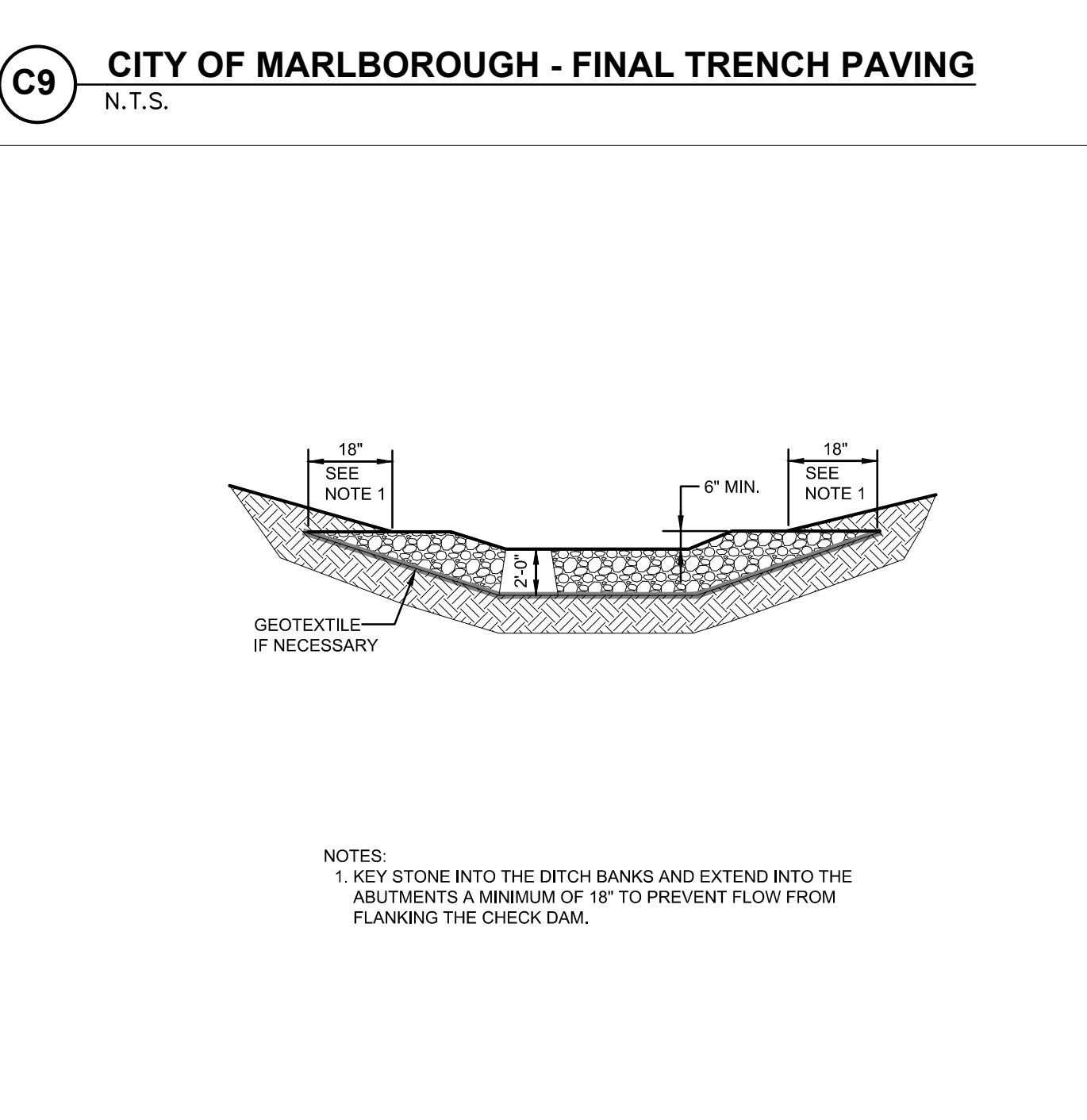
**A3 COMPOST SOCK WITH SILT FENCE**  
N.T.S.



**A5 TEMPORARY CONSTRUCTION FENCE W/GATE**  
N.T.S.



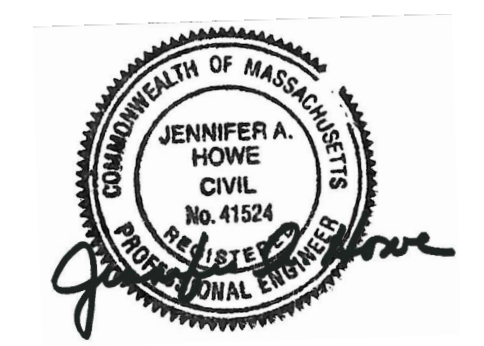
**A7 SEDIMENT BAG AT CATCH BASIN**  
N.T.S.



**A9 STONE CHECK DAM**  
N.T.S.

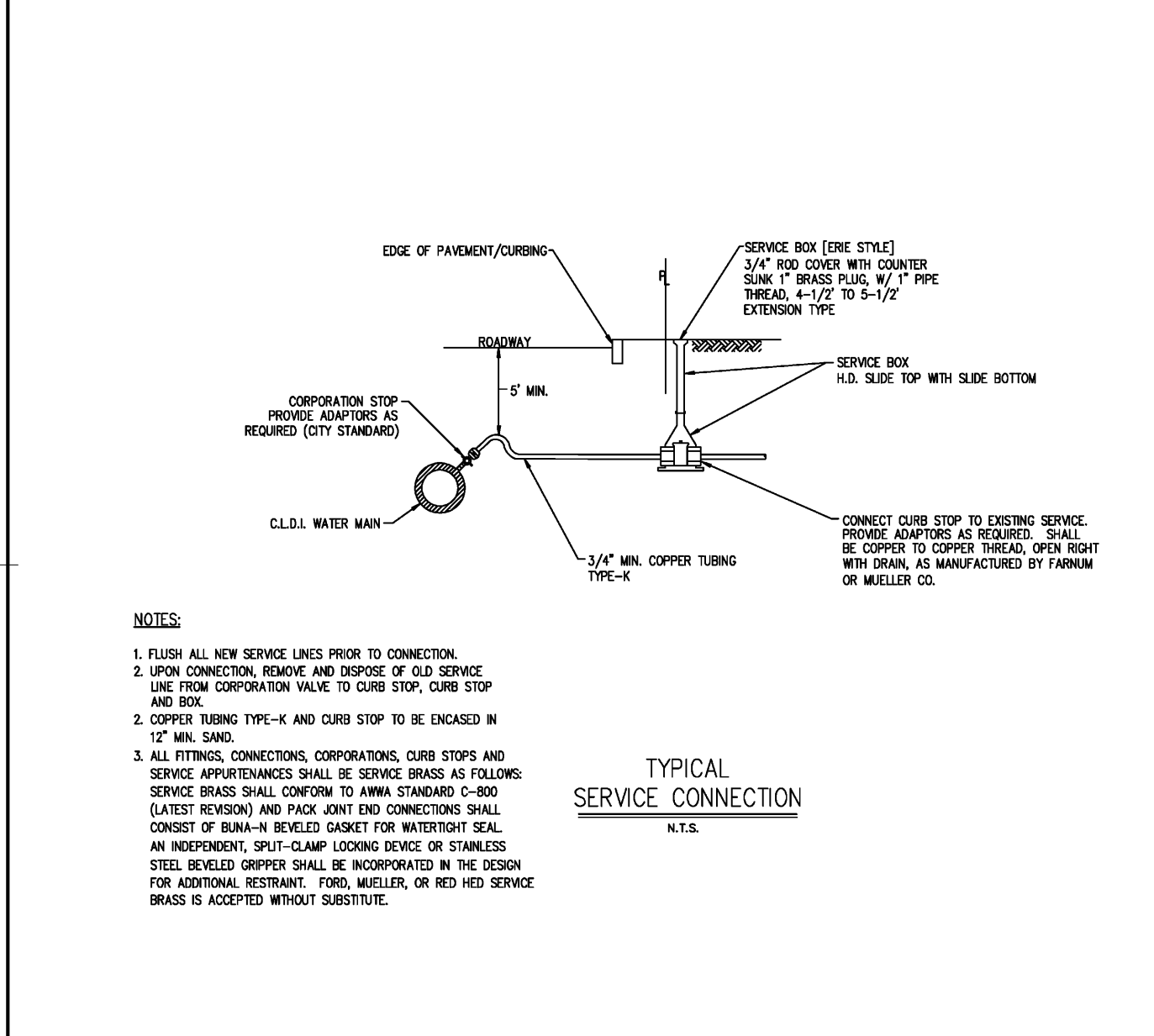
322 HMD  
322 HAYES MEMORIAL DRIVE  
MARLBOROUGH, MA 01752

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	MARK DATE	DESCRIPTION
	ISSUE LOG	

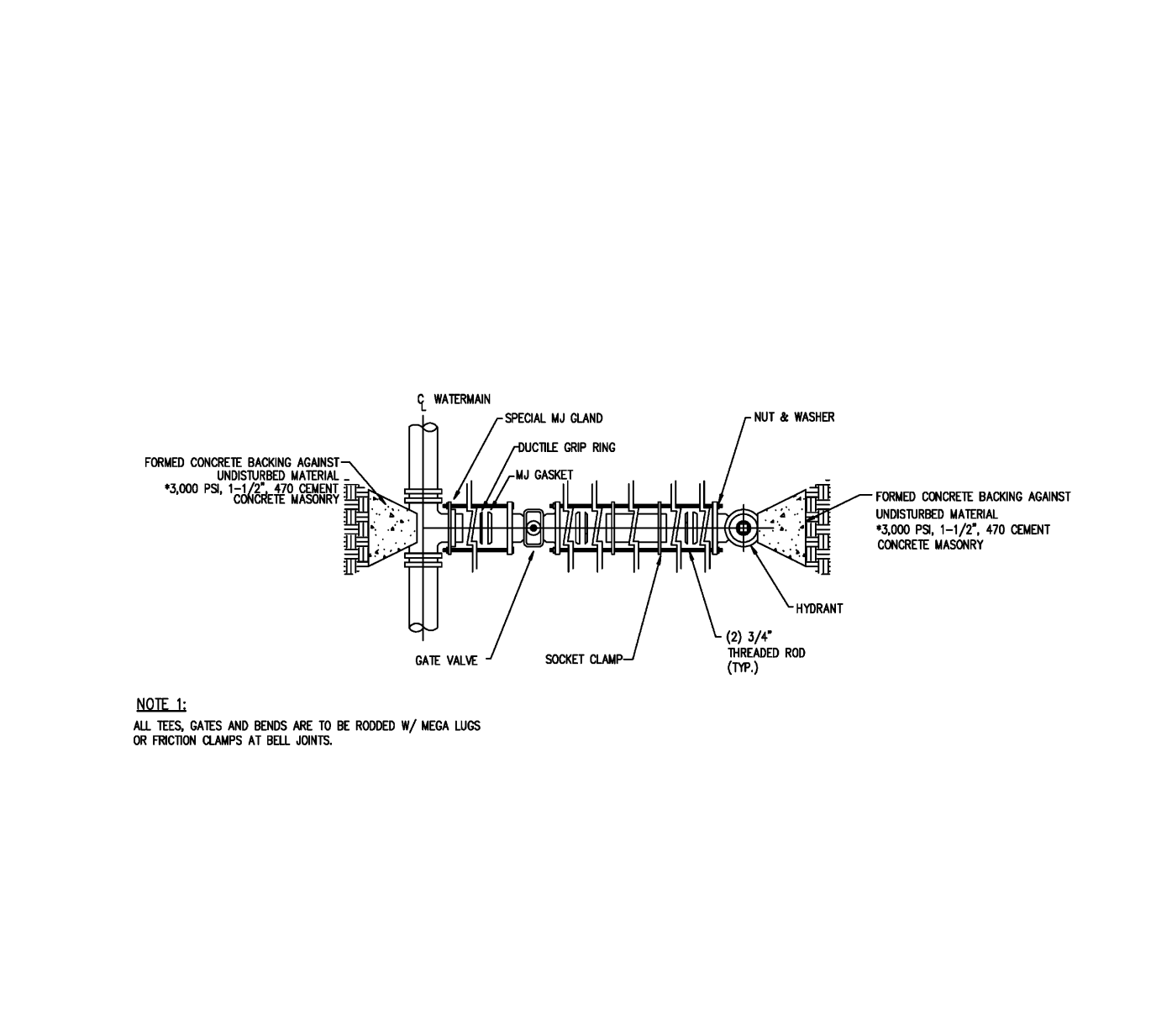


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CHECK BY	WVP
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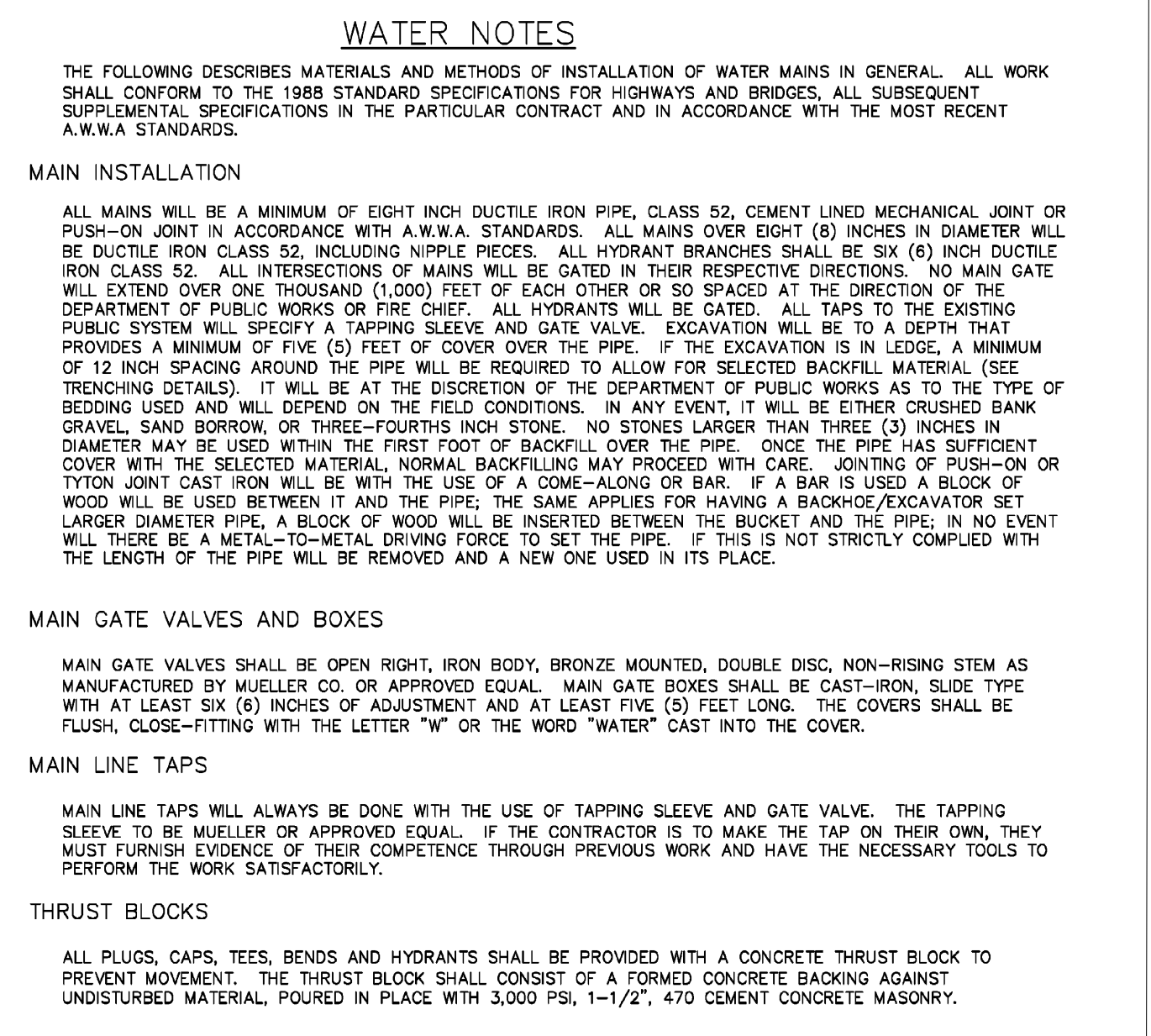
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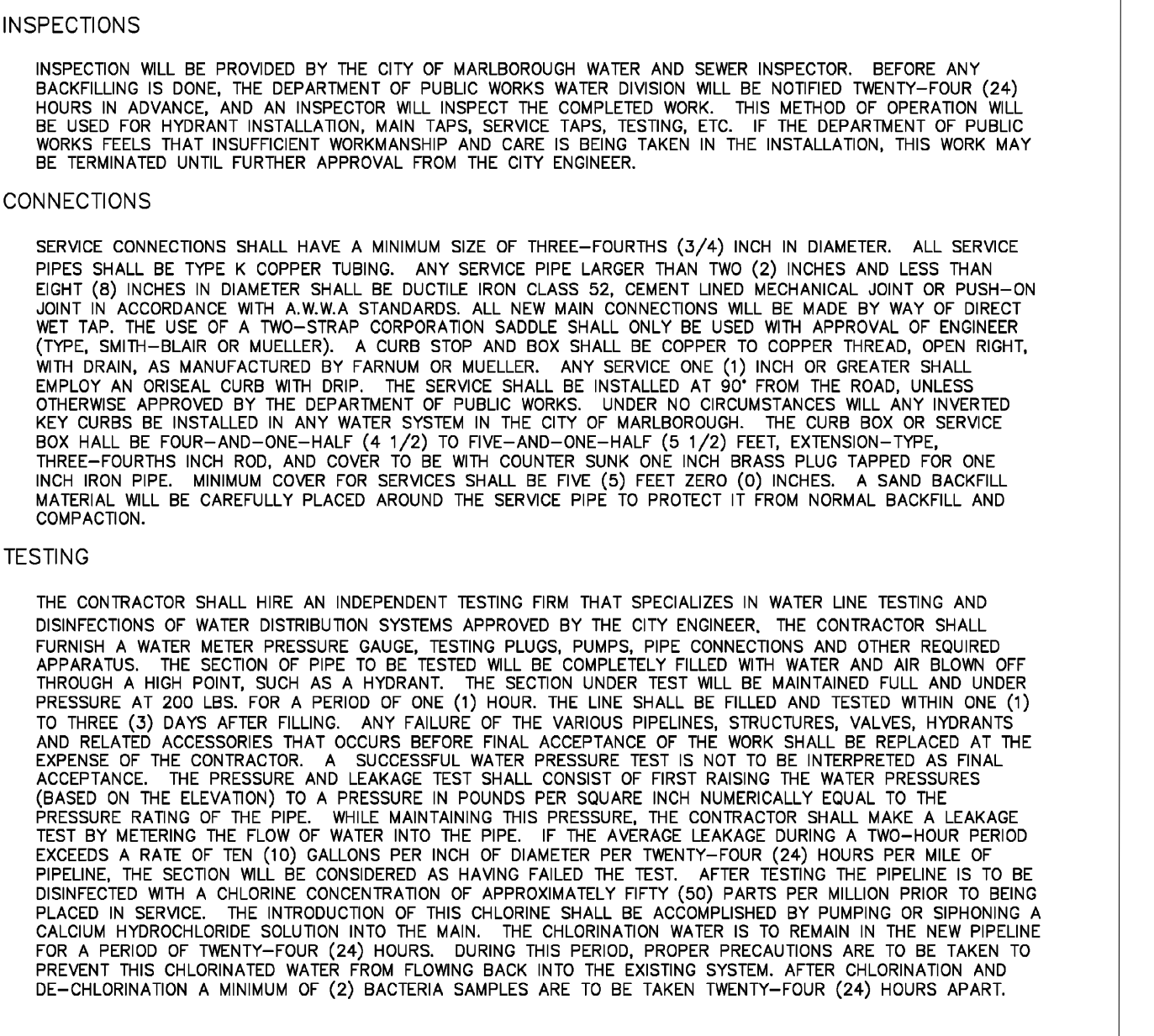
G1 CITY OF MARLBOROUGH - SERVICE CONNECTION N.T.S.



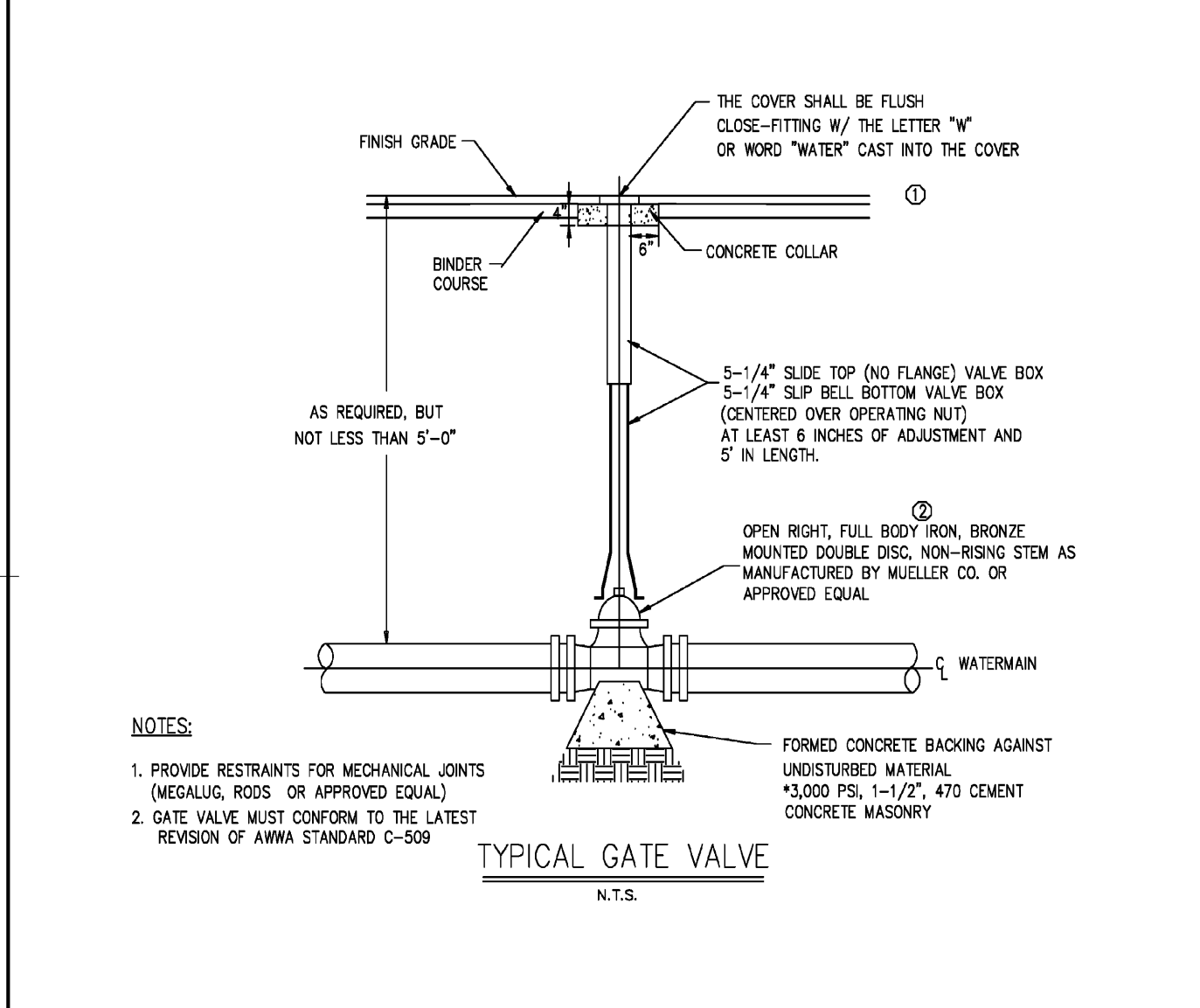
G3 CITY OF MARLBOROUGH - VALVE CONNECTION N.T.S.



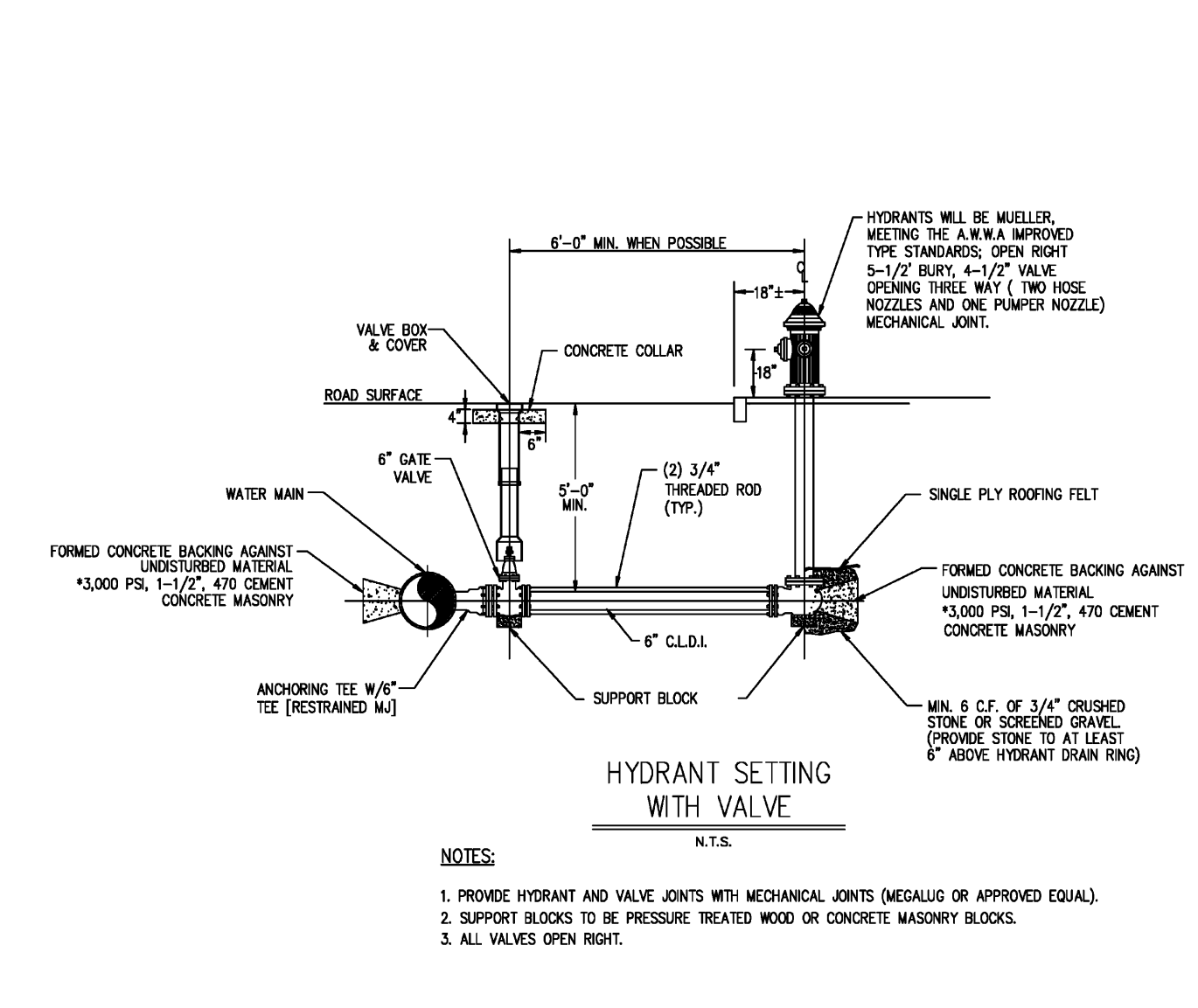
G5 CITY OF MARLBOROUGH - WATER NOTES 1 N.T.S.



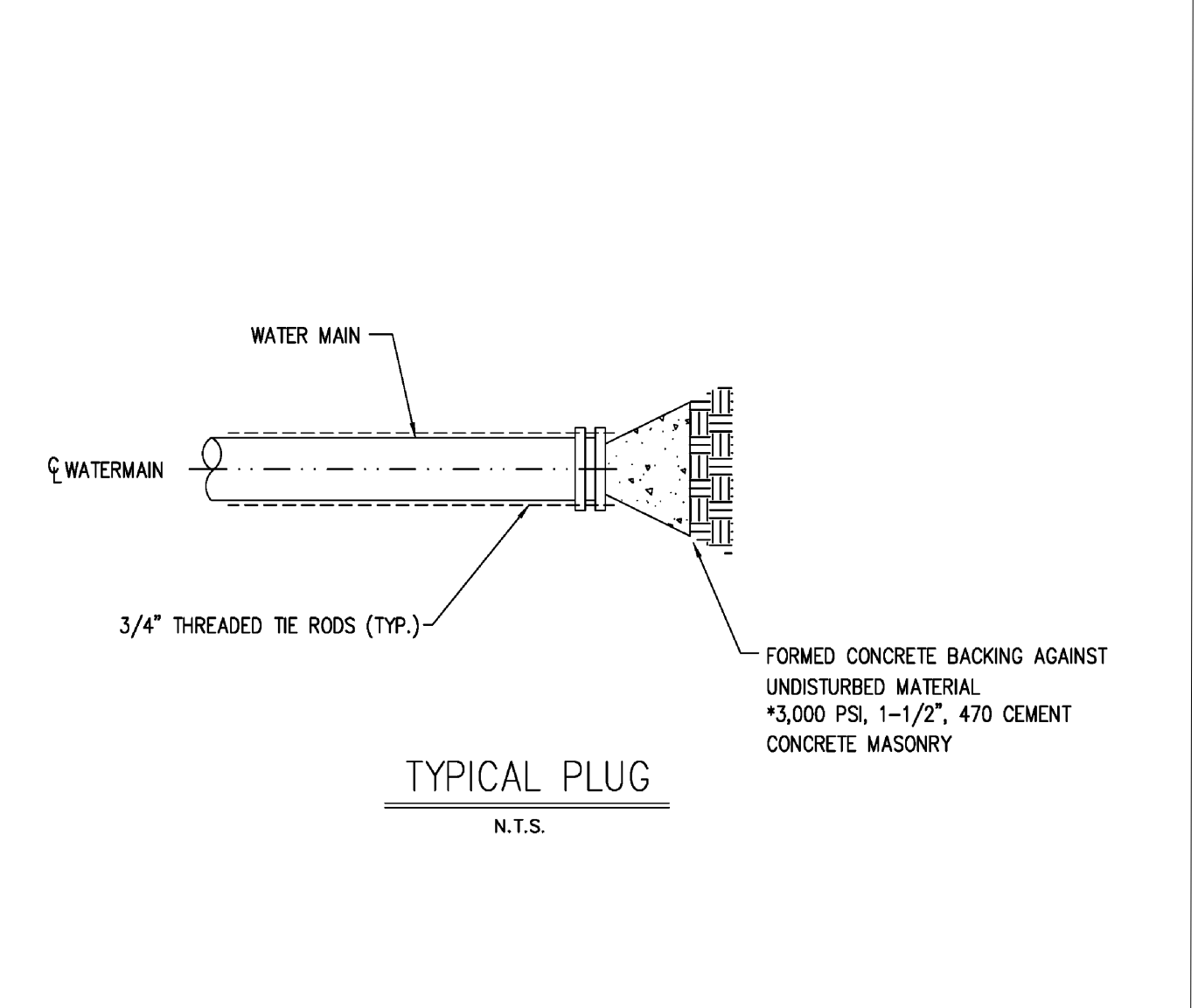
G7 CITY OF MARLBOROUGH - WATER NOTES 2 N.T.S.



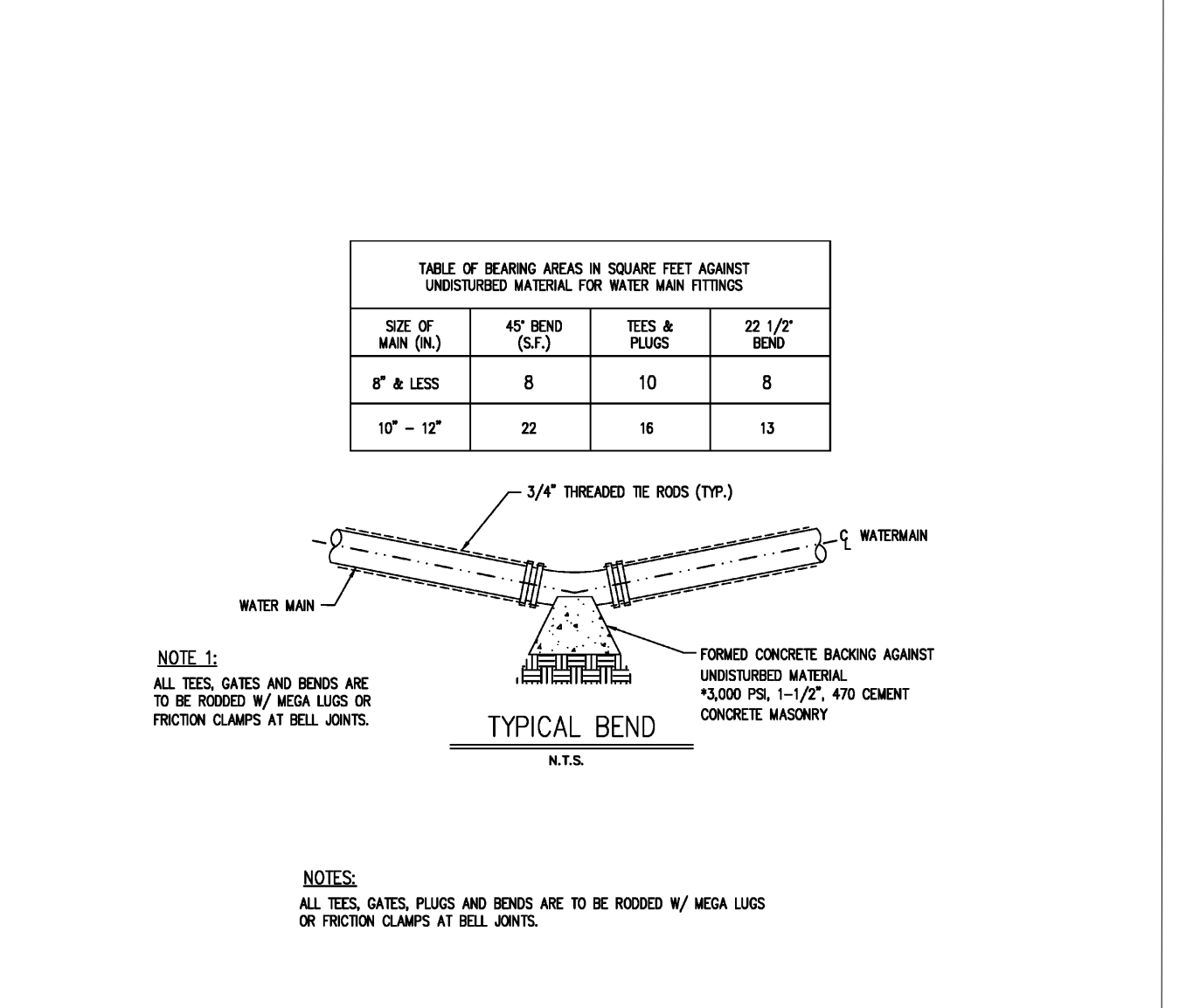
E1 CITY OF MARLBOROUGH - GATE VALVE N.T.S.



E3 CITY OF MARLBOROUGH - HYDRANT SETTING WITH VALVE N.T.S.



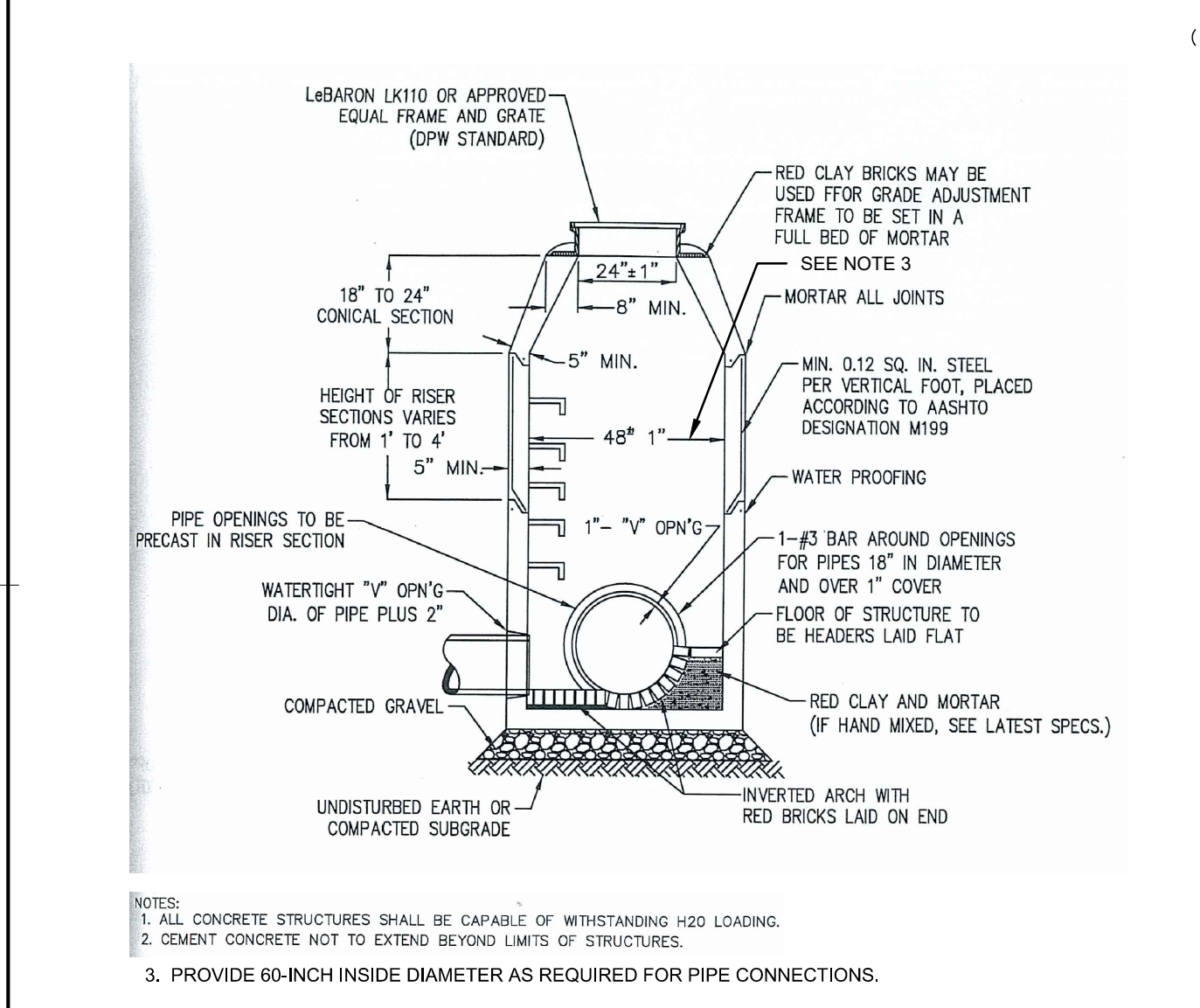
E5 CITY OF MARLBOROUGH - TYPICAL PLUG N.T.S.



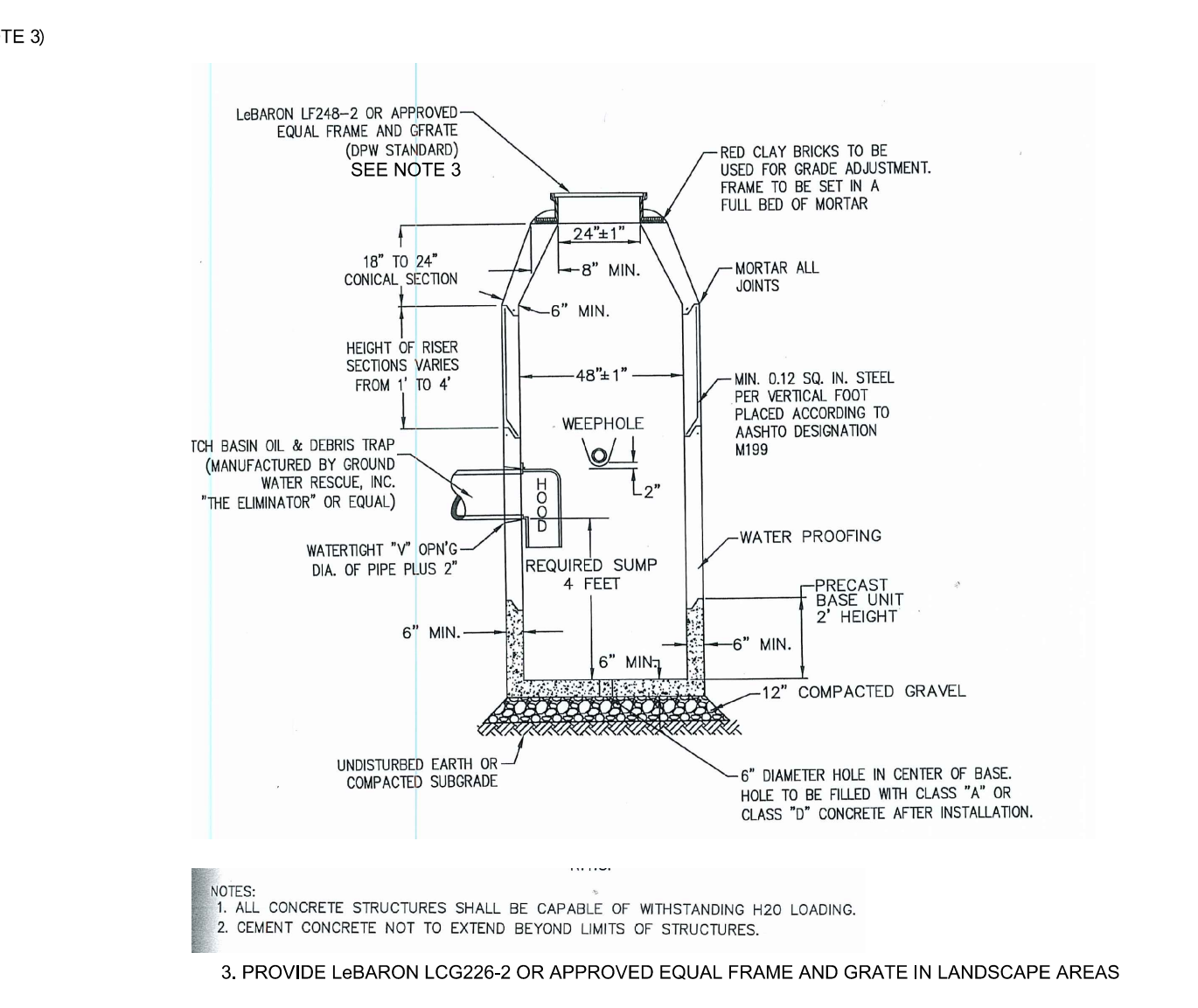
E7 CITY OF MARLBOROUGH - TYPICAL BEND N.T.S.

Table E9: TYPICAL CONCRETE RETAINING WALL. Includes dimensions and reinforcement details for Retaining Wall Type 'A'.

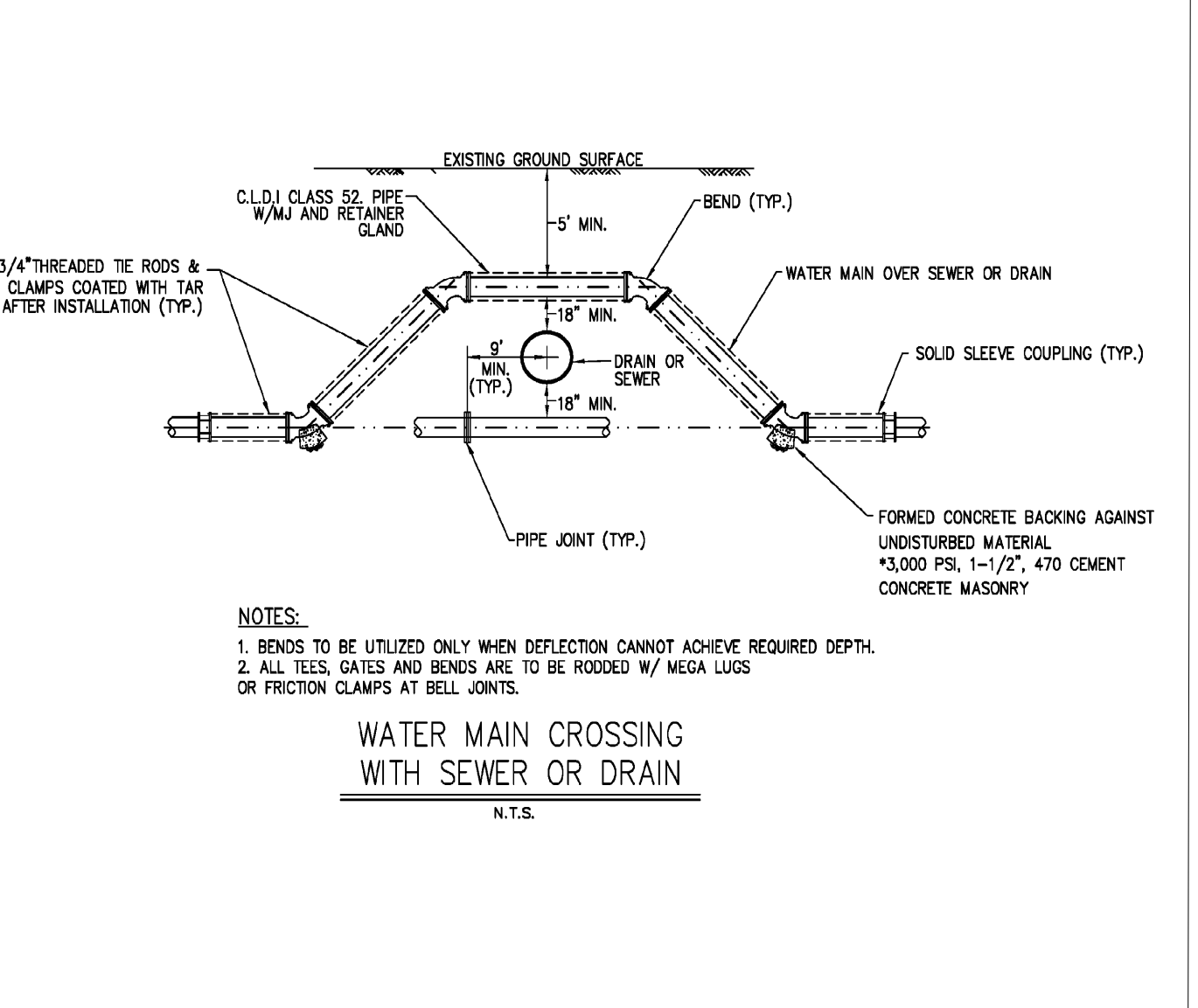
E9 TYPICAL CONCRETE RETAINING WALL N.T.S.



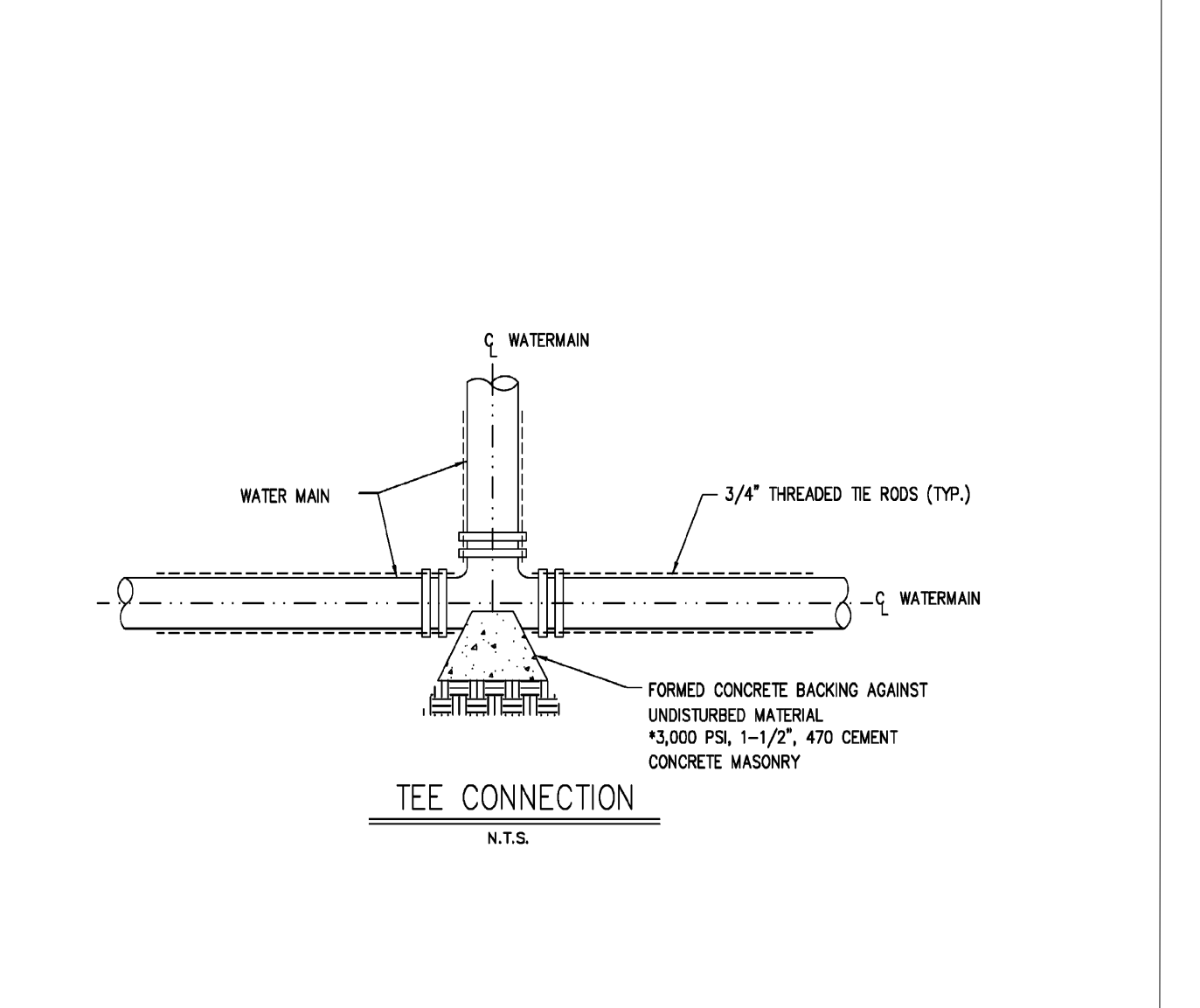
C1 CITY OF MARLBOROUGH - PRECAST CONCRETE MANHOLE N.T.S.



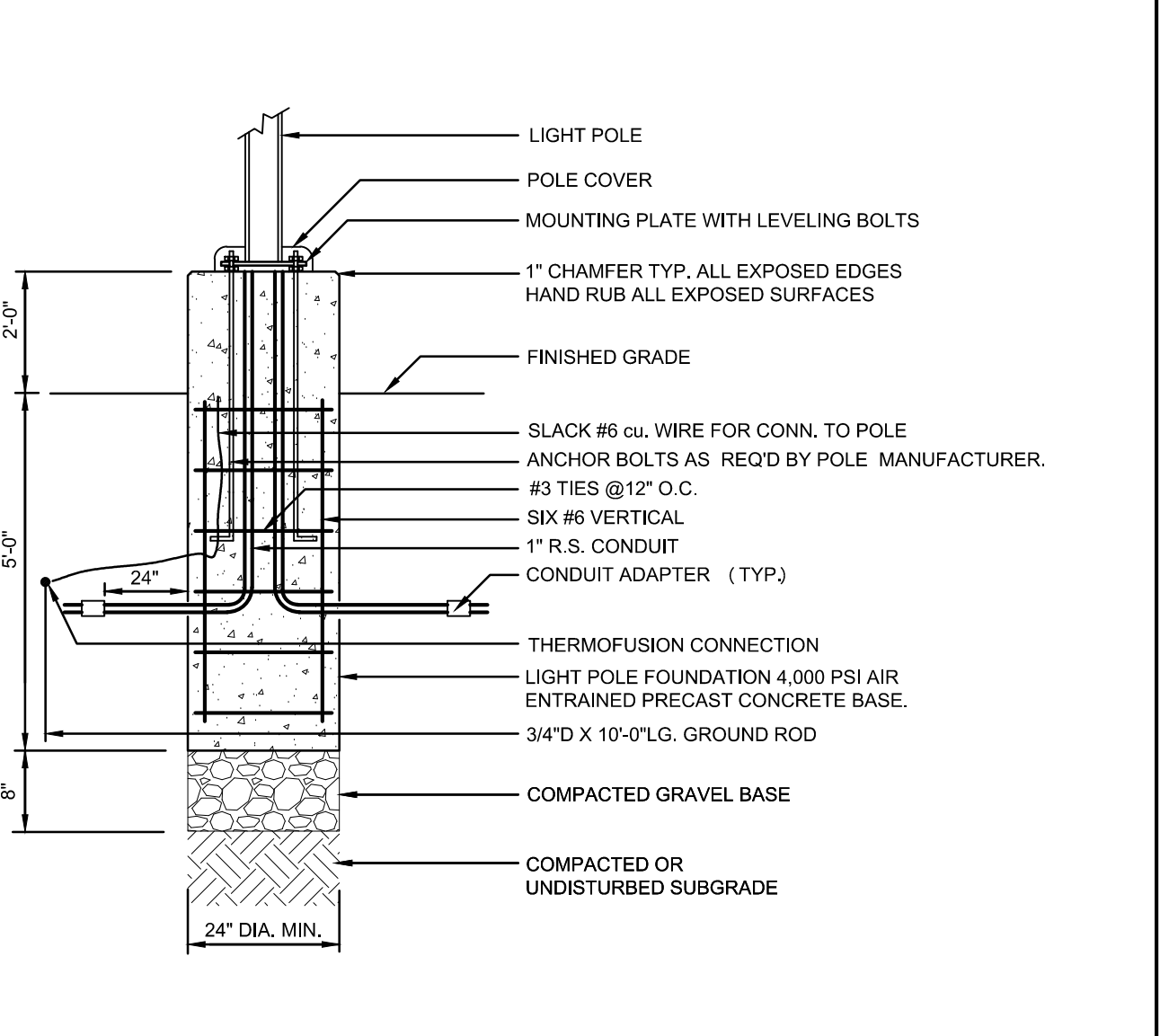
C3 CITY OF MARLBOROUGH - PRECAST CONCRETE CATCHBASIN N.T.S.



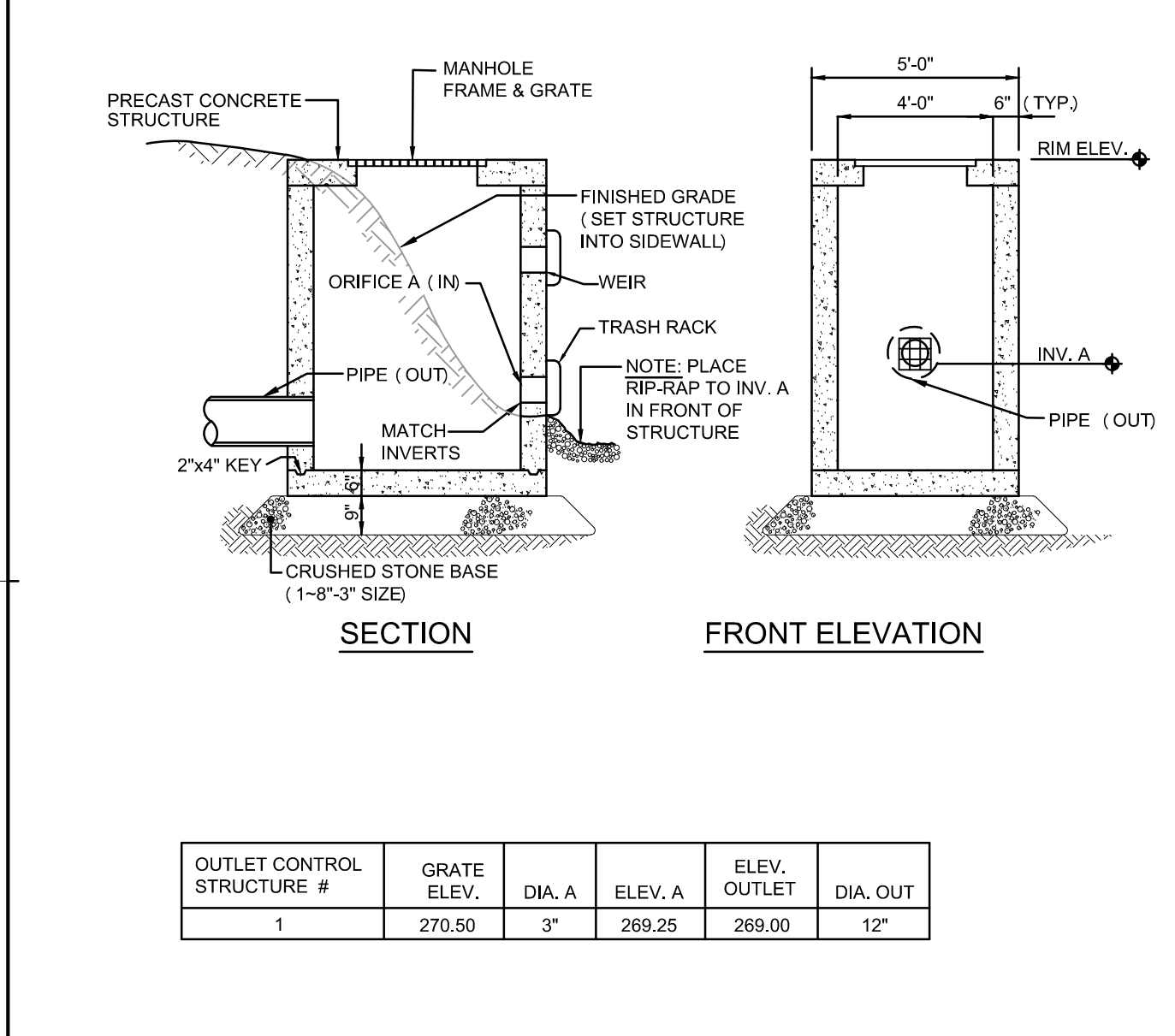
C5 CITY OF MARLBOROUGH - WATER MAIN CROSSING SEWER OR DRAIN N.T.S.



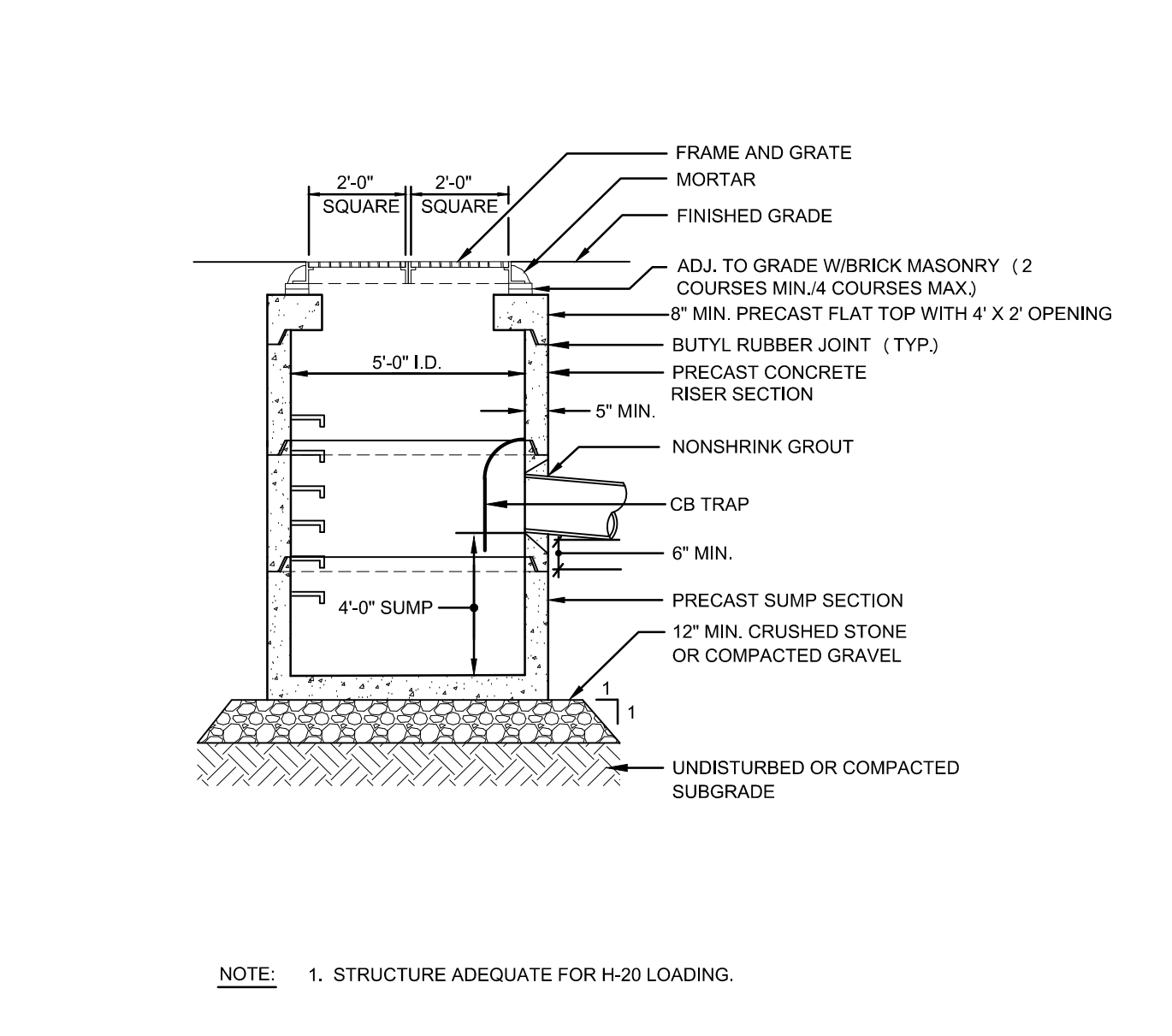
C7 CITY OF MARLBOROUGH - TEE CONNECTION N.T.S.



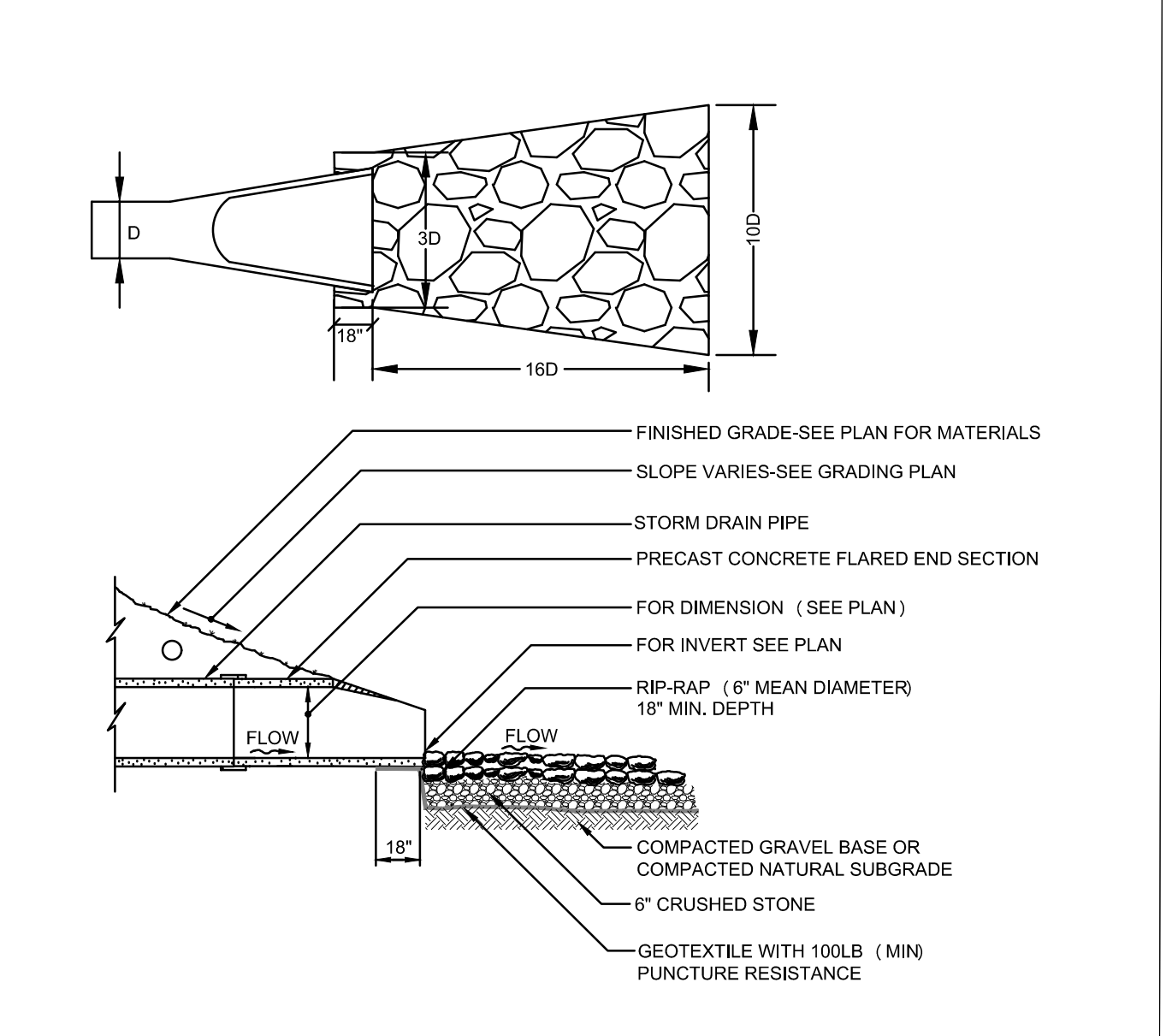
C9 CITY OF MARLBOROUGH - LIGHTPOLE BASE IN PAVEMENT N.T.S.



A1 CITY OF MARLBOROUGH - OUTLET CONTROL STRUCTURE N.T.S.



A3 CITY OF MARLBOROUGH - DOUBLE PRECAST CONCRETE CATCHBASIN N.T.S.



A5 CITY OF MARLBOROUGH - FLARED END N.T.S.

SEWER NOTES

THE FOLLOWING DESCRIBES MATERIALS AND METHODS OF INSTALLATION OF SEWER MAINS IN GENERAL. ALL WORK SHALL CONFORM TO THE 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, ALL SUBSEQUENT SUPPLEMENTAL SPECIFICATIONS IN THE PARTICULAR CONTRACT.

MAN INSTALLATION

ALL GRATEY MAINS WILL BE A MINIMUM OF EIGHT INCHES IN DIAMETER. ALL LATERALS, INTERCEPTORS, TRUNKLINES, ETC., WILL BE EITHER POLYVINYL CHLORIDE (PVC) OR DUCTILE IRON. THE CLASS OF PIPE WILL ACCOMMODATE THE FIELD CONDITIONS, I.E., PVC PIPE SHALL MEET OR EXCEED THE ASTM D-3034, SDR 35 REQUIREMENTS. PVC PIPE SHALL NOT BE USED FOR PIPES WITH DIAMETERS GREATER THAN 18 INCHES UNLESS EXPRESSLY APPROVED IN WRITING BY THE COMMISSIONER OF PUBLIC WORKS. PVC PIPE SHALL NOT BE USED FOR PIPES WHEN THE DEPTH EXCEEDS 5 FEET OR DEPTHS OF SERVICE EXCEEDING 10 FEET CLASS 52 DUCTILE IRON SHALL BE USED. WHEN THE COVER IS FIVE FEET OR LESS UNDER A ROADWAY, THE CLASS AND TYPE OF PIPE WILL BE SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS. THE SLOPE OF THE SEWER SHALL NOT BE LESS THAN 1/8" PER 100'. ALL SIZES OF ALL PIPE WILL HAVE AS THEIR MINIMUM SLOPE THAT SLOPE WHICH YIELDS THE SCOURING VELOCITY FOR THE PARTICULAR DIAMETER PIPE. WARNING RIBBON SHALL BE USED IN THE INSTALLATION OF ANY SEWER MAIN. SDR 35 IRON SHALL BE GREEN IN COLOR AND IMPRINTED WITH THE WORDS "CAUTION SEWER LINE BELOW" OR WORDS SIMILAR INTENT, AND SHALL BE METALLIC TO PROVIDE FOR FUTURE LOCATING WITH INDUCTIVE TAPE LOCATORS. DEPTH OF BURIAL SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS STANDARDS, EXCEPT THAT BURIAL SHALL NOT BE AT A DEPTH LESS THAN 18 INCHES NOR A DEPTH GREATER THAN 48 INCHES.

MANHOLES DISTANCE BETWEEN ANY TWO MANHOLES SHALL NOT EXCEED 300 FEET. ANY TWO SEWER LINES ENTERING A MANHOLE OR A STRUCTURE WITH A DIFFERENCE IN ELEVATION OF 18 INCHES AN INSIDE DROP SHALL BE PROVIDED. THE INSIDE DROP IN A MANHOLE SHALL NOT EXCEED 3 FEET IN CHANGE OF ELEVATION. ANY MANHOLE THAT IS REQUIRED TO HAVE AN INSIDE DROP SHALL BE A 6 FOOT INSIDE DIAMETER MANHOLE. MANHOLES SHALL BE PRECAST CONCRETE AND PRECAST SECTIONS WILL BE MADE WATERPROOF BY O-RING JOINTS OR APPROVED EQUAL. CONNECTIONS TO MANHOLES SHALL BE CORED AND MADE WITH A FLEXIBLE MANHOLE BOOT. THE EXTERIOR OF ALL MANHOLES SHALL BE COMPLETELY COVERED WITH A BITUMINOUS WATERPROOFING. ALL SEWER MANHOLES WILL HAVE A BRICK TABLE CONSTRUCTED IN THEIR BASE TO MEET ALL INCOMING AND OUTGOING PIPES SO THAT THE FLOW IS CHANNELLED SMOOTHLY FROM ONE POINT TO ANOTHER. ALL BRICKS USED FOR MANHOLE INVERTS WILL BE A HARD-BURNED SEWER BRICK TO MEET ASTM C249 GRADES. BRICKWORK WILL ALSO BE USED BETWEEN THE MANHOLE STRUCTURE AND RING AND RING COVER TO GIVE THE DESIRED GRADE. HOWEVER, THE BRICKWORK IN THIS AREA WILL NEVER EXCEED EIGHT INCHES. THIS BRICKWORK CAN BE WITH A COMMON BRICK.

THRUST LOCKS THRUST LOCKS WILL BE USED ON ANY FORCE MAIN SECTIONS WHERE CALLED FOR BY THE DEPARTMENT OF PUBLIC WORKS. THE THRUST LOCK SHALL CONSIST OF A FORMED CONCRETE BACKING AGAINST UNDISTURBED MATERIAL, POURED IN PLACE WITH SLOPE 1"-1/2" PER 4'0" CEMENT CONCRETE MASONRY.

INSPECTIONS INSPECTION WILL BE PROVIDED BY THE CITY OF MARLBOROUGH ONLY ON A LIMITED OR PART-TIME BASIS. BEFORE ANY BACKFILLING IS DONE, THE DEPARTMENT OF PUBLIC WORKS' WATER & SEWER DIVISION WILL BE NOTIFIED 24 HOURS IN ADVANCE. A CITY REPRESENTATIVE WILL INSPECT THE COMPLETED WORK. THE DEPARTMENT OF PUBLIC WORKS FEELS THAT INSUFFICIENT WORKMANSHIP AND CARE IS BEING TAKEN IN THE INSTALLATION, A PERSON WILL BE ASSIGNED FROM THE DEPARTMENT OF PUBLIC WORKS ON A FULL-TIME BASIS. THE CONTRACTOR OR OWNER WILL BEAR THE COST OF THIS INSPECTOR.

CONNECTIONS MAIN-TO-MAIN CONNECTIONS WILL ONLY BE MADE BY USE OF A MANHOLE AS SPECIFIED IN THE MARLBOROUGH CITY CODE § 910-19B(2). IN THE CASE OF A TAP OF A SERVICE-TO-MAIN THE USE OF A TAPPING SADDLE AS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS WILL BE EMPLOYED ON THE MAIN UNLESS A SERVICE IS NEEDED WHICH THE DEPTH OF THE MAIN EXCEEDS EIGHT FEET. THIS SHALL BE EXCEPTED WHEN THE ELEVATION OF THE CONNECTION AT THE BUILDING DOES NOT ALLOW THE USE OF A CHIMNEY. ALL CHIMNEYS WILL BE PRECAST STRUCTURES. ALL WYE-BRANCHES WHICH ARE PROVIDED WITH THE PROPER END CAPS UNTIL SUCH TIME THE COMPLETED TIE-IN IS MADE. THE CONNECTIONS OF BUILDING SEWERS INTO PUBLIC SEWERS SHALL BE MADE BY THE USE OF A "WYE" AT THE MAIN AND RECONNECTING TO THE MAIN OR MANHOLE IS UNAVAILABLE, A CONNECTION MAY BE MADE BY TAPPING THE EXISTING SEWER BY AN APPROVED METHOD. THIS MAY CONSIST OF CUTTING OUT A PORTION OF THE SEWER MAIN AND INSTALLING A "WYE" AT THE MAIN AND RECONNECTING THE EXISTING MAIN WITH NEW PIPE AND PROPER COUPLINGS AS APPROVED BY INSPECTOR. NO PERSON SHALL MAKE CONNECTION OF ROOF DRAINS, COMPOSITE DRAINS, DOWNSPOUTS, DRAIN PUMPS OR OTHER SOURCES OF SURFACE RUNOFF OR GROUNDWATER TO A BUILDING SEWER OR BUILDING DRAIN WHICH IS DIRECTLY OR INDIRECTLY TO A PUBLIC SEWER. ALL SEWERS SHALL BE TESTED BEFORE ANY CONNECTIONS ARE MADE TO BUILDINGS.

ULDING SEWERS THE SIZE AND SLOPE OF THE BUILDING SEWER SHALL BE SUBJECT TO THE APPROVAL OF THE COMMISSIONER BUT IN NO EVENT SHALL THE DIAMETER LESS THAN SIX INCHES. THE SLOPE OF SUCH PIPE SHALL NOT BE LESS THAN 1/8" OR GREATER THAN 1/4". THE BUILDING SEWER SHALL BE Laid AT THE FINISH GRADE AND A GRADE LINE ALONGSIDE THE SEWER AS FAR AS POSSIBLE. CHANGES IN DIRECTION SHALL BE MADE ONLY WITH BENDS, SWEEPS, MANHOLES OR PRECAST CLEANOUTS AS APPROVED BY THE COMMISSIONER. CLEANOUTS SHALL BE LOCATED ON THE EXTERIOR OF THE BUILDING SERVICE AND SHALL BE IN A PLACE THAT IS ACCESSIBLE FOR MAINTENANCE BY THE DEPARTMENT OF PUBLIC WORKS OR OTHERS. WARNING RIBBON SHALL BE USED IN THE INSTALLATION OF ANY SEWER PIPE. TOP OF RIBBON SHALL BE GREEN IN COLOR AND IMPRINTED WITH THE WORDS "CAUTION SEWER LINE BELOW" OR WORDS SIMILAR INTENT, AND SHALL BE METALLIC TO PROVIDE FOR FUTURE LOCATING WITH INDUCTIVE TAPE LOCATORS. BURIAL SHALL NOT BE AT A DEPTH LESS THAN 18 INCHES NOR A DEPTH GREATER THAN 48 INCHES UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE APPLICABLE ENTRANCE FEES IN ACCORDANCE WITH THE MARLBOROUGH CITY CODE SECTION 910-4 "BUILDING SEWER CONNECTIONS" SHALL BE PAID PRIOR TO ANY WORK.

EQUINE OF TESTING THE SEQUENCE OF TESTING SHALL BE AS FOLLOWS: CONSTRUCTION COMPLETED AND ALL BACKFILL SUPERIMPOSED LOADS IN PLACE, LANDSCAPING OVER AND AROUND SEWER APPEARANCE IS COMPLETED, MANHOLES COVERED, LINES THOROUGHLY CLEANED. VISUAL INSPECTION (TAP/SIGHT), MANHOLE TESTING (ALL APPROVED PIPE TYPES), DETERMINATION OF GROUND WATER TABLE, AIR TESTING OR INFILTRATION TESTING (PIPE, MANHOLE).

ESTING THE CONTRACTOR SHALL HIRE AN INDEPENDENT TESTING FIRM THAT SPECIALIZES IN SEWER LINE AND MANHOLE TESTING. THIS SHALL BE ACCOMPLISHED THROUGH THE COORDINATION OF VISUAL INSPECTIONS, INFILTRATION TESTING, LOW-PRESSURE AIR TESTS AND LEAKAGE TESTS METHODS. ACCEPTANCE TESTS SHALL BE PERFORMED AFTER ALL WORK ADVANCES TO AND OVER THE PIPE HAS BEEN COMPLETED. TESTING SHALL BE APPROVED BY THE CITY REPRESENTATIVE AND THE CONTRACTOR SHALL AND IN THE PRESENCE OF THE CITY REPRESENTATIVE. TESTS PERFORMED IN THE ABSENCE OF THE CITY REPRESENTATIVE SHALL BE CONSIDERED INVALID AND SHALL BE REPEATED AT THE CONTRACTOR'S EXPENSE. IN A MANHOLE WITH SEWER BRANCH OR MANHOLE IS UNAVAILABLE, A CONNECTION MAY BE MADE BY TAPPING THE EXISTING SEWER BY AN APPROVED METHOD. THIS MAY CONSIST OF CUTTING OUT A PORTION OF THE SEWER MAIN AND INSTALLING A "WYE" AT THE MAIN AND RECONNECTING THE EXISTING MAIN WITH NEW PIPE AND PROPER COUPLINGS AS APPROVED BY INSPECTOR. NO PERSON SHALL MAKE CONNECTION OF ROOF DRAINS, COMPOSITE DRAINS, DOWNSPOUTS, DRAIN PUMPS OR OTHER SOURCES OF SURFACE RUNOFF OR GROUNDWATER TO A BUILDING SEWER OR BUILDING DRAIN WHICH IS DIRECTLY OR INDIRECTLY TO A PUBLIC SEWER. ALL SEWERS SHALL BE TESTED BEFORE ANY CONNECTIONS ARE MADE TO BUILDINGS.

AB TEST PROCEDURE (SEE CONDITIONS). ALL TEST PRESSURES ARE MEASURED AS GAGE PRESSURE, WHICH IS ANY PRESSURE GREATER THAN ATMOSPHERIC. SINCE WATER PRODUCES A PRESSURE OF 2.31 PSIG FOR EVERY FOOT OF DEPTH OVER THE MAIN, AIR TEST PRESSURE SHALL BE KNOWN TO EXIST. THE CONTRACTOR SHALL INSTALL A ONE-HALF INCH DIAMETER CAPPED PVC PIPE WITH APPROVED TEST PLUGS AND FITTINGS. ONE OF THE PLUGS OR CAPS SHOULD HAVE AN INLET TAP OR OTHER PROVISION FOR CONNECTING A HOSE TO A POTABLE AIR SOURCE. IF NOT PROPERLY SEALED, AIR CAN LEAK THROUGH THE POTABLE SOURCE. THE CONTRACTOR SHALL, IN THE PRESENCE OF THE CITY REPRESENTATIVE, CONNECT THE AIR SOURCE TO THE PRESSURE OF 2.0 PSIG IS MAINTAINED FOR AT LEAST FIVE MINUTES. THE PRESSURE WILL NORMALLY DROP SLIGHTLY UNTIL EQUILIBRIUM IS OBTAINED. HOSE AND VALVES SHOULD BE SECURED. DISCONNECT THE AIR SUPPLY AND DEURATE THE PRESSURE TO 2.0 PSIG BEFORE STARTING THE TEST.

VACUUM TESTING OF MANHOLES. ALL SANITARY SEWER MANHOLES CONSTRUCTED BY THE CONTRACTOR SHALL BE VACUUM TESTED FOR LEAKAGE IN THE PRESENCE OF THE CITY REPRESENTATIVE. VACUUM TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D7086. THE VACUUM TEST SHALL BE PERFORMED ON ANY EXISTING MANHOLE, OR ANY EXISTING MANHOLE THAT HAS BEEN CONVERTED TO A DROP MANHOLE BY THE CONTRACTOR. VACUUM TESTING PROCEDURE. ALL SEWER MANHOLES SHALL BE PLUGGED WITH AN APPROVED NON-SHRINKING GROUT INSIDE AND QUAT MANHOLE JOINTS SHALL BE GROUTED FROM THE OUTSIDE ONLY. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED. THE CONTRACTOR SHALL SECURELY BRACE THE PIPES IN ORDER TO KEEP THEM FROM BEING BROKE. THE MANHOLE SHALL BE TEST HEAD SHALL BE PLACED AT THE INSIDE OF THE TOP OF THE CONE SECTION OF THE MANHOLE AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. A VACUUM OF 10 INCHES OF MERCURY SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF. WITH THE VALVES CLOSED, THE TIME FOR THE VACUUM TO DROP TO 9 INCHES SHALL NOT BE LESS THAN THAT SHOWN IN TABLE 1) BELOW.

TEST FAILURE SHOULD A LINE OR MANHOLE FAIL TO PASS ANY OF THE ACCEPTANCE TEST AS OUTLINED, THE CONTRACTOR SHALL AT HIS EXPENSE, DETERMINE THE SOURCE OF THE FAILURE, MAKE ANY REPAIRS AND RE-TEST THE SEGMENT OF PIPING OR MANHOLE IN QUESTION AT NO COST TO THE CITY.

MANDREL EQUIPMENT EQUIPMENT SYSTEMS USE TO PERFORM MANDREL TESTS SHALL BE SPECIFICALLY DESIGNED FOR THE PIPE MATERIAL BEING TESTED. MANDRELS THAT DO NOT SPECIFICALLY STATE THE SIZE AND TYPE OF PIPING FOR WHICH IT IS APPLICABLE SHALL NOT BE ALLOWED.

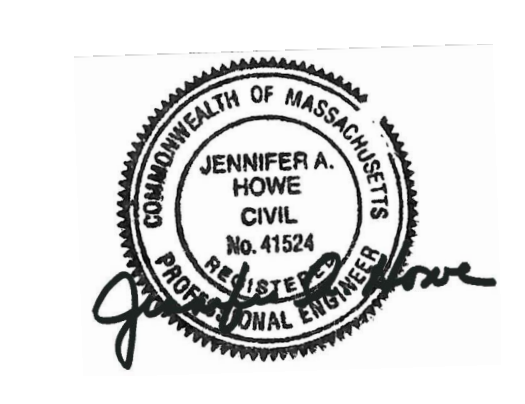
AIR/VACUUM TEST EQUIPMENT EQUIPMENT SYSTEMS USE TO PERFORM LOW-PRESSURE AIR TESTS SHALL BE SPECIFICALLY DESIGNED FOR THIS PURPOSE. SYSTEMS SHALL BE APPROVED BY THE CITY PRIOR TO THE TEST TAKING PLACE. ISOLATION OF PIPE SEGMENTS SHALL BE ACCOMPLISHED THROUGH THE USE OF PLUGS (MECHANICAL OR PNEUMATIC TYPES). PRESSURIZATION OF THE SEWER MAIN SHALL BE ACCOMPLISHED THROUGH THE USE OF AN AIR COMPRESSOR THAT HAS AN OIL FREE AIR SOURCE, SINGULAR CONTROL PANEL, MAIN SHUT-OFF VALVE, PRESSURE-REGULATING VALVE, 9 PSI PRESSURE RELIEF VALVE, INLET PRESSURE GAUGE AND A CONTINUOUS MONITORING PRESSURE GAUGE. THE CONTINUOUS MONITORING PRESSURE GAUGE SHALL HAVE A PRESSURE RANGE FROM 0 PSI TO AT LEAST 10 PSI WITH MINIMUM OVERSIZES OF 10 PSI. THE GAUGE FACE SHALL HAVE A MINIMUM OF 6 INCHES IN DIAMETER AND HAVE AN ACCURACY OF ±0.04 PSI/G.

SUBMITTALS SHOP DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR ALL PRODUCTS SPECIFIED WITHIN THE BID/CONTRACT DOCUMENTS AND INDICATED OR MARKED ON THE DRAWINGS. THE SHOP DRAWINGS SHALL BE SUBMITTED AT LEAST (10) DAYS PRIOR TO SCHEDULED USE OF THE PRODUCT FOR REVIEW BY THE ENGINEER. EACH SHOP DRAWING SHALL INCLUDE THE SPECIFICATIONS OF THE PRODUCT, MATERIAL CONTENT, PHYSICAL AND CHEMICAL PREPARATIONS, TESTING RESULTS, DIMENSIONS, QUALIFICATIONS, COLOR CHOICES, SAMPLES (IF SPECIFICALLY REQUIRED), AND DRAWINGS (IF SPECIFICALLY REQUIRED). EXACTLY FOUR (4) COPIES OF THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OR DESIGNATED REPRESENTATIVE. THE CONTRACTOR SHALL BE STAMPED AND SIGNED BY THE CONTRACTOR WITH A STATEMENT INDICATING THAT THE CONTRACTOR HAS REVIEWED THE PRODUCT INFORMATION TO DETERMINE ACCEPTABILITY BASED ON THE CONTRACT DOCUMENTS. THE ENGINEER SHALL RETURN THREE (3) COPIES OF THE SHOP DRAWINGS TO THE CONTRACTOR WITH A MEMORANDUM DETAILED THE ENGINEER'S REVIEW. IN THE CASE THAT THE SHOP DRAWING IS REJECTED, THE ENGINEER WILL RETURN THREE (3) COPIES TO THE CONTRACTOR WITH A REASONABLE EXPLANATION AS TO WHY THE PRODUCT WAS REJECTED.

Table with 2 columns: DEPTH (FEET) and MANHOLE DIAMETER (INCHES). Rows include 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30. Includes a note: TYPE 1 (TIMES SHOWN ARE MINIMUM ELAPSED TIMES IN SECONDS FOR A DROP IN VACUUM OF 1 INCH OF MERCURY).

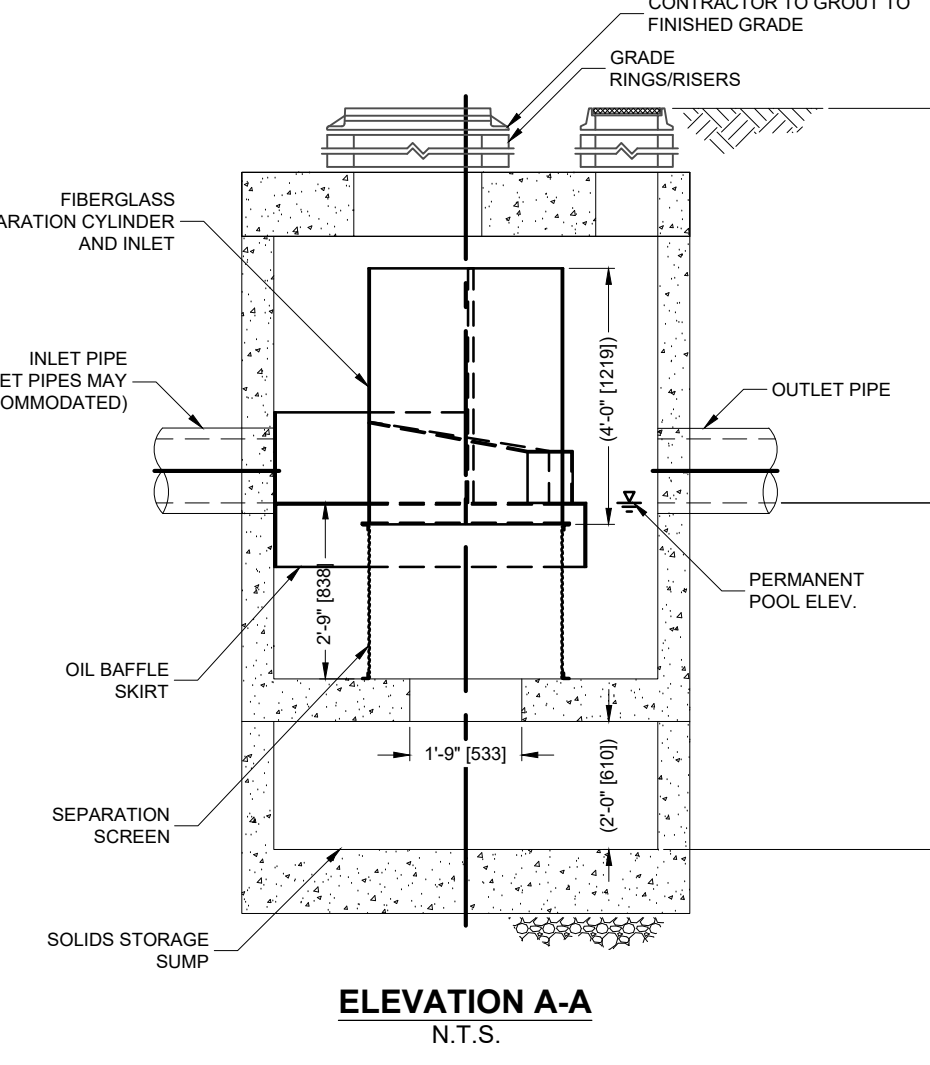
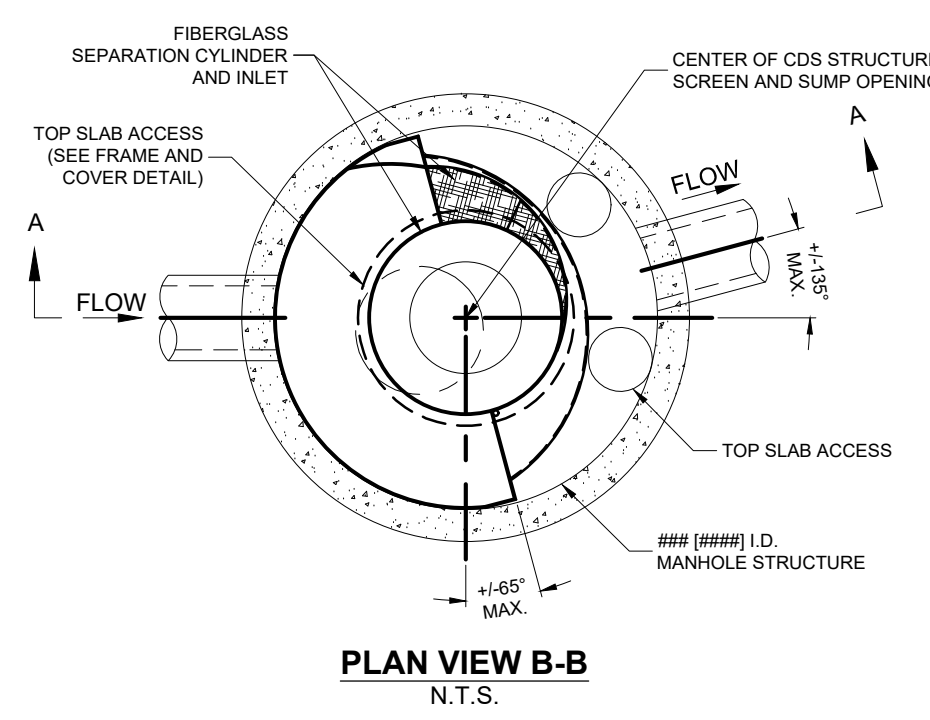
SCALE N.T.S.

Table with 2 columns: MARK, DATE, DESCRIPTION. Includes entry for 04/20/2022 SITE PERMIT PLANS.

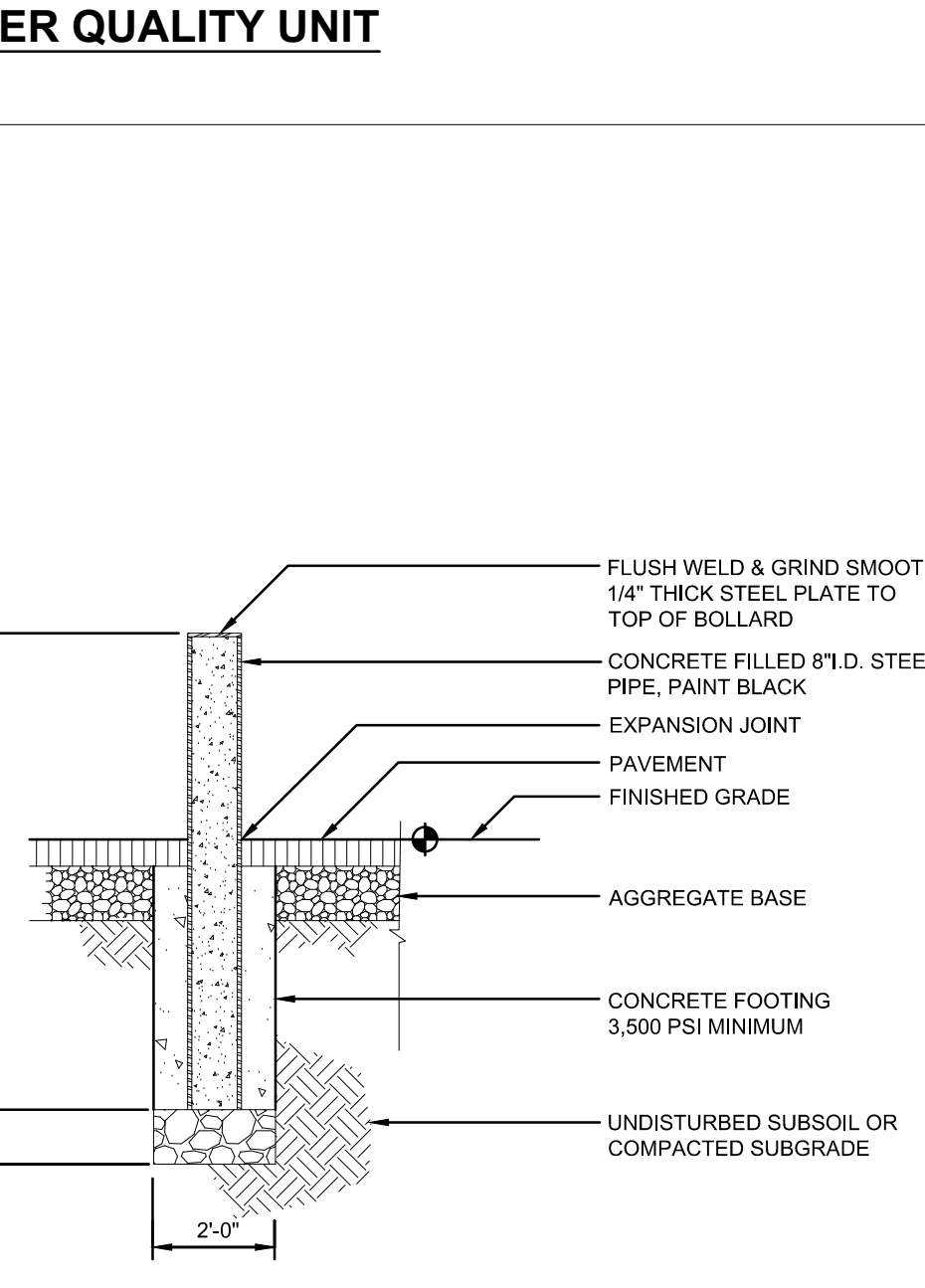


SCALE N.T.S. DRAWN BY JLO CHECK BY WWP PROJECT/ENGR. PROJ. MGR. JAV JOB NO. 22013.00 © SYMMES, MAIN & MCKEE ASSOCIATES, INC. 2022

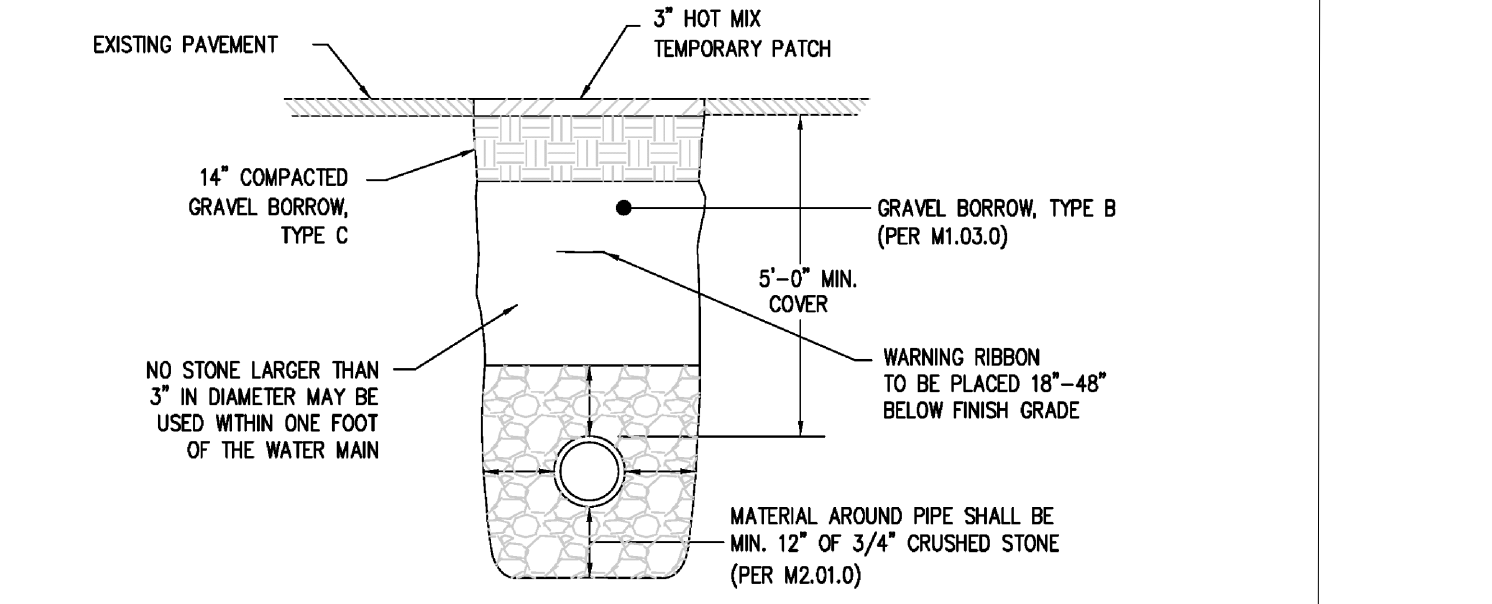
DETAILS III



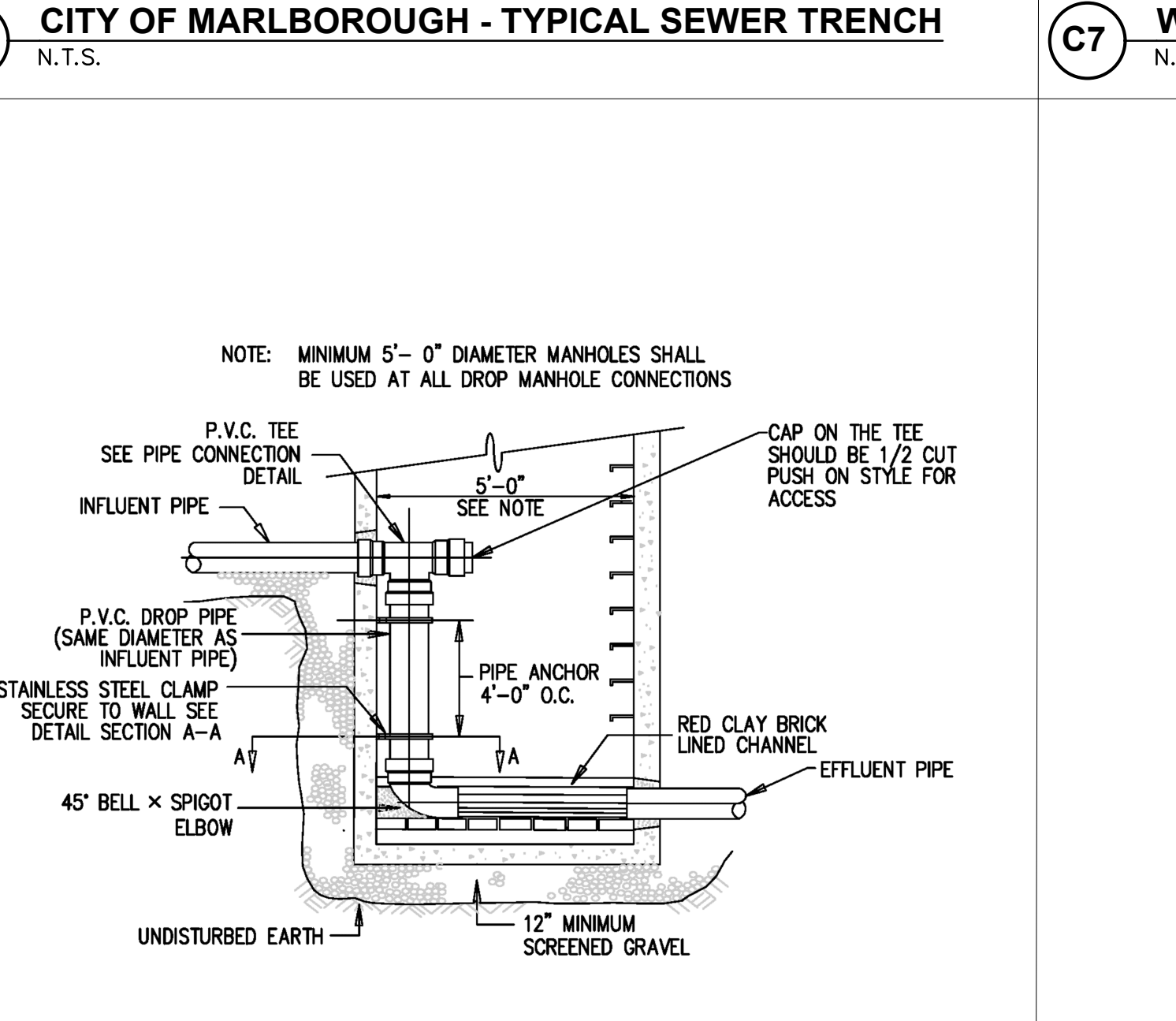
NOTE: 1. PROVIDE MODEL CDS 2020-6 UNIT MANUFACTURED BY CONTECH ENGINEERED SOLUTIONS, OR APPROVED EQUAL, FOR WQU 1-1.



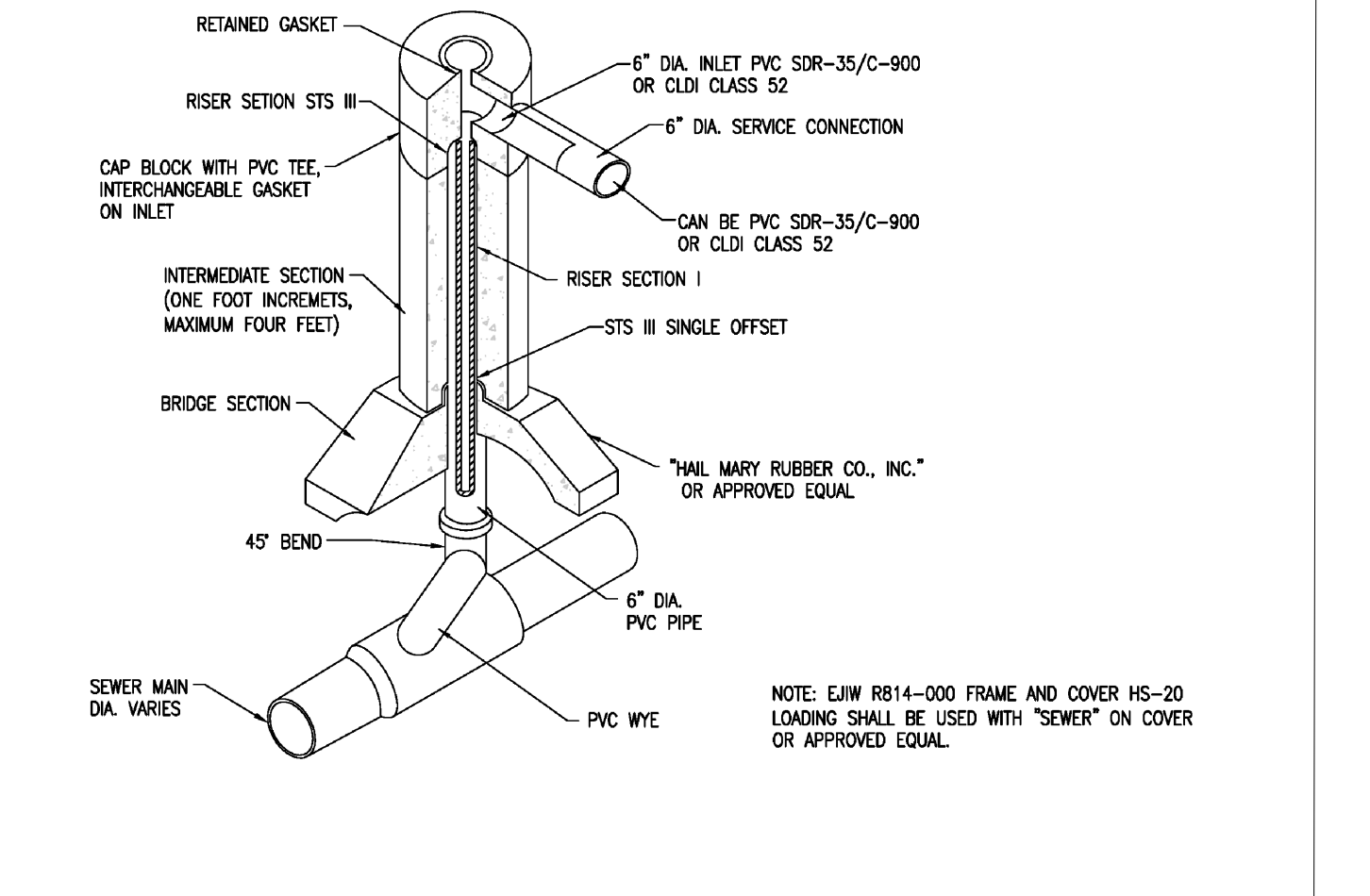
A7 CITY OF MARLBOROUGH - SEWER NOTES N.T.S.



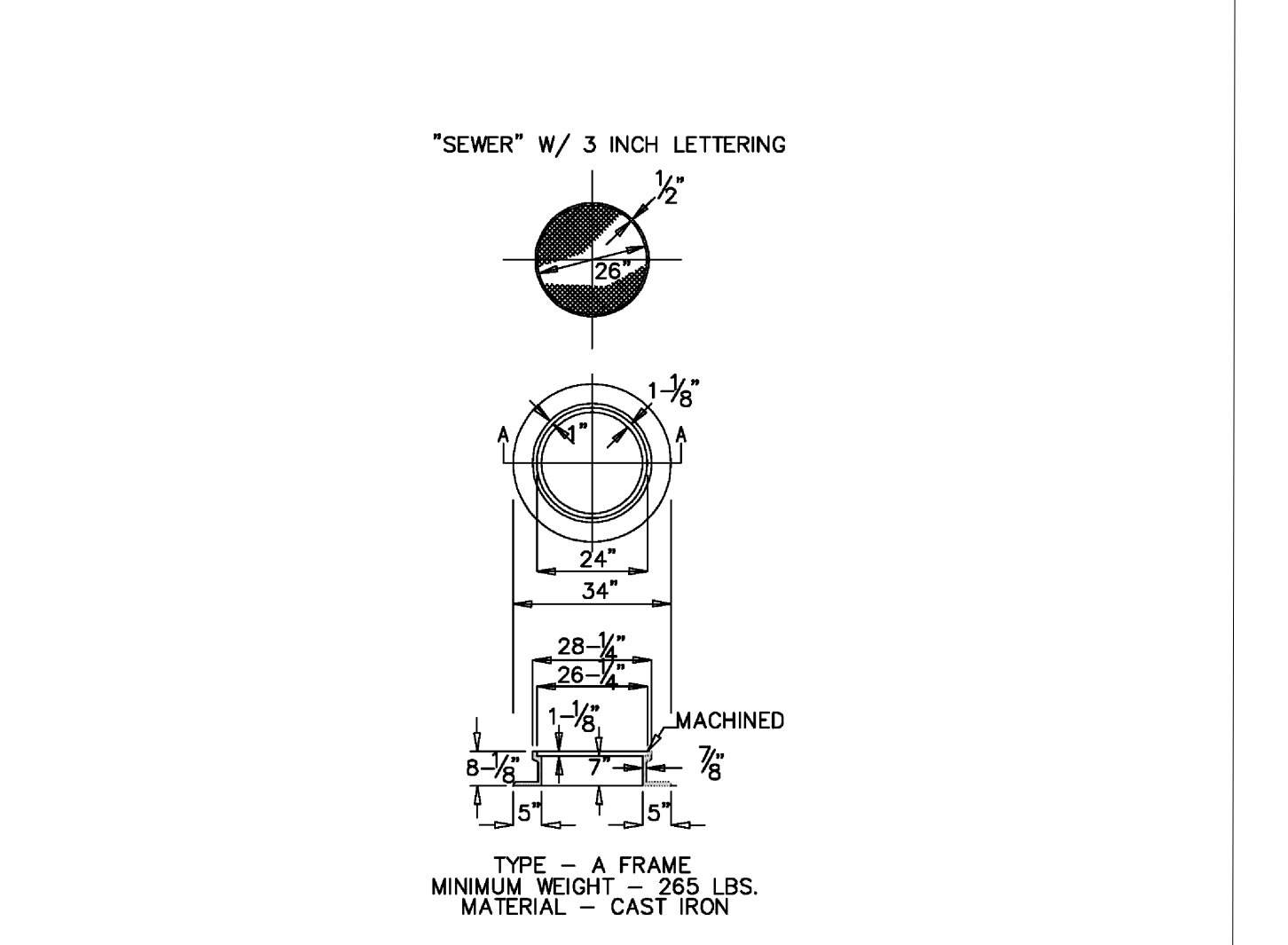
C5 CITY OF MARLBOROUGH - TYPICAL SEWER TRENCH N.T.S.



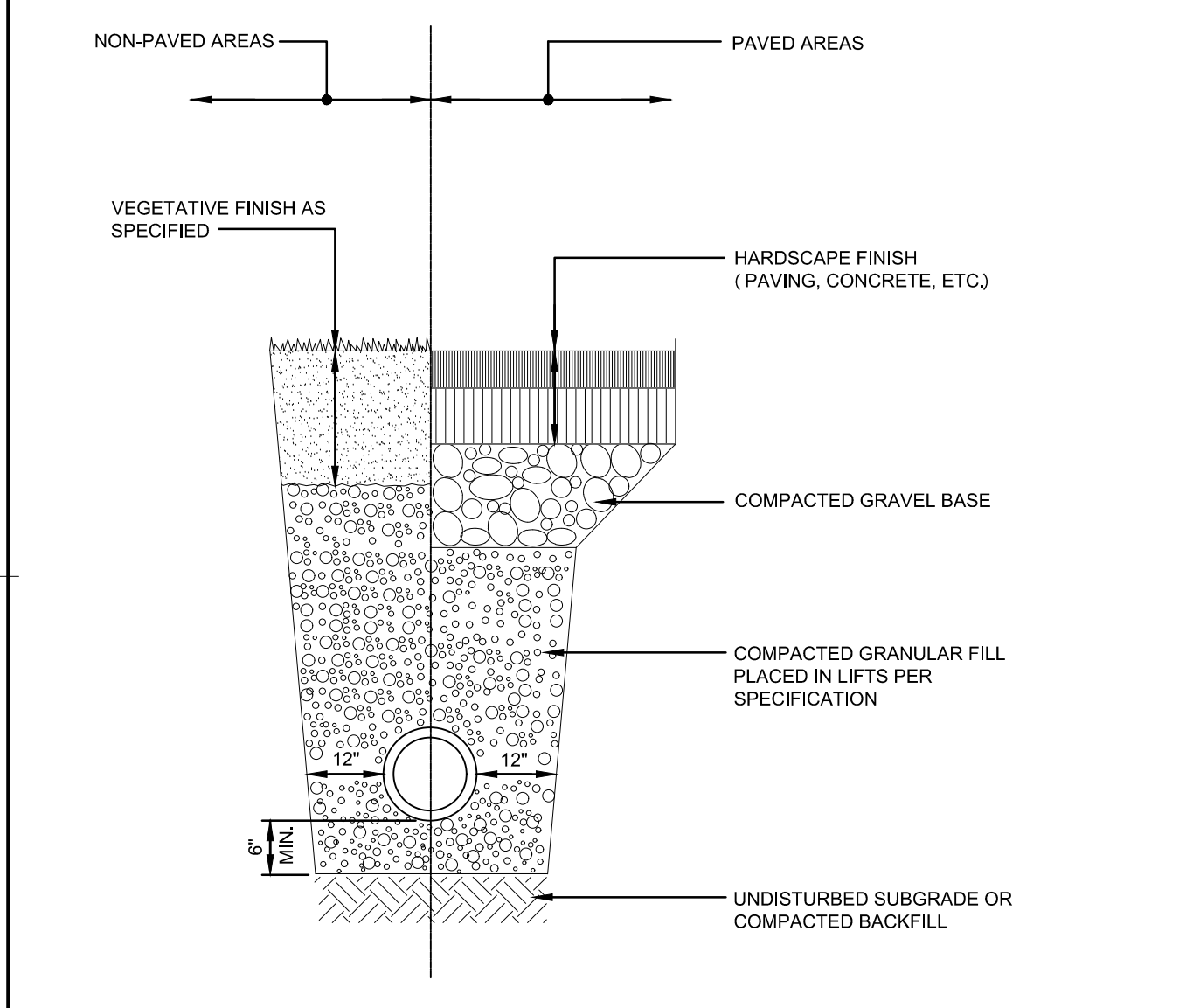
A5 CITY OF MARLBOROUGH - DROP CONNECTION N.T.S.



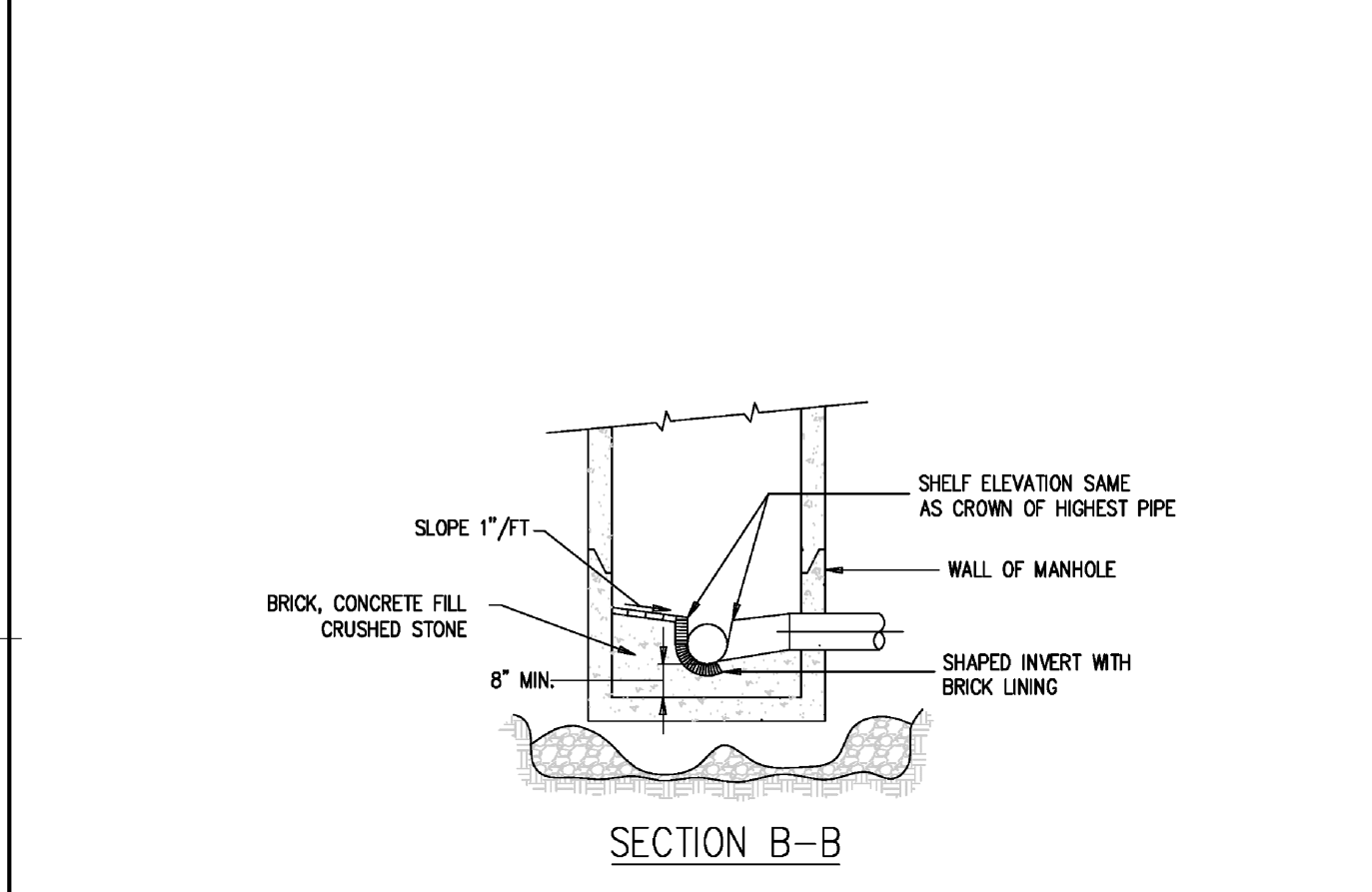
C3 CITY OF MARLBOROUGH - PRECAST SEWER CLEANOUT N.T.S.



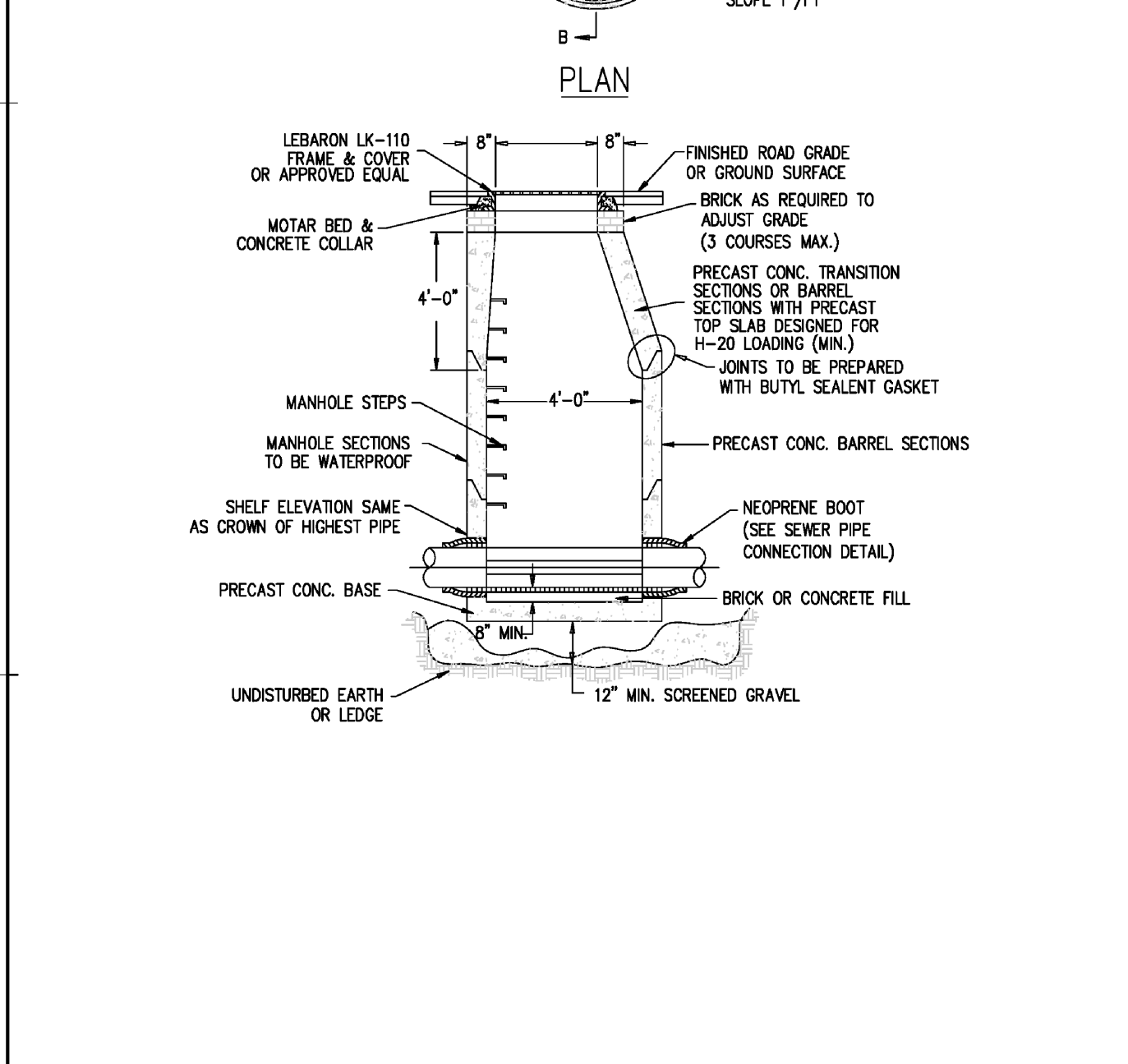
A3 CITY OF MARLBOROUGH - FRAME & COVER N.T.S.



E1 TRENCH SECTION - CPE DRAINS N.T.S.



C3 CITY OF MARLBOROUGH - PRECAST SEWER CLEANOUT N.T.S.



A1 CITY OF MARLBOROUGH - PRECAST SEWER MANHOLE N.T.S.

1	04/05/2022	SITE PERMIT PLANS
MARK	DATE	DESCRIPTION
ISSUE LOG		
☐ = CLOUDED CHANGE		



SCALE	NTS
DRAWN BY	JLO
CHECK BY	WVP
PROJ. ARCH/ENGR.	JAH
PROJ. MGR.	SAV
JOB NO.	22013.00
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DETAILS IV

C-504

**NOTES:**

**ACCESSIBLE PARKING SPACES:**

1. MAXIMUM SLOPE 2% IN ANY DIRECTION.
2. LOCATE SIGN WITHIN 10' OF ACCESSIBLE SPACE.
3. PROVIDE AN ACCESSIBLE CURB CUT AT EACH ACCESSIBLE BETWEEN ACCESSIBLE SPACES.

**CONCRETE WALKWAY:**

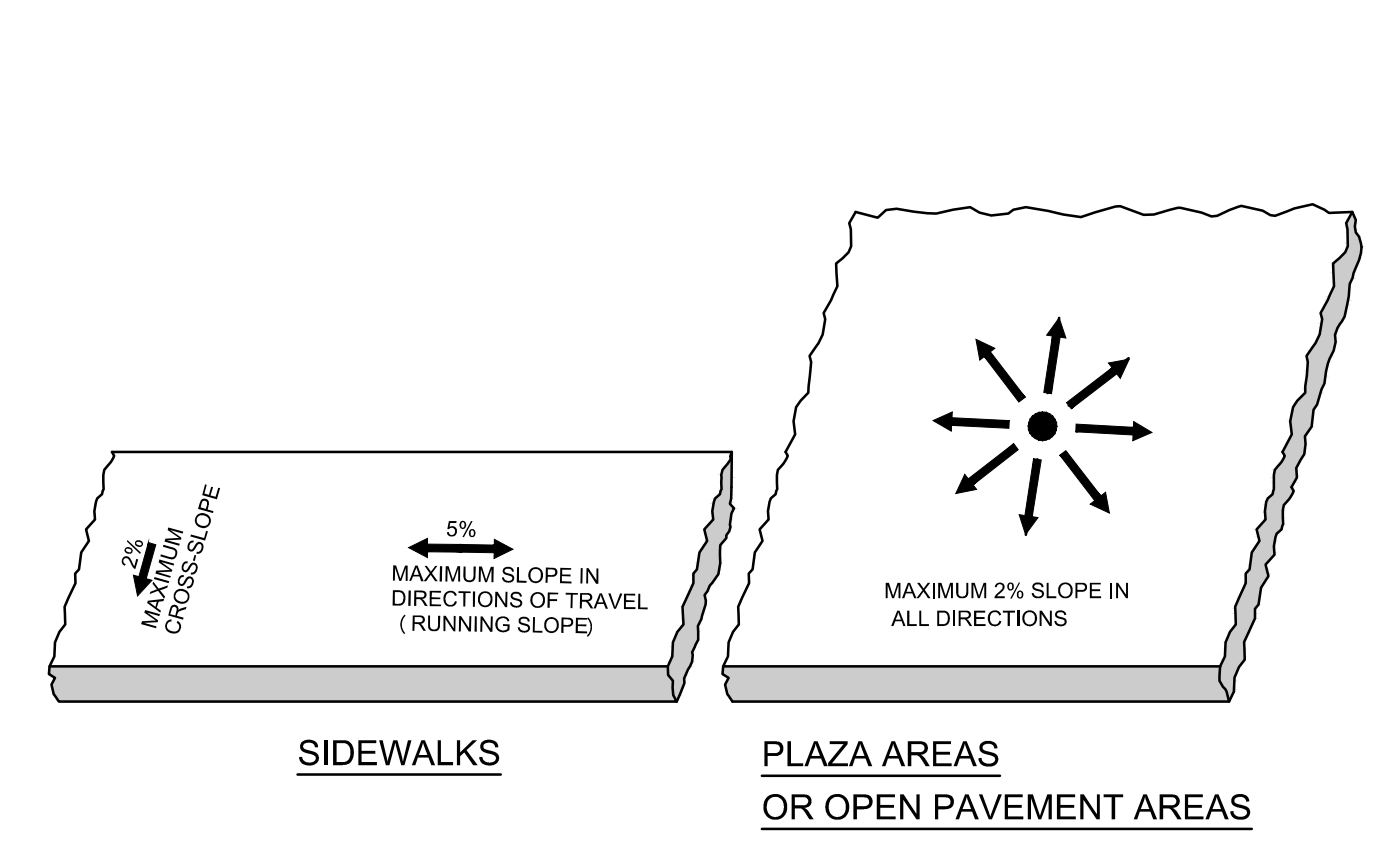
1. PROVIDE FLUSH TRANSITION FROM CURB CUTS TO ADJACENT WALKS AND STREETS. FREE OF CHANGES IN LEVEL GREATER THAN 1/2 INCHES.
2. THE SLOPE OF THE LEVEL LANDING AT THE TOP OF THE CURB CUT SHALL NOT EXCEED 1% IN ANY DIRECTION.
3. ALL CURB CUTS ARE TO BE CONSTRUCTED OUT OF PORTLAND CEMENT CONCRETE UNLESS OTHERWISE NOTED ON PLANS.

**LEVEL LANDINGS:**

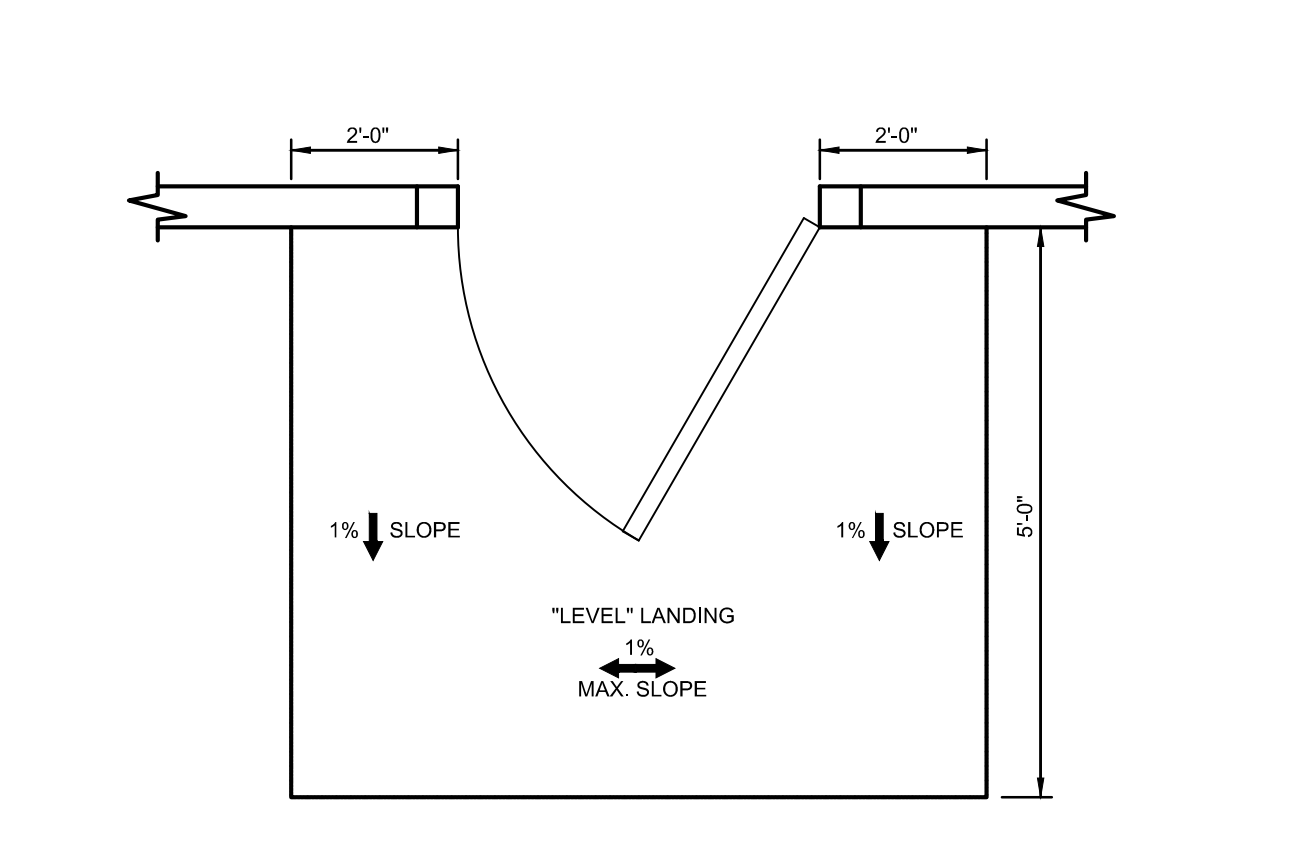
1. PROVIDE LEVEL LANDINGS WITH MAXIMUM SLOPE IN ANY DIRECTION OF 1%.

**TACTILE WARNING DEVICES:**

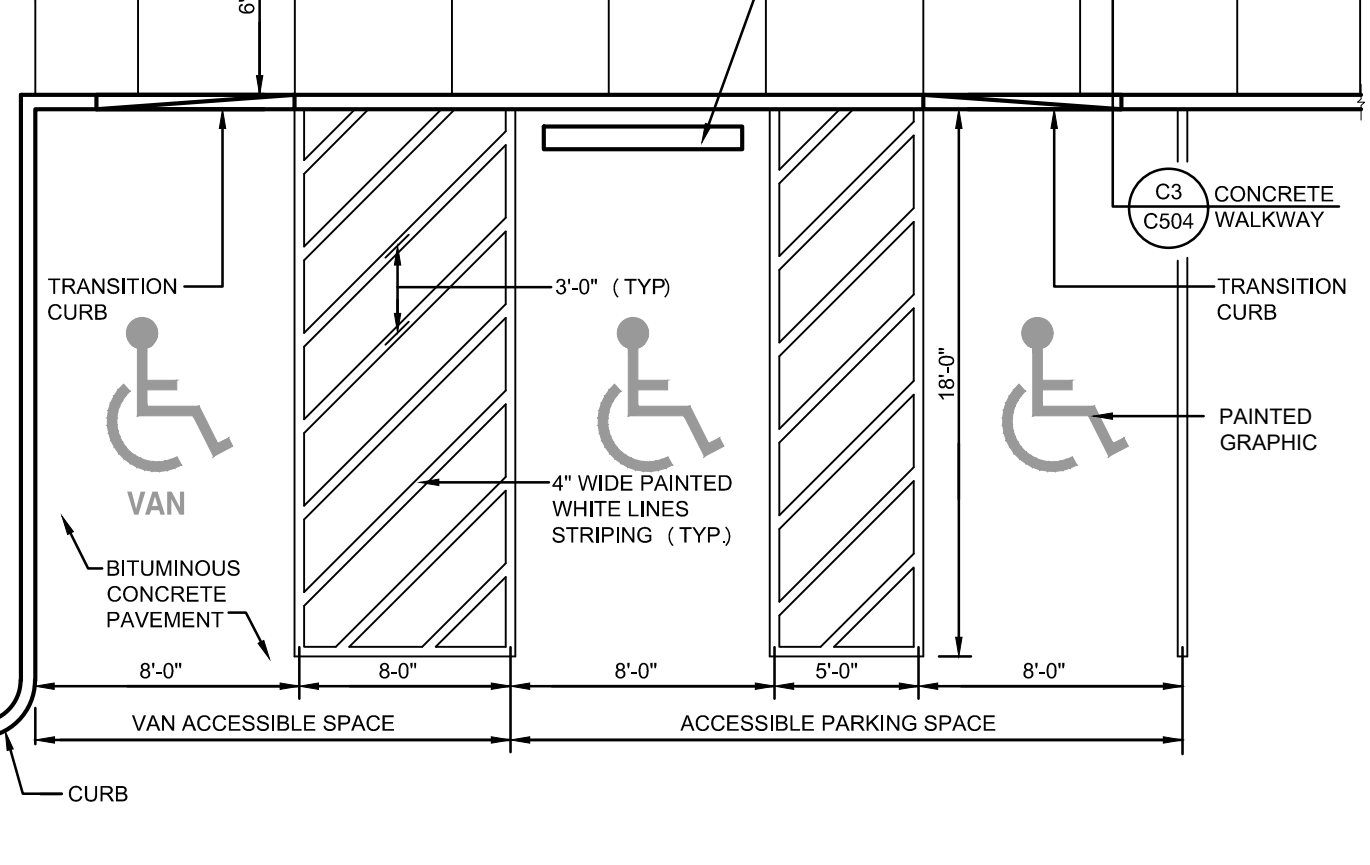
1. EXTEND FULL WIDTH OF CURB RAMP AND A LENGTH OF 24 INCHES.
2. MATERIAL CONTRASTS WITH ADJACENT MATERIAL BY AT LEAST 70%.
3. DOME SIZE HEIGHT: 0.2 INCHES  
BASE DIAMETER: 0.9 TO 1.4 INCHES  
TOP DIAMETER: 50% TO 60% OF BASE DIAMETER
4. DOME SPACING:  
PATTERN: SQUARE GRID PATTERN  
CENTER-TO-CENTER: 1.6 TO 2.4 INCHES  
BASE TO BASE: 0.65 MINIMUM BETWEEN CLOSEST DOMES IN GRID



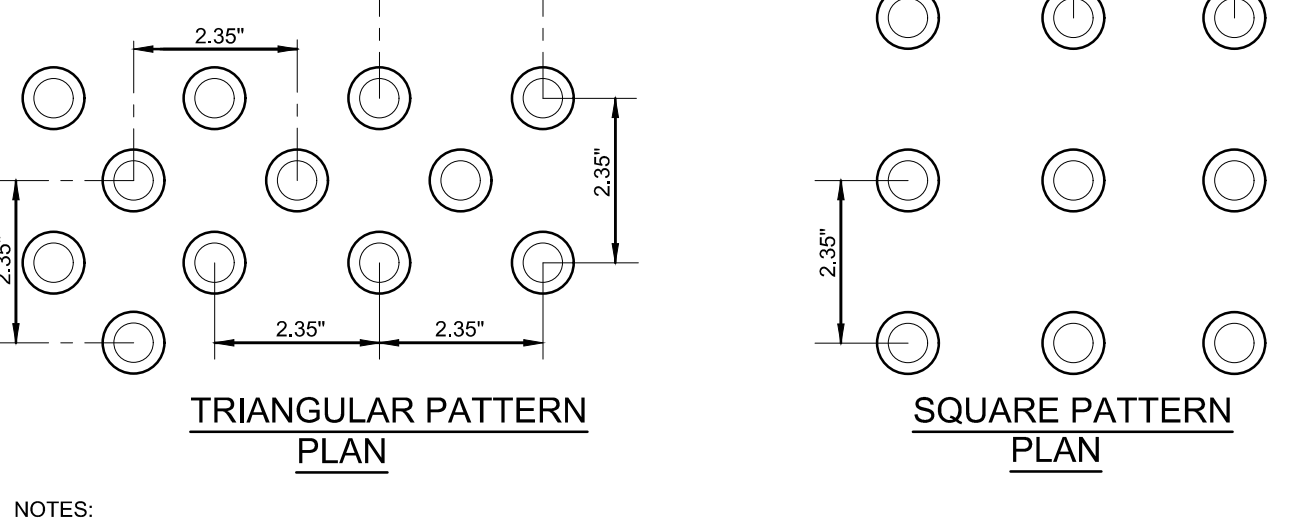
**G7 PAVEMENT SLOPES**  
N.T.S.



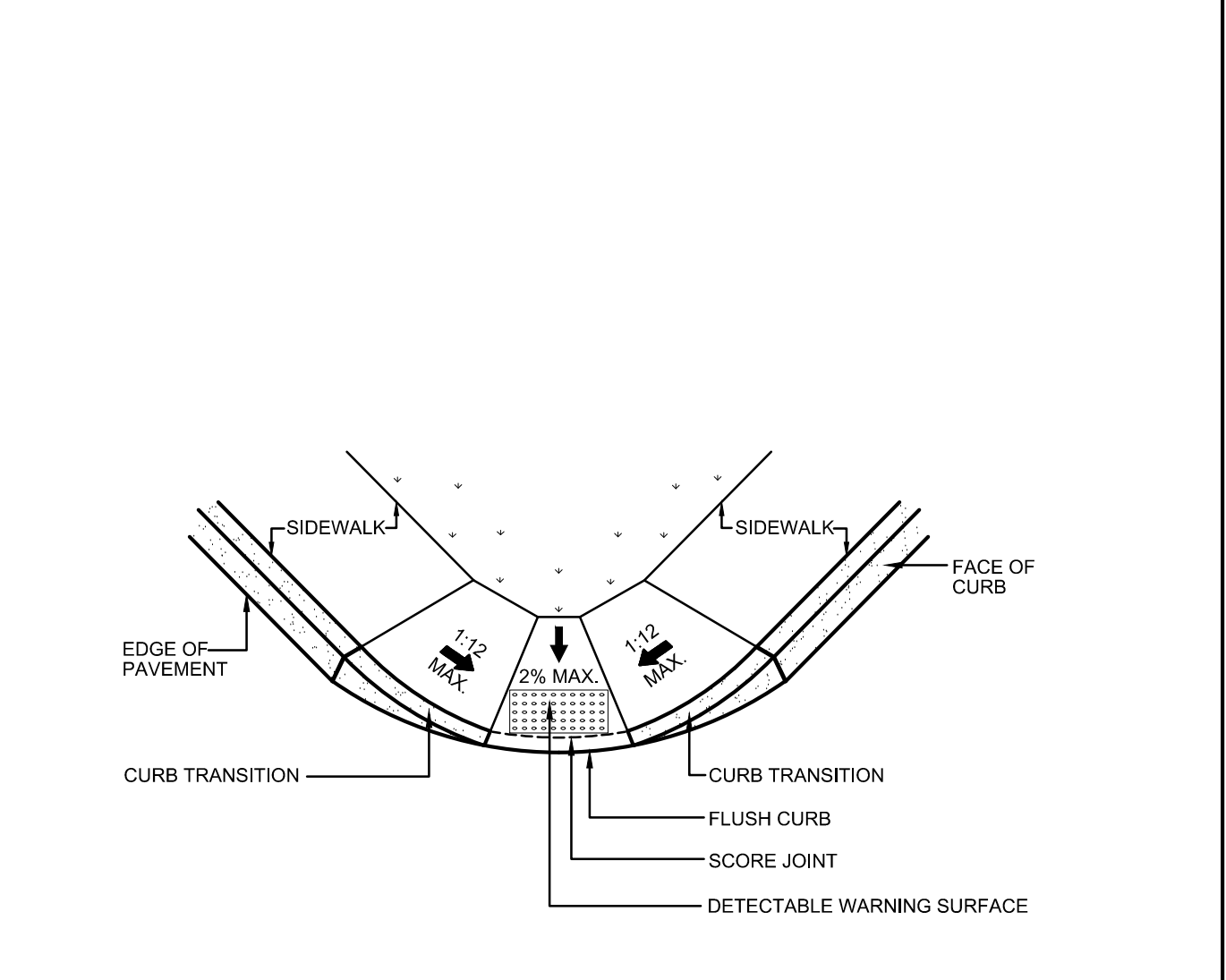
**G5 LEVEL LANDING AT BUILDING ENTRANCES**  
N.T.S.



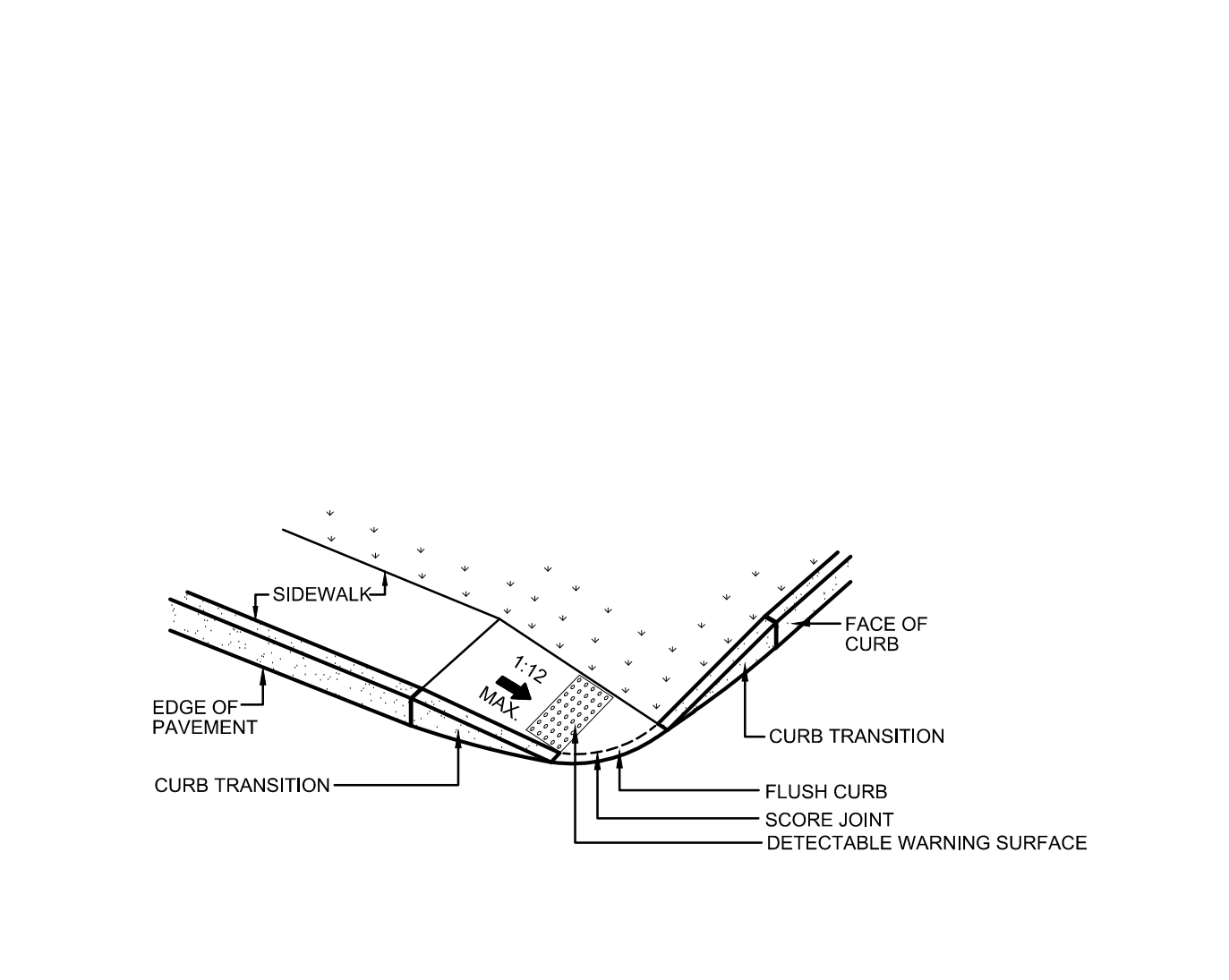
**G3 ACCESSIBLE PARKING SPACES**  
N.T.S.



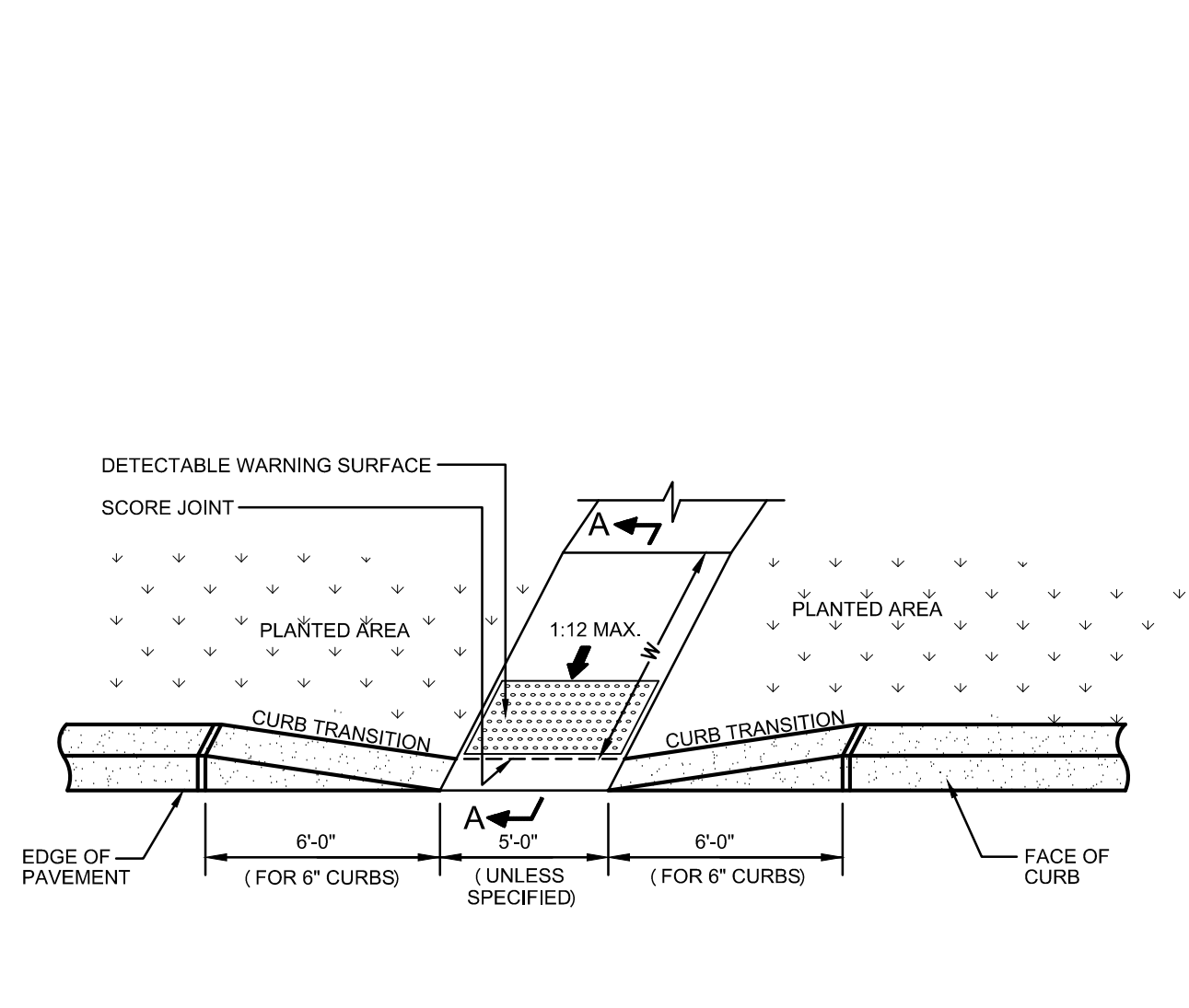
**G1 DETECTABLE WARNING SURFACE**  
N.T.S.



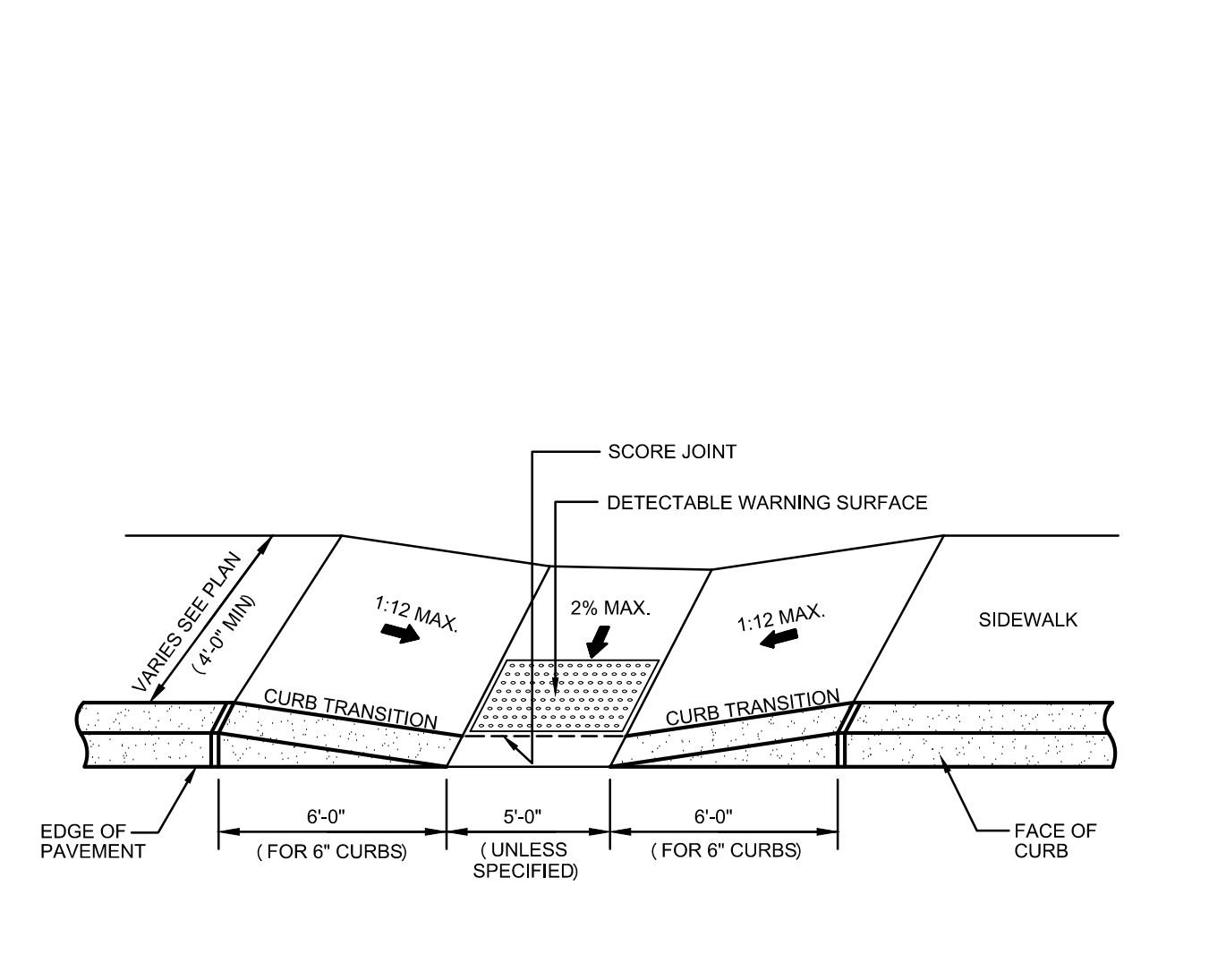
**E9 ACCESSIBLE CURB CUT (TYPE 5)**  
N.T.S.



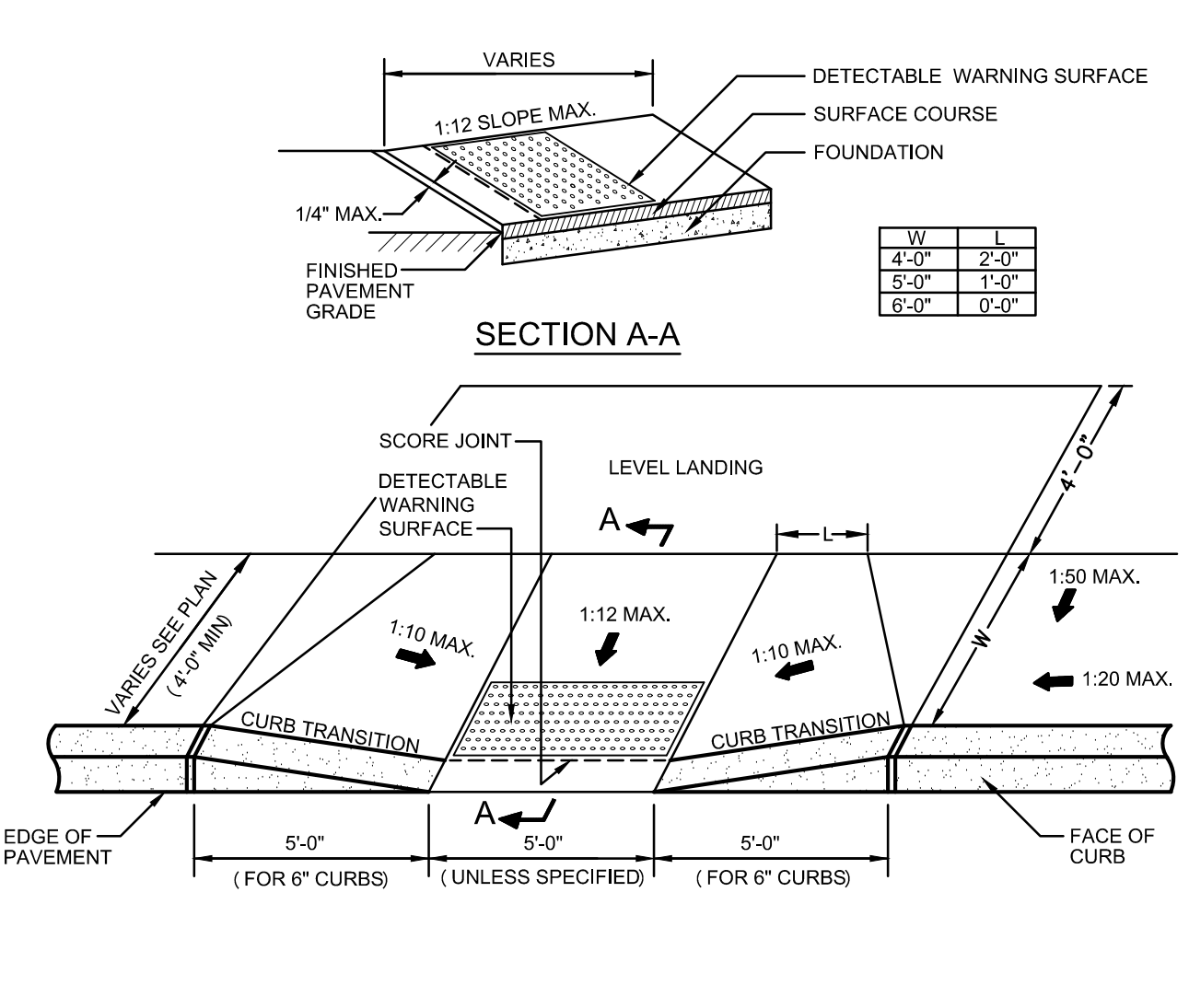
**E7 ACCESSIBLE CURB CUT (TYPE 4)**  
N.T.S.



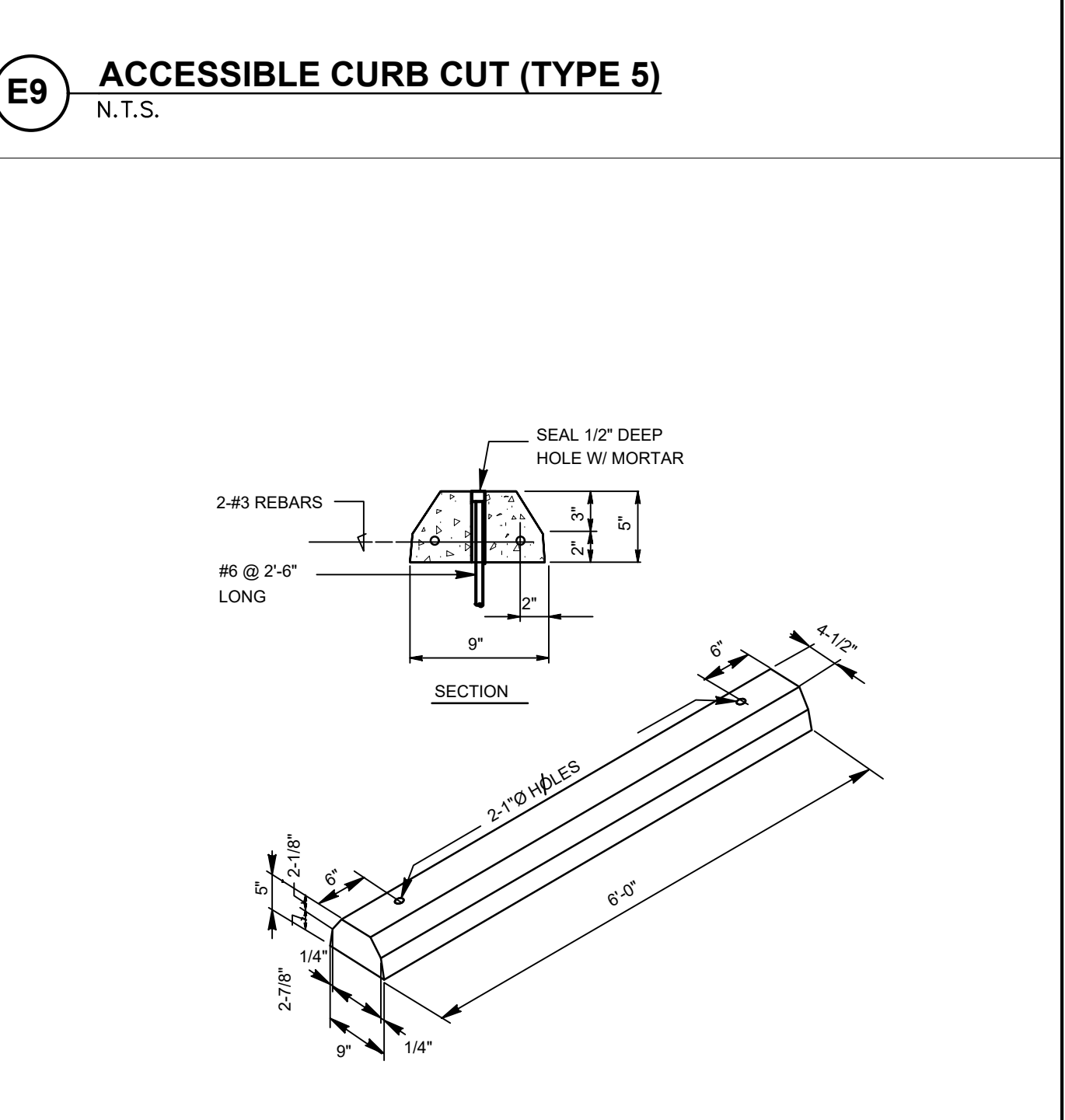
**E5 ACCESSIBLE CURB CUT (TYPE 3)**  
N.T.S.



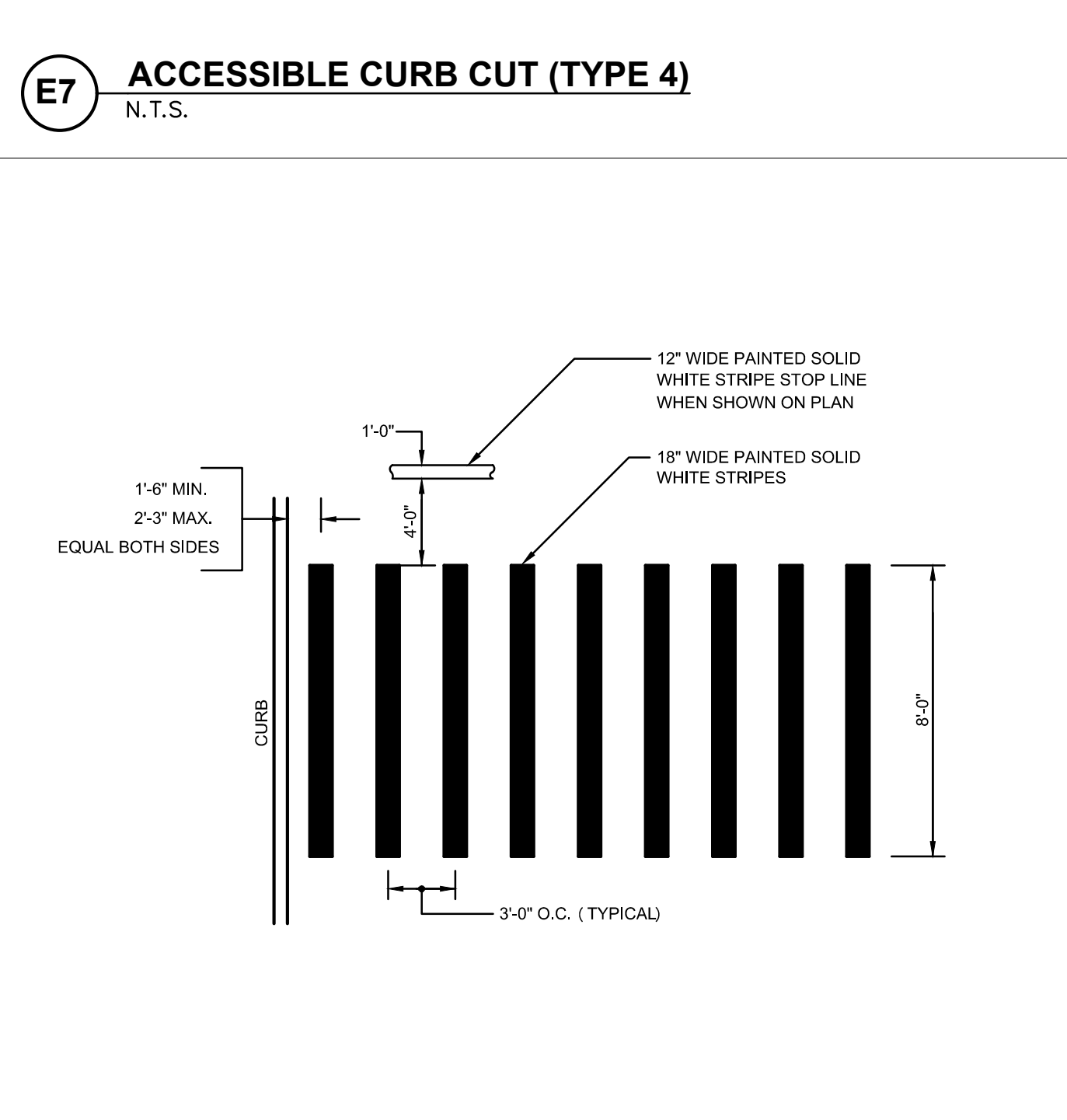
**E3 ACCESSIBLE CURB CUT (TYPE 2)**  
N.T.S.



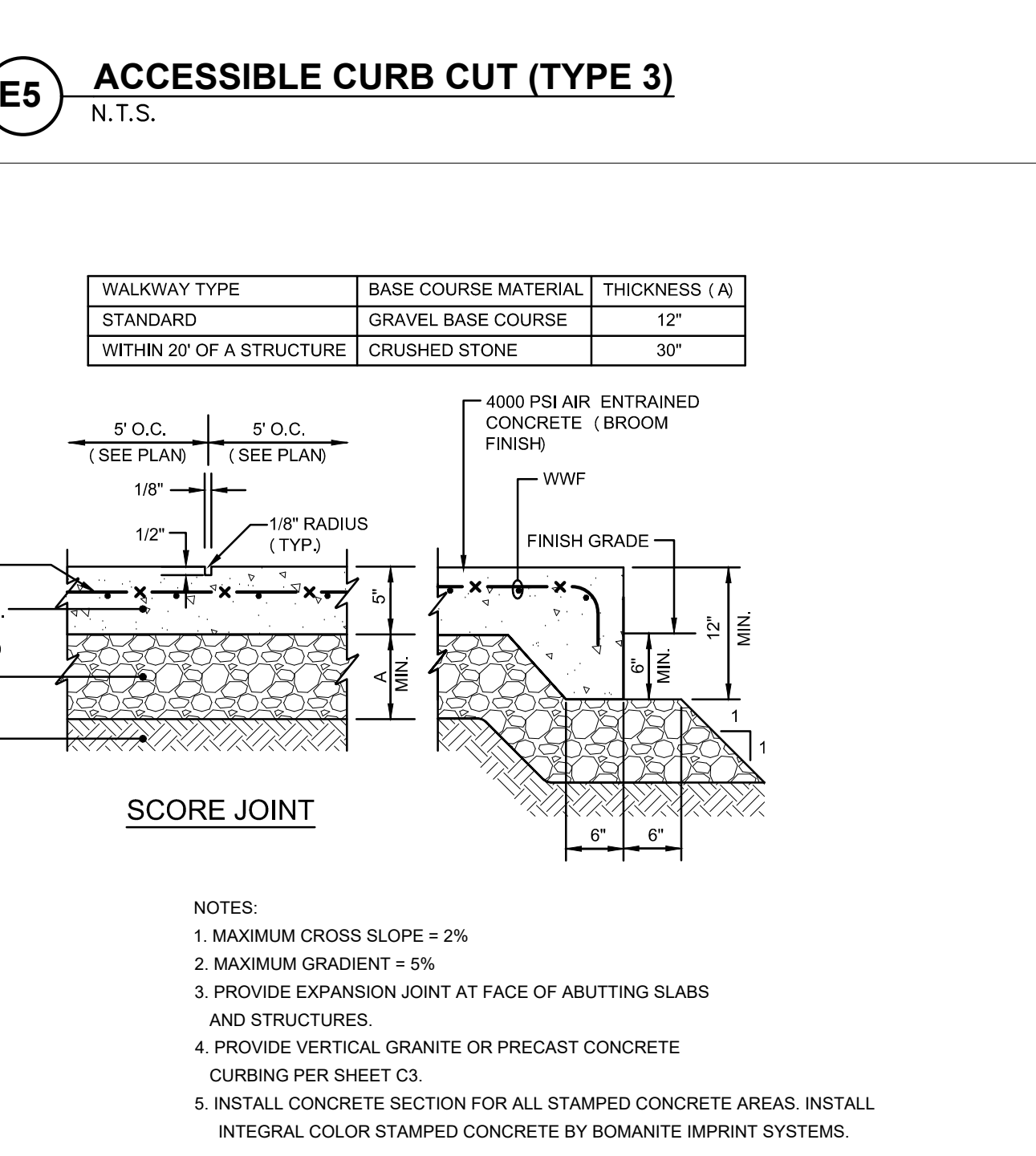
**E1 ACCESSIBLE CURB CUT (TYPE 1)**  
N.T.S.



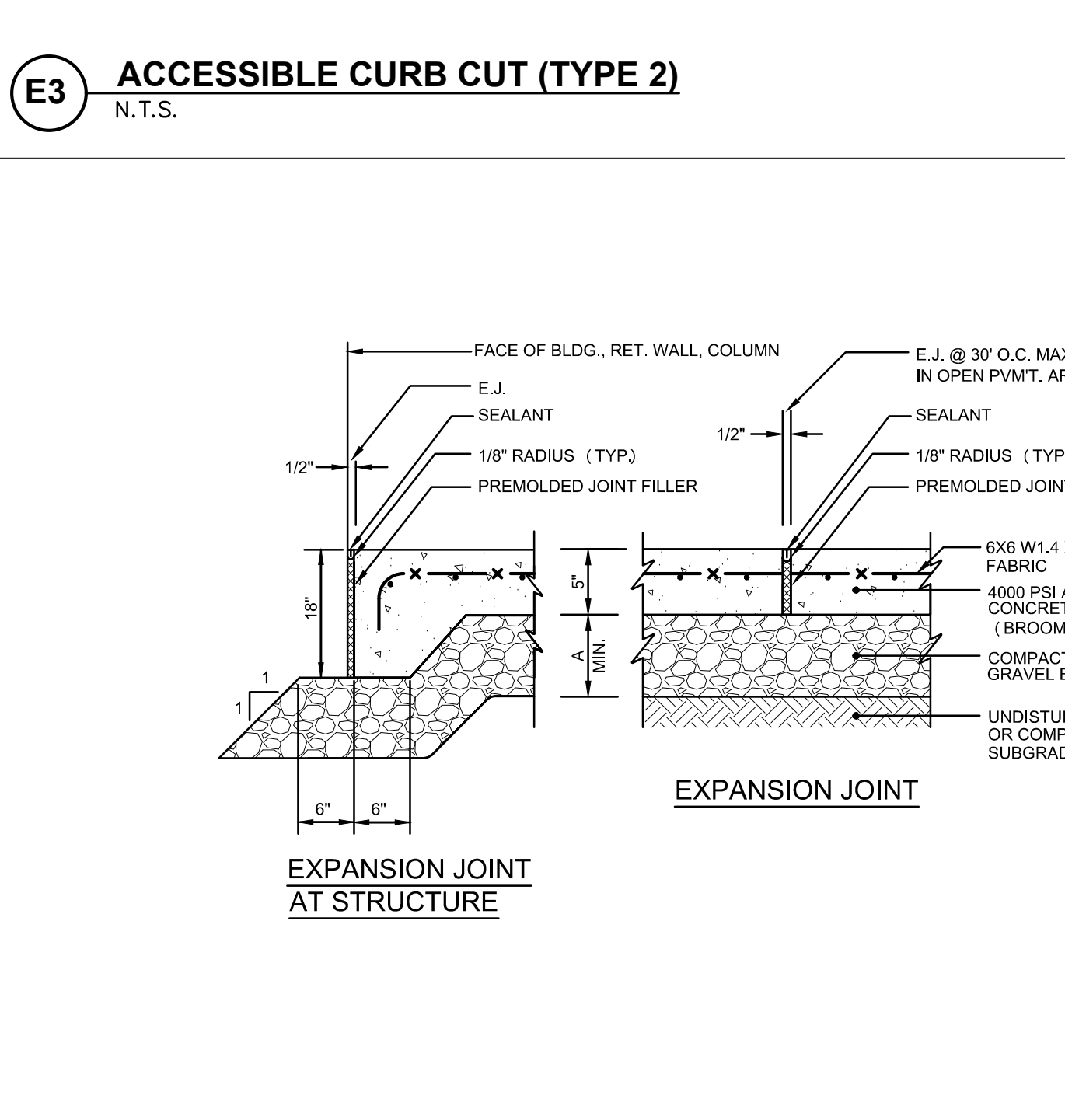
**C9 CONCRETE WHEELSTOP**  
N.T.S.



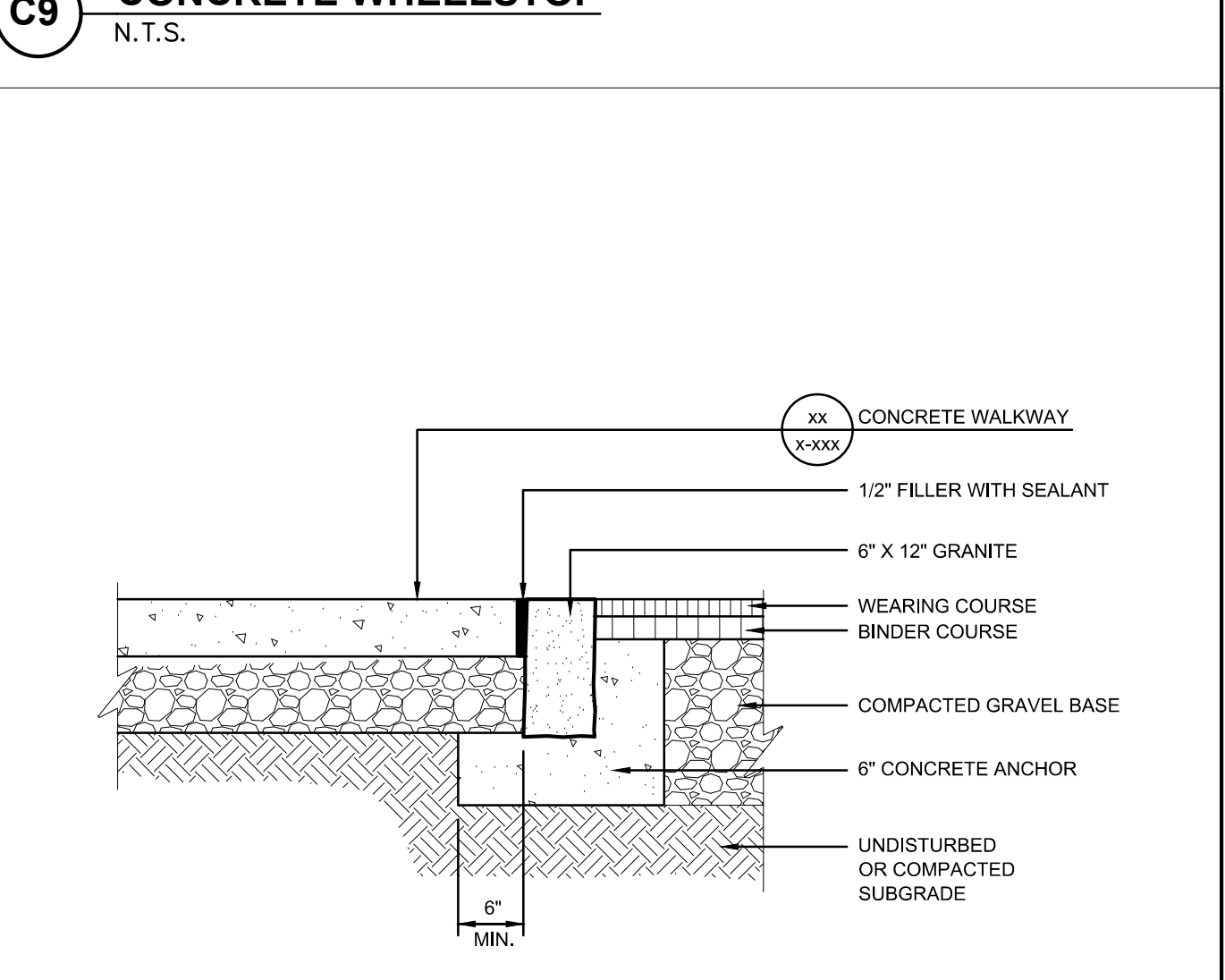
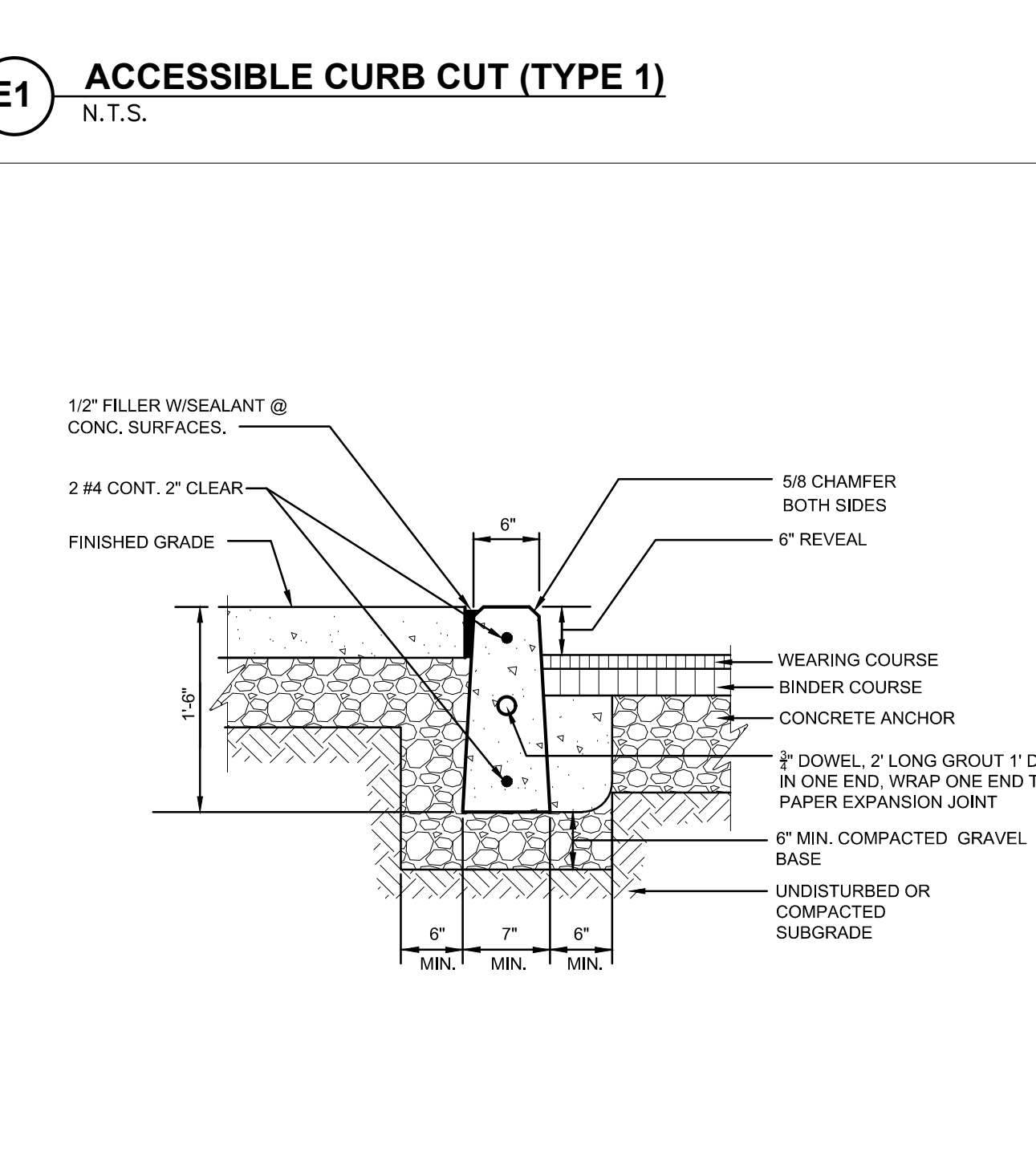
**C7 CROSSWALK**  
N.T.S.



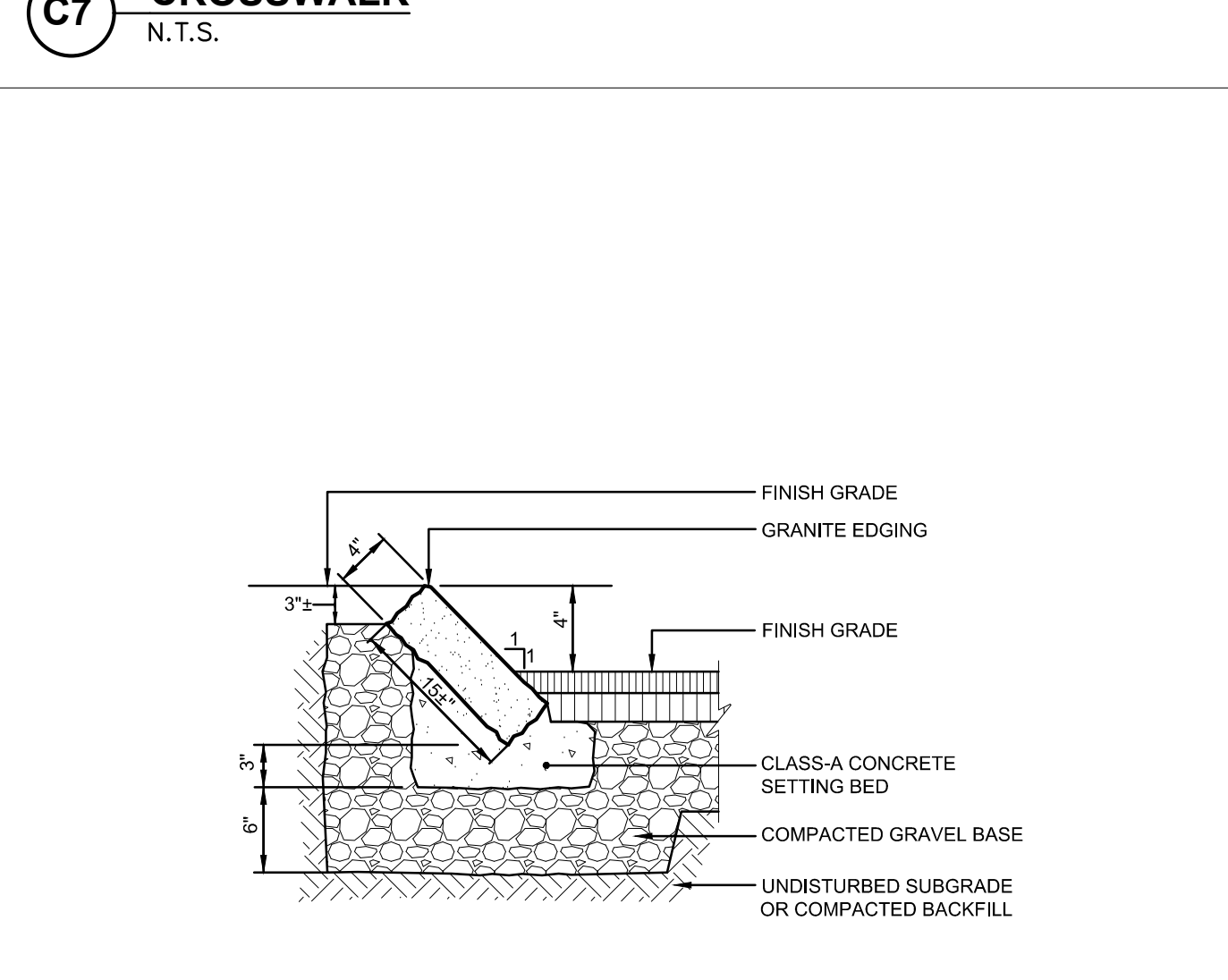
**C3 CONCRETE WALKWAY**  
N.T.S.



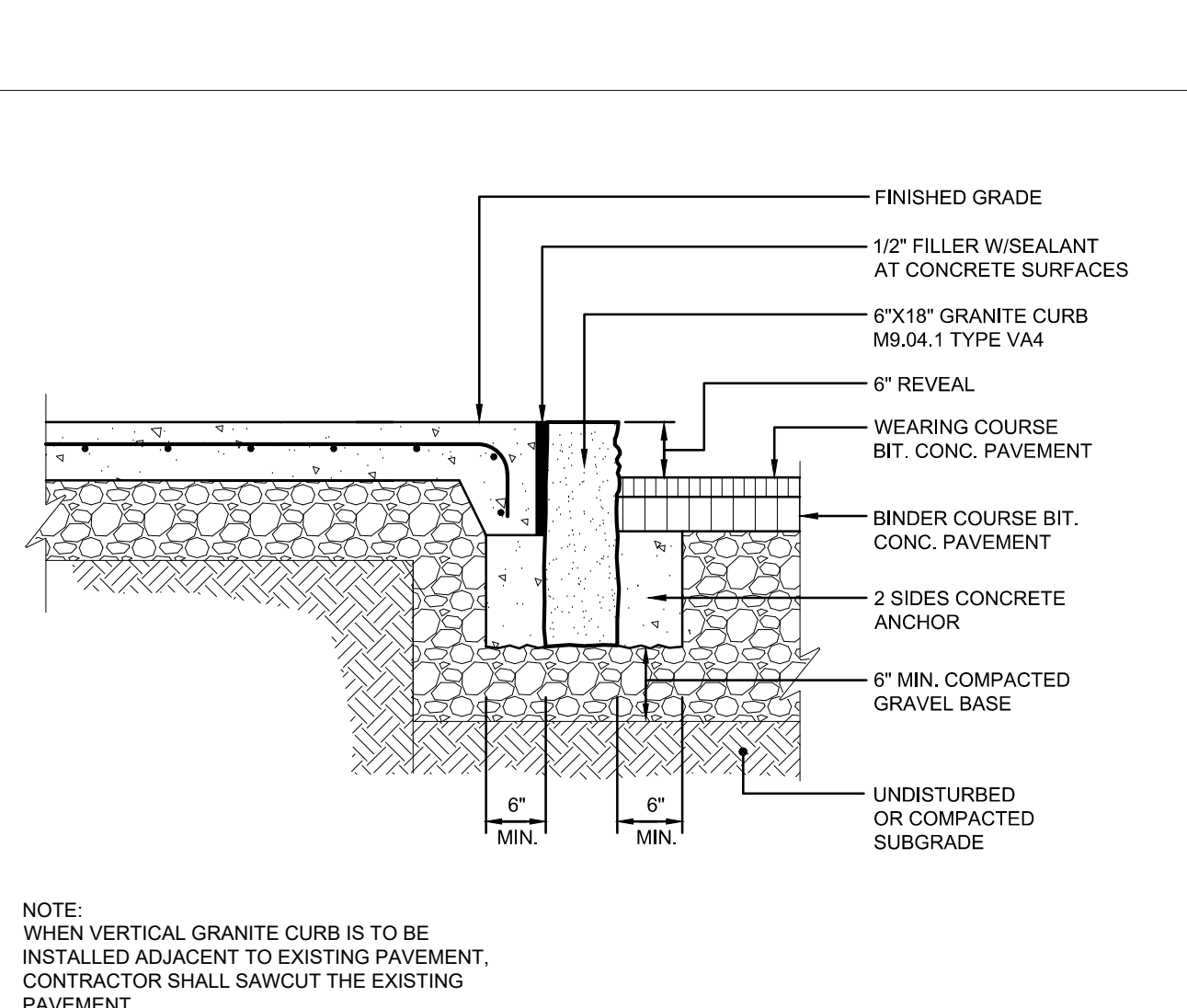
**C1 PRECAST CONCRETE CURB 4000 PSI**  
N.T.S.



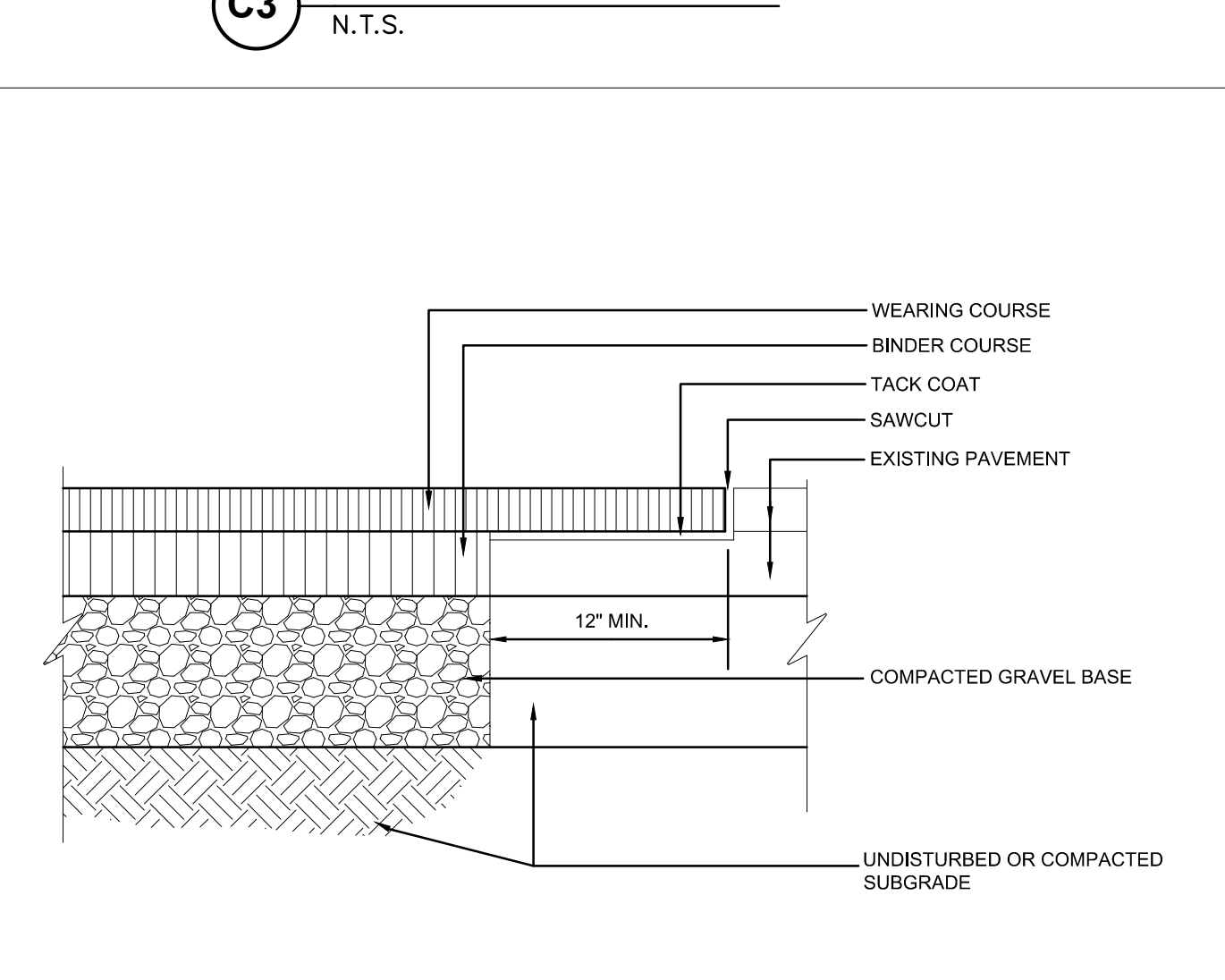
**A9 FLUSH VERTICAL GRANITE CURB**  
N.T.S.



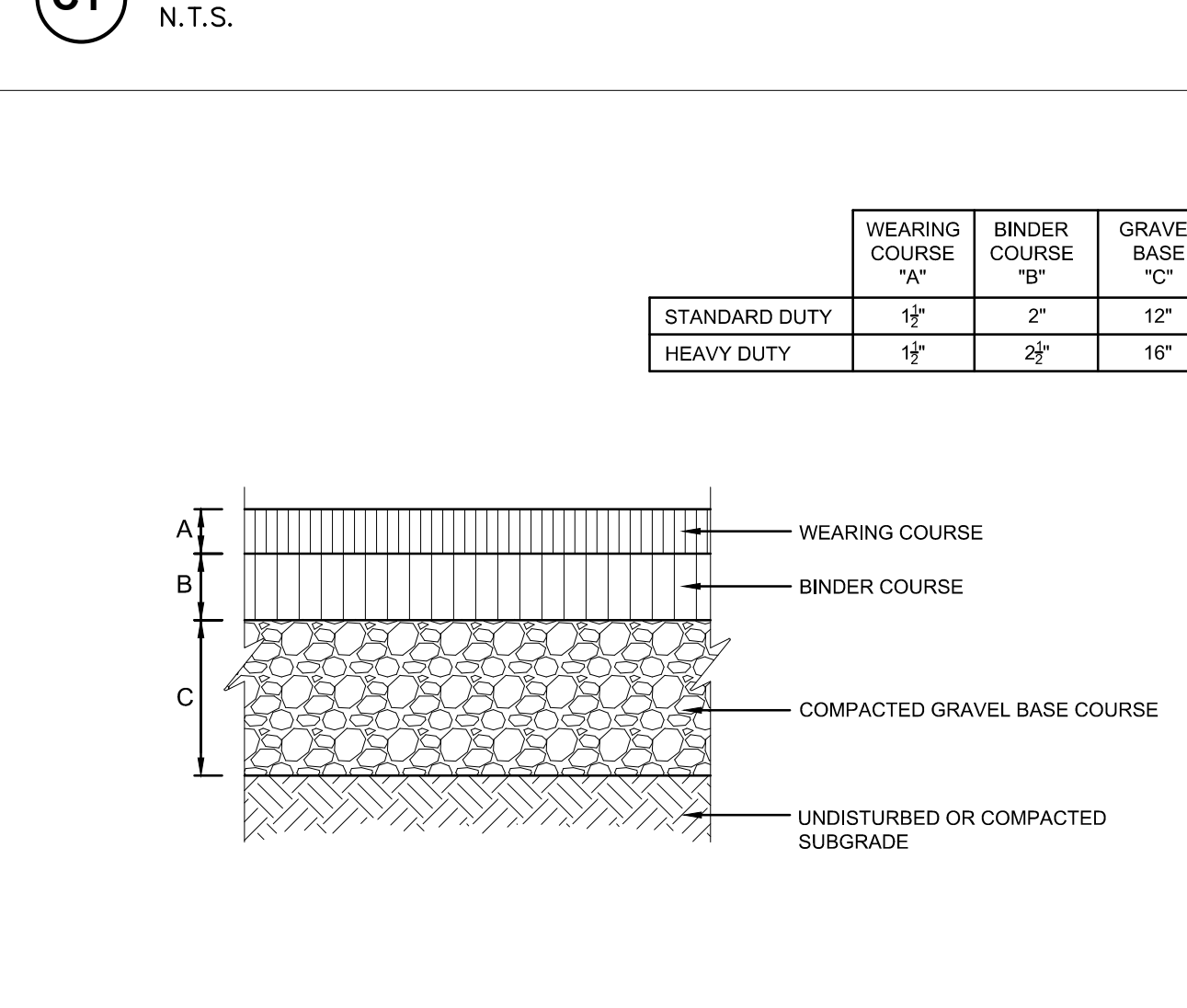
**A7 SLOPED GRANITE EDGING**  
N.T.S.



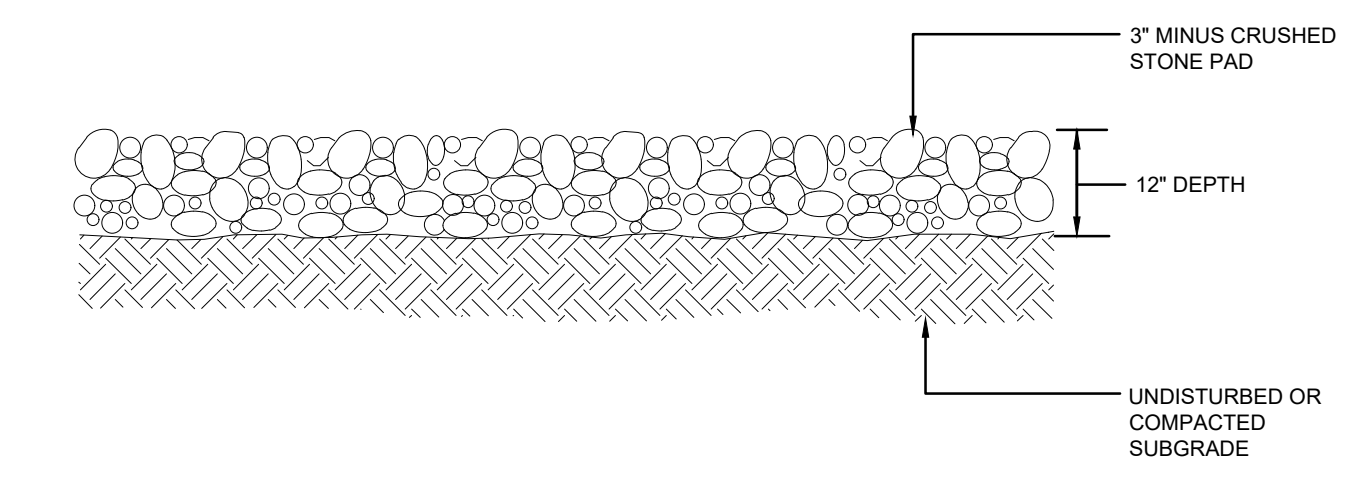
**A5 VERTICAL GRANITE CURB**  
N.T.S.



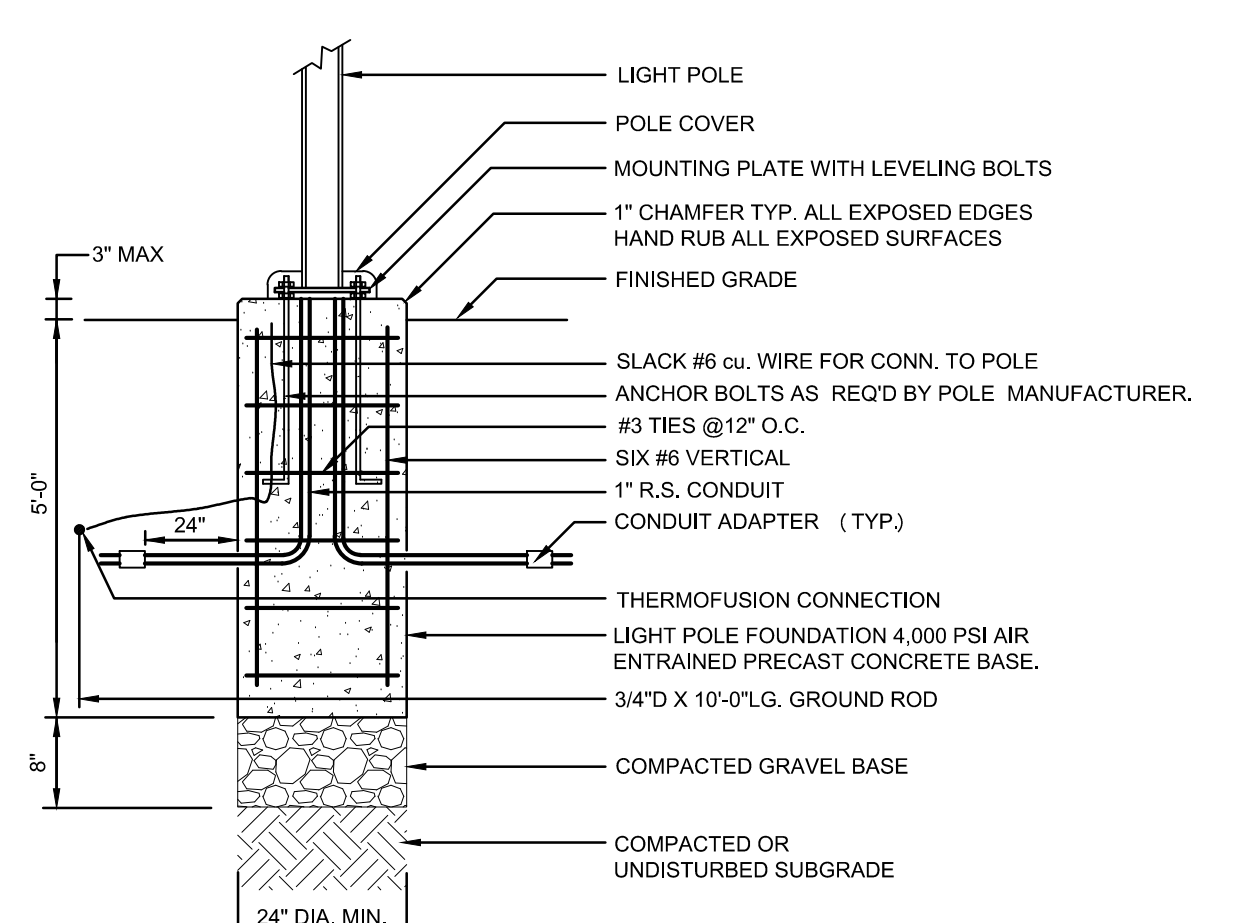
**A3 BITUMINOUS CONCRETE AT EXISTING PAVEMENT**  
N.T.S.



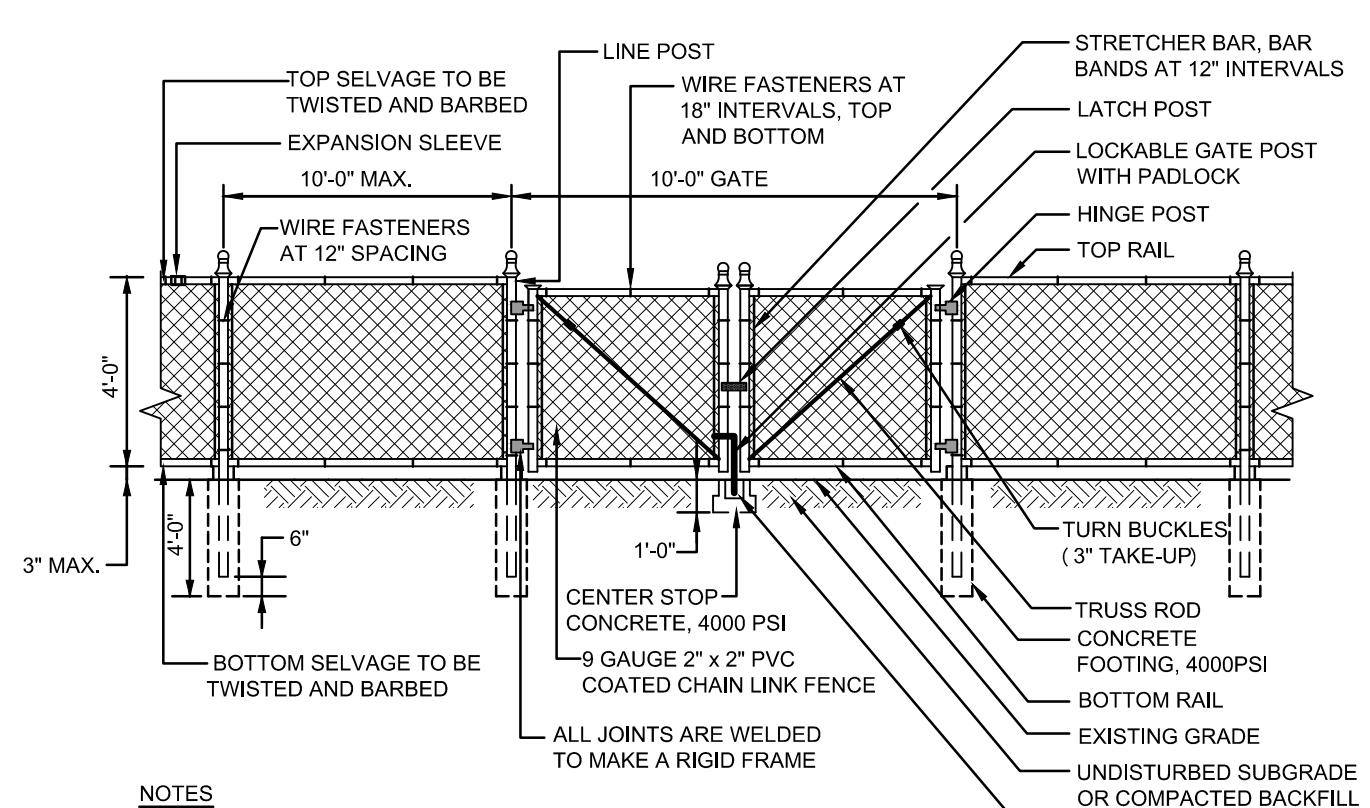
**A1 BITUMINOUS CONCRETE PAVEMENT**  
N.T.S.



**E9 GRAVEL ROAD**  
N.T.S.

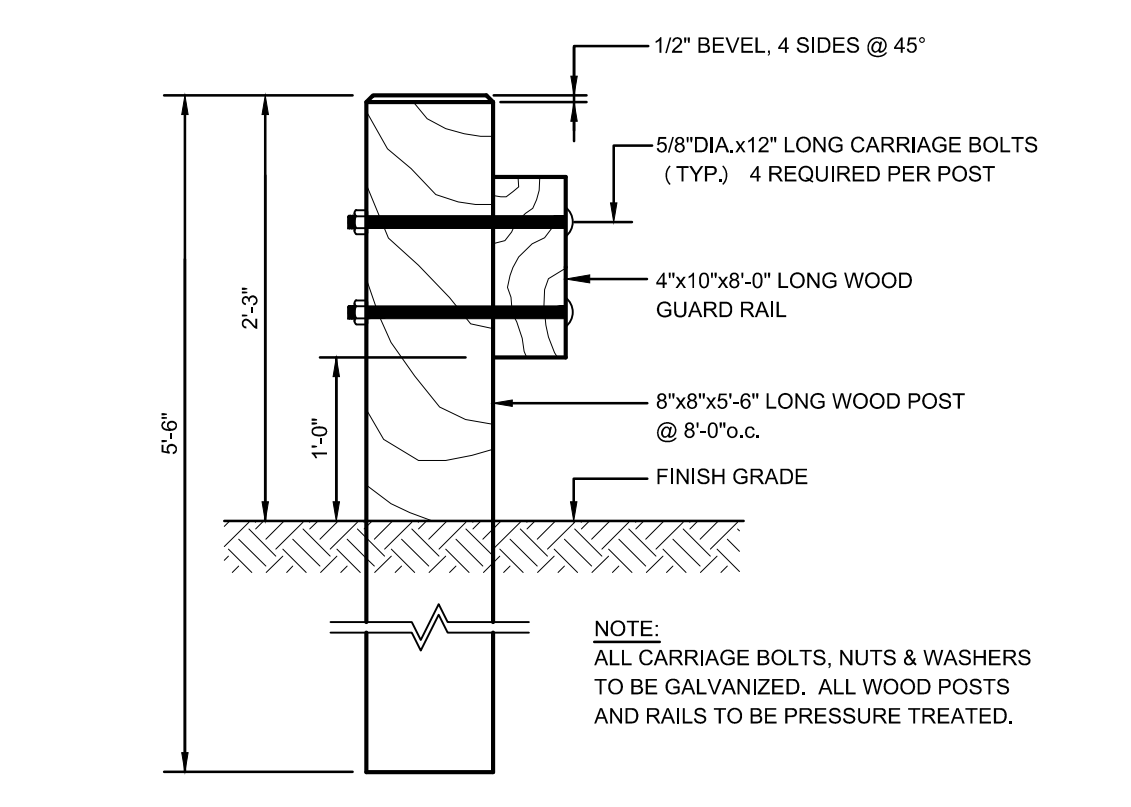


**C1 LIGHTPOLE BASE IN LAWN AREAS**  
N.T.S.

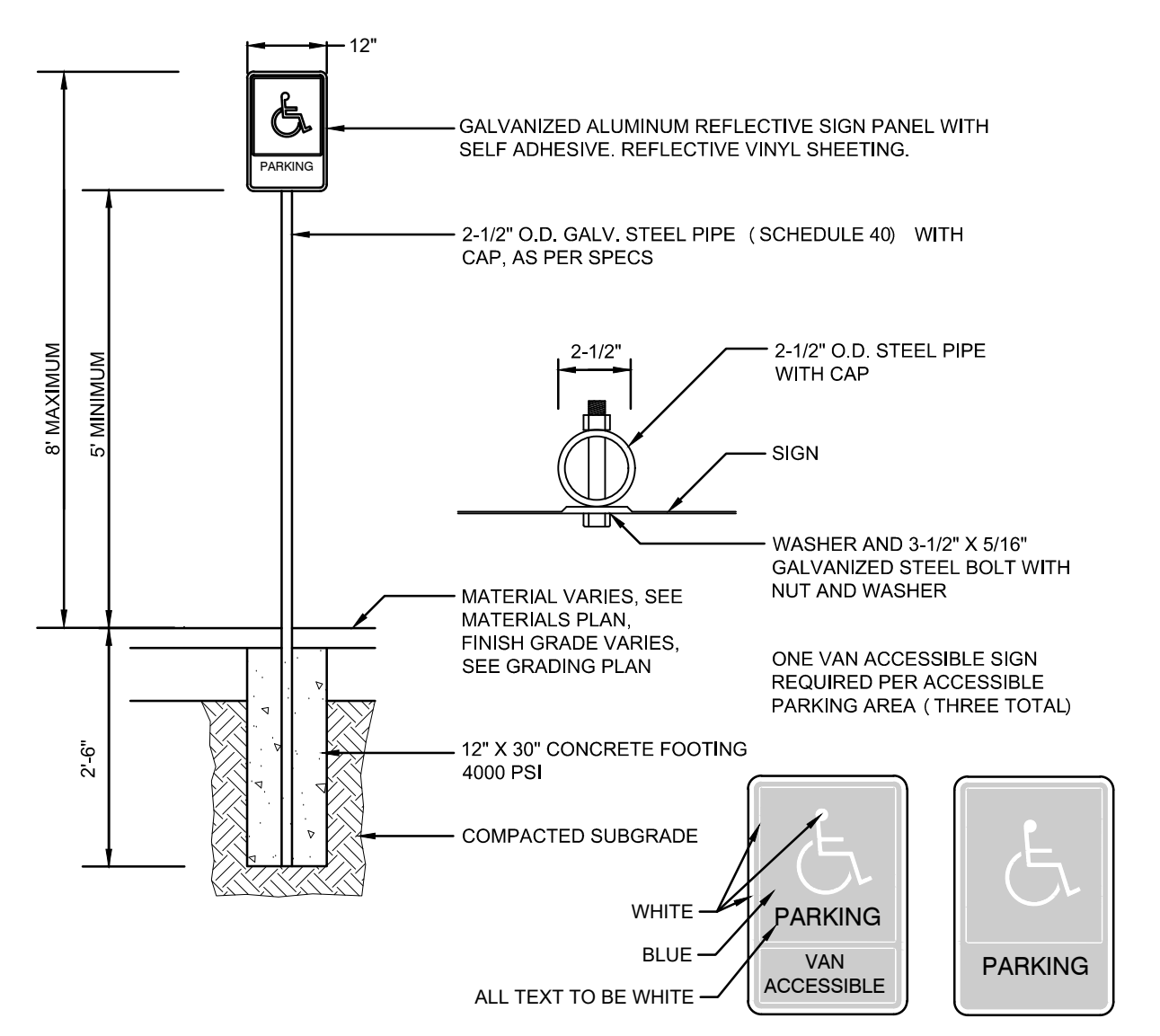


**NOTES**  
1. CONCRETE FOUNDATIONS SHALL HAVE A DIAMETER EQUAL TO FOUR TIMES THE DIAMETER OF THE POST, BUT NOT LESS THAN 12 INCHES.  
2. ALL POST, RAILS, BRACES AND CAPS BARS, TIES, FASTENERS TO BE PVC COATED

**C3 4 FT. HIGH CHAIN LINK FENCE WITH DOUBLE GATE**  
N.T.S.

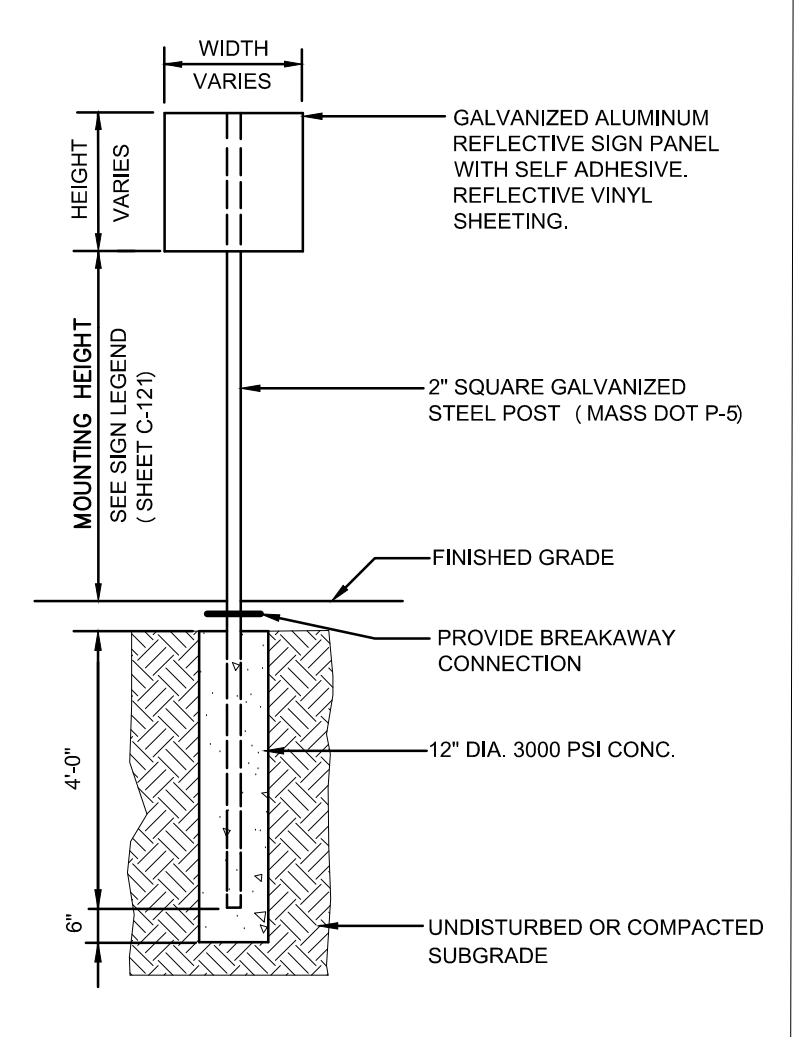


**A1 WOOD GUARDRAIL**  
N.T.S.

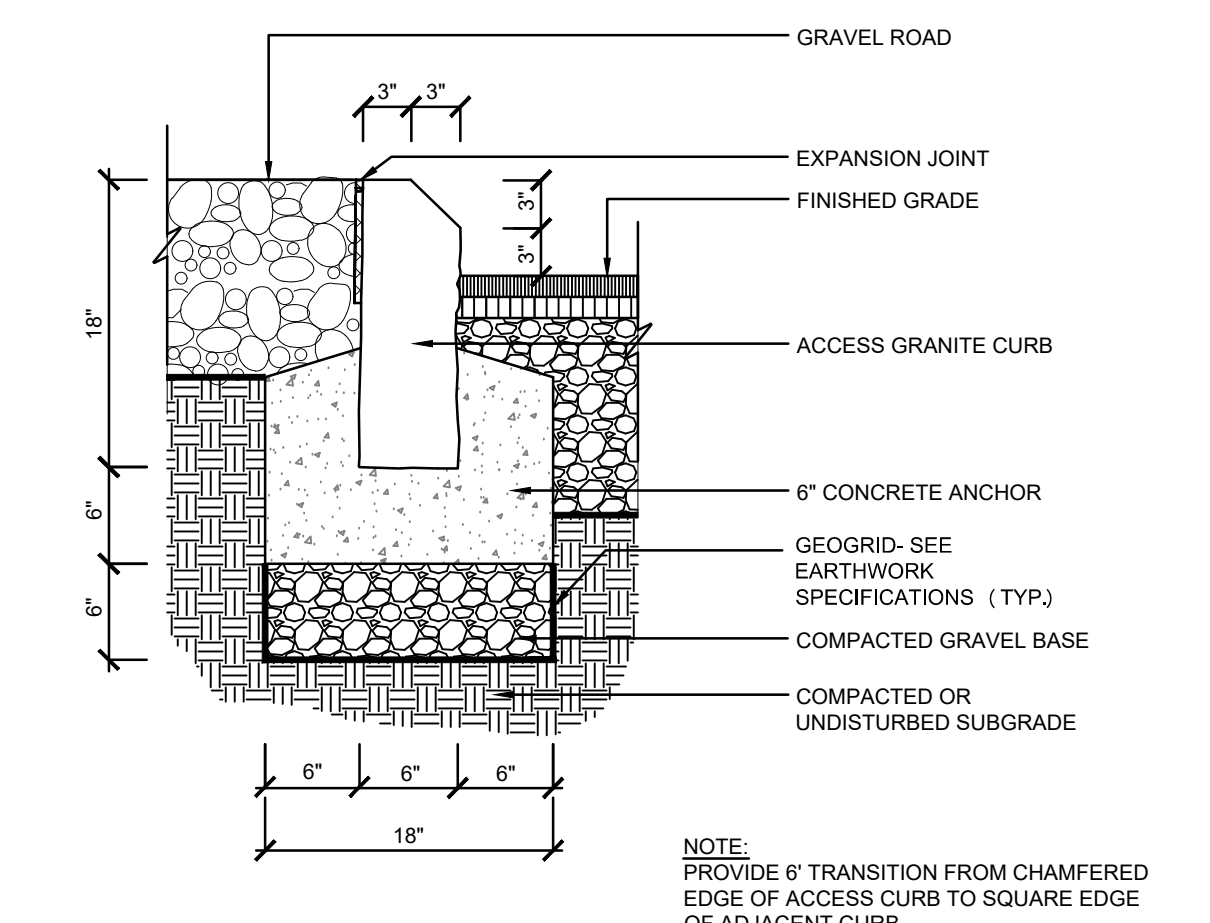


**A3 PARKING SIGN**  
N.T.S.

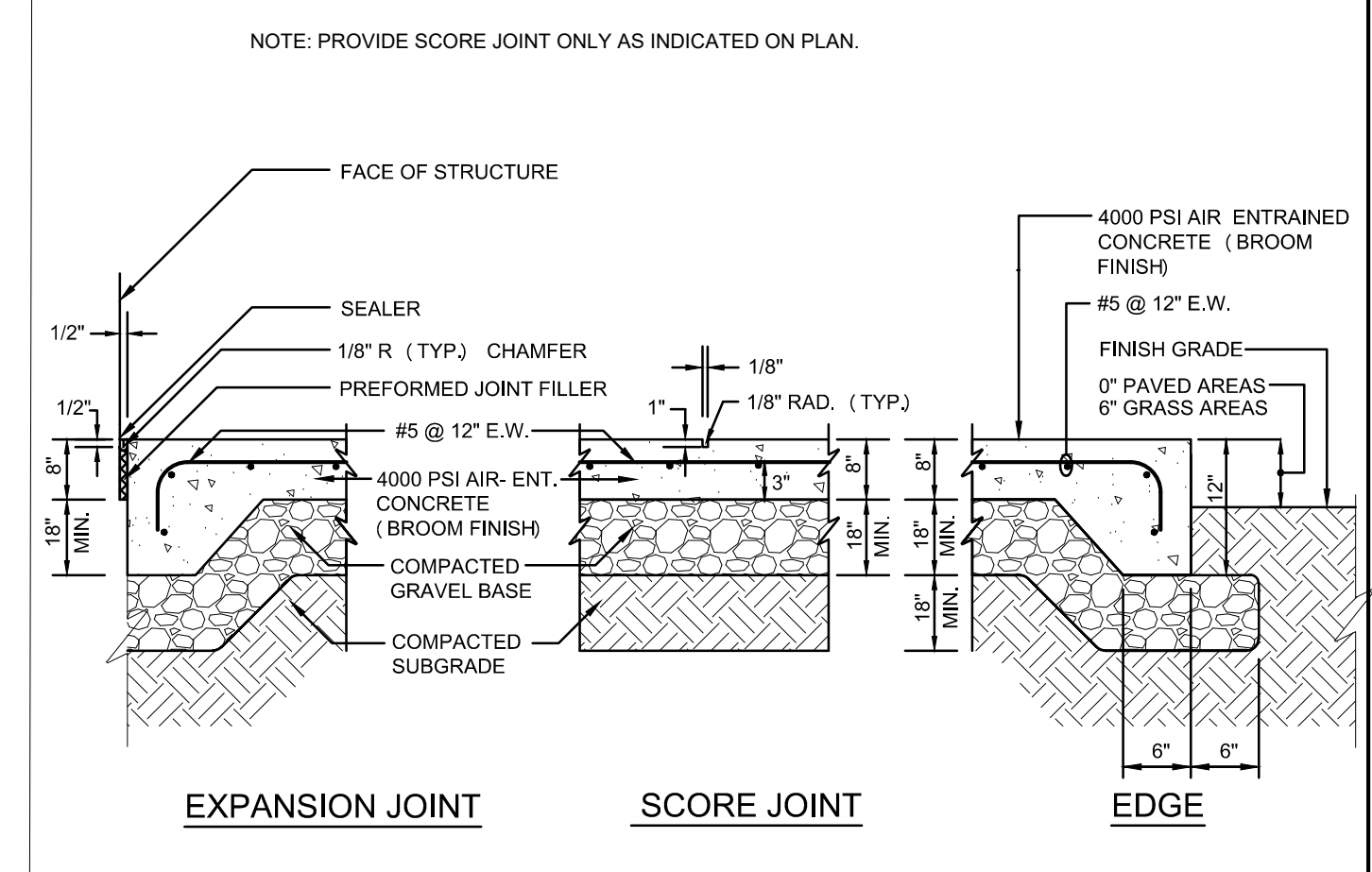
**NOTES FOR TEMPORARY SIGNS:**  
1. 2" SQUARE GALVANIZED STEEL POST SHALL BE REPLACED WITH GALVANIZED STEEL CHANNEL.  
2. POST SHALL BE SET 4" INTO EXISTING GROUND WITHOUT CONCRETE BASE.



**A5 TRAFFIC SIGN**  
N.T.S.

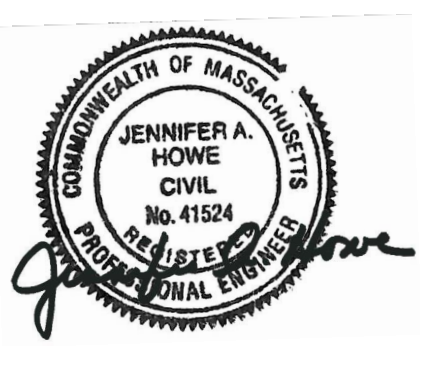


**A7 ACCESS GRANITE CURB**  
N.T.S.



**A9 EQUIPMENT PAD / CONCRETE APRON**  
N.T.S.


1	04/05/2022	SITE PERMIT PLANS
MARK	DATE	DESCRIPTION
ISSUE LOG		
△	CLOUDED CHANGE	



SCALE	NTS
DRAWN BY	JLO
CHECK BY	WWP
PROJ.ARCH/ENGR.	JAH
PROJ.MRG.	SAV
JOB NO.	22013.00
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**DETAILS V**