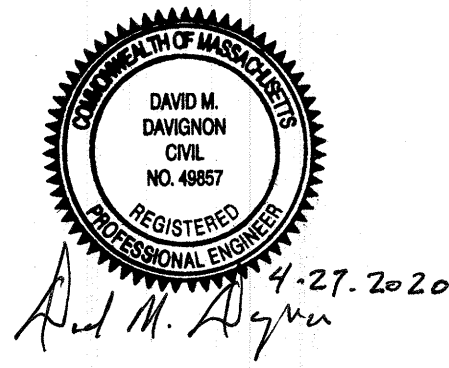


LEGEND
 - - - - - PROPOSED CONTOURS
 - - - - - EXISTING CONTOURS
 - - - - - EDGE OF WETLAND
 - - - - - 100 FL. BUFFER ZONE

SITE INFORMATION:
 ASSESSORS MAP # 298
 ASSESSORS LOTS # 271
 SITE ADDRESS: 46 TORRINGTON ROAD
 ZONING DISTRICT: RURAL RESIDENCE
 CURRENT BUILDING SETBACKS:
 FRONT: 30' SIDE: 20'
 REAR: 30' ELEV. N/A
 FEMA FLOOD ZONE: X ELEV. N/A
 FIRM COMMUNITY PANEL NO. 2500SC 0501E
 OWNERS/APPLICANTS:
 NORMAN R. & BRENDA A. BEAUREGARD
 46 TORRINGTON ROAD
 FAIRHAVEN, MA 02719



Rev. #	DATE	BY	DESCRIPTION
1			

"AS BUILT" BOARDWALK PLAN
 ON PROPERTY
 at 46 TORRINGTON ROAD in
 FAIRHAVEN, MA.
 PREPARED FOR
NORMAN R. & BRENDA A. BEAUREGARD

SCALE: 1"=20'
 0 10 20 40 60
 DATE: APRIL 27, 2020

SCHNEIDER, DAVIGNON & LEONE, INC.
 PROFESSIONAL CIVIL ENGINEERS & LAND SURVEYORS
 1 COUNTY RD, P.O. BOX 480, MATTAPOISETT, MA 02739
 1-508-756-7666

Drawn By: D.M.D. Check By: D.M.D. Job No. 2707

TOWN OF FAIRHAVEN, MASSACHUSETTS

BILLY'S WAY

ROADWAY IMPROVEMENT PROJECT

MARCH 17, 2020

PUBLIC WORKS DEPARTMENT
 VINCENT FURTADO, BPW SUPERINTENDENT
 JOHN M. CHARBONNEAU, HIGHWAY SUPERINTENDENT

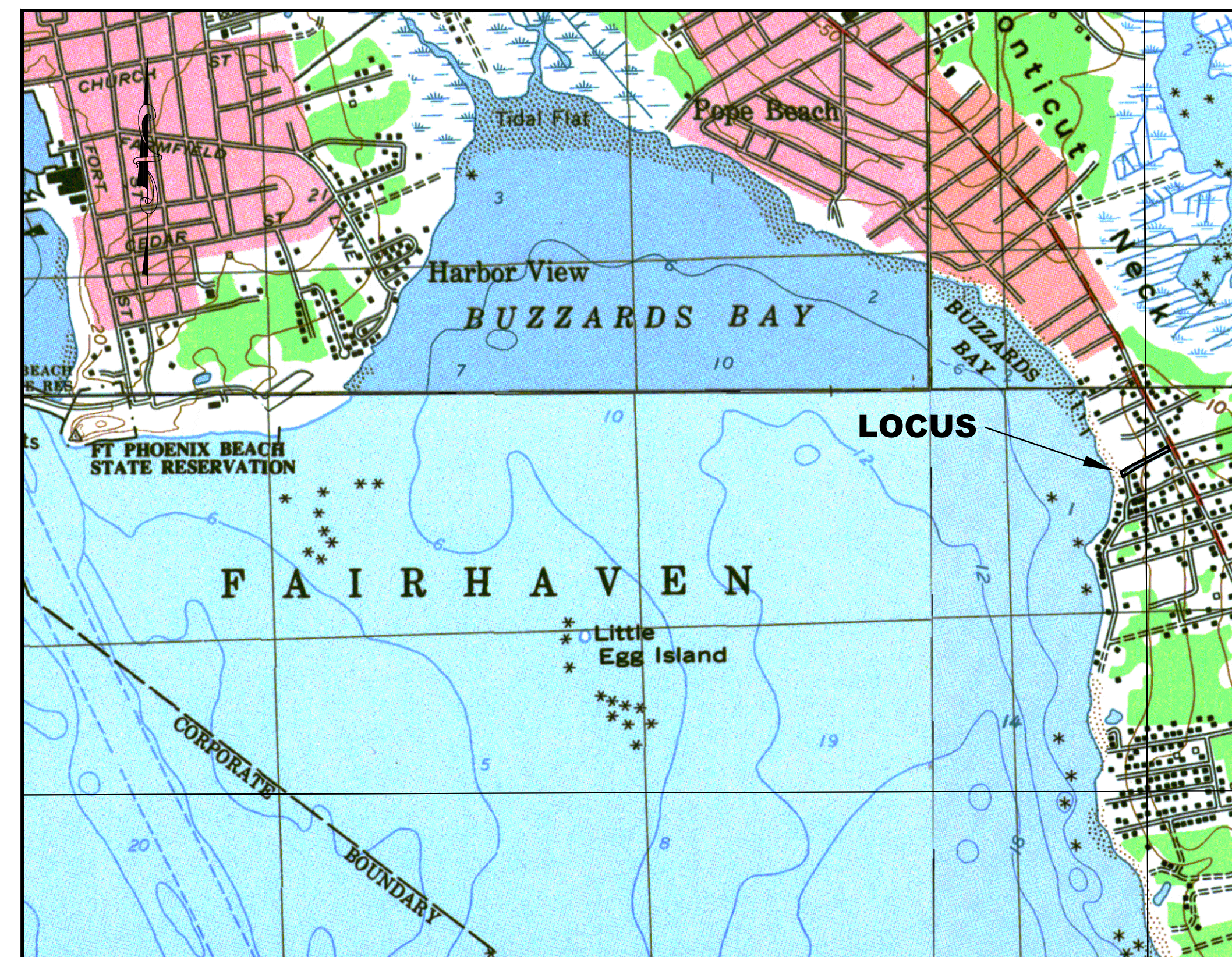
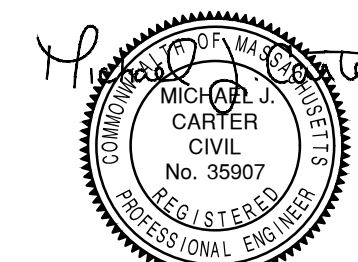


IMAGE OBTAINED FROM: "OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS"

LOCUS PLAN
 SCALE : 1" = 1,000'±



3/17/2020

INDEX TO DRAWINGS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1.	COVER
2.	LEGEND & CONSTRUCTION NOTES
3.	PROPOSED PLAN
4.	DETAILS I
5.	DETAILS II
6.	EROSION CONTROL PLAN

ABBREVIATIONS

ALT	ALTERNATE
BB	BITUMINOUS BERM
BND	BOUND
BLDG	BUILDING
BIT CONC	BITUMINOUS CONCRETE
BM	BENCH MARK
BOL	BOLLARD
BRK	BRICK
CB	CATCH BASIN
CS	COMBINED SEWER
C	CONDUIT
CL	CENTERLINE
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CSMH	COMBINED SEWER MANHOLE
CST	COBBLESTONE
CULV	CULVERT
CO	COUNTY
CONC	CONCRETE
C.L.D.I.	CONC. LINED DUCTILE IRON
CLF	CHAIN LINK FENCE
DI	DUCTILE IRON PIPE
DR	DRIVE
DMH	DRAIN MANHOLE
EMH	ELECTRIC MANHOLE
EX	EXISTING
FAB	FIRE ALARM BOX
EOP	EDGE OF PAVEMENT
GC	GRANITE CURB
GG	GAS GATE
GS	GAS SERVICE
GIP	GALVANIZED IRON PIPE
HW	HEADWALL
HSE	HOUSE
HOR	HORIZONTAL
HYD	HYDRANT
HP	HIGH PRESSURE
LP	LIGHT POLE
MB	MAIL BOX
MH	MANHOLE
MIN	MINIMUM
PE	POLYETHYLENE PIPE
PROP	PROPOSED
R	APPROXIMATE PROPERTY LINE
RCP	REINFORCED CONCRETE PIPE
RET WALL	RETAINING WALL
ROW	APPROXIMATE RIGHT OF WAY
RR	RAILROAD
SB	STONE BOUND
S	SIGN
SMH	SEWER MANHOLE
STA	STATION
S	SEWER
SS	SEWER SERVICE
STL	STEEL
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TMH	TELEPHONE MANHOLE
TR	TREE
TYP	TYPICAL
UP	UTILITY POLE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
W	WATER MAIN
WG	WATER GATE
WD	WOOD
WIP	WROUGHT IRON PIPE
WS	WATER SERVICE
WSO	WATER SERVICE SHUTOFF
WV	WATER VALVE

SYMBOLS

	BENCHMARK
	BOUND
	BUILDING
	CATCH BASIN
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	FLARED END
	GAS GATE
	HAYBALE
	HEADWALL
	HYDRANT
	IRON PIPE
	LIGHTPOLE
	MAILBOX
	MANHOLE
	PERC TEST
	SEWER MANHOLE
	TELEPHONE MANHOLE
	TEST PIT
	TREE
	SIGN
	UTILITY POLE
	WATER GATE

LINWORK

EXISTING	PROPOSED	
		CONTOUR MAJOR
		CONTOUR MINOR
		DRAIN LINE
		ELECTRIC LINE
		ELECTRIC/TELEPHONE/CABLE
		GAS LINE
		PROPERTY LINE
		SETBACK
		SEWER LINE
		TELEPHONE LINE
		TREE LINE
		WATER LINE

GENERAL NOTES

- PLANS AND TOPOGRAPHIC INFORMATION ARE PREPARED FROM A GROUND INSTRUMENT AND AERIAL DRONE SURVEY PERFORMED BY GCG ASSOCIATES, INC DURING FEBRUARY 2020.
- THE LOCATIONS AND ELEVATIONS SHOWN REFER TO MASSACHUSETTS STATE PLANE COORDINATE SYSTEM. (NAD 83 -NAVD 88).
- CONTOUR INTERVAL: 1 FOOT
- PROPERTY LINES AND SIDELINES WERE ESTABLISHED, APPROXIMATELY, FROM MASS GIS DATA LAYERS AND PLANS OBTAINED AT THE SOUTH BRISTOL REGISTRY OF DEEDS.
- THE LOCATIONS OF SUBSURFACE UTILITIES AND STRUCTURES WERE OBTAINED FROM AVAILABLE TOWN AND UTILITY RECORDS. THE SIZE, TYPE AND LOCATION OF UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL PROPERLY LOCATE THE UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN UTILITY INFORMATION BY CONTACTING DIGSAFE (811). THE CONTRACTOR SHALL EXCAVATE TEST PITS TO VERIFY UTILITY LINES.
- SUBSURFACE UTILITY LINES, AS SHOWN HEREON, WERE COMPILED ACCORDING TO AVAILABLE RECORD INFORMATION FROM THE REFERENCED UTILITY COMPANIES AND THE TOWN OF FAIRHAVEN. THE LOCATIONS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. GCG ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.

GENERALLY THE LINES IN THE PUBLIC AND PRIVATE WAYS ARE SHOWN AND THE LATERAL CONNECTIONS SERVICING INDIVIDUAL USERS ARE NOT SHOWN. BEFORE DESIGNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITIES MUST BE CONSULTED.

BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE MUST BE NOTIFIED (SEE MASSACHUSETTS GENERAL LAWS, CHAPTER 82 SECTION 40.) CALL "DIG SAFE" (811) HTTP://WWW.DIGSAFE.COM

- WATER MAINS ARE ASSUMED TO BE 5 FEET BELOW THE EXISTING GROUND SURFACE. GAS LINES ARE ASSUMED TO BE 3 FEET BELOW THE EXISTING GROUND SURFACE. TELEPHONE AND ELECTRIC CONDUIT ARE ASSUMED TO BE 2 FEET BELOW THE EXISTING GROUND SURFACE.
- LOCATION OF PROPOSED DRAINAGE SYSTEM MAY BE ALTERED IN THE FIELD BY THE ENGINEER TO SUIT FIELD CONDITIONS.
- THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A CONSTRUCTION SCHEDULE DELINEATING THE SEQUENCE OF WORK, TRAFFIC MANAGEMENT PLAN AND ESTIMATED TIME OF COMPLETION OF EACH SEGMENT OF WORK, PRIOR TO THE COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL MAINTAIN CONTINUOUS TRAFFIC FLOW DURING CONSTRUCTION SATISFACTORY TO THE ENGINEER AND THE TOWN OF FAIRHAVEN. NO EQUIPMENT SHALL BE ALLOWED TO BE PARKED ON THE ROAD WHEN NOT IN USE. MATERIALS SHALL NOT BE STOCKPILED ON THE ROAD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE RESTORATION AND CLEAN UP UPON COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES AND PROCEDURES, AND FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH ALL WORK INCLUDED UNDER THIS CONTRACT. THE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL SAFETY BARRIERS, WARNING FLASHERS AND THE LIKE, AS REQUIRED BY THE CONDUCT OF THE WORK FOR THE PROTECTION OF WORKERS AND NON-WORKERS ALIKE. THE CONTRACTORS ATTENTION IS DIRECTED TO OSHA REQUIREMENTS.
- ALL CONSTRUCTION SIGNING SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

DBILLY'S WAY FULL DEPTH EXCAVATION NOTES

- ALL TRENCHES WILL BE COMPACTED TO ALLOW PROPER SETTLEMENT. ALL TRENCHES WILL BE COMPACTED TO 95% COMPACTION.
- AFTER THE COMPACTION PROCESS IS COMPLETED, THE CONTRACTOR SHALL MAINTAIN TRENCH GRAVEL FLUSH TO EXISTING GRADE UNTIL BILLY'S WAY IS RECONSTRUCTED.
- THE CONTRACTOR WILL ALLOW THE TRENCHES TO SETTLE THE REQUIRED PERIOD (30 DAY MIN) PRIOR TO EXCAVATING THE ENTIRE WIDTH OF ROADWAY.
- THE CONTRACTOR SHALL EXCAVATE ENTIRE PROPOSED ROAD WIDTH TO A MINIMUM DEPTH OF 16" BELOW THE PROPOSED FINISH GRADE AND REMOVE THE MATERIAL FROM THE SITE.
- DUE TO THE 16" EXCAVATION DEPTH AND MINIMAL COVER REMAINING OVER EXISTING UTILITIES - EXCAVATION SHALL NOT BE ALLOWED WITH HEAVY EQUIPMENT WHICH REQUIRES TRAVEL ON THE EXCAVATED AREA. ALL EXCAVATION OF THE ROADWAY, PLACING AND LOADING OF TRUCKS SHALL BE PERFORMED ON THE EXISTING PAVEMENT GRADE. CONSTRUCTION EQUIPMENT OR TRUCKS SHALL NOT BE ALLOWED TO DRIVE ON THE EXCAVATED ROADWAY UNTIL THE ROADWAY IS BACKFILLED TO THE PROPOSED GRADE.
- THE CONTRACTOR SHALL CAREFULLY EXCAVATE TO THE ROADWAY EXCAVATION LIMITS AND SHALL NOT DAMAGE THE EXISTING UTILITIES. EXISTING UTILITIES DAMAGED DURING THE EXCAVATION OF THE ROADWAY SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BACKFILL AND COMPACT THE ROAD TO THE PROPOSED ROAD GRADE AND CROSS SECTION AS DEFINED IN THE GRAVEL BORROW WHICH SHALL BE BE M1.003.0 TYPE "B" GRAVEL OR EQUAL AS SPECIFIED BY THE LATEST MASSDOT SPECIFICATIONS.
- THE CONTRACTOR SHALL LOWER AND PLATE UTILITY CASTINGS, UTILITY VALVE BOXES, FRAMES AND COVERS WITHIN THE ROAD AND LATER RESTORE ALL UTILITY CASTINGS, UTILITY VALVE BOXES, FRAMES AND COVERS TO THE TOP OF FINISHED GRADE UNLESS APPROVED OTHERWISE.
- THE CONTRACTOR SHALL GRADE THE GRAVEL BASE COURSE MATERIAL TO MATCH THE PROPOSED CENTERLINE GRADE AS SHOWN ON THE PROPOSED PROFILE AND TO MEET THE PAVEMENT REQUIREMENTS SHOWN ON THE TYPICAL ROADWAY CROSS SECTION PLAN TO ALLOW THE PLACEMENT OF A 2-1/2" BASE COURSE (BINDER COURSE PAVEMENT - M3.11.03 - TABLE "A" AND 1-1/2" WEARING COURSE (TOP COURSE PAVEMENT - M3.11.03 - TABLE "A")
- THE CONTRACTOR SHALL FINE GRADE THE GRAVEL BASE COURSE MATERIAL NO MORE THAN 24 HOURS PRIOR TO THE PLACEMENT OF THE 2-1/2" BASE COURSE PAVEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTION TESTING. TESTING SHALL BE PERFORMED AT INTERVALS OF 200 FEET ALONG THE ROADWAY.
- IN AREAS WHERE A PARKING OR PAVEMENT EXPANSION IS PROPOSED, THE EXISTING SOILS SHALL BE EXCAVATED TO THE REQUIRED SUBGRADE DEPTH THEN BACKFILLED AND COMPACTED WITH A SUITABLE 12" THICK SUBBASE LAYER.
- PRIOR TO COMPLETING FINAL GRADING OF THE SUBBASE COURSE, THE ENGINEER SHALL REVIEW GRADES TO DETERMINE THAT SUFFICIENT PROPOSED CROSS SLOPES AND POSITIVE DRAINAGE FLOWS HAVE BEEN MAINTAINED. IF GRADES NEED TO BE ADJUSTED, THE CONTRACTOR SHALL RE-GRADE AS DIRECTED.
- CONTRACTOR SHALL CONTROL DUST DURING CONSTRUCTION USING CALCIUM CHLORIDE AS NECESSARY.
- SHOULDERS, DRIVEWAY AND PARKING AREAS SHALL BE GRADED FOR A SMOOTH TRANSITION FROM THE PROPOSED EDGE OF PAVEMENT/CURB TO THE EXISTING GRADE.

CURB NOTES

- ALL GRANITE CURB SHALL BE OF TYPE VA-4 AS SPECIFIED BY MASSDOT AND SHALL INCLUDE ALL LENGTHS - STRAIGHT, RADIUS, AND TRANSITION.
- ALL PRECAST CONCRETE CURB SHALL BE AS MANUFACTURED BY PRECAST CONCRETE SPECIALTIES AND SHALL INCLUDE ALL LENGTHS - STRAIGHT, RADIUS, AND TRANSITION.

CONSTRUCTION SEQUENCE

- SPRING/SUMMER 2020 - BEGIN CONSTRUCTION, DRAINAGE WORK, EXCAVATE/BACKFILL ROADWAY, GRADE AND INSTALL 2-1/2" BINDER COURSE PAVING, GRANITE CURB, LOAM AND SEED.
- FALL 2021 - INSTALL 1-1/2" TOP COURSE WITH MONOLITHIC CAPE COD BERM.

TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

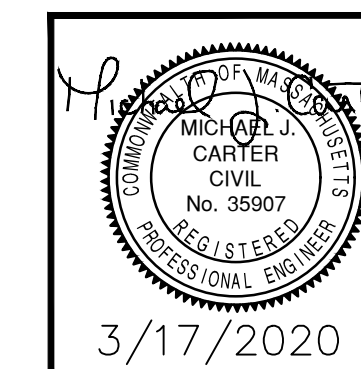
LEGEND AND NOTES
BILLY'S WAY

GCG ASSOCIATES, INC.

WILMINGTON MASSACHUSETTS

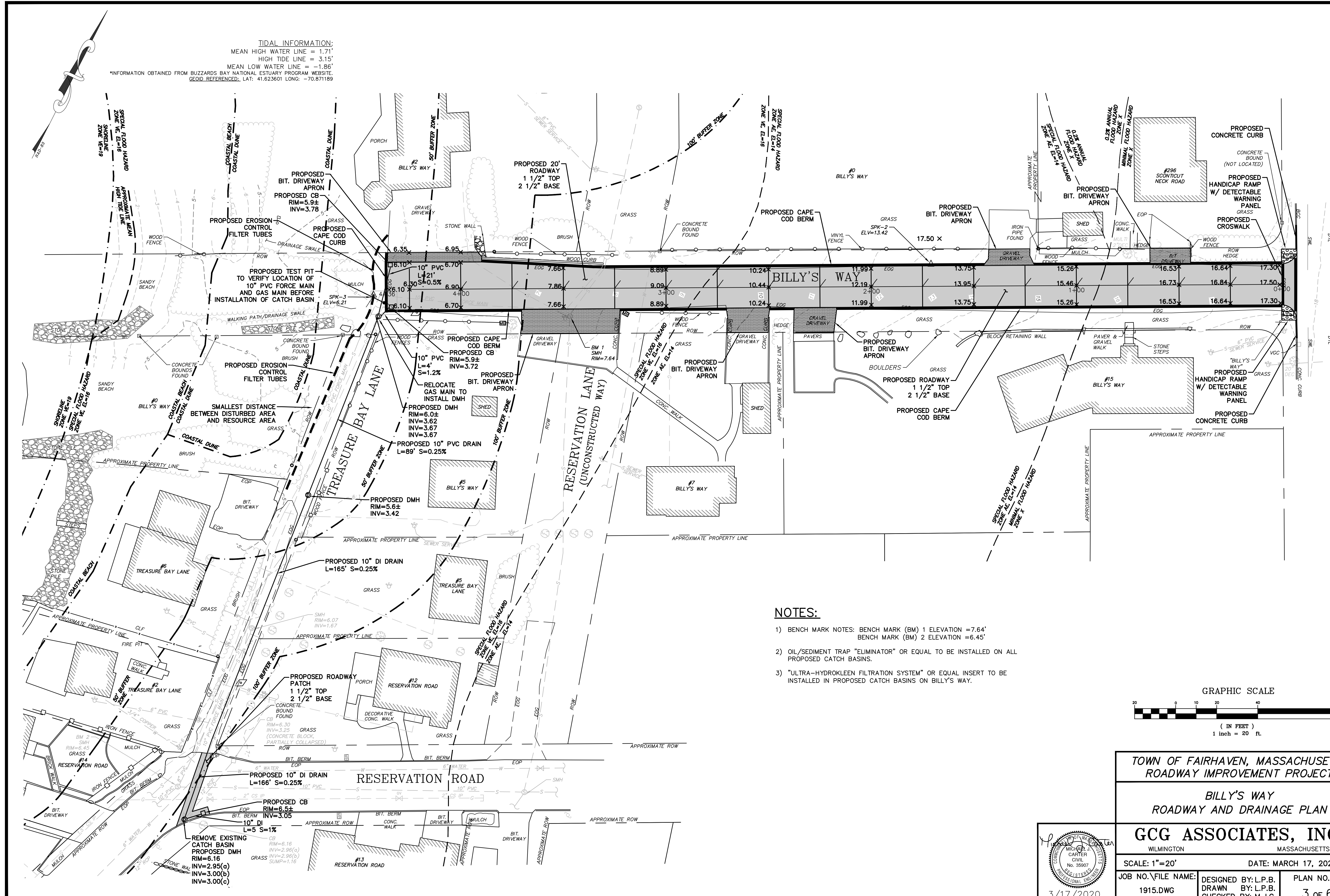
SCALE: AS NOTED DATE: MARCH 17, 2020

JOB NO. 1915-WORKING	FILE NAME: 3/17/2020	DESIGNED BY: JTC	DRAWN BY: JTC	CHECKED BY: M.J.C.	PLAN NO. 2 OF 6
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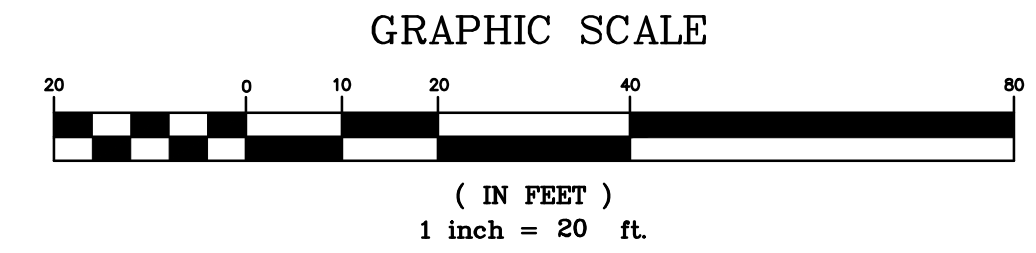
TIDAL INFORMATION:
 MEAN HIGH WATER LINE = 1.71'
 HIGH TIDE LINE = 3.15'
 MEAN LOW WATER LINE = -1.86'

*INFORMATION OBTAINED FROM BUZZARDS BAY NATIONAL ESTUARY PROGRAM WEBSITE.
 GEOID REFERENCED. LAT: 41.623601 LONG: -70.871189



NOTES:

- 1) BENCH MARK NOTES: BENCH MARK (BM) 1 ELEVATION = 7.64'
BENCH MARK (BM) 2 ELEVATION = 6.45'
- 2) OIL/SEDIMENT TRAP "ELIMINATOR" OR EQUAL TO BE INSTALLED ON ALL PROPOSED CATCH BASINS.
- 3) "ULTRA-HYDROKLEEN FILTRATION SYSTEM" OR EQUAL INSERT TO BE INSTALLED IN PROPOSED CATCH BASINS ON BILLY'S WAY.



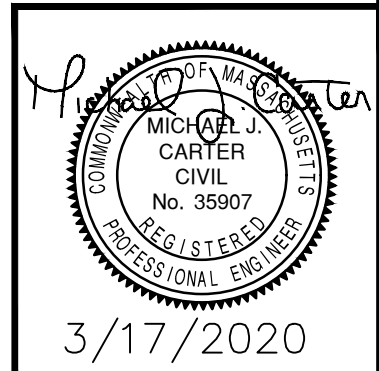
TOWN OF FAIRHAVEN, MASSACHUSETTS
 ROADWAY IMPROVEMENT PROJECT

BILLY'S WAY
 ROADWAY AND DRAINAGE PLAN

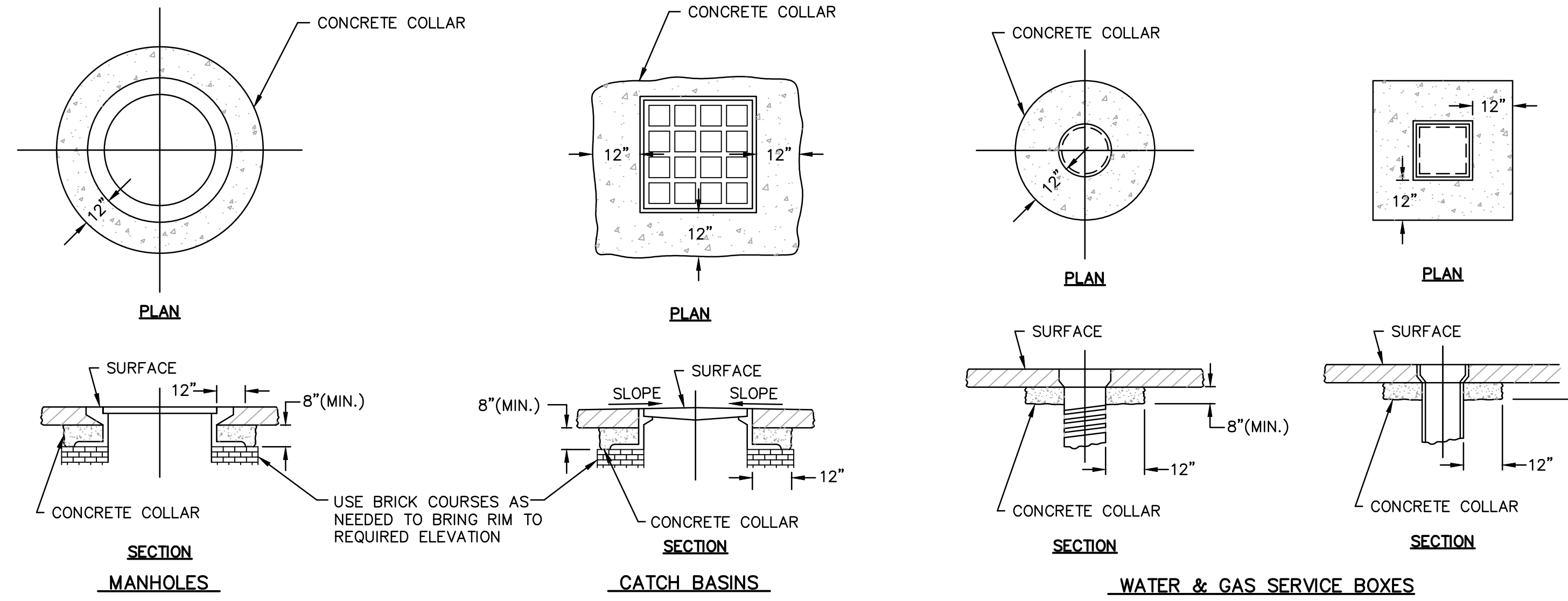
GCG ASSOCIATES, INC.
 WILMINGTON MASSACHUSETTS

SCALE: 1"=20' DATE: MARCH 17, 2020

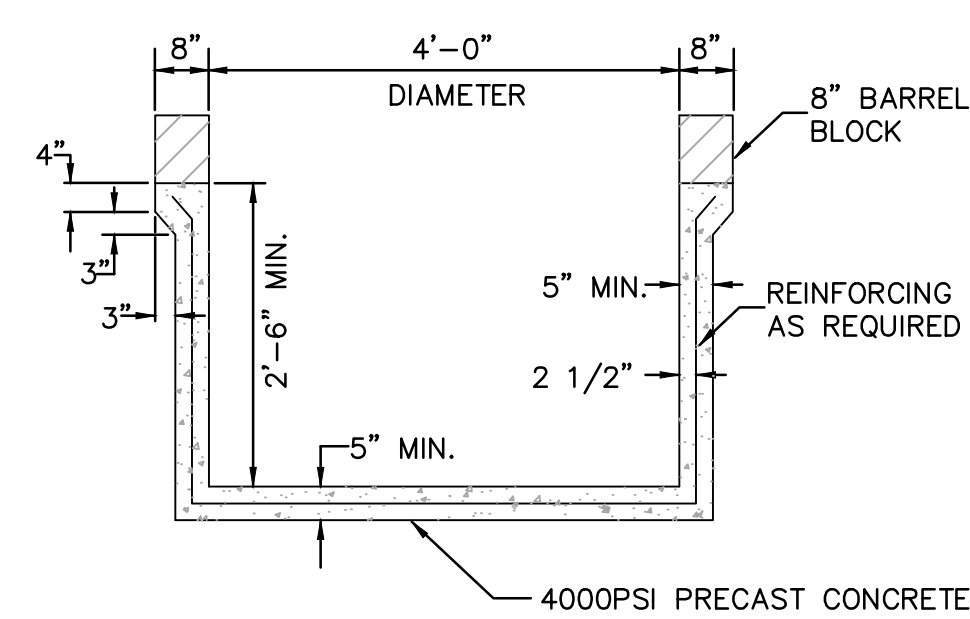
JOB NO./FILE NAME: 1915.DWG DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C. PLAN NO. 3 OF 6



3/17/2020

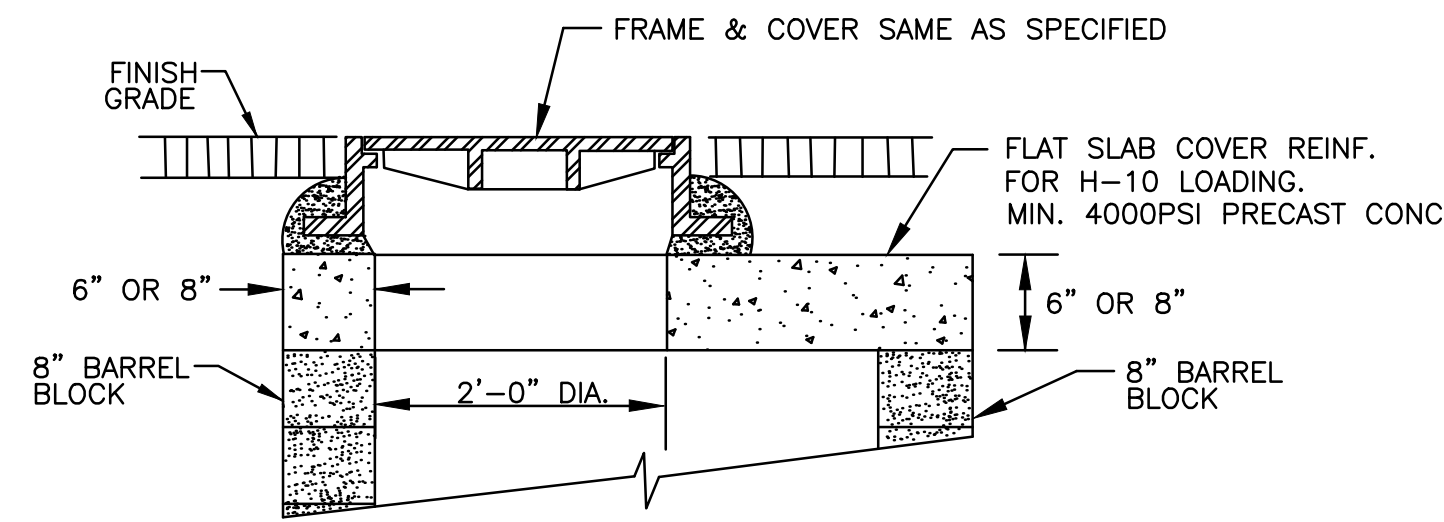


DETAILS FOR ADJUSTING CASTINGS
N.T.S.

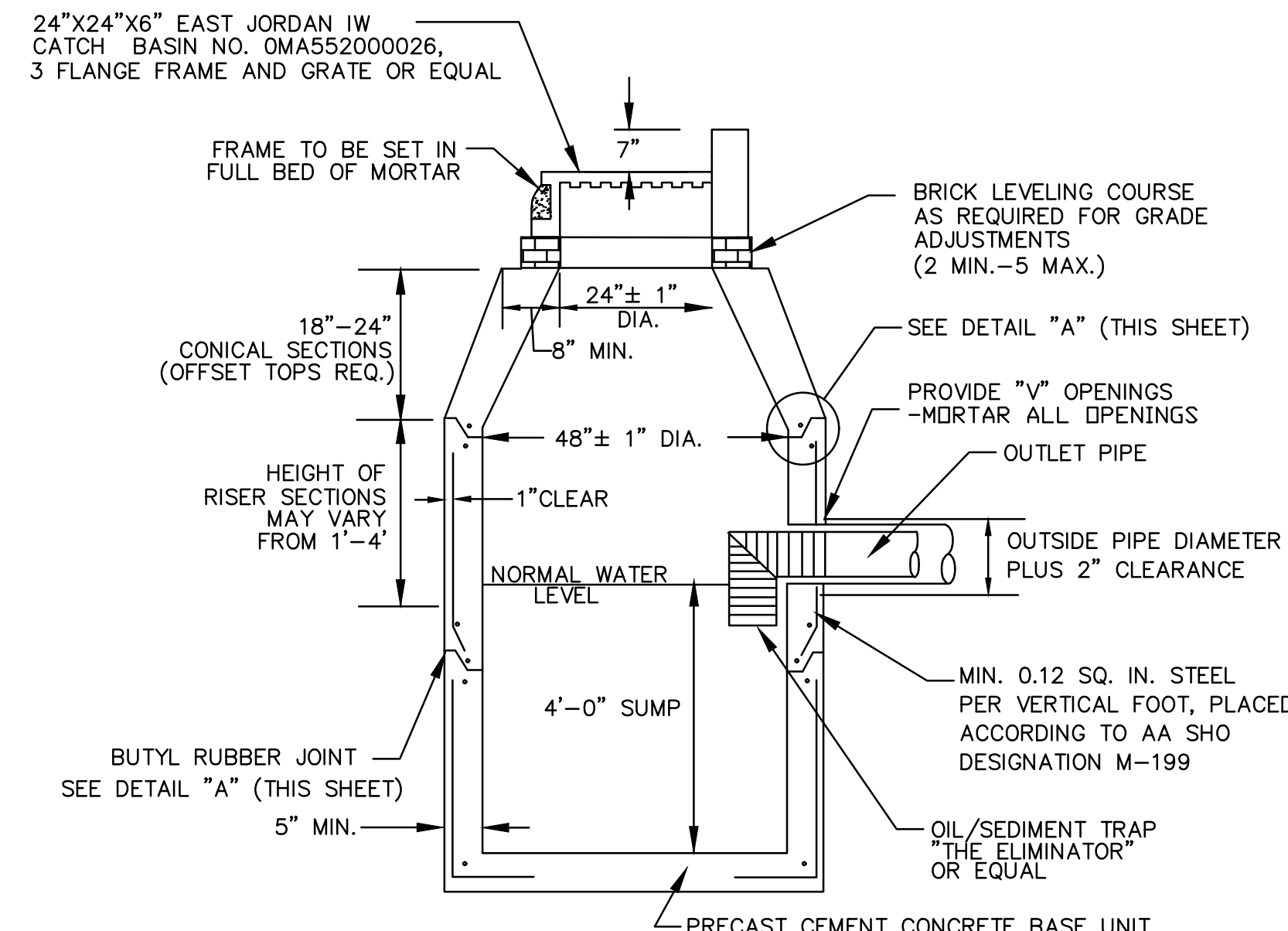


- NOTE:
1. PRECAST CONCRETE SUMP TO CONFORM TO ASTM C478.
 2. CONCRETE SHALL BE 4000 PSI MINIMUM.
 3. STEEL REINFORCEMENT TO MEET OR EXCEED H-20 LOADING.
 4. REINFORCING STEEL 0.12 SQ. IN./LF & 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.

PRECAST CONCRETE CATCH BASIN SUMP
NOT TO SCALE



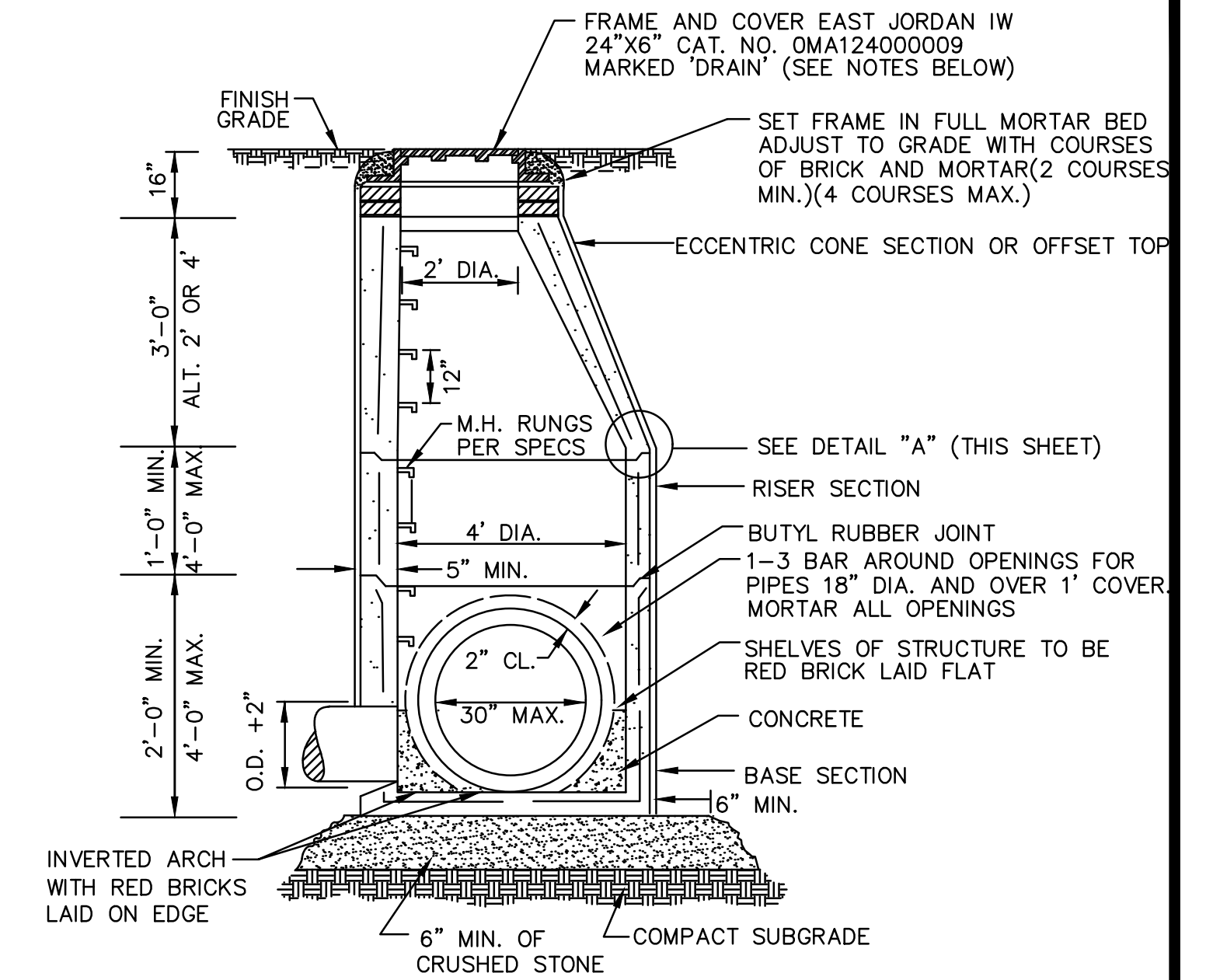
OFFSET TOP FOR ALL MANHOLES & CATCH BASINS
NOT TO SCALE



- NOTES:
1. PRECAST REINFORCED CONCRETE CB BASE, CONE AND RISER SECTIONS PER A.S.T.M. C-478. MINIMUM 4000 PSI CONCRETE.
 2. PRECAST CONCRETE STRUCTURE SHALL BE RATED FOR AASHTO HS-20 LOADING.
 3. DOUBLE GRATED CATCH BASINS SHALL BE 5' IN DIAMETER, HAVE 6" WALLS AND PROVIDE A MIN. OPENING OF 24"x36".

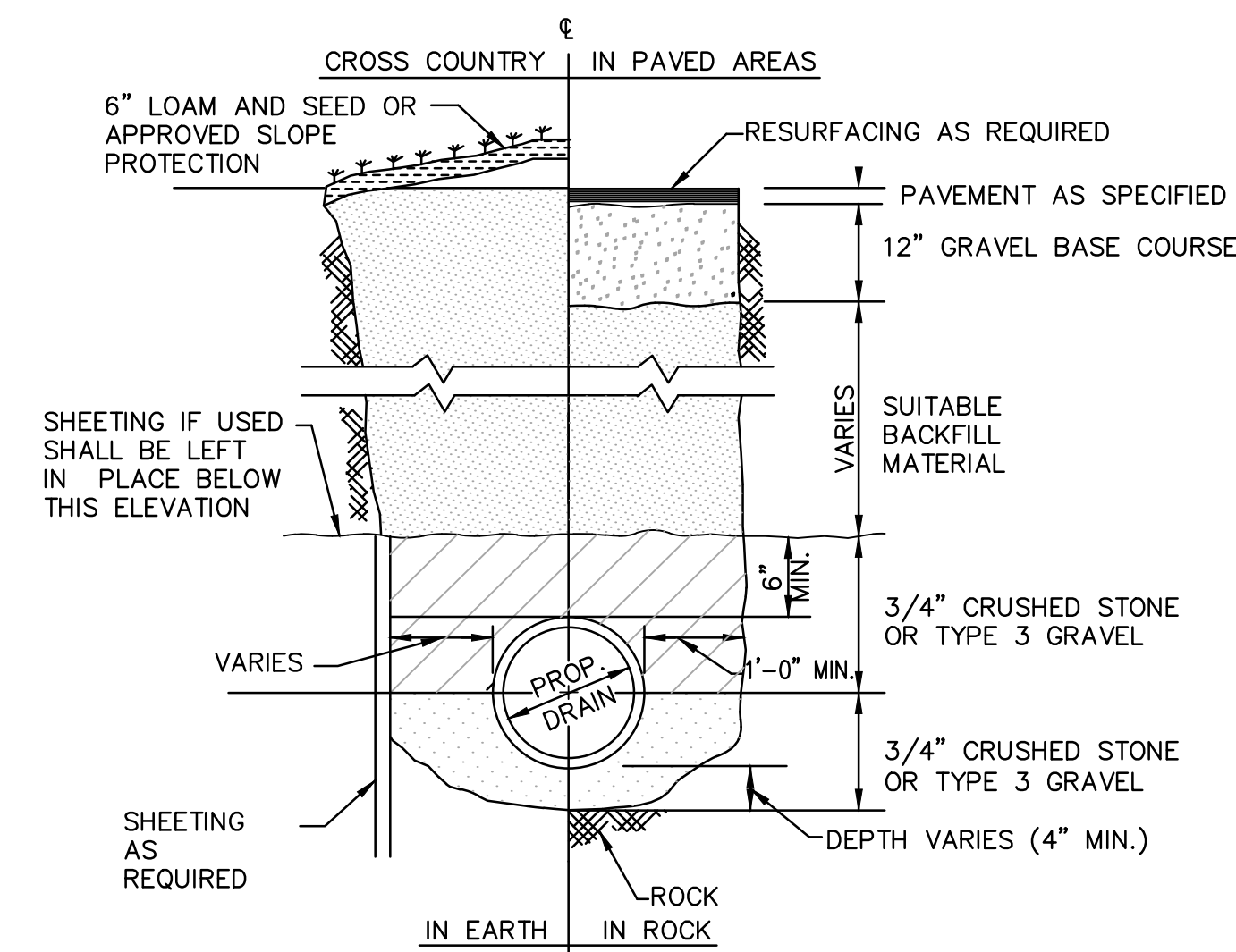
PRECAST CONCRETE CATCH BASIN
WITH GRANITE CURB INLET
NOT TO SCALE

DETAIL "A"
NOT TO SCALE

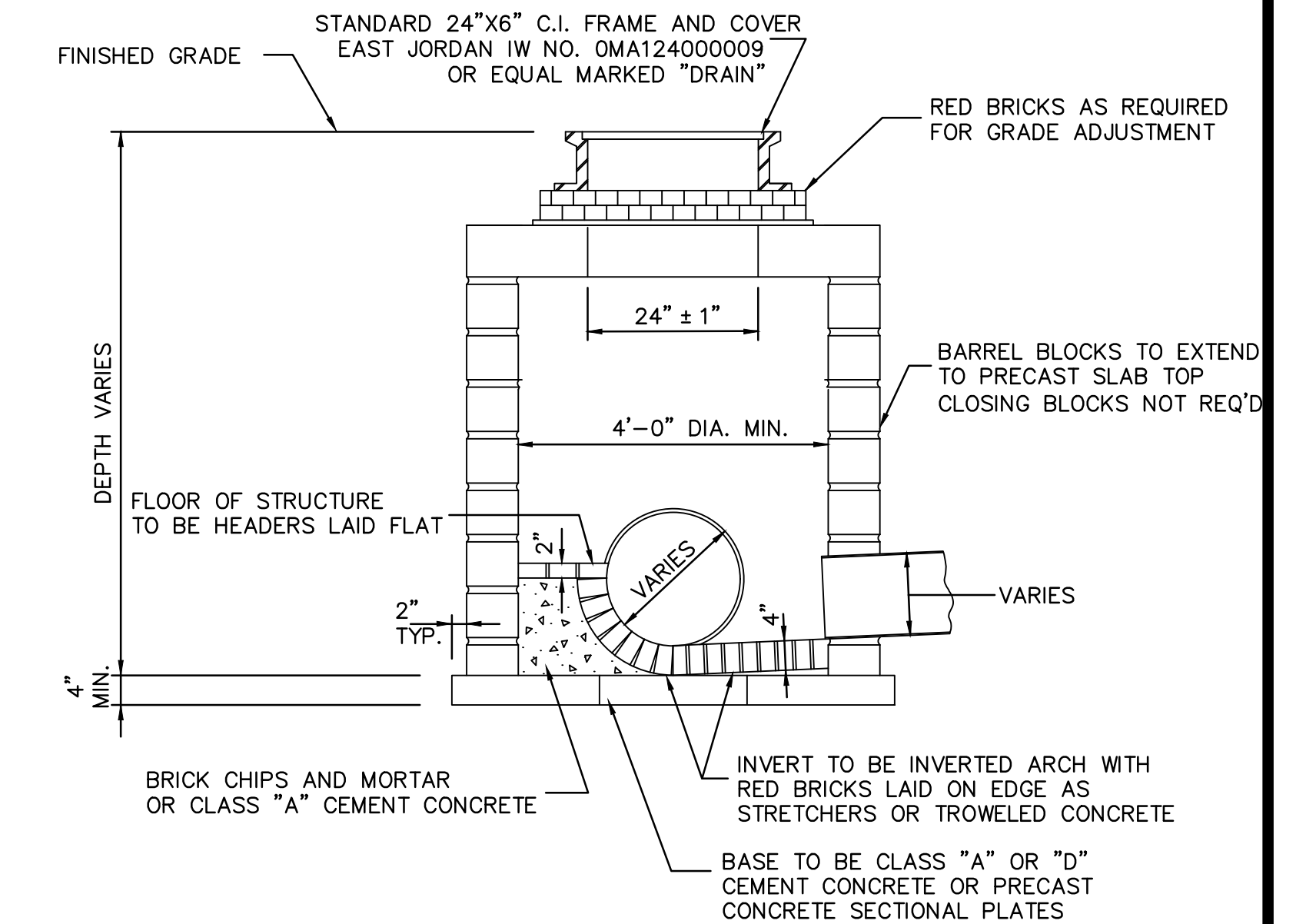


- NOTE:
1. PRECAST REINFORCED CONCRETE MANHOLE BASE, CONE AND RISER SECTIONS PER A.S.T.M. C-478 PIPE OPENINGS TO BE PRECAST IN BASE SECTION
 2. MINIMUM 4000 PSI PRECAST CONCRETE

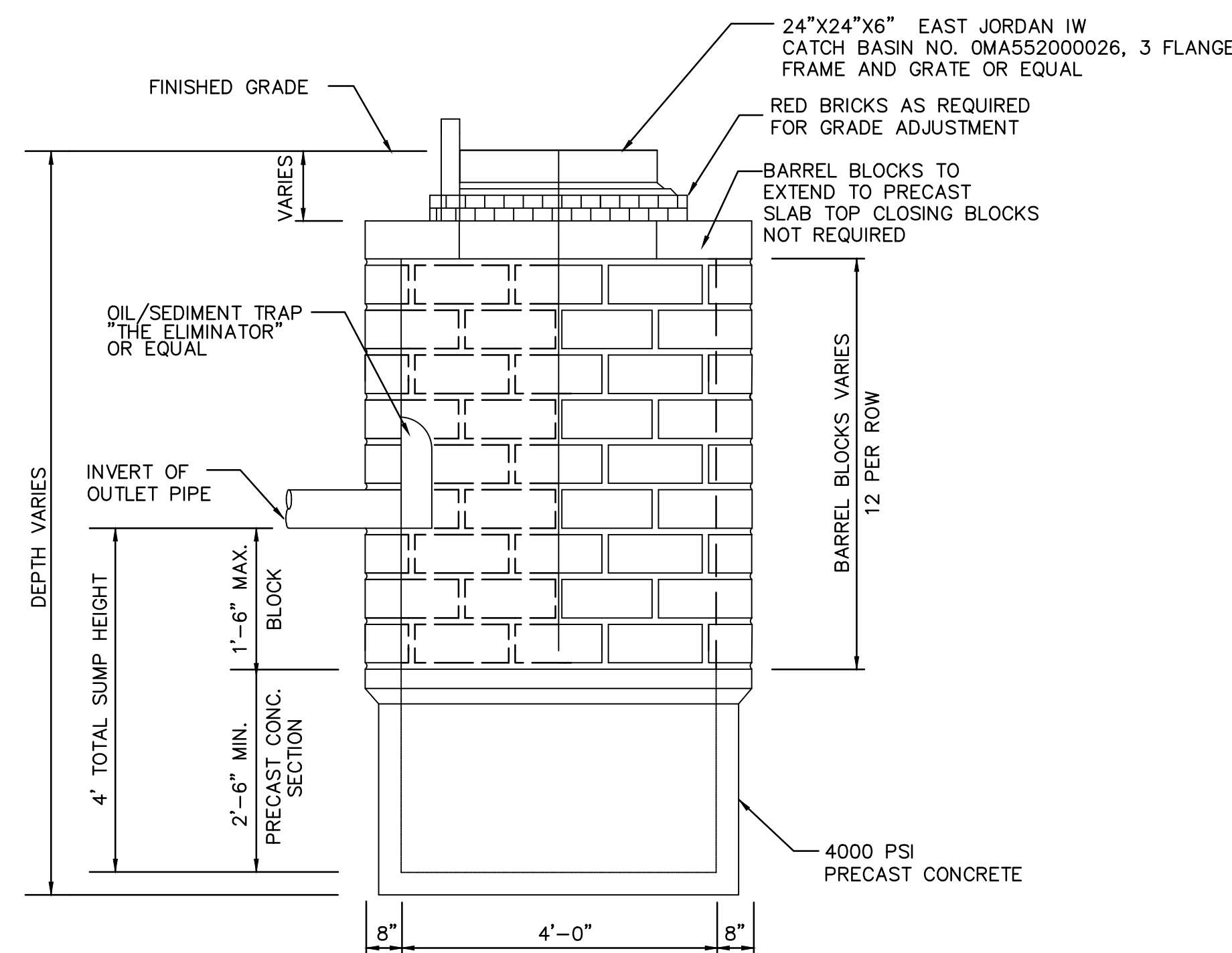
TYPICAL PRECAST DRAIN MANHOLE
NOT TO SCALE



TYPICAL DRAIN/SEWER TRENCH DETAIL
NOT TO SCALE



TYPICAL CONCRETE BLOCK DRAIN MANHOLE
NOT TO SCALE



TYPICAL CONCRETE BLOCK CATCH BASIN
NOT TO SCALE

TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

BILLY'S WAY
DETAILS I

GCG ASSOCIATES, INC.

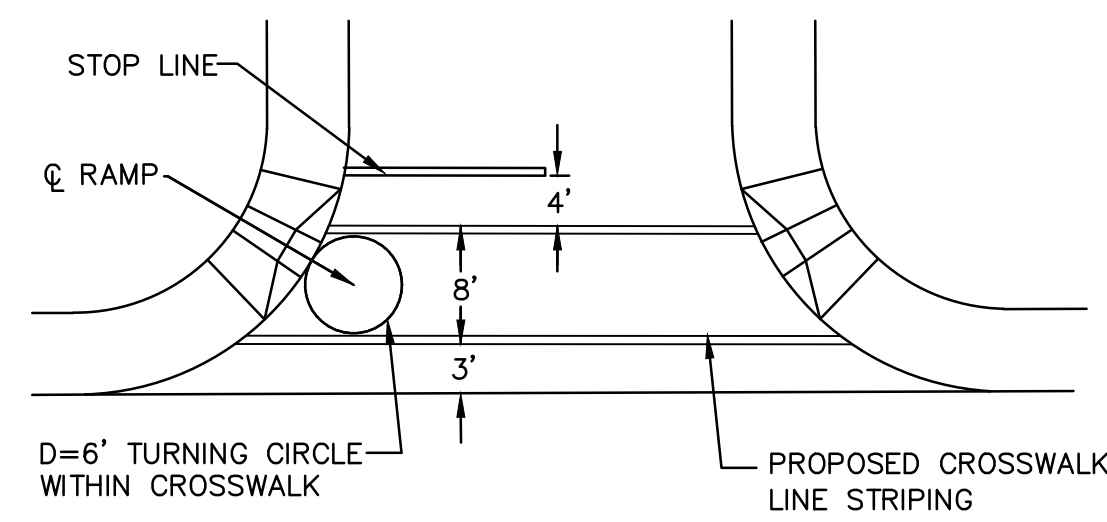
WILMINGTON MASSACHUSETTS

SCALE: AS NOTED DATE: MARCH 17, 2020

JOB NO. \FILE NAME: 1915-WORKING DESIGNED BY: JTC DRAWN BY: JTC CHECKED BY: M.J.C. PLAN NO. 4 OF 6

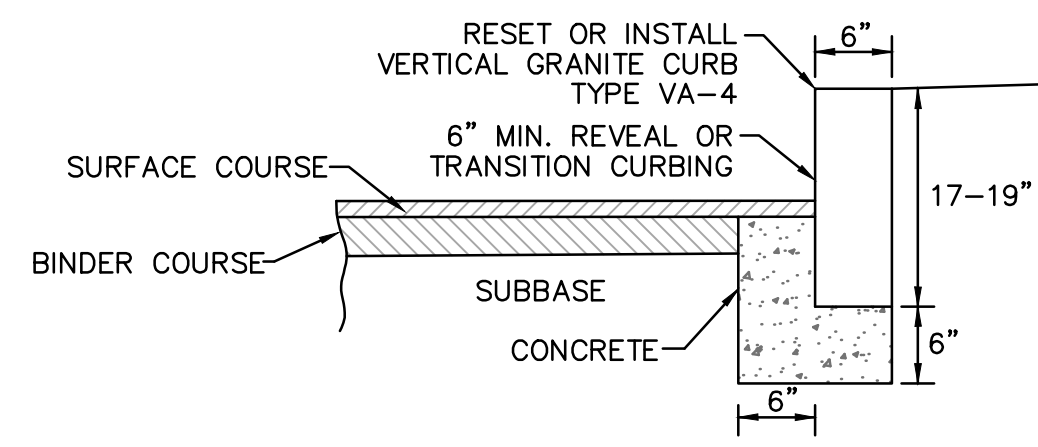


3/17/2020

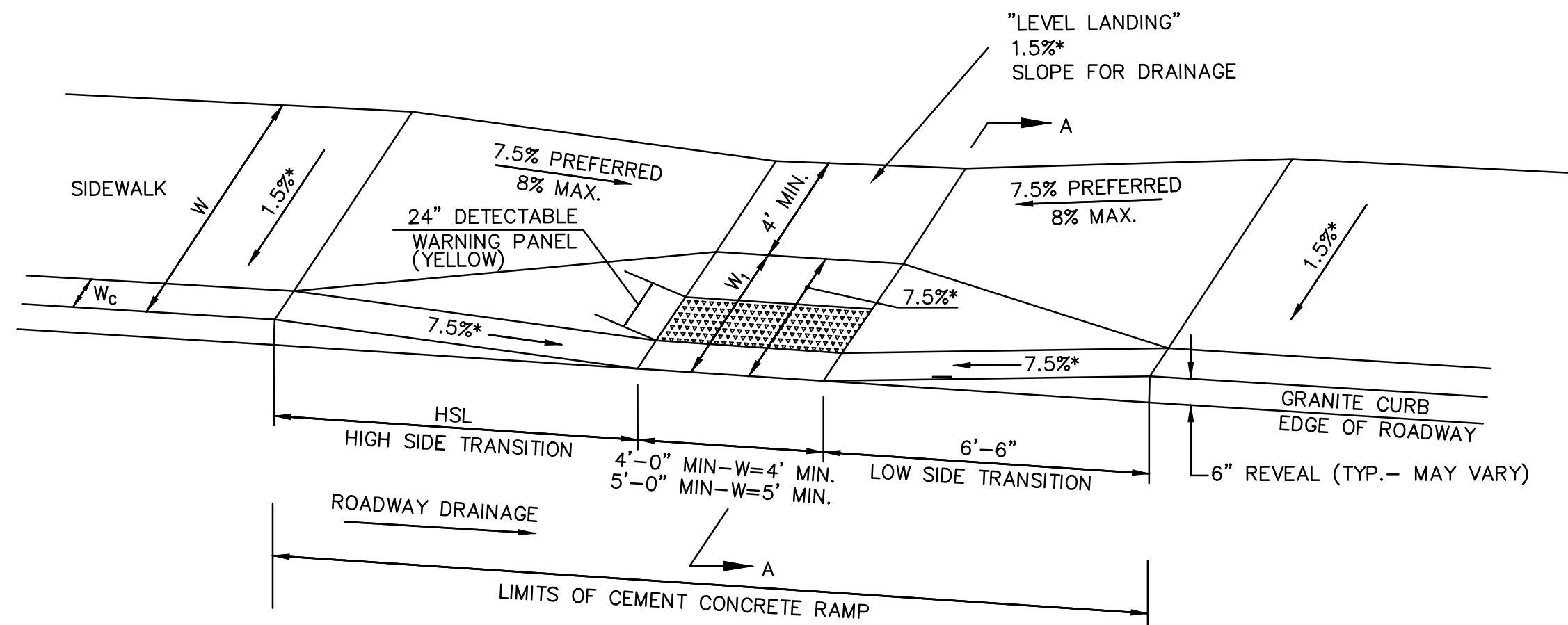


- NOTES:
- CROSSWALKS SHALL BE PAINTED AT ALL PAIRED WHEELCHAIR RAMP LOCATIONS WITHIN THE LIMITS OF WORK.
 - THE CROSSWALKS AND STOP LINES SHALL BE PAINTED WITH 12" WIDE, WHITE REFLECTORIZED, EPOXY PAINT IN THE PATTERN SHOWN.

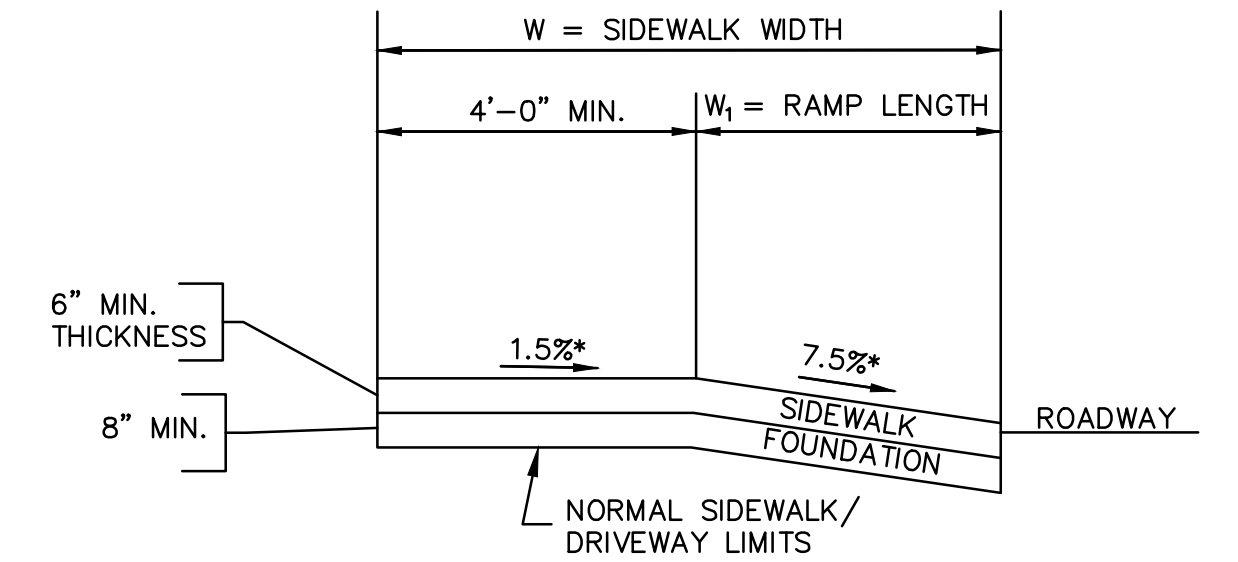
PAIRED WHEELCHAIR RAMP & CROSSWALK DETAIL
N.T.S.



VERTICAL GRANITE CURB
N.T.S.



PLAN



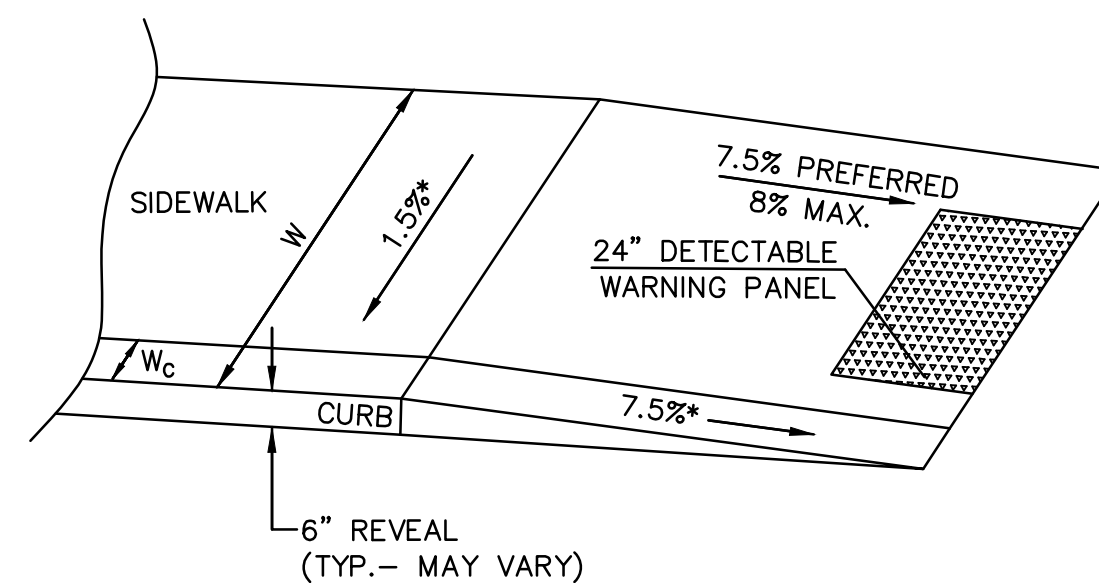
- * = TOLERANCE FOR CONSTRUCTION ±0.5%
USEABLE SIDEWALK WIDTH PER ABB = W - Wc
RAMP LENGTH, W1 = W - (4'-0") MIN.

SECTION A-A

NOTES:

- THE DIMENSIONS SHOWN AT ROADWAY EDGE ARE FIXED DISTANCES.
 - RAMP CROSS SECTION TO BE SAME AS ADJACENT SIDEWALK; e.g. DEPTH OF SURFACES.
 - PORTLAND CEMENT CONCRETE RAMPS ARE TO BE TEXTURED BY BROOMING IN A DIRECTION PARALLEL TO THE LENGTH OF THE RAMP.
 - IN NO CASE ARE THE RAMPS TO BE PLACED BEHIND THE STOP LINE.
 - SIDEWALKS THAT CROSS DRIVEWAYS SHALL BE RAMPED TO MEET THE GRADE OF THE DRIVEWAY.
- * THESE DIMENSIONS ARE SUBJECT TO CHANGE IN THE FIELD IF EXISTING APPURTENANCES OR CONDITIONS WILL MAKE THE RAMP LOCATIONS IMPRACTICAL OR UNSAFE.

TYPICAL WHEELCHAIR RAMP CONDITION
N.T.S.



TYPICAL WHEELCHAIR RAMP
N.T.S.

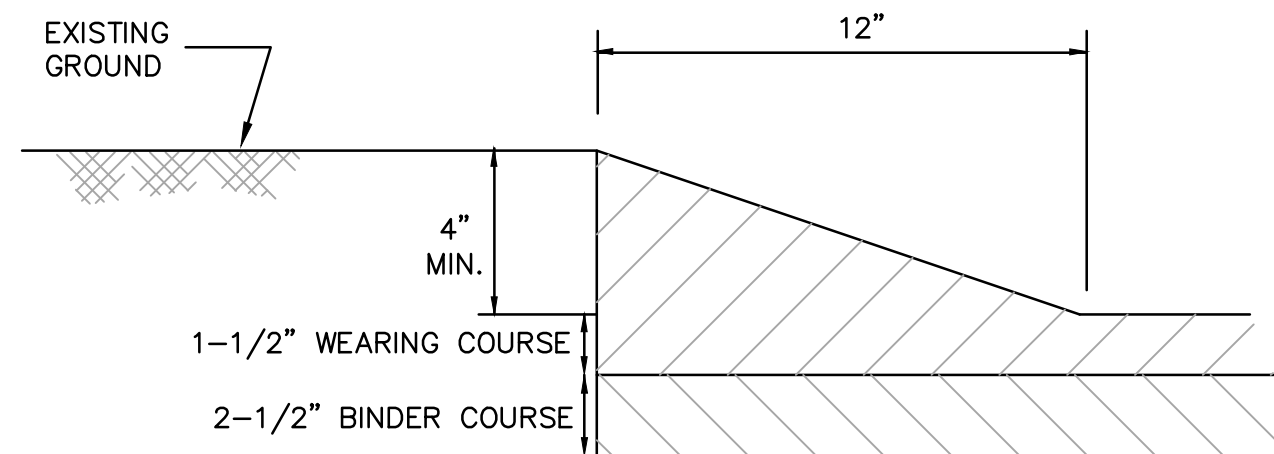
ROADWAY PROFILE GRADE %	*HIGH SIDE TRANSITION LENGTH
0	6'-6"
> 0 - 1	7'-8"
> 1 - 2	9'-0"
> 2 - 3	11'-0"
> 3 - 4	14'-0"
> 4	15'-0" MAX.

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

CURB TRANSITION LENGTH FOR WHEELCHAIR RAMPS
N.T.S.

WHEELCHAIR RAMP NOTES

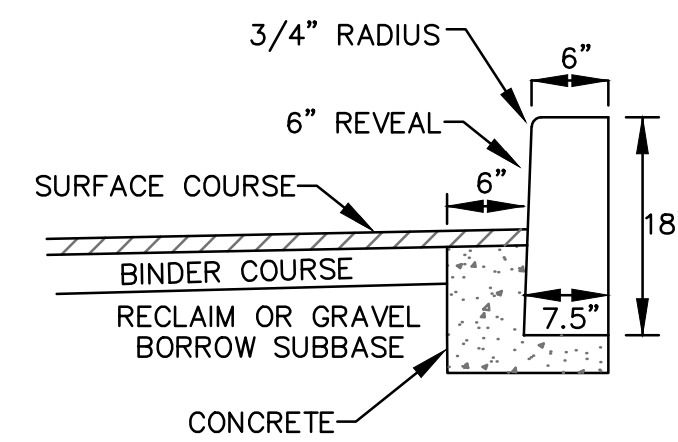
- ROADWAY SIDEWALK CROSS SLOPES, FOR BRICK, CEMENT CONCRETE, AND BITUMINOUS CONCRETE, AS INDICATED IN THE STANDARD SPECIFICATIONS, WILL BE 1.5%. A CONSTRUCTION TOLERANCE OF ±0.5% IS ACCEPTABLE ON ROADWAY SIDEWALKS. SIDEWALKS ON BRIDGES WILL BE CONSTRUCTED TO A CROSS SLOPE OF 1.0% IN ACCORD WITH BRIDGE POLICY. (REFER TO STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, SECTION 700.) IN ACCORDANCE WITH 521 CMR THE RULES AND REGULATIONS OF THE ARCHITECTURAL ACCESS BOARD (AAB), THE SIDEWALK CROSS SLOPE CANNOT EXCEED 2.0%.
- AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, SIGNS, SIGNAL FOUNDATIONS AND MASTS, MAILBOXES, ALONG DRIVE OPENINGS, ETC.).
- THE WHEELCHAIR RAMP SLOPES AND SIDE SLOPES (TRANSITIONS) WILL BE 7.5% WITH A CONSTRUCTION TOLERANCE OF ±0.5%. HOWEVER, THESE SLOPES MAY BE FLATTER WHEN WARRANTED BY SURROUNDING CONDITIONS.
- WHERE THE ROAD PROFILE EXCEEDS 4%, THE HIGH SIDE TRANSITION LENGTH UNDER ANY CONDITIONS NEED NOT EXCEED 4.57m (15').
- IN NO CASE WHERE A STOP LINE IS WARRANTED, SHALL A RAMP BE PLACED ON THE TRAFFIC APPROACH SIDE OF THAT STOP LINE.
- FIXED OBJECTS (I.E. UTILITY POLES, HYDRANTS, SIGNS, SIGNAL FOUNDATIONS, ETC.) MUST NOT ENCRUSH ON ANY PART OF THE WHEELCHAIR RAMP INCLUDING TRANSITION SLOPES.
- AT NO TIME IS ANY PART OF THE WHEELCHAIR RAMP, EXCLUDING CURB TRANSITIONS, TO BE LOCATED OUTSIDE THE CROSSWALK. THE WHEELCHAIR RAMP ENTRANCE IS TO BE CENTERED IN THE CROSSWALK WHENEVER POSSIBLE.
- CATCH BASINS WHICH ARE IN THE VICINITY OF A WHEELCHAIR RAMP SHALL BE LOCATED UPGRADGE OF THE RAMP ENTRANCE.
- THE ENTRANCE OF A WHEELCHAIR RAMP SHALL BE FLUSH WITH THE ROADWAY.
- TESTING SURFACE: WHEN TESTING WITH A STRAIGHTEDGE PLACED PARALLEL TO THE LINE OF THE SLOPE THERE SHALL BE NO DEVIATION FROM A TRUE SURFACE IN EXCESS OF 1/4" (6 mm).
- SIDEWALK CONSTRUCTION SHALL BE IN CONFORMANCE WITH MASS HIGHWAY CONSTRUCTION STANDARD FOR WHEELCHAIR RAMPS.
- EACH WHEELCHAIR RAMP SHALL HAVE A POURED INPLACE, ADS DETECTABLE WARNING PANEL. PANELS SHALL BE ALIGNED TO THE BACK OF THE PROPOSED CURB RADIUS AS REQUIRED.



NOTES:

- INCLUDE PAYMENT FOR BERM UNDER ITEM 1 1/2" WEARING COURSE PAVEMENT ITEM.
- COMPACT BERM WITH 75 LB. STEEL HAND ROLLER.
- INSTALL MONOLITHIC BERM ON BOTH SIDES OF ROAD.

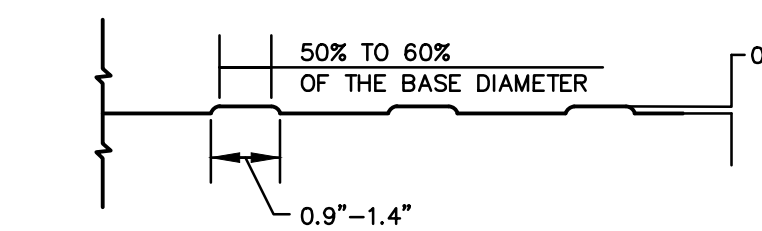
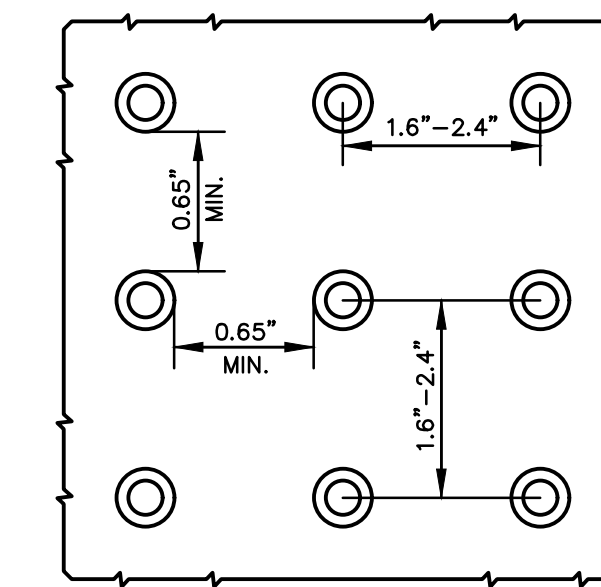
MONOLITHIC BERM DETAIL
NOT TO SCALE



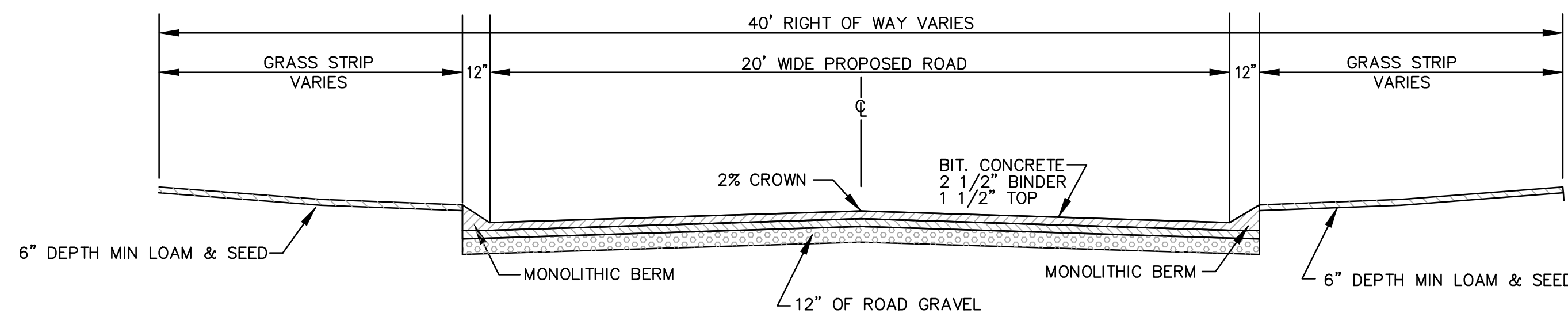
VERTICAL CONCRETE CURB
N.T.S.

NOTE:

- VERTICAL PRECAST CONCRETE CURB TO BE AS MANUFACTURED BY PRECAST SPECIALTIES CORP, ABINGTON, MA 02351, Tel: 781-878-7220, (info@precastspecialtiescorp.com) AS A TOWN STANDARD



DETECTABLE WARNING PANEL DOME LAYOUT
N.T.S.



TYPICAL PROPOSED CROSS SECTION OF BILLY'S WAY ROAD
N.T.S.

TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

BILLY'S WAY
MISCELLANEOUS DETAILS II

GCG ASSOCIATES, INC.

WILMINGTON MASSACHUSETTS

SCALE: AS NOTED DATE: MARCH 17, 2020

JOB NO. / FILE NAME: 1915-WORKING
DESIGNED BY: JTC
DRAWN BY: JTC
CHECKED BY: M.J.C.

PLAN NO.
5 of 6



3/17/2020

GENERAL

THIS PLAN PROPOSES EROSION CONTROL MEASURES TO ADEQUATELY CONTROL ACCELERATED SEDIMENTATION AND REDUCE THE DANGER FROM STORM WATER RUNOFF AT THE SITE. THE RUNOFF SHALL BE CONTROLLED BY THE INTERCEPTION, DIVERSION, AND SAFE DISPOSAL OF PRECIPITATION. RUNOFF SHALL ALSO BE CONTROLLED BY STAGING CONSTRUCTION ACTIVITY AND PRESERVING NATURAL VEGETATION WHEREVER POSSIBLE.

EXISTING VEGETATION SHALL BE PROTECTED AND ONLY THAT CLEARING AND GRUBBING ABSOLUTELY NECESSARY TO THE PROPOSED CONSTRUCTION SHALL BE PERFORMED. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND CONTOUR, UNLESS OTHERWISE INDICATED ON THE PLANS. THE CONTRACTOR SHALL TAKE SPECIAL CARE WITH HIS CONSTRUCTION METHODS AND SHALL COMPLY WITH THE FOLLOWING GUIDELINES.

SEDIMENTATION CONTROL

ALL AREAS SHALL BE PROTECTED FROM SEDIMENTATION DURING AND AFTER CONSTRUCTION, PARTICULARLY THE STORAGE OF EXCAVATED OR STOCKPILED MATERIAL. THE CONTRACTOR SHALL CAREFULLY STRIP ALL TOPSOIL, LOAM, OR ORGANIC MATTER PRIOR TO THE TRENCHING OR OTHER OPERATIONS AND SHALL STORE THEM SEPARATELY FROM ALL OTHER MATERIALS DURING EXCAVATION. EACH STOCKPILE MUST BE ADEQUATELY RINGED WITH SEDIMENT CONTROL MATERIAL (i.e., STRAW FILTER TUBES).

DEBRIS AND OTHER WASTE RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION WILL NOT BE DISCARDED ON SITE.

STABILIZING OF SLOPES SHALL BE DONE IMMEDIATELY AFTER CONSTRUCTION OF SLOPES. SLOPES STEEPER THAN 3:1 SHALL BE PROTECTED WITH EROSION MATS. THESE MATS ARE MANUFACTURED COMBINATIONS OF MULCH AND NETTING AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL OTHER AREAS SHALL BE MULCHED WITH STRAW AT A RATE OF 1.5 TO 2 TONS PER ACRE. STRAW MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT WINDBLOWING.

EROSION AND SEDIMENTATION CONTROL PLAN

SEDIMENTATION CONTROL SYSTEM – THE SEDIMENTATION CONTROL SYSTEM SHALL CONSIST OF STRAW FILTER TUBES. THE SEDIMENTATION CONTROL SYSTEM SHALL BE INSTALLED IMMEDIATELY AFTER A CUT SLOPE HAS BEEN GRADED, BEFORE A FILL SLOPE HAS BEEN CREATED, AND AS INDICATED ON THE PLANS. DESIGN THE SYSTEM TO INTERCEPT SILT AND SEDIMENT BEFORE IT REACHES THE WETLANDS OR WATERCOURSES. DEPOSITS OF SEDIMENT AND SILT ARE TO BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE FENCE. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. THE SEDIMENTATION CONTROL SYSTEM IS TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE SYSTEM IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE FENCE ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.

STRAW FILTER TUBES (IN ADDITION TO CRUSHED STONE) USED FOR EROSION CONTROL SHALL BE RINGED AT CATCH BASINS LOCATED IN AREAS THAT WILL NOT BE PAVED AND WHERE SEDIMENT MAY ENTER THE CATCH BASIN OR AS DIRECTED BY THE RESIDENT ENGINEER. DEPOSITS OF SEDIMENT AND SILT ARE TO BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE EROSION CHECKS. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. STRAW FILTER TUBES ARE TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE SYSTEM IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE EROSION CHECKS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.

SILT SACK – SILT SACKS SHALL BE PLACED WITHIN ALL CATCH BASINS PRIOR TO CONSTRUCTION OR IMMEDIATELY AFTER INSTALLATION OF NEW CATCH BASINS. DEPOSITS OF SEDIMENT ARE TO BE PERIODICALLY REMOVED DURING CONSTRUCTION AND SPREAD AS DESCRIBED ABOVE. SILT SACKS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND SURROUNDING AREAS ARE STABILIZED.

IN ALL AREAS, REMOVAL OF TREES, BUSHES, AND OTHER VEGETATION, AND DISTURBANCE TO THE SOIL, IS TO BE KEPT TO AN ABSOLUTE MINIMUM WHILE ALLOWING PROPER DEVELOPMENT OF THE SITE.

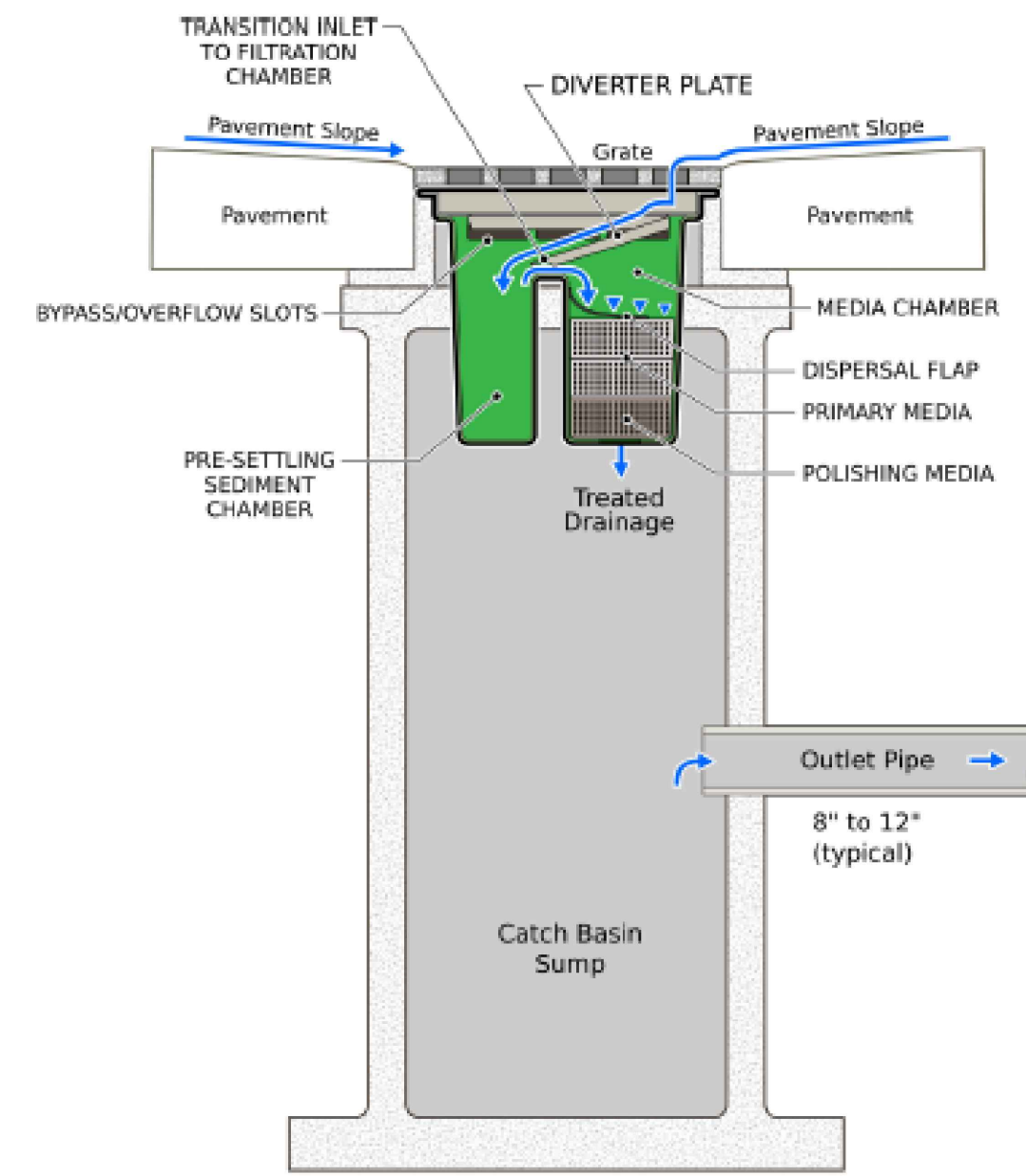
DEWATERING OF GROUNDWATER MAY BE NECESSARY DURING CONSTRUCTION. ALL DEWATERING ACTIVITIES SHALL BE CONDUCTED IN A MANNER THAT WILL NOT INTRODUCE SILT, SEDIMENT, CONTAMINATION, ETC. INTO A WETLAND RESOURCE AREA OR AN ADJACENT UPLAND RESOURCE AREA. DISCHARGED GROUNDWATER SHALL BE PROPERLY DETAINED, SETTLED, FILTERED OR OTHERWISE TREATED PRIOR TO ENTERING A WETLAND RESOURCE AREA OR AN ADJACENT UPLAND RESOURCE AREA (SEE DEWATERING DETAIL).

EROSION AND SEDIMENT CONTROL MAINTENANCE PROCEDURES

DURING CONSTRUCTION, AS SMALL AN AREA OF SOIL AS POSSIBLE SHOULD BE EXPOSED FOR AS SHORT A TIME AS POSSIBLE. AFTER CONSTRUCTION, GRADE, RESPREAD TOPSOIL, AND STABILIZE SOIL BY SEEDING AND MULCHING TO PREVENT EROSION.

ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL BE INSPECTED DURING CONSTRUCTION ON A DAILY BASIS AND FOLLOWING ALL STORMS BY THE RESIDENT ENGINEER. THE CONTRACTOR SHALL MAINTAIN AND MAKE REPAIRS AND REMOVE SEDIMENT AS REQUESTED BY THE RESIDENT ENGINEER. THIS WORK SHALL BE PERFORMED WITHIN 24 HOURS OF REQUEST.

THE CONTRACTOR SHALL CLEAN SEDIMENT AND DEBRIS FROM ALL DRAINAGE STRUCTURES AND PIPES. AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REPAIR ALL ERODED AREAS AND ENSURE A GOOD STAND OF TURF IS ESTABLISHED THROUGHOUT. THE CONTRACTOR SHALL REPAIR ALL ERODED OR DISPLACED RIPRAP, AND CLEAN SEDIMENT COVERED STONES.



The storm water runoff filtration system shall consist of a unit or units to be installed in existing or designed catch basins.

The water runoff filtration units shall be properly sized for the catch basin opening and predicted run-off.

The water runoff filtration system shall contain a pre-settling sediment chamber and a contaminant filtration chamber.

The media within the filtration chamber shall be a layered dual media system.

The first or primary filtration media shall consist of 8" in two or more mesh bags. This primary media shall be a non-leaching absorbent cellulose material that will attach hydrocarbons.

The second filter media shall consist of 4" of specially textured activated carbon to achieve a final polishing effect on the hydrocarbons in the discharge water as well as removing other organics, metals, and other contaminants.

Run-off water entering the unit shall be first diverted into the sediment chamber and from there shall flow into the filtering chamber through a transition inlet.

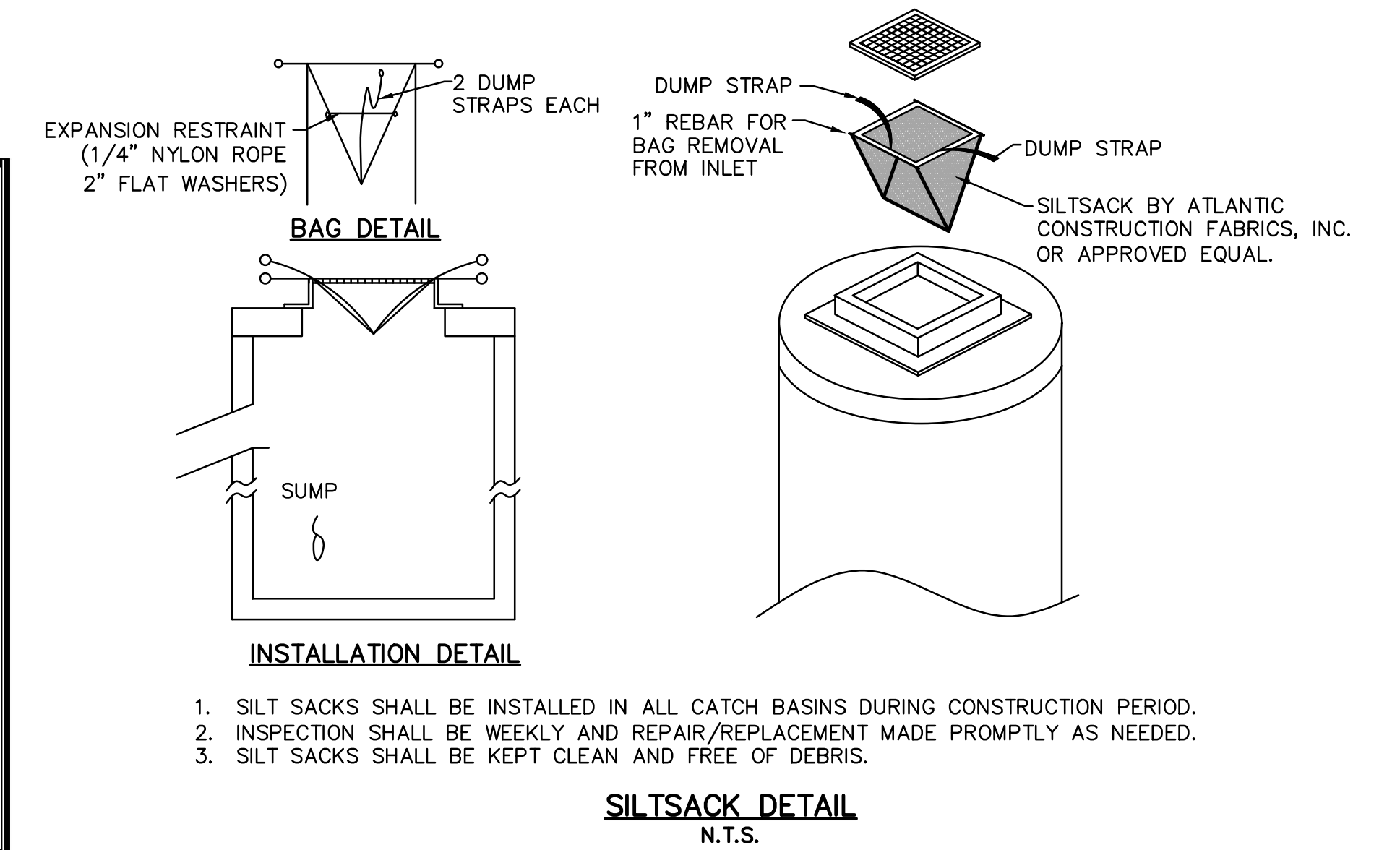
The units shall have sufficient overflow capacity to prevent ponding or flooding on the surface.

Filtration systems effectiveness shall be verified through third party testing.

The filtration system shall be the Ultra-HydroKleen® Stormwater Filtration System or equivalent.

ULTRA-HYDROKLEEN FILTRATION SYSTEM

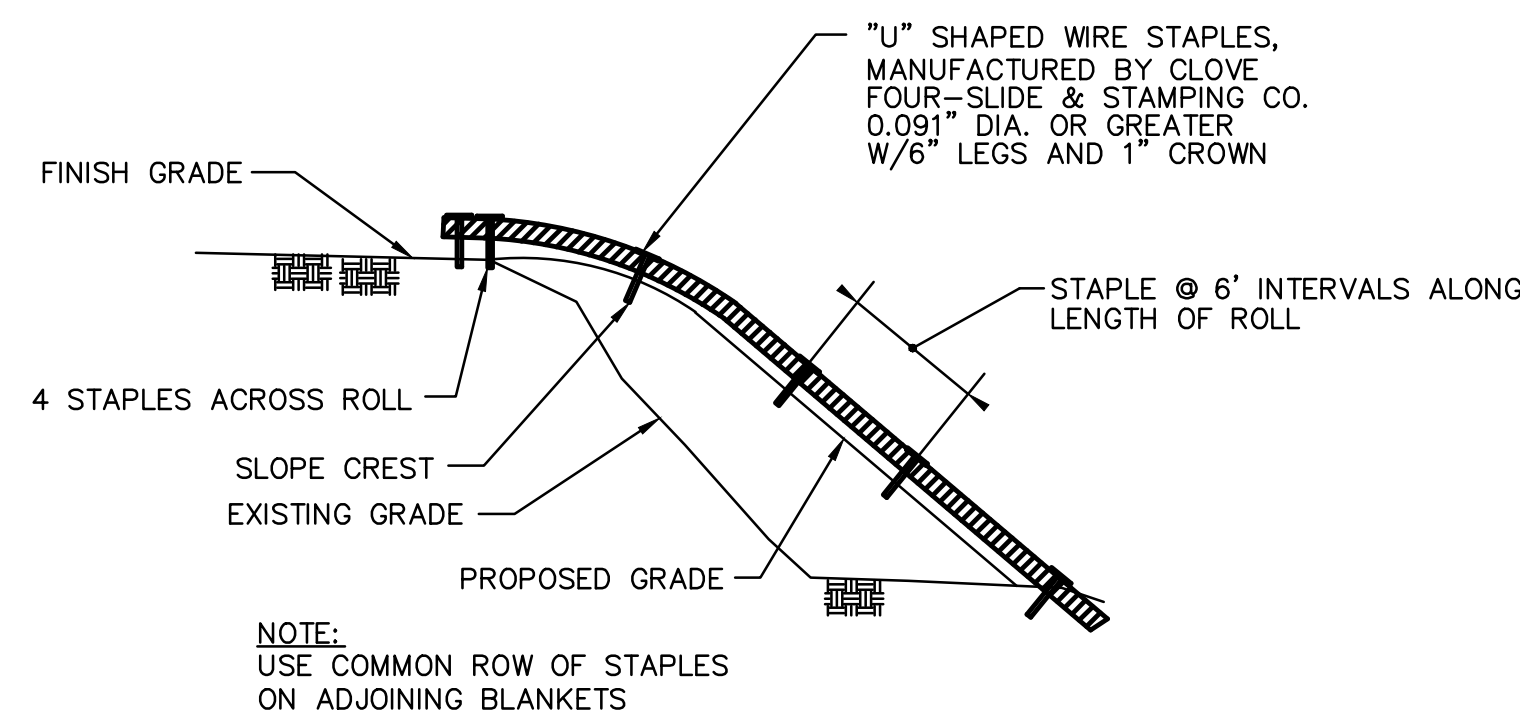
N.T.S.



SILTSACK DETAIL

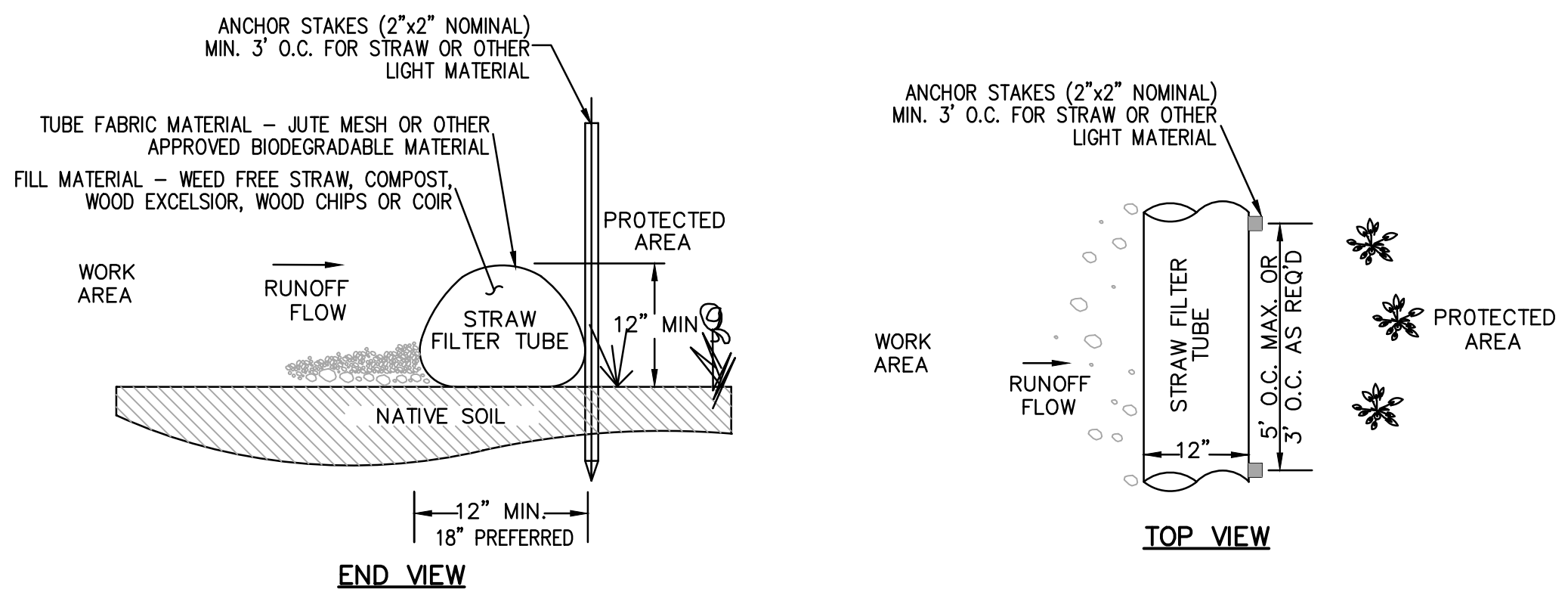
N.T.S.

1. SILT SACKS SHALL BE INSTALLED IN ALL CATCH BASINS DURING CONSTRUCTION PERIOD.
2. INSPECTION SHALL BE WEEKLY AND REPAIR/REPLACEMENT MADE PROMPTLY AS NEEDED.
3. SILT SACKS SHALL BE KEPT CLEAN AND FREE OF DEBRIS.



EROSION CONTROL BLANKET DETAIL

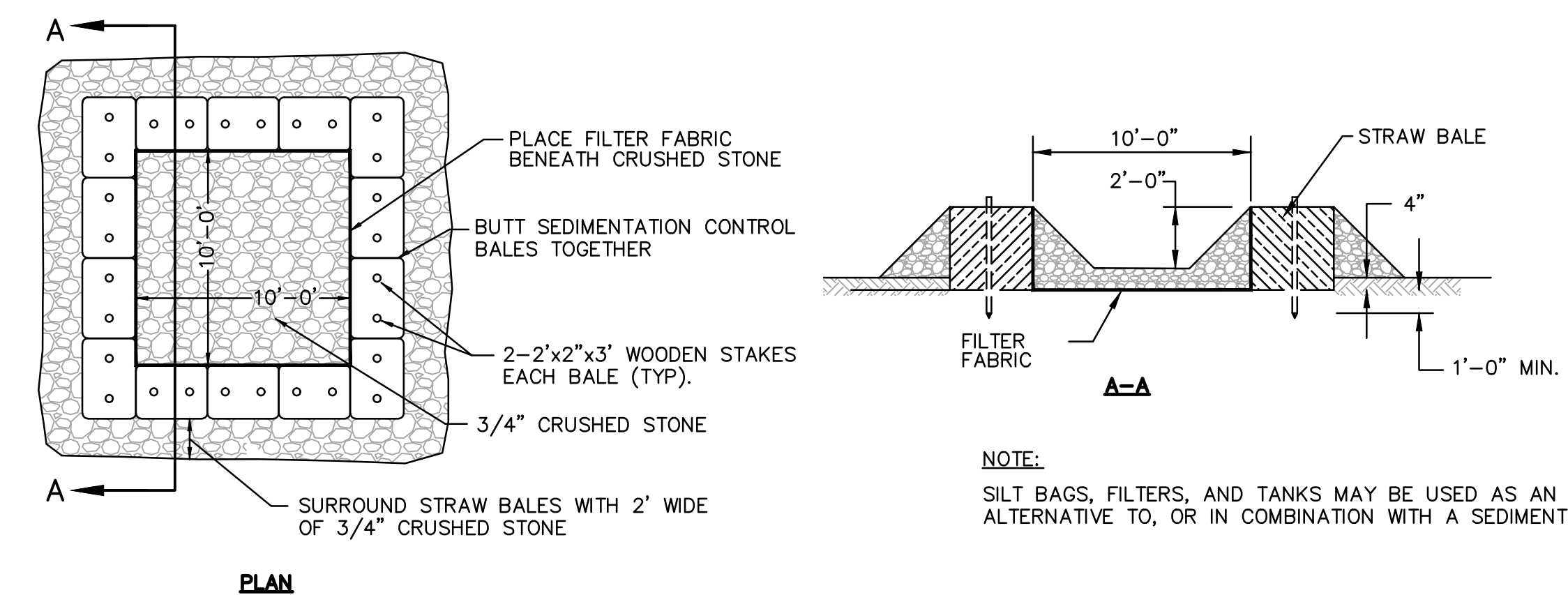
N.T.S.



STRAW FILTER TUBE DETAIL

N.T.S.

- NOTES:
1. TUBES MAY BE FILLED ON SITE OR SHIPPED.
 2. ENSURE PROPER LOCATION AT SITE FOR EFFECTIVENESS.
 3. TUBES SHALL BE PLACED AND STAKED IN PLACE AS REQUIRED TO ENSURE STABILITY AGAINST WATER FLOWS.
 4. TUBES FILLED WITH LIGHT MATERIAL SHALL BE STAKED AT A MAXIMUM OF 3 FEET ON CENTER. FOR HEAVIER MATERIAL, 5 FEET ON CENTER.
 5. TUBES SHALL BE TAMPED TO ENSURE GOOD CONTACT WITH SOIL.
 6. INSPECT AFTER EACH RAINFALL OR DAILY DURING RAINFALL EVENTS. CORRECT ALL DEFICIENCIES IMMEDIATELY.
 7. FAILURE INCLUDES BUT IS NOT LIMITED TO WASHOUT, OVERTOPPING, CLOGGING, AND EROSION. IF OVERTOPPING OR WASHOUT OCCURS, NEW FILTER TUBES WITH ADDITIONAL STAKING OR STRAW MATERIAL SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
 8. FILTER TUBES SHALL BE REMOVED ONCE SITE WORK IS COMPLETE, SITE IS STABLE, ADEQUATE GROWTH HAS BEEN ESTABLISHED AND AS DIRECTED BY THE ENGINEER. TUBE FABRIC SHALL BE CUT, REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR AT NO ADDITIONAL COST.



SEDIMENTATION CONTROL SYSTEM FOR ONSITE DEWATERING

N.T.S.

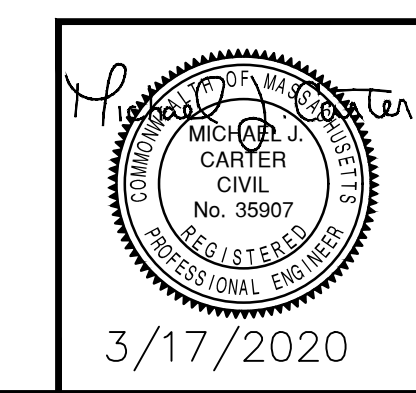
TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

BILLY'S WAY
EROSION CONTROL PLAN

GCG ASSOCIATES, INC.
WILMINGTON MASSACHUSETTS

SCALE: AS NOTED DATE: MARCH 17, 2020

JOB NO./FILE NAME: 1915-WORKING.dwg DESIGNED BY: JTC DRAWN BY: JTC CHECKED BY: M.J.C. PLAN NO. 6 of 6



TOWN OF FAIRHAVEN, MASSACHUSETTS

FARMFIELD STREET & HARBOR VIEW AVENUE

ROADWAY IMPROVEMENT PROJECT

MARCH 18, 2020

PUBLIC WORKS DEPARTMENT

VINCENT FURTADO, BPW SUPERINTENDENT
 JOHN CHARBONNEAU, HIGHWAY SUPERINTENDENT
 LINDA SCHICK, SEWER SUPERINTENDENT
 JEFF FURTADO, WATER SUPERINTENDENT

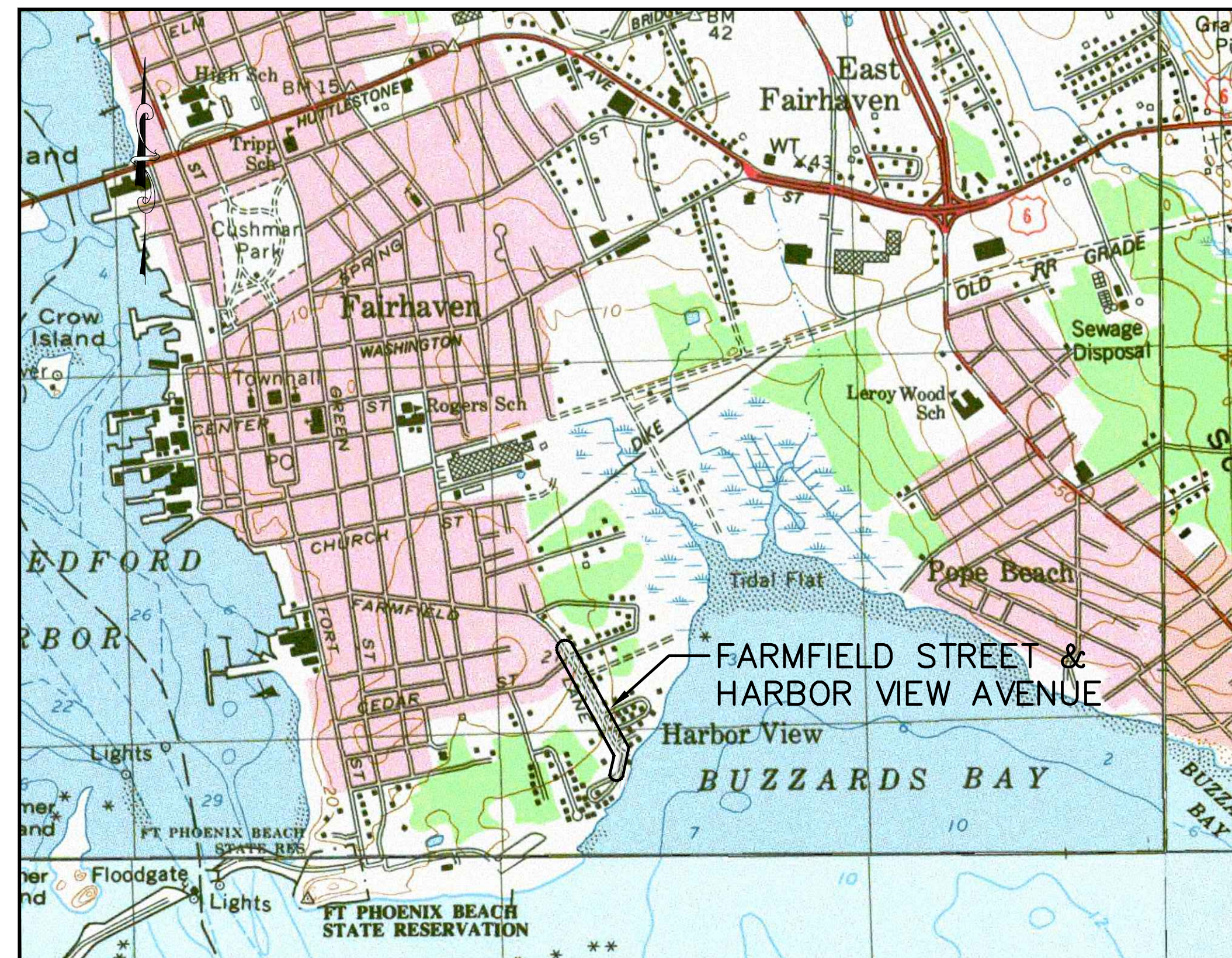
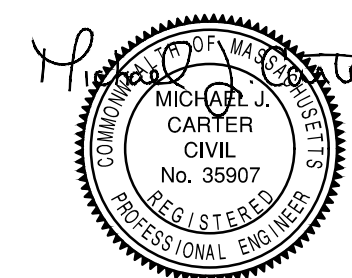


IMAGE OBTAINED FROM: "OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS"

LOCUS PLAN
 SCALE : 1" = 1,000'±



3/18/2020

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2.	LEGEND & CONSTRUCTION NOTES
3.	EXISTING CONDITION PLAN
4.	PROPOSED PLAN
5.	PROPOSED PROFILE
6.	PROPOSED SITE PLAN
7.	DETAILS I
8.	DETAILS II
9.	EROSION CONTROL PLAN

ABBREVIATIONS

ALT	ALTERNATE
BB	BITUMINOUS BERM
BND	BOUND
BLDG	BUILDING
BIT CONC	BITUMINOUS CONCRETE
BM	BENCH MARK
BOL	BOLLARD
BRK	BRICK
CB	CATCH BASIN
CS	COMBINED SEWER
C	CONDUIT
CL	CENTERLINE
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CSMH	COMBINED SEWER MANHOLE
CST	COBBLESTONE
CULV	CULVERT
CO	COUNTY
CONC	CONCRETE
C.L.D.I.	CONC. LINED DUCTILE IRON
CLF	CHAIN LINK FENCE
DI	DUCTILE IRON PIPE
DR	DRIVE
DMH	DRAIN MANHOLE
EMH	ELECTRIC MANHOLE
EX	EXISTING
FAB	FIRE ALARM BOX
EOP	EDGE OF PAVEMENT
GC	GRANITE CURB
GG	GAS GATE
GS	GAS SERVICE
GIP	GALVANIZED IRON PIPE
HW	HEADWALL
HSE	HOUSE
HOR	HORIZONTAL
HYD	HYDRANT
HP	HIGH PRESSURE
LP	LIGHT POLE
MB	MAIL BOX
MH	MANHOLE
MIN	MINIMUM
PE	POLYETHYLENE PIPE
PROP	PROPOSED
P	APPROXIMATE PROPERTY LINE
RCP	REINFORCED CONCRETE PIPE
RET WALL	RETAINING WALL
ROW	APPROXIMATE RIGHT OF WAY
RR	RAILROAD
SB	STONE BOUND
S	SIGN
SMH	SEWER MANHOLE
STA	STATION
S	SEWER
SS	SEWER SERVICE
STL	STEEL
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TMH	TELEPHONE MANHOLE
TR	TREE
TP	TYPICAL
UP	UTILITY POLE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
W	WATER MAIN
WG	WATER GATE
WD	WOOD
WIP	WROUGHT IRON PIPE
WS	WATER SERVICE
WSO	WATER SERVICE SHUTOFF
WV	WATER VALVE

SYMBOLS

	BENCHMARK
	BOUND
	BUILDING
	CATCH BASIN
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	FLARED END
	GAS GATE
	HAYBALE
	HEADWALL
	HYDRANT
	IRON PIPE
	LIGHTPOLE
	MAILBOX
	MANHOLE
	PERC TEST
	SEWER MANHOLE
	TELEPHONE MANHOLE
	TEST PIT
	TREE
	SIGN
	UTILITY POLE
	WATER GATE

GENERAL NOTES

- PLANS AND TOPOGRAPHIC INFORMATION ARE PREPARED FROM A GROUND INSTRUMENT SURVEY PERFORMED AND AN AERIAL DRONE SURVEY BY GCG ASSOCIATES, INC.
- THE LOCATIONS AND ELEVATIONS SHOWN REFER TO MASSACHUSETTS STATE PLANE COORDINATE SYSTEM. (NAD 83 – NAVD 88).
- CONTOUR INTERVAL: 1 FOOT
- PROPERTY LINES AND SIDELINES WERE ESTABLISHED, APPROXIMATELY, FROM MASS GIS DATA LAYERS AND PLANS OBTAINED AT THE BRISTOL COUNTY REGISTRY OF DEEDS.
- THE LOCATIONS OF SUBSURFACE UTILITIES AND STRUCTURES WERE OBTAINED FROM AVAILABLE TOWN AND UTILITY RECORDS. THE SIZE, TYPE AND LOCATION OF UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL PROPERLY LOCATE THE UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN UTILITY INFORMATION BY CONTACTING DIGSAFE (811).
- THE CONTRACTOR SHALL EXCAVATE TEST PITS ALONG THE ALIGNMENT OF THE PROPOSED DRAINAGE AND WATER SYSTEM TO LOCATE THE EXISTING SEWER, WATER AND GAS MAINS AND SERVICES AS REQUIRED BY THE ENGINEER AND PRIOR TO ORDERING THE DRAINAGE AND WATER SYSTEM AND COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL PLAN AND PERFORM TEST PIT EXCAVATION WELL IN ADVANCE OF COMMENCING CONSTRUCTION TO ALLOW TIME TO REVIEW ACTUAL CONDITIONS ENCOUNTERED. TEST PITS NOT SPECIFICALLY IDENTIFIED SHALL BE EXCAVATED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER. INCLUDE FOR PAYMENT UNDER THE UNCLASSIFIED EXCAVATION ITEM.
- WATER MAINS ARE ASSUMED TO BE 5 FEET BELOW THE EXISTING GROUND SURFACE. GAS LINES ARE ASSUMED TO BE 3 FEET BELOW THE EXISTING GROUND SURFACE. TELEPHONE AND ELECTRIC CONDUIT ARE ASSUMED TO BE 2 FEET BELOW THE EXISTING GROUND SURFACE.
- LOCATION OF PROPOSED DRAINAGE SYSTEM MAY BE ALTERED IN THE FIELD BY THE ENGINEER TO SUIT FIELD CONDITIONS.
- THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A CONSTRUCTION SCHEDULE DELINEATING THE SEQUENCE OF WORK, TRAFFIC MANAGEMENT PLAN AND ESTIMATED TIME OF COMPLETION OF EACH SEGMENT OF WORK, PRIOR TO THE COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL MAINTAIN CONTINUOUS TRAFFIC FLOW DURING CONSTRUCTION SATISFACTORY TO THE ENGINEER AND THE TOWN OF FAIRHAVEN. NO EQUIPMENT SHALL BE ALLOWED TO BE PARKED ON THE ROAD WHEN NOT IN USE. MATERIALS SHALL NOT BE STOCKPILED ON THE ROAD.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE RESTORATION AND CLEAN UP UPON COMPLETION OF THE PROJECT. PAYMENT UNDER ASSOCIATED ITEM.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES AND PROCEDURES, AND FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH ALL WORK INCLUDED UNDER THIS CONTRACT. THE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL SAFETY BARRIERS, WARNING FLASHERS AND THE LIKE, AS REQUIRED BY THE CONDUCT OF THE WORK FOR THE PROTECTION OF WORKERS AND NON-WORKERS ALIKE. THE CONTRACTORS ATTENTION IS DIRECTED TO OSHA REQUIREMENTS.
- ALL CONSTRUCTION SIGNING SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- PRIOR TO THE PROPOSED CONSTRUCTION ON FARMFIELD STREET AND HARBOR VIEW AVENUE, THE CONTRACTOR SHALL SUBMIT FOR REVIEW BY THE TOWN, A TRAFFIC MANAGEMENT PLAN IN COMPLIANCE WITH MASSDOT AND MUTCD. SAID PLAN WILL SHOW HOW TRAFFIC FLOW WILL BE HANDLED DURING CONSTRUCTION. PAYMENT UNDER THE ASSOCIATED ITEM.
- TRENCH DEWATERING COSTS THROUGHOUT THE DURATION OF THE PROPOSED PROJECT SHALL BE INCLUDED IN THE APPLICABLE BID ITEMS. GROUNDWATER ELEVATION IS ASSUMED TO BE 2' BELOW THE EXISTING ROADWAY FOR BIDDING PURPOSES.

RAISING CASTINGS

- AFTER MINIMUM 30 DAY SETTLEMENT OF TRENCHES HAS PASSED, ALL CASTINGS WILL BE LOWERED OR REMOVED AND PLATED PRIOR TO EXCAVATING THE ROADWAY.
- ALL CASTINGS WILL BE RAISED TO FINISHED GRADE AFTER PLACEMENT OF THE 2-1/2" BINDER PAVING COURSE, PRIOR TO PLACEMENT OF THE 1-1/2" FINAL PAVING COURSE.

LINework

EXISTING	PROPOSED	
		CONTOUR MAJOR
		CONTOUR MINOR
		DRAIN LINE
		ELECTRIC LINE
		ELECTRIC/TELEPHONE/CABLE
		GAS LINE
		PROPERTY LINE
		SETBACK
		SEWER LINE
		TELEPHONE LINE
		TREE LINE
		WATER LINE

FARMFIELD STREET – PROPOSED PAVED ROAD

HARBOR VIEW AVENUE PROPOSED GRAVEL ROAD

FULL DEPTH EXCAVATION AND BACKFILL NOTES

- ALL TRENCHES WILL BE COMPACTED TO ALLOW PROPER SETTLEMENT. ALL TRENCHES WILL BE COMPACTED TO 95% COMPACTION. INCLUDE PAYMENT UNDER ASSOCIATED ITEM.
- AFTER THE COMPACTION PROCESS IS COMPLETED, THE CONTRACTOR SHALL MAINTAIN TRENCH GRAVEL FLUSH TO EXISTING GRADE UNTIL FARMFIELD STREET AND HARBOR VIEW AVENUE IS RECONSTRUCTED. IF REQUIRED BY THE ENGINEER, TRENCH PAVING SHALL BE INSTALLED TO STABILIZE AREAS AS NEEDED.
- THE CONTRACTOR WILL ALLOW THE TRENCHES TO SETTLE THE REQUIRED PERIOD (30 DAY MIN) AS STATED IN THE SPECIFICATIONS PRIOR TO EXCAVATING THE ENTIRE WIDTH OF ROADWAY.
- THE CONTRACTOR SHALL LOWER AND PLATE UTILITY CASTINGS, UTILITY VALVE BOXES, FRAMES AND COVERS WITHIN THE ROAD AND LATER RESTORE ALL UTILITY CASTINGS, UTILITY VALVE BOXES, FRAMES AND COVERS TO THE TOP OF FINISHED GRADE.
- FARMFIELD STREET SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 16" BELOW THE PROPOSED FINISHED GRADE WITHIN THE PROJECT LIMITS AND MATERIAL DISPOSED OF OR SEPARATED AS DEFINED IN THE MEASUREMENT AND PAYMENT UNDER ITEM 4B – "ROADWAY EXCAVATION AND DISPOSAL".
- HARBOR VIEW AVENUE SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 12" BELOW THE PROPOSED FINISHED GRADE WITHIN THE PROJECT LIMITS AND MATERIAL DISPOSED OF OR SEPARATED AS DEFINED IN THE MEASUREMENT AND PAYMENT UNDER ITEM 4B – "ROADWAY EXCAVATION AND DISPOSAL".
- DUE TO THE EXCAVATION DEPTHS AND MINIMAL COVER REMAINING OVER EXISTING UTILITIES – EXCAVATION SHALL NOT BE ALLOWED WITH HEAVY EQUIPMENT WHICH REQUIRES TRAVEL ON THE EXCAVATED AREA. ALL EXCAVATION OF THE ROADWAY, PLACING AND LOADING OF TRUCKS SHALL BE PERFORMED ON THE EXISTING PAVEMENT GRADE. CONSTRUCTION EQUIPMENT AND TRUCKS SHALL NOT BE ALLOWED TO DRIVE ON THE EXCAVATED ROADWAY UNTIL THE ROADWAY IS BACKFILLED TO THE PROPOSED GRADE.
- THE CONTRACTOR SHALL CAREFULLY EXCAVATE TO THE ROADWAY EXCAVATION LIMITS AND SHALL NOT DAMAGE THE EXISTING UTILITIES. EXISTING UTILITIES DAMAGED DURING THE EXCAVATION OF THE ROADWAY SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BACKFILL AND COMPACT THE ROAD TO THE PROPOSED ROAD GRADE AND CROSS SECTION AS SHOWN ON THE PLANS AND AS DEFINED IN THE MEASUREMENT AND PAYMENT UNDER ITEM 4F – "ROADWAY GRAVEL BACKFILL WITHIN NORMAL LIMITS" WITH GRAVEL BORROW WHICH SHALL BE M1.003.0 TYPE "B" GRAVEL AS SPECIFIED BY THE 2020 MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- FARMFIELD STREET SHALL BE FINE GRADED, COMPACTED AND PAVED. HARBOR VIEW AVENUE SHALL BE FINE GRADED AND COMPACTED ONLY.
- AFTER EXCAVATING THE EXISTING IN PLACE ASPHALT AND UNDERLYING MATERIALS TO THE PROPOSED GRAVEL SUBGRADE, THE CONTRACTOR SHALL BACKFILL, GRADE AND COMPACT THE GRAVEL BASE COURSE TO THE PROPOSED ROAD GRADES AND TYPICAL PROPOSED ROADWAY CROSS-SECTION SHOWN ON THE PLANS AND ON FARMFIELD STREET – TO ALLOW THE PLACEMENT OF A 2-1/2" INTERMEDIATE COURSE (SIC-12.5-TABLE 450.1) AND A 1-1/2" SURFACE COURSE (SSC-9.5-TABLE 450.1) AS SPECIFIED AND ACCORDING TO MASSDOT SECTION 450-"HOT MIX ASPHALT PAVEMENT".
- THE CONTRACTOR SHALL FINE GRADE THE BACKFILLED GRAVEL BASE COURSE MATERIAL NO MORE THAN 24 HOURS PRIOR TO THE PLACEMENT OF THE 2-1/2" BASE COURSE PAVEMENT. ALL GRADING, COMPACTION AND DUST CONTROL ASSOCIATED WITH THE GRAVEL BASE COURSE SHALL BE INCLUDED IN THE PRICE OF ITEM 4E – "FINE GRADING AND COMPACTING OF SUBGRADE AREAS"
- THE CONTRACTOR SHALL GRADE THE GRAVEL BASE COURSE MATERIAL TO MATCH THE PROPOSED CENTERLINE GRADE AS SHOWN ON THE PROPOSED PROFILE AND TO MEET THE SURFACE AND PAVEMENT REQUIREMENTS SHOWN ON THE TYPICAL ROADWAY CROSS SECTION PLAN.
- THE CONTRACTOR SHALL STOCKPILE AND RETAIN SUFFICIENT SURPLUS SUBBASE MATERIALS TO USE AS NEEDED IN THE ENTIRE PROJECT AREA. THE COSTS ASSOCIATE WITH THE EXCAVATION, PLACEMENT AND DISPOSAL OF SURPLUS SUBBASE MATERIAL SHALL BE INCLUDED IN THE APPROPRIATE ITEM. NO ADDITIONAL PAYMENT FOR PLACEMENT SHALL BE MADE. SURPLUS SUBBASE MATERIAL MAY BE USED ONSITE PRIOR TO GRAVEL BORROW MATERIAL. ANY EXCESS SUBBASE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. NO ADDITIONAL PAYMENT FOR DISPOSAL SHALL BE MADE.
- IN AREAS WHERE A PARKING OR PAVEMENT EXPANSION IS PROPOSED, THE EXISTING SOILS SHALL BE EXCAVATED TO THE REQUIRED SUBGRADE DEPTH THEN BACKFILLED AND COMPACTED WITH A SUITABLE 12" THICK SUBBASE LAYER.
- PRIOR TO COMPLETING FINAL GRADING OF THE SUBBASE COURSE, THE ENGINEER SHALL REVIEW GRADES TO DETERMINE THAT SUFFICIENT CROSS SLOPES AND POSITIVE DRAINAGE FLOWS HAVE BEEN MAINTAINED. IF GRADES NEED TO BE ADJUSTED, THE CONTRACTOR SHALL REGRADE AS DIRECTED.
- CROSS SLOPES AT CATCH BASINS SHALL BE ADJUSTED AS NECESSARY TO ASSURE PROPER DRAINAGE.
- CONTRACTOR SHALL CONTROL DUST DURING CONSTRUCTION USING CALCIUM CHLORIDE AS NECESSARY.
- DRIVEWAY AND PARKING AREAS SHALL BE GRADED FOR A SMOOTH TRANSITION FROM THE PROPOSED EDGE OF PAVEMENT/CURB TO THE EXISTING GRADE.

FINE GRADING AND COMPACTING

- THE CONTRACTOR SHALL FINE GRADE AND COMPACT ALL AREAS IN PREPARATION FOR PAVEMENT, INCLUDING, BUT NOT LIMITED TO THE ROADWAY AREAS AND TRANSITION DRIVEWAY AREAS. THE CONTRACTOR SHALL ALSO STRAIGHTEN OUT ALL EXISTING JOINTS AND EDGES IN PREPARATION FOR FINAL PAVEMENT.
- PAYMENT FOR GRADING AND COMPACTING THE PROPOSED OR RECONSTRUCTED CONCRETE SIDEWALKS, RAMPS AND DRIVEWAY APRONS SHALL BE INCLUDED IN THE APPROPRIATE SIDEWALK, APRON, OR RAMP ITEM.
- PAYMENT FOR FINE GRADING AND COMPACTING THE RECONSTRUCTED BITUMINOUS ROADWAY SHALL BE INCLUDED IN THE APPROPRIATE CONTRACT ITEM.

WATER SYSTEM NOTES

- LOCATION OF PROPOSED WATER MAINS AND APPURTENANCES MAY BE ALTERED IN THE FIELD BY THE ENGINEER TO SUIT FIELD CONDITIONS.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING WATER SERVICES SHOWN ON THE PLAN AND BE RESPONSIBLE FOR LOCATING ANY ADDITIONAL SERVICES NOT SHOWN.
- EXISTING WATER SERVICE REPLACEMENT SHALL BE DONE ONCE THE PROPOSED WATER MAIN IS TESTED AND DISINFECTED..
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL AFFECTED WATER CUSTOMERS, IN WRITING, OF SHUTTING OFF SERVICE AT LEAST TWO DAYS PRIOR TO SHUTDOWN. NOTICE CARDS WILL BE FURNISHED BY THE CONTRACTOR WHICH WILL INCLUDE THE HOURS OF SHUTDOWN AND NOTE THAT A TEMPORARY RUSTY WATER CONDITION MAY EXIST. NOTICE CARDS WILL ALSO HAVE SPACE FOR THE CONTRACTOR TO FILL IN THE SPECIFIC DATES FOR EACH SHUTDOWN. THE WORK SHALL BE SCHEDULED IN SECTIONS, AS APPROVED BY THE ENGINEER, AS IT IS NECESSARY TO ALLOW FOR COMPLETION OF THE WORK AND RESTORATION OF SERVICE TO THE CUSTOMER WITHIN THE TIMES SPECIFIED BY THE ENGINEER.
- PROPOSED FITTINGS AND VALVES SHALL BE RESTRAINED BY MJ RESTRAINTS (MEGALUG OR EQUAL).
- PROPOSED CORPORATION COCKS, CURB STOPS AND COPPER TUBING FOR EACH HOUSE SERVICE SHALL BE "LEAD FREE" AND A MINIMUM OF 3/4" INCH IN SIZE UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.
- UNLESS OTHERWISE NOTED, THE PROPOSED WATER MAIN SHALL BE INSTALLED WITH A MINIMUM GROUND COVER OF FIVE FEET.
- PROPOSED WATER PIPE SHALL BE CEMENT LINED DUCTILE IRON (C.L.D.I.), CLASS 52.
- THE EXISTING WATER SYSTEM SHALL BE ABANDONED BY CLOSING VALVES, REMOVING VALVE BOXES AND HYDRANTS, CAPPING ALL OPEN PIPE ENDS, REMOVING THE TEMPORARY COUPLINGS AND CONNECTIONS UPON ACTIVATION OF THE PROPOSED WATER SYSTEM.
- ANY EXISTING WATER PIPE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE PRICE OF THE ASSOCIATED PIPE ITEM.

TEMPORARY WATER BYPASS PIPING NOTES

- THE TEMPORARY WATER BYPASS SYSTEM SHALL BE INSTALLED PRIOR TO INSTALLING THE PROPOSED SEWER, WATER AND DRAINAGE SYSTEMS.
- BYPASS MAIN LINES MAY BE INSTALLED AT MAX. LENGTH OF 4000 FEET. BYPASS MAIN LINES SHALL HAVE A SHUTOFF VALVE PLACED AT A MAX. DISTANCE OF 500 FEET. SERVICE CONNECTION TEES SHALL BE PLACED ALONG TEMPORARY BYPASS MAINLINE AS IT IS INSTALLED.
- PERMANENT BITUMINOUS TRENCH PAVEMENT AND RESTORATIVE REPAIRS SHALL BE COMPLETED AT THE END.
- TEMPORARY SERVICE CONNECTIONS SHALL BE CONNECTED AT THE RIGHT-OF-WAY BY EXCAVATION TO SERVICE(S) AND CONNECTING TO EXISTING PIPE. ALL FITTINGS, MATERIAL AND LABOR SHALL BE INCLUDED UNDER THE APPROPRIATE ITEM
- PRIOR TO STARTING ANY WORK THAT WILL AFFECT SERVICE TO CUSTOMERS, THE CONTRACTOR SHALL NOTIFY THE CITY, THE ENGINEER AND THE CUSTOMERS 72 HOURS PRIOR TO SHUTDOWN. NOTICE INFORMATION SHALL, AT A MINIMUM, INCLUDE THE DATES AND HOURS OF SHUTDOWN AND NOTE THAT A TEMPORARY RUSTY WATER CONDITION MAY EXIST.
- FINAL TEMPORARY BYPASS PIPING PLAN SHALL BE DESIGNED BY THE CONTRACTOR, INCLUDING LAYOUT OF THE BYPASS PIPING, TEMPORARY SERVICE LINES TO ALL CUSTOMERS, THE SPECIFIED BYPASS PIPE DIAMETER TO BE USED IN EACH LOCATION, AND THE TYPE AND LOCATION OF TEMPORARY FIRE HYDRANTS. THE BYPASS PIPING, SHALL BE 4" OR 6" AS REQUIRED. PAYMENT FOR FURNISHING, INSTALLING, AND MAINTAINING AND REMOVING BYPASS PIPING WILL BE PAID FOR UNDER TEMPORARY BYPASS PIPING ITEMS.
- THREE COPIES OF PROPOSED PLANS FOR THE DESIGN OF THE TEMPORARY WATER BYPASS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT THE PRE-CONSTRUCTION MEETING. THE ENGINEER SHALL MAKE THE FINAL DECISION AS TO THE ROUTING AND SIZES OF ALL BYPASS LINES, BEFORE ANY BYPASS IS INSTALLED.
- AT ALL ROADWAY CROSSING, CURB CUT DRIVEWAY LOCATIONS AND ENTRANCES TO PARKING AREAS, THE TEMPORARY BYPASS WATER PIPING SHALL BE PLACED BELOW PAVING GRADE AND COVERED. THE BYPASS PIPING MAY BE LAID ABOVE GROUND IN UNPAVED LOCATIONS WHICH DO NOT SUSTAIN VEHICLE TRAFFIC.
- THE TEMPORARY BYPASS PIPING SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO THE REMOVAL OF THE EXISTING WATER MAIN AND THE INSTALLATION OF THE PROPOSED WATER MAIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL AFFECTED WATER CUSTOMERS, IN WRITING, OF SHUTTING OFF SERVICE AT LEAST 72 HOURS PRIOR TO SHUTDOWN. NOTICE CARDS WILL BE FURNISHED BY THE CONTRACTOR WHICH WILL INCLUDE THE HOURS OF SHUTDOWN AND NOTE THAT A TEMPORARY RUSTY WATER CONDITION MAY EXIST. NOTICE CARDS WILL ALSO HAVE SPACE FOR THE CONTRACTOR TO FILL IN THE SPECIFIC DATES FOR EACH SHUTDOWN. THE WORK SHALL BE SCHEDULED IN SECTIONS, AS APPROVED BY THE ENGINEER, AS IT IS NECESSARY TO ALLOW FOR COMPLETION OF THE WORK AND RESTORATION OF SERVICE TO THE CUSTOMER WITHIN THE TIMES SPECIFIED BY THE ENGINEER.
- CONTRACTOR SHALL PLACE AND MAINTAIN ALL BARRELS, CONES AND SAFETY DEVICES TO PROTECT THE BYPASS.

CONSTRUCTION SEQUENCE

- FALL 2020 – BEGIN CONSTRUCTION, UTILITY WORK, EXCAVATE ROADWAY AND INSTALL 2-1/2" BINDER COURSE, GRANITE CURB AND SIDEWALKS.
- FALL 2021 – INSTALL 1-1/2" TOP COURSE AND FINAL LANDSCAPING ESTABLISHMENT OF GROWTH.

MISCELLANEOUS NOTES

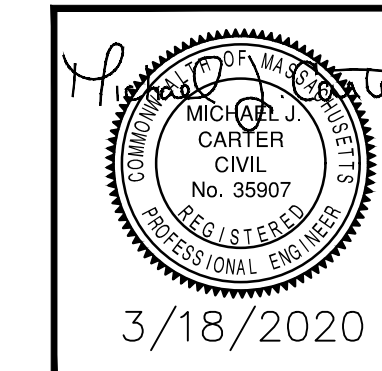
- THE CONTRACTOR SHALL CUT JOINTS IN THE EXISTING PAVEMENT AREAS WHERE THE PROPOSED PAVEMENT SHALL MEET TO ALLOW A SMOOTH TRANSITION AFTER PAVING. ALL JOINTS SHALL BE SANDED AND SEALED.
- THE CONTRACTOR WILL INSTALL ALL TEMPORARY SEDIMENTATION BARRIERS AS REQUIRED DURING CONSTRUCTION.
- PAYMENT FOR REMOVING AND DISPOSING OF EXISTING MANHOLES, CATCH BASINS AND PIPE AS SPECIFIED AND SHOWN ON THE PLANS TO BE INCLUDED IN THE ASSOCIATED ITEM.
- ANY COORDINATION OF RELOCATION OF WATER, SEWER, ELECTRIC, TELEPHONE, AND CABLE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ANY COORDINATION OF RELOCATION OF STREET SIGNS, MAILBOXES ETC. SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- EXISTING GRATES, FRAMES AND COVERS REMOVED FROM THE WORK SHALL BE DELIVERED TO THE FAIRHAVEN DPW BY THE CONTRACTOR.
- ALL TRENCHES SHALL BE SAWCUT ONLY. NO OTHER METHOD OF CUTTING THE EXISTING PAVEMENT SHALL BE ACCEPTABLE. NO SEPARATE PAYMENTS SHALL BE MADE FOR THIS CUTTING.

POLICE DETAILS FOR TRAFFIC CONTROL WILL BE PAID FOR DIRECTLY BY THE TOWN THROUGH THE CONTRACT. THE CONTRACTOR SHALL COORDINATE ALL DETAIL ASSIGNMENTS AND ALL COSTS INCLUDING COORDINATION SHALL BE INCLUDED UNDER ALL ITEMS IN THE CONTRACT.

- THE CONTRACTOR SHALL LOAM & SEED ALL DISTURBED AREAS.
- THE CONTRACTOR SHALL PROVIDE GENERAL CLEAN-UP TO THE ENTIRE PROJECT SITE. INCLUDE PAYMENT UND APPROPRIATE ITEM.
- ALL CASTINGS, GATE BOXES, ETC. DAMAGED DURING CONSTRUCTION SHALL BE SUPPLIED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. THE CONTRACTOR SHALL INCLUDE THE COST IN ALL BID ITEMS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL OR REMOVE AND REPLACE SIGNS AS REQUIRED TO PERFORM THE PROPOSED WORK. PAYMENT TO BE INCLUDED UNDER MISCELLANEOUS WORK ITEM.
- THE CONTRACTOR SHALL BE PAID FOR WORK REQUIRED TO SUPPORT OR REMOVE AND REPLACE EXISTING STRUCTURES AND UTILITY LINES ADJACENT TO OR WITHIN THE LIMITS OF TRENCH EXCAVATION UNDER THE MISCELLANEOUS WORK ITEM.
- THE CONTRACTOR SHALL MAINTAIN ONE LANE OF TRAFFIC ON THE STREET AT ALL TIMES DURING THE CONSTRUCTION, AND SHALL MAINTAIN ACCESS TO ALL ABUTTING DRIVEWAYS AND ACCESS WAYS.
- THE CONTRACTOR SHALL SAWCUT ALL PRIVATE DRIVEWAYS AND SIDEWALKS TO ALLOW FOR PROPER SLOPES AND TRANSITIONS TO THE PROPOSED FINISHED SURFACE AS NECESSARY. THE CONTRACTOR SHALL MATCH THE EXISTING MATERIAL AND TYPE. ALL WORK SHALL BE INCLUDED UNDER THE APPROPRIATE ITEM.

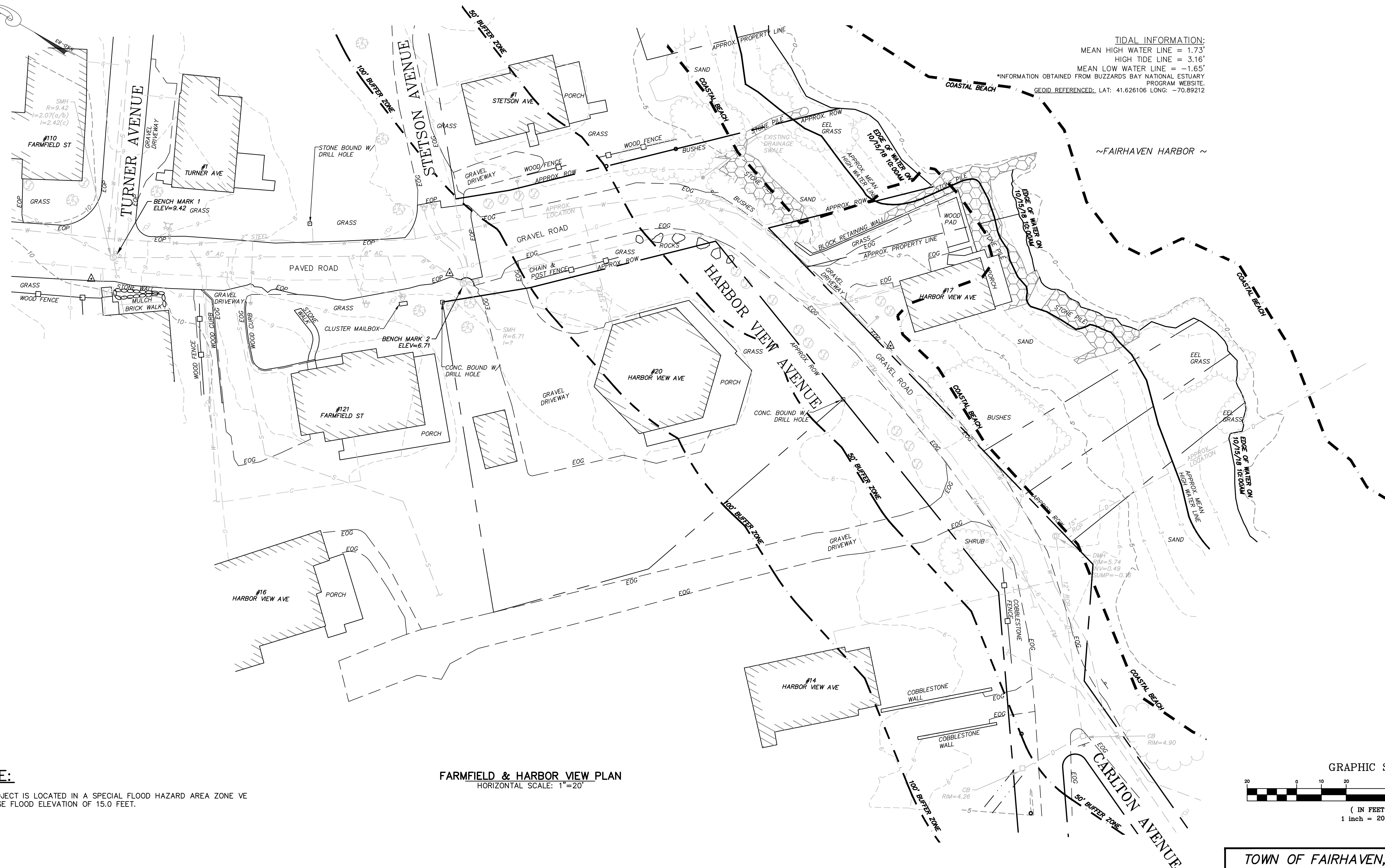
STOCKPILED EXCAVATED MATERIALS

- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING A LOCATION FOR STAGING AND STORING STOCKPILED MATERIALS.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF LOCATION AND ANY PRIVATE AGREEMENTS AND ALL FEES THAT MAY BE ASSOCIATED WITH THE USE OF AN AREA FOR STORING STOCKPILED MATERIALS.
- THE TOWN OF FAIRHAVEN IS NOT RESPONSIBLE FOR PROVIDING A LOCATION FOR STAGING OR STORAGE OF STOCKPILED MATERIAL.
- MATERIALS SHALL NOT BE STOCKPILED ON THE ROAD OR IN PUBLIC PARKING AREAS.
- NO EQUIPMENT SHALL BE ALLOWED TO BE PARKED ON THE ROAD WHEN NOT IN USE.
- STOCKPILED SUITABLE EXCAVATED MATERIAL SHALL BE USED ONSITE FOR SUITABLE TRENCH BACKFILL AND OTHER AREAS REQUIRING SUITABLE BACKFILL. NO ADDITIONAL PAYMENT SHALL BE MADE FOR THE PLACEMENT OF THIS MATERIAL.
- ALL SURPLUS EXCAVATED MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF OFFSITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.



TOWN OF FAIRHAVEN, MASSACHUSETTS ROADWAY IMPROVEMENT PROJECT		
FARMFIELD STREET & HARBOR VIEW AVENUE LEGEND AND CONSTRUCTION NOTES		
GCG ASSOCIATES, INC.		
WILMINGTON		MASSACHUSETTS
SCALE: AS NOTED		DATE: MARCH 18, 2020
JOB NO. \ FILE NAME: 1841.dwg	DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C.	PLAN NO. 2 OF 9

FARMFIELD STREET

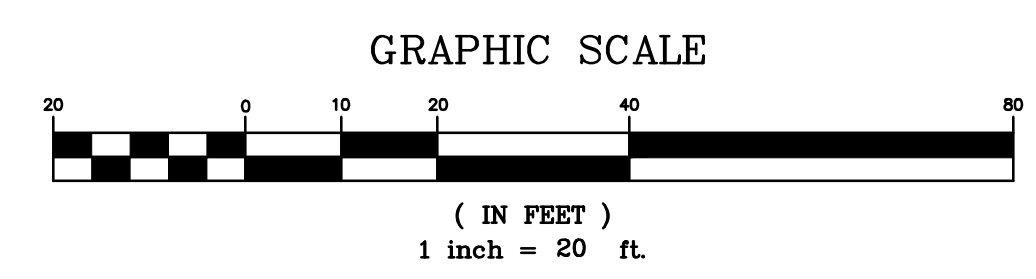


TIDAL INFORMATION:
 MEAN HIGH WATER LINE = 1.73'
 HIGH TIDE LINE = 3.16'
 MEAN LOW WATER LINE = -1.65'
 *INFORMATION OBTAINED FROM BUZZARDS BAY NATIONAL ESTUARY PROGRAM WEBSITE.
 GEOID REFERENCED. LAT: 41.626106 LONG: -70.89212

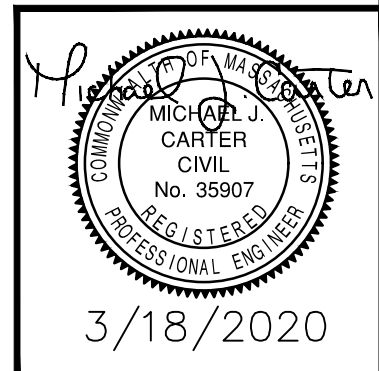
NOTE:

THIS PROJECT IS LOCATED IN A SPECIAL FLOOD HAZARD AREA ZONE VE WITH BASE FLOOD ELEVATION OF 15.0 FEET.

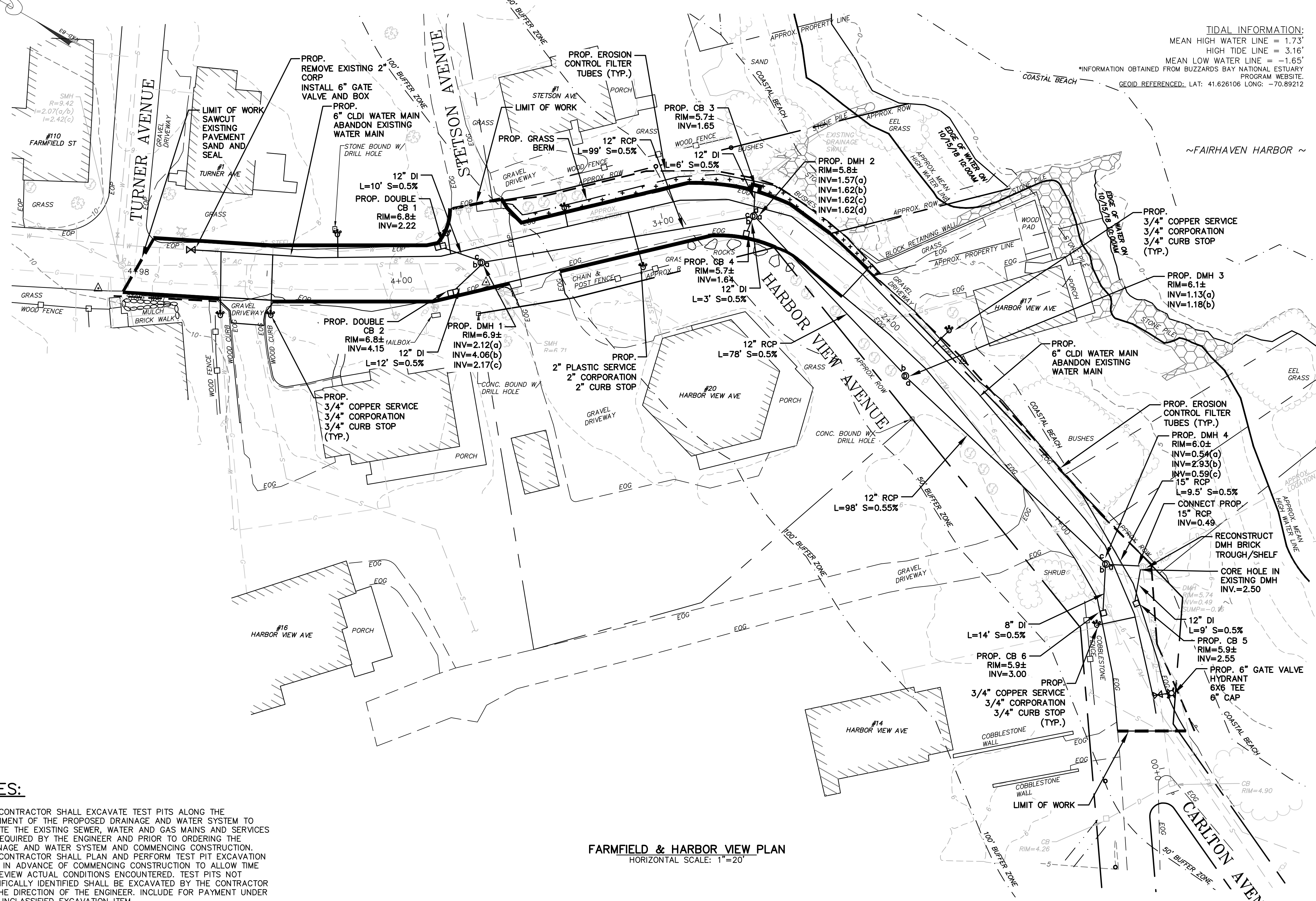
FARMFIELD & HARBOR VIEW PLAN
 HORIZONTAL SCALE: 1"=20'



TOWN OF FAIRHAVEN, MASSACHUSETTS ROADWAY IMPROVEMENT PROJECT		
FARMFIELD STREET & HARBOR VIEW AVENUE EXISTING CONDITIONS PLAN		
GCG ASSOCIATES, INC. WILMINGTON MASSACHUSETTS		
SCALE: 1"=20'	DATE: MARCH 18, 2020	
JOB NO. \ FILE NAME: 1841.DWG	DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C.	PLAN NO. 3 of 9



FARMFIELD STREET

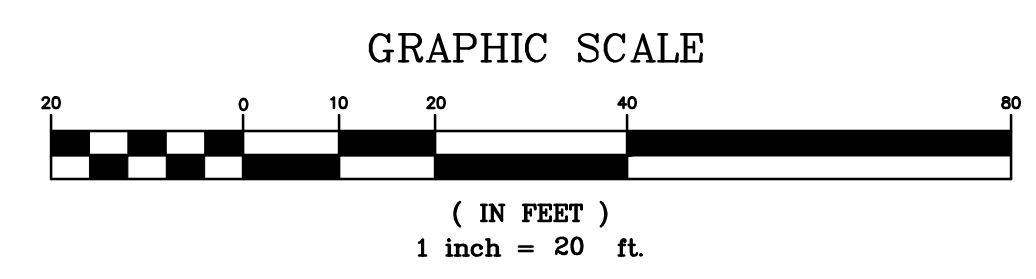


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 GEOID REFERENCED: LAT: 41.626106 LONG: -70.89212

NOTES:

- 1) THE CONTRACTOR SHALL EXCAVATE TEST PITS ALONG THE ALIGNMENT OF THE PROPOSED DRAINAGE AND WATER SYSTEM TO LOCATE THE EXISTING SEWER, WATER AND GAS MAINS AND SERVICES AS REQUIRED BY THE ENGINEER AND PRIOR TO ORDERING THE DRAINAGE AND WATER SYSTEM AND COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL PLAN AND PERFORM TEST PIT EXCAVATION WELL IN ADVANCE OF COMMENCING CONSTRUCTION TO ALLOW TIME TO REVIEW ACTUAL CONDITIONS ENCOUNTERED. TEST PITS NOT SPECIFICALLY IDENTIFIED SHALL BE EXCAVATED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER. INCLUDE FOR PAYMENT UNDER THE UNCLASSIFIED EXCAVATION ITEM.
- 2) OIL/SEDIMENT TRAP "ELIMINATOR" OR EQUAL TO BE INSTALLED ON ALL PROPOSED CATCH BASINS.
- 3) "ULTRA-HYDROKLEEN FILTRATION SYSTEM" OR EQUAL INSERT TO BE INSTALLED IN PROPOSED DOUBLE CATCH BASINS 1 AND 2 AND CATCH BASINS 3 AND 4. SEE SHEET 9 OF 9 FOR DETAIL.

FARMFIELD & HARBOR VIEW PLAN
 HORIZONTAL SCALE: 1"=20'



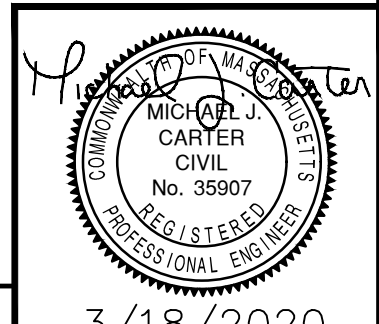
TOWN OF FAIRHAVEN, MASSACHUSETTS
 ROADWAY IMPROVEMENT PROJECT

FARMFIELD STREET &
 HARBOR VIEW AVENUE
 PROPOSED PLAN

GCG ASSOCIATES, INC.
 WILMINGTON MASSACHUSETTS

SCALE: 1"=20' DATE: MARCH 18, 2020

JOB NO. \FILE NAME: 1841.DWG DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C. PLAN NO. 4 OF 9

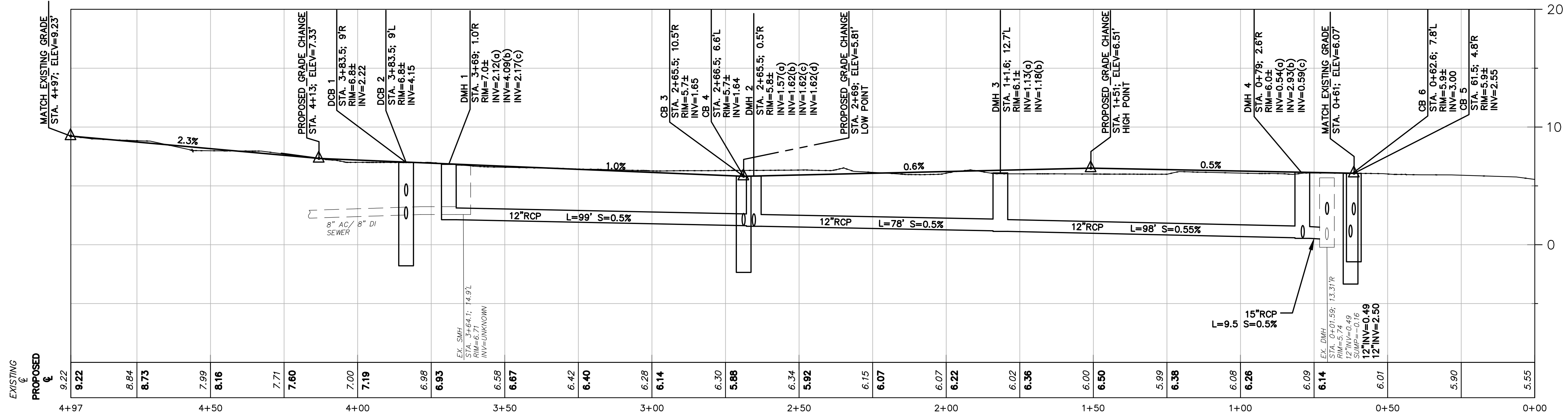


REV.	DATE	DESCRIPTION	BY
1	4/28/20	EXTEND PAVING AND BERMS ONTO HARBOR VIEW AV	JTC

3/18/2020

FARMFIELD STREET & HARBOR VIEW AVENUE PROFILE

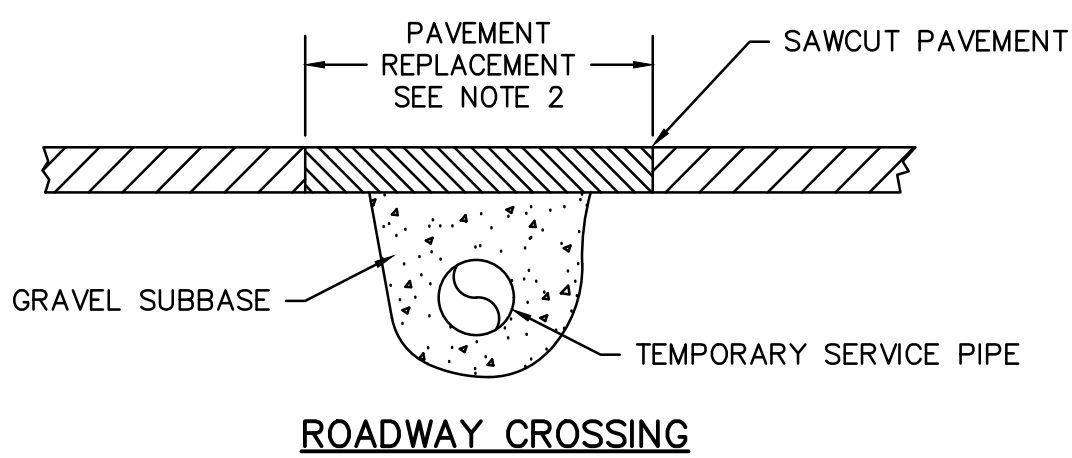
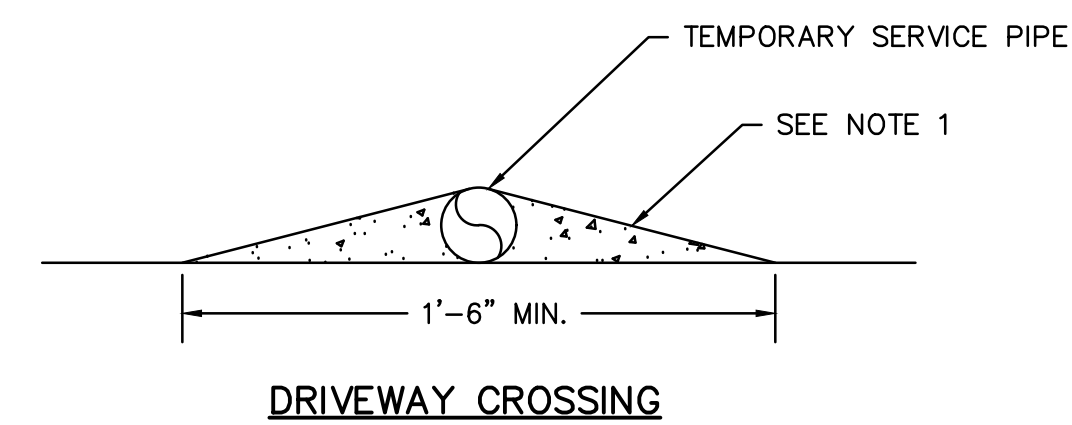
- EXISTING CENTER LINE
- PROPOSED CENTER LINE
- - - EXISTING DRAIN LINE
- - - EXISTING SEWER LINE
- PROPOSED DRAIN LINE



FARMFIELD & HARBOR VIEW PLAN
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=5'

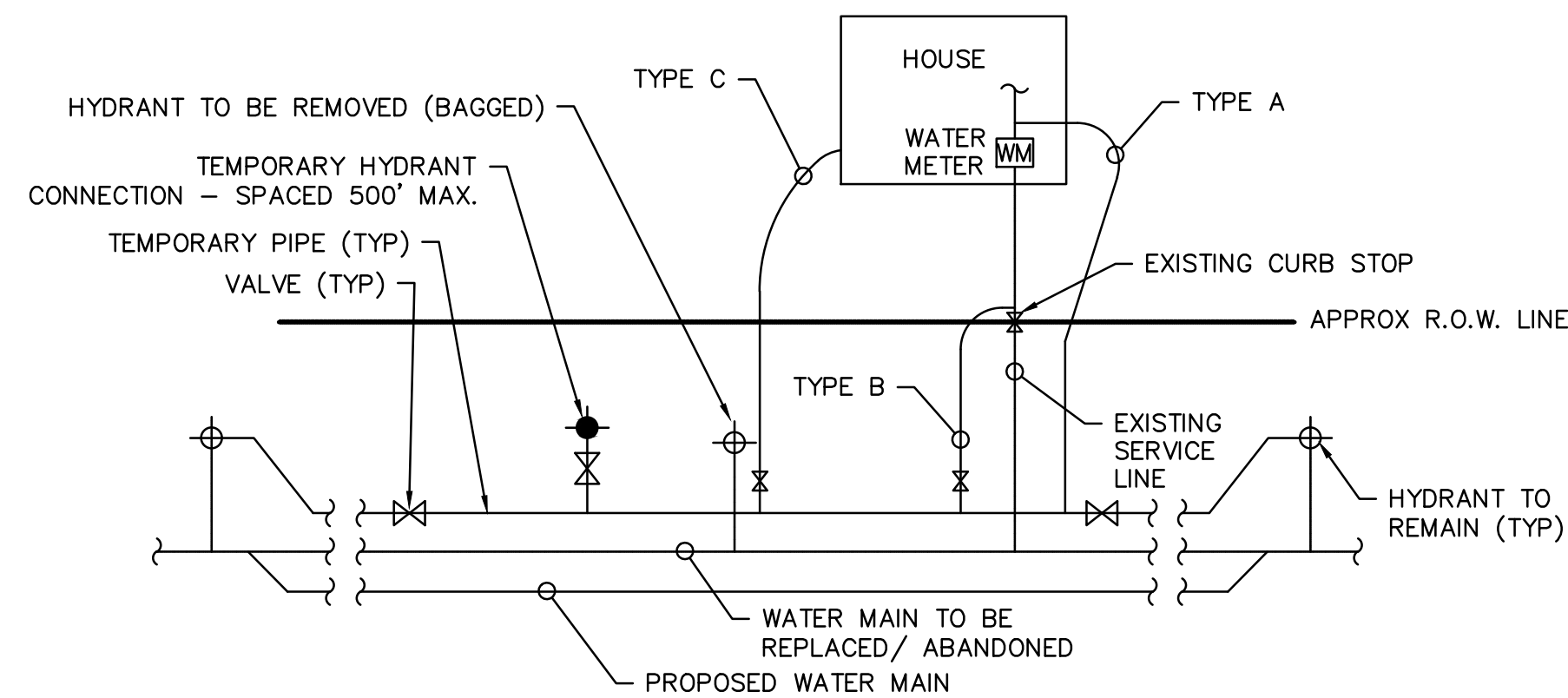
TEMPORARY BYPASS PIPING NOTES

- PRIOR TO STARTING ANY WORK THAT WILL AFFECT SERVICE TO CUSTOMERS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE CUSTOMERS TWO DAYS PRIOR TO SHUTDOWN.
- BUILDINGS TIED OFF OF MEMORIAL DRIVE WILL NEED TO BE CONNECTED TO THE TEMPORARY WATER BY-PASS. (25, 33, 43, 51, 55 AND 77 BRIDGE STREET)
- TEMPORARY BYPASS PIPING PLAN SHALL BE DESIGNED BY THE CONTRACTOR, INCLUDING LAYOUT OF THE BYPASS PIPING, TEMPORARY SERVICE LINES TO ALL CUSTOMERS, THE SPECIFIED BYPASS PIPE DIAMETER TO BE USED IN EACH LOCATION, AND THE TYPE AND LOCATION OF TEMPORARY FIRE HYDRANTS. THE BYPASS PIPING, IN MOST CASES, WILL BE LAID ABOVE GROUND AND SHALL BE 2" AND 4" AS REQUIRED. PAYMENT FOR FURNISHING, INSTALLING, AND MAINTAINING AND REMOVING BYPASS PIPING WILL BE PAID FOR UNDER ITEM 2P.
- THREE COPIES OF PROPOSED PLANS FOR THE DESIGN OF THE TEMPORARY WATER BYPASS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT THE PRE-CONSTRUCTION MEETING. THE ENGINEER SHALL MAKE THE FINAL DECISION AS TO THE ROUTING AND SIZES OF ALL BYPASS LINES, BEFORE ANY BYPASS IS INSTALLED.
- THE TEMPORARY BYPASS PIPING SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO THE REMOVAL OF THE EXISTING WATER MAIN AND THE INSTALLATION OF THE PROPOSED WATER MAIN.
- THE CONTRACTOR SHALL USE CRUSHER-RUN MATERIAL (3/4"-1/4" STONE MIXED WITH STONE DUST) AT ALL DRIVEWAYS TO RAMP OVER THE BYPASS PIPING. AT CROSS STREETS, PIPING SHALL BE PLACED BELOW PAVING GRADE AND COVERED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL AFFECTED WATER CUSTOMERS, IN WRITING, OF SHUTTING OFF SERVICE AT LEAST TWO DAYS PRIOR TO SHUTDOWN. NOTICE CARDS WILL BE FURNISHED BY THE CONTRACTOR WHICH WILL INCLUDE THE HOURS OF SHUTDOWN AND NOTE THAT A TEMPORARY RUSTY WATER CONDITION MAY EXIST. NOTICE CARDS WILL ALSO HAVE SPACE FOR THE CONTRACTOR TO FILL IN THE SPECIFIC DATES FOR EACH SHUTDOWN. THE WORK SHALL BE SCHEDULED IN SECTIONS, AS APPROVED BY THE ENGINEER, AS IT IS NECESSARY TO ALLOW FOR COMPLETION OF THE WORK AND RESTORATION OF SERVICE TO THE CUSTOMER WITHIN THE TIMES SPECIFIED BY THE ENGINEER.

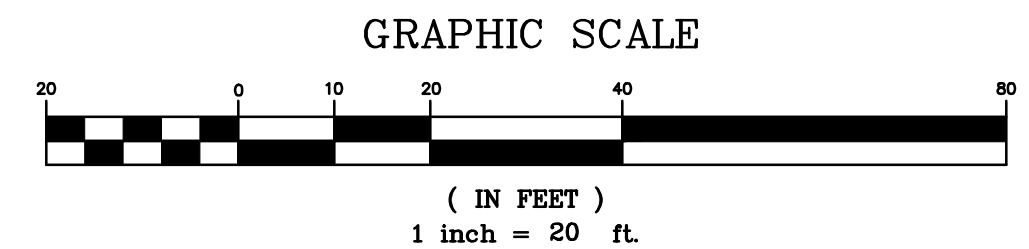


- NOTES:
- THE CONTRACTOR SHALL USE CRUSHER-RUN MATERIAL (3/4"-1/4" STONE MIXED WITH STONE DUST) AT ALL DRIVEWAYS TO RAMP OVER THE BYPASS PIPING.
 - AT CROSS STREETS, PIPING SHALL BE PLACED BELOW PAVING GRADE AND COVERED.

TEMPORARY SERVICE PIPE CROSSING DETAIL
 N.T.S.



- CONNECTION TYPE A - TEMPORARY SERVICE HOSE WITH METER REMOVED
 CONNECTION TYPE B - TEMPORARY SERVICE HOSE AT EXISTING CURB STOP
 CONNECTION TYPE C - TEMPORARY SERVICE HOSE AT OTHER SUITABLE LOCATION
- TYPICAL TEMPORARY SERVICE PIPE DETAIL
 N.T.S.



TOWN OF FAIRHAVEN, MASSACHUSETTS
 ROADWAY IMPROVEMENT PROJECT

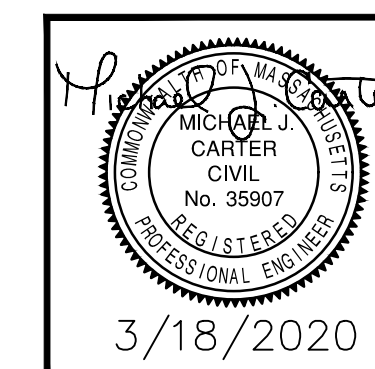
FARMFIELD STREET &
 HARBOR VIEW AVENUE
 PROPOSED PROFILE

GCG ASSOCIATES, INC.

WILMINGTON MASSACHUSETTS





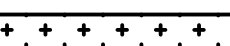

SCALE: 1"=20' DATE: MARCH 18, 2020

JOB NO./FILE NAME: 1841.DWG DESIGNED BY: L.P.B. PLAN NO. 5 of 9
 DRAWN BY: L.P.B.
 CHECKED BY: M.J.C.

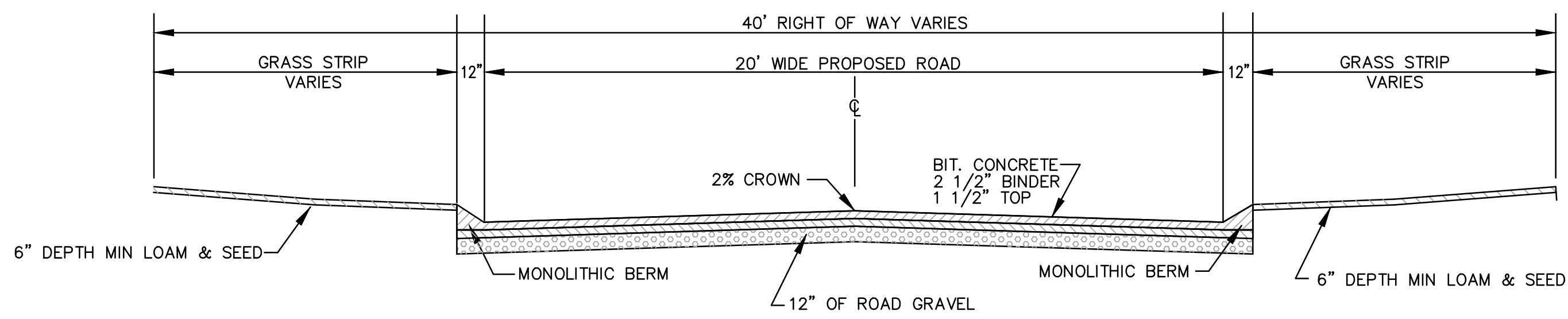
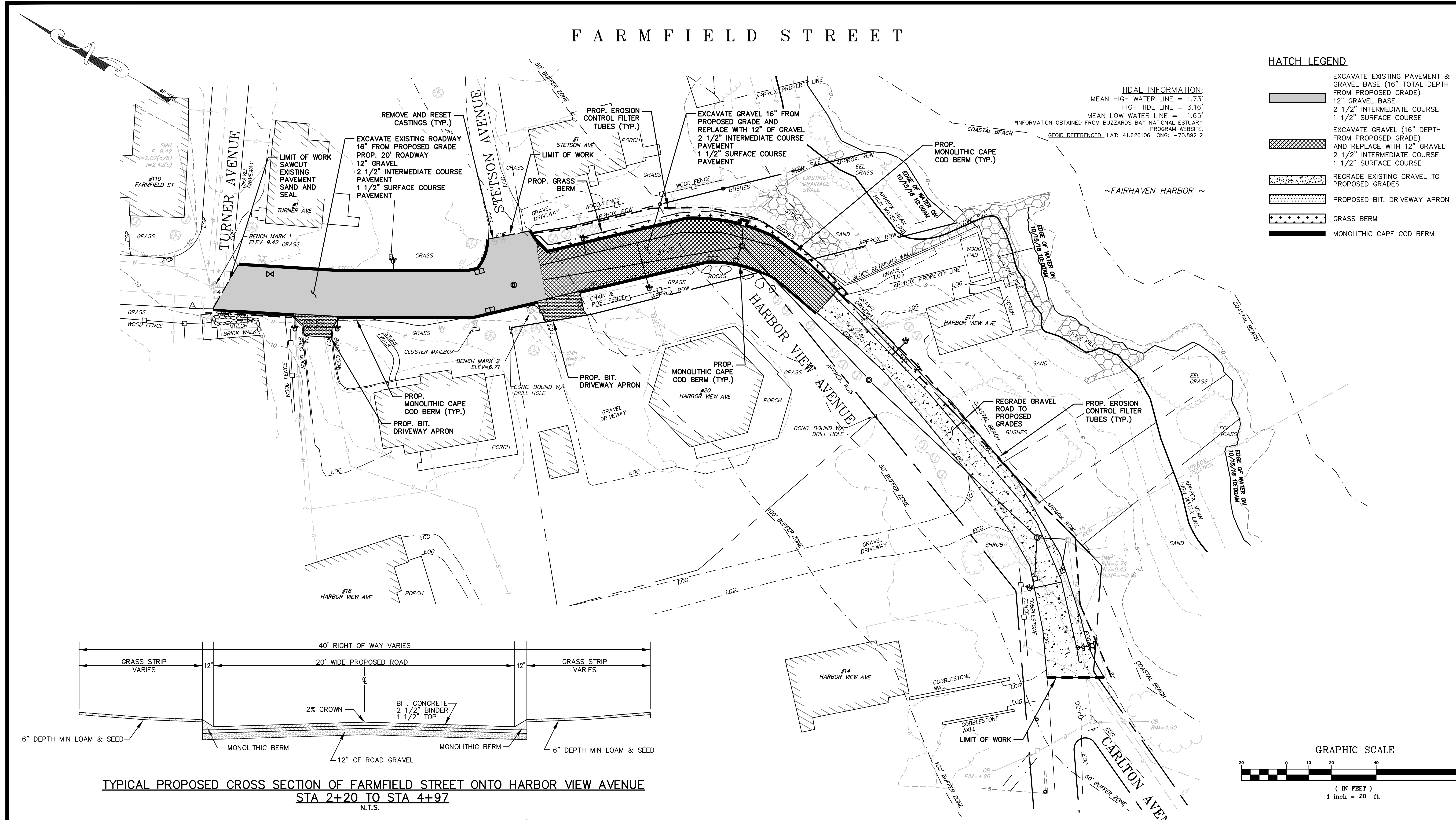


FARMFIELD STREET

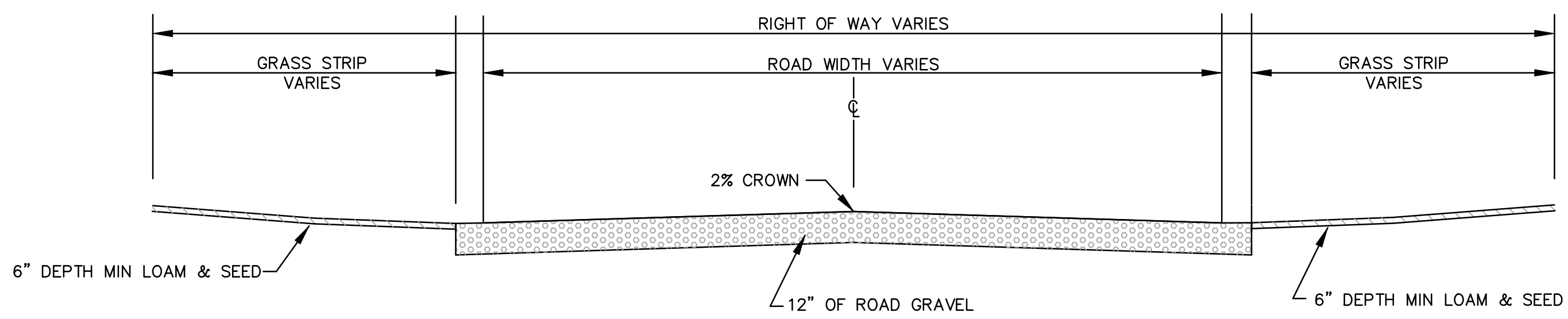
HATCH LEGEND

-  EXCAVATE EXISTING PAVEMENT & GRAVEL BASE (16" TOTAL DEPTH FROM PROPOSED GRADE)
12" GRAVEL BASE
2 1/2" INTERMEDIATE COURSE
1 1/2" SURFACE COURSE
-  EXCAVATE GRAVEL (16" DEPTH FROM PROPOSED GRADE) AND REPLACE WITH 12" GRAVEL
2 1/2" INTERMEDIATE COURSE
1 1/2" SURFACE COURSE
-  REGRADE EXISTING GRAVEL TO PROPOSED GRADES
-  PROPOSED BIT. DRIVEWAY APRON
-  GRASS BERM
-  MONOLITHIC CAPE COD BERM

TIDAL INFORMATION:
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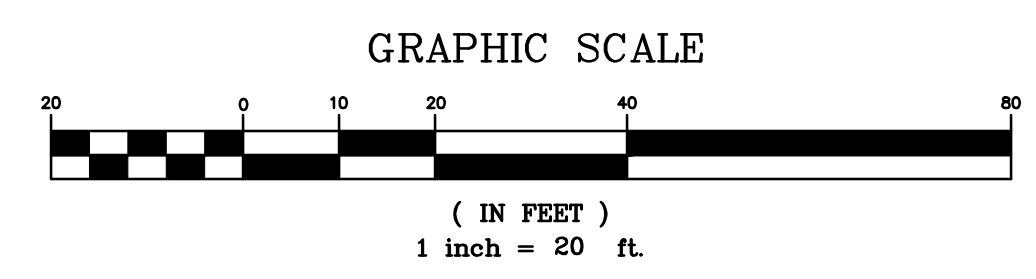


TYPICAL PROPOSED CROSS SECTION OF FARMFIELD STREET ONTO HARBOR VIEW AVENUE
 STA 2+20 TO STA 4+97
 N.T.S.



TYPICAL PROPOSED CROSS SECTION OF HARBOR VIEW AVENUE
 STA 0+12 TO STA 2+20
 N.T.S.

FARMFIELD & HARBOR VIEW PLAN
 HORIZONTAL SCALE: 1"=20'



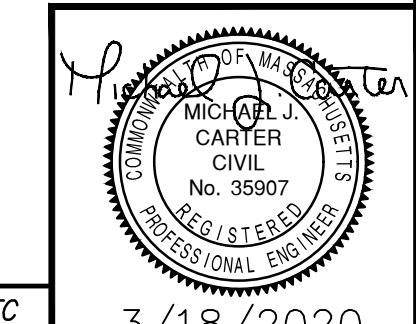
TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

FARMFIELD STREET & HARBOR VIEW AVENUE
PROPOSED SITE PLAN

GCG ASSOCIATES, INC.
 WILMINGTON MASSACHUSETTS

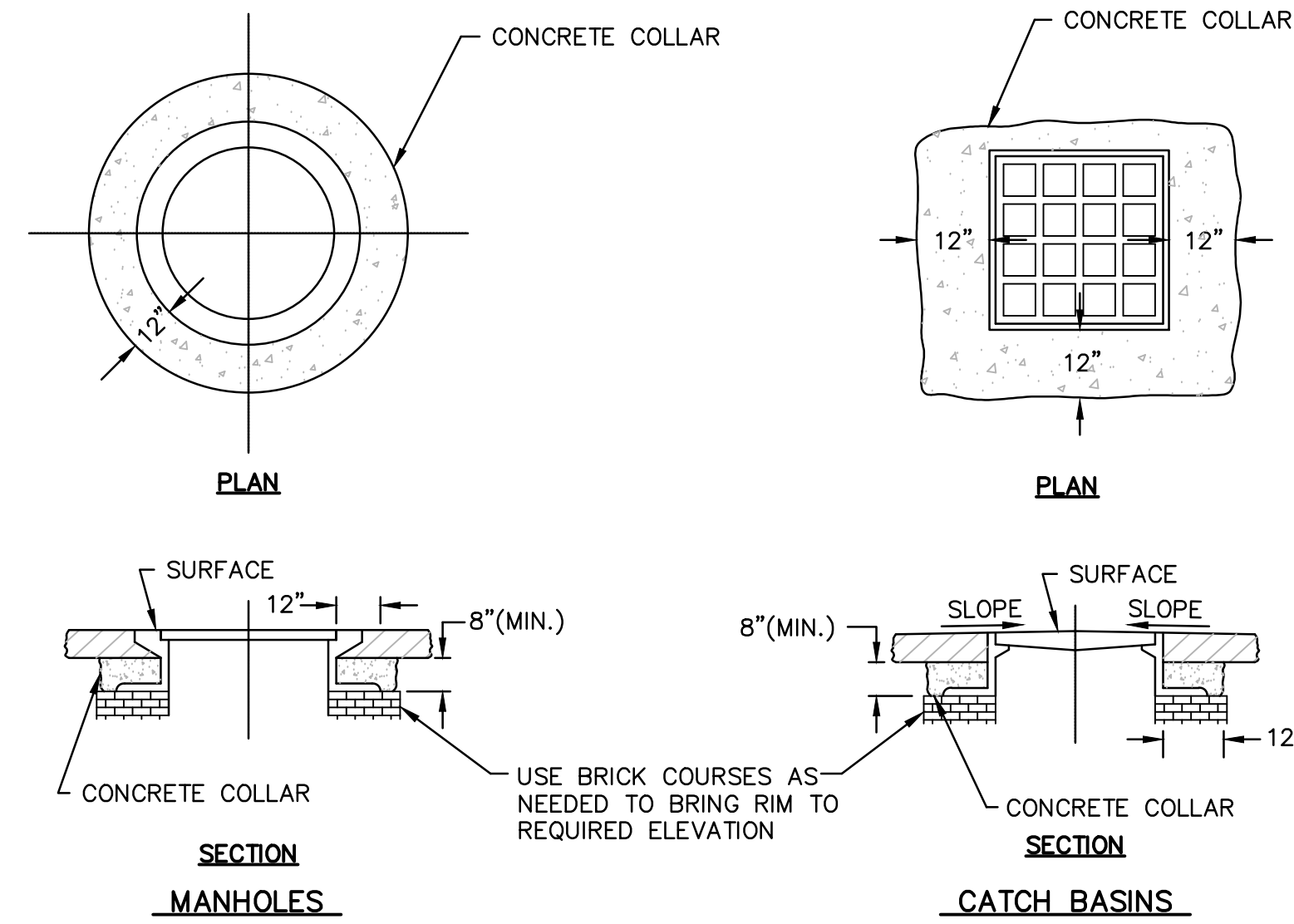
SCALE: 1"=20' DATE: MARCH 18, 2020

JOB NO. \FILE NAME: 1841.DWG DESIGNED BY: L.P.B. PLAN NO. 6 OF 9
 DRAWN BY: L.P.B.
 CHECKED BY: M.J.C.

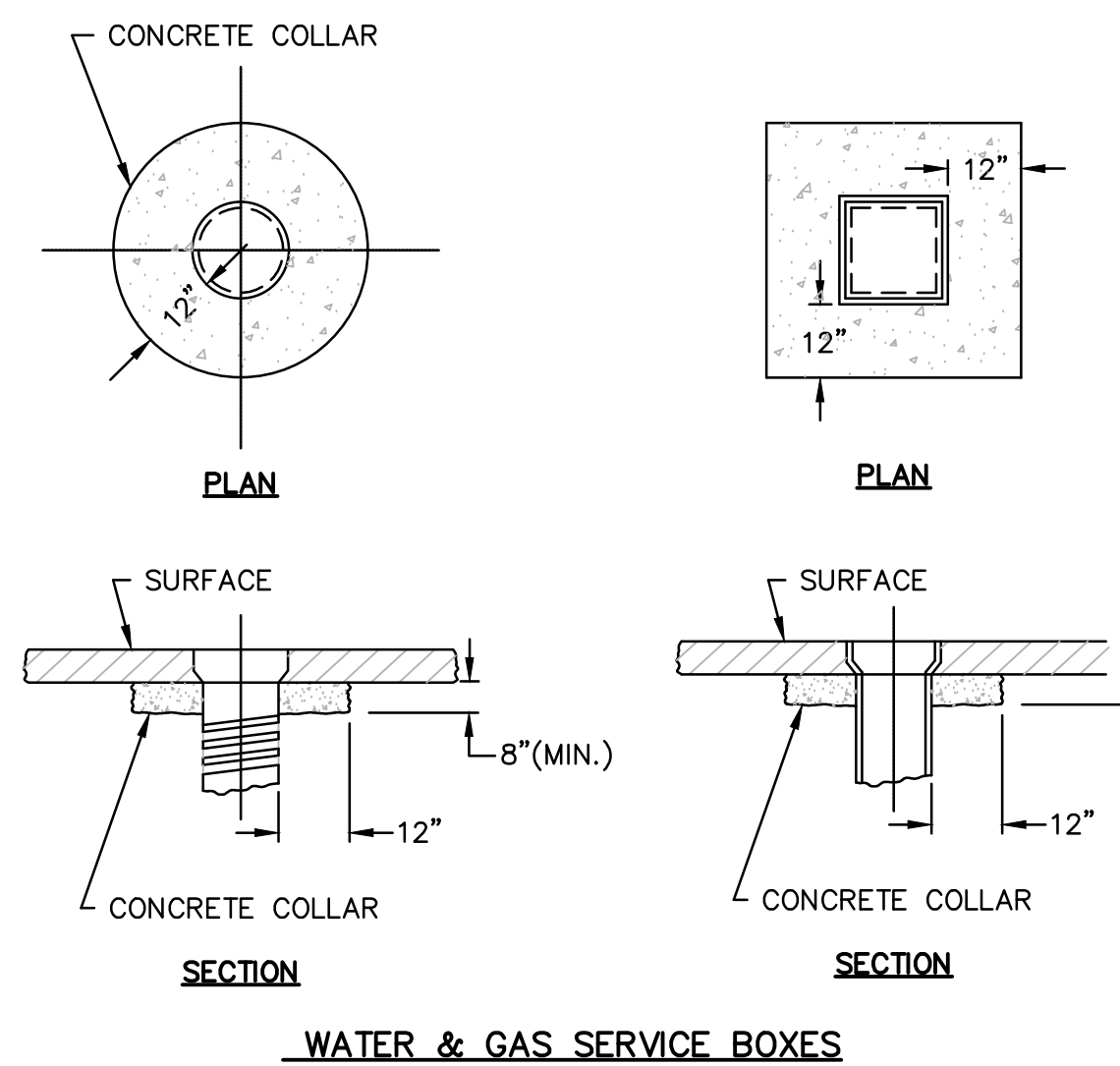


REV.	DATE	DESCRIPTION	BY
1	4/28/20	EXTEND PAVING AND BERMS ONTO HARBOR VIEW AV	JTC

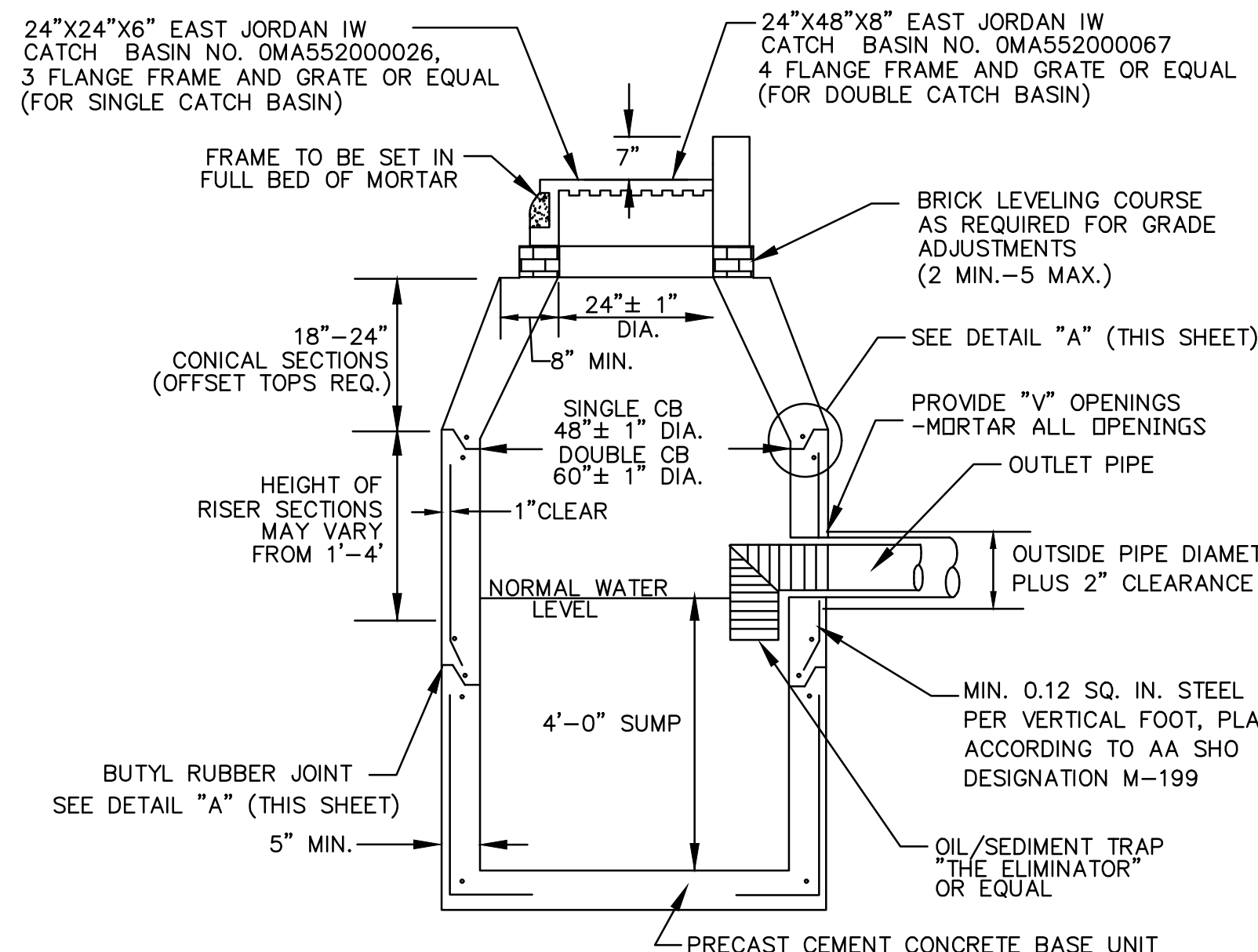
3/18/2020



DETAILS FOR ADJUSTING CASTINGS
N.T.S.



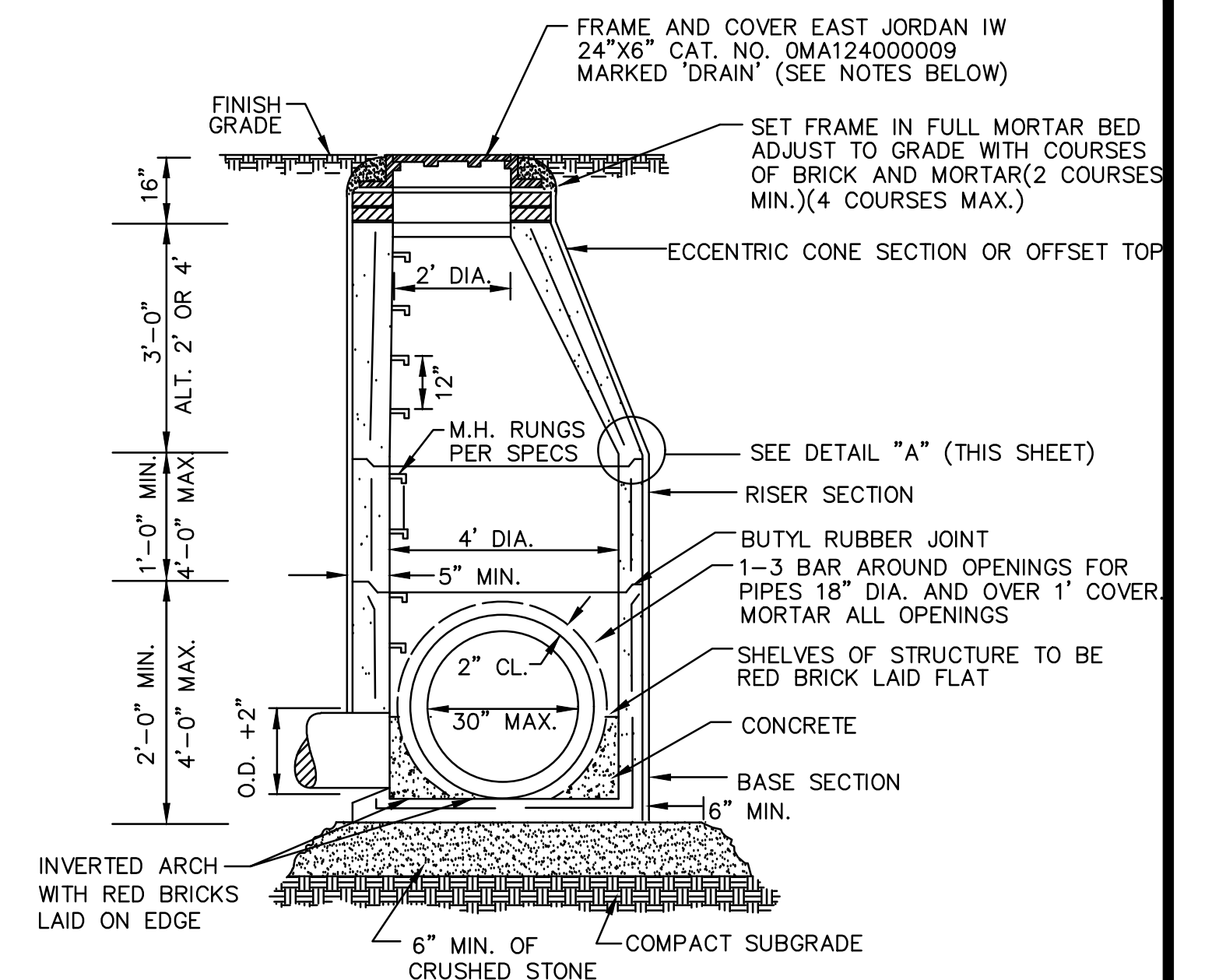
WATER & GAS SERVICE BOXES



- NOTES:**
- 1.) PRECAST REINFORCED CONCRETE CB BASE, CONE AND RISER SECTIONS PER A.S.T.M. C-478. MINIMUM 4000 PSI CONCRETE.
 - 2.) PRECAST CONCRETE STRUCTURE SHALL BE RATED FOR AASHTO HS-20 LOADING.
 - 3.) DOUBLE GRATED CATCH BASINS SHALL BE 5' IN DIAMETER, HAVE 6" WALLS AND PROVIDE A MIN. OPENING OF 24"x36".

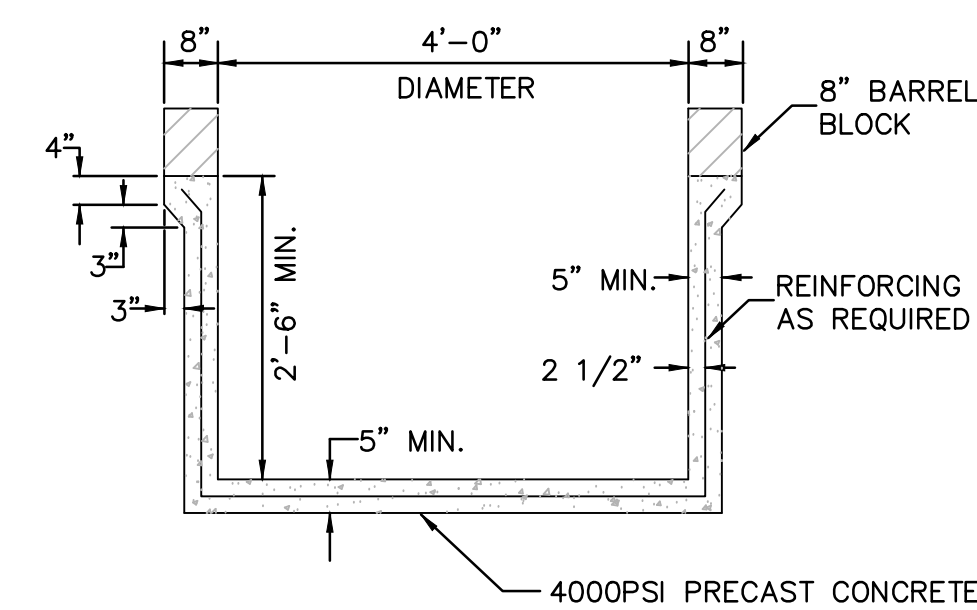
PRECAST CONCRETE CATCH BASIN
WITH GRANITE CURB INLET
NOT TO SCALE

DETAIL "A"
NOT TO SCALE



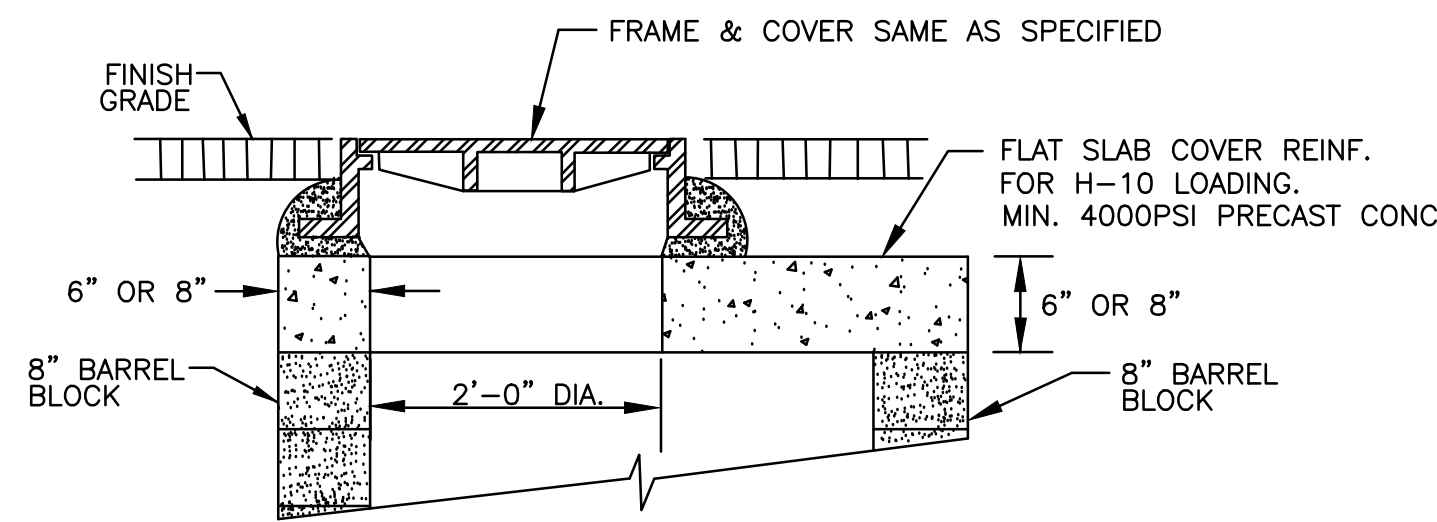
- NOTE:**
1. PRECAST REINFORCED CONCRETE MANHOLE BASE, CONE AND RISER SECTIONS PER A.S.T.M. C-478
 2. MINIMUM 4000 PSI PRECAST CONCRETE

TYPICAL PRECAST DRAIN MANHOLE
NOT TO SCALE

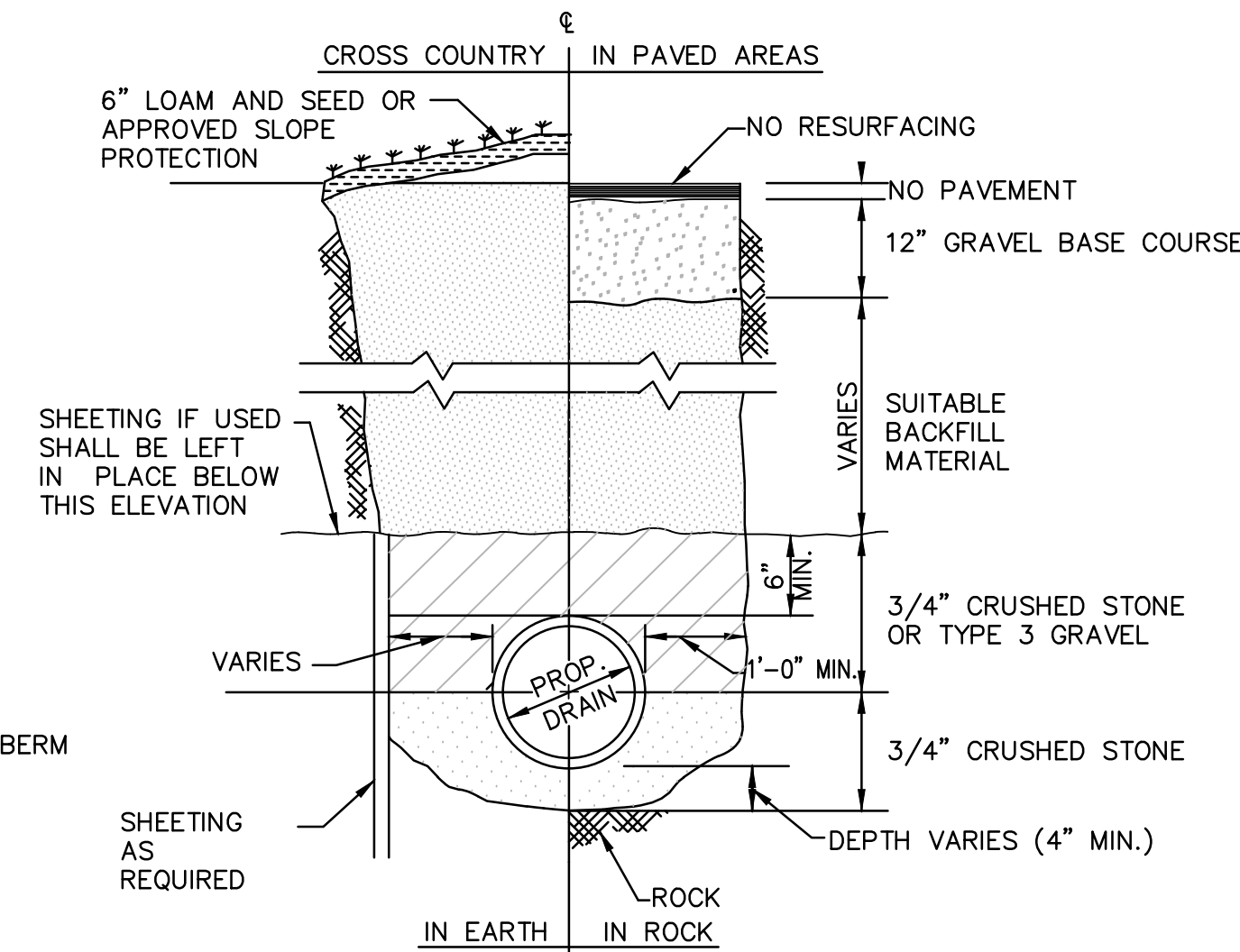


- NOTE:**
1. PRECAST CONCRETE SUMP TO CONFORM TO ASTM C478.
 2. CONCRETE SHALL BE 4000 PSI MINIMUM.
 3. STEEL REINFORCEMENT TO MEET OR EXCEED H-20 LOADING.
 4. REINFORCING STEEL 0.12 SQ.IN./LF & 0.12 SQ.IN. (BOTH WAYS) BASE BOTTOM.

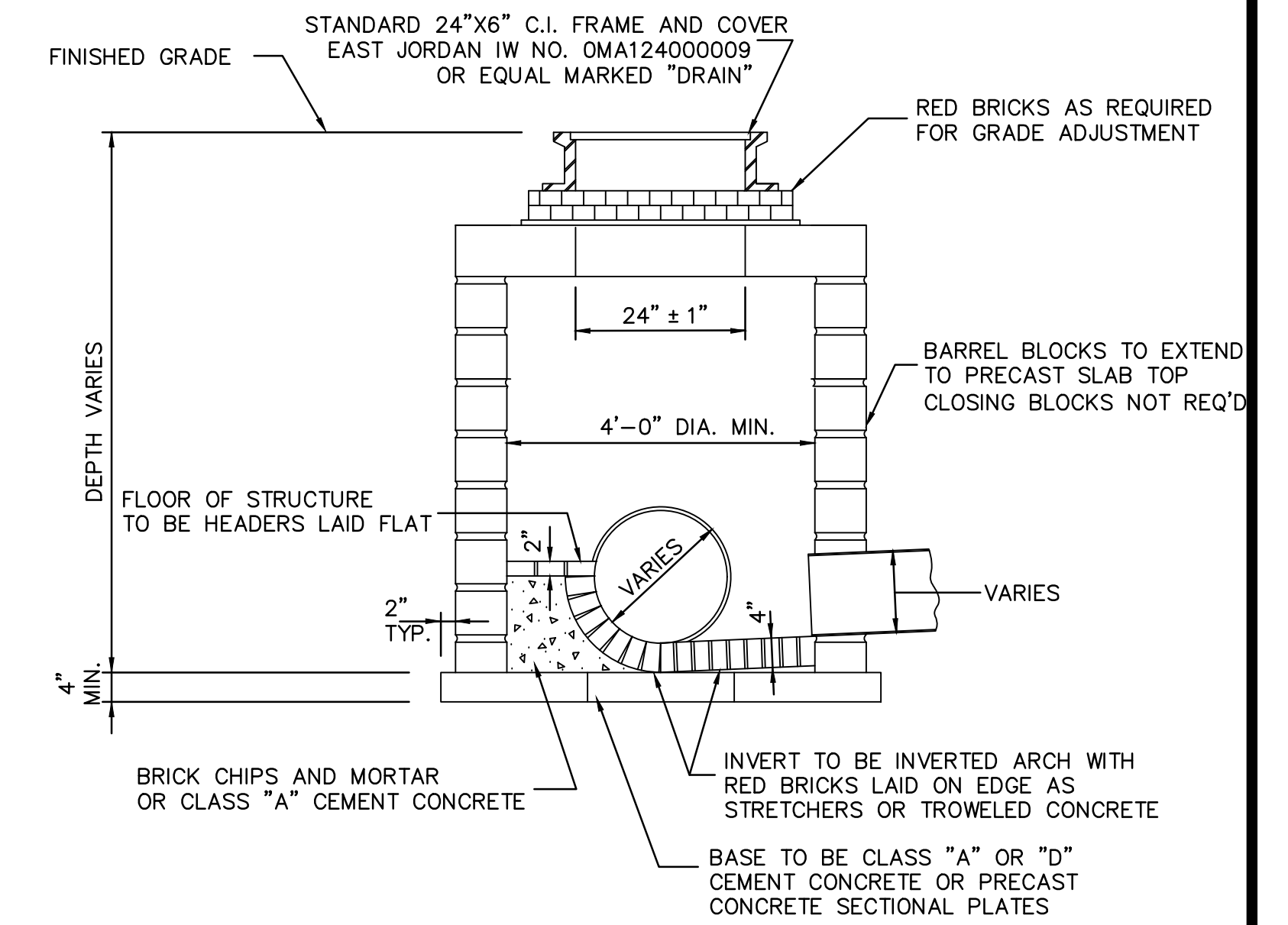
PRECAST CONCRETE CATCH BASIN SUMP
NOT TO SCALE



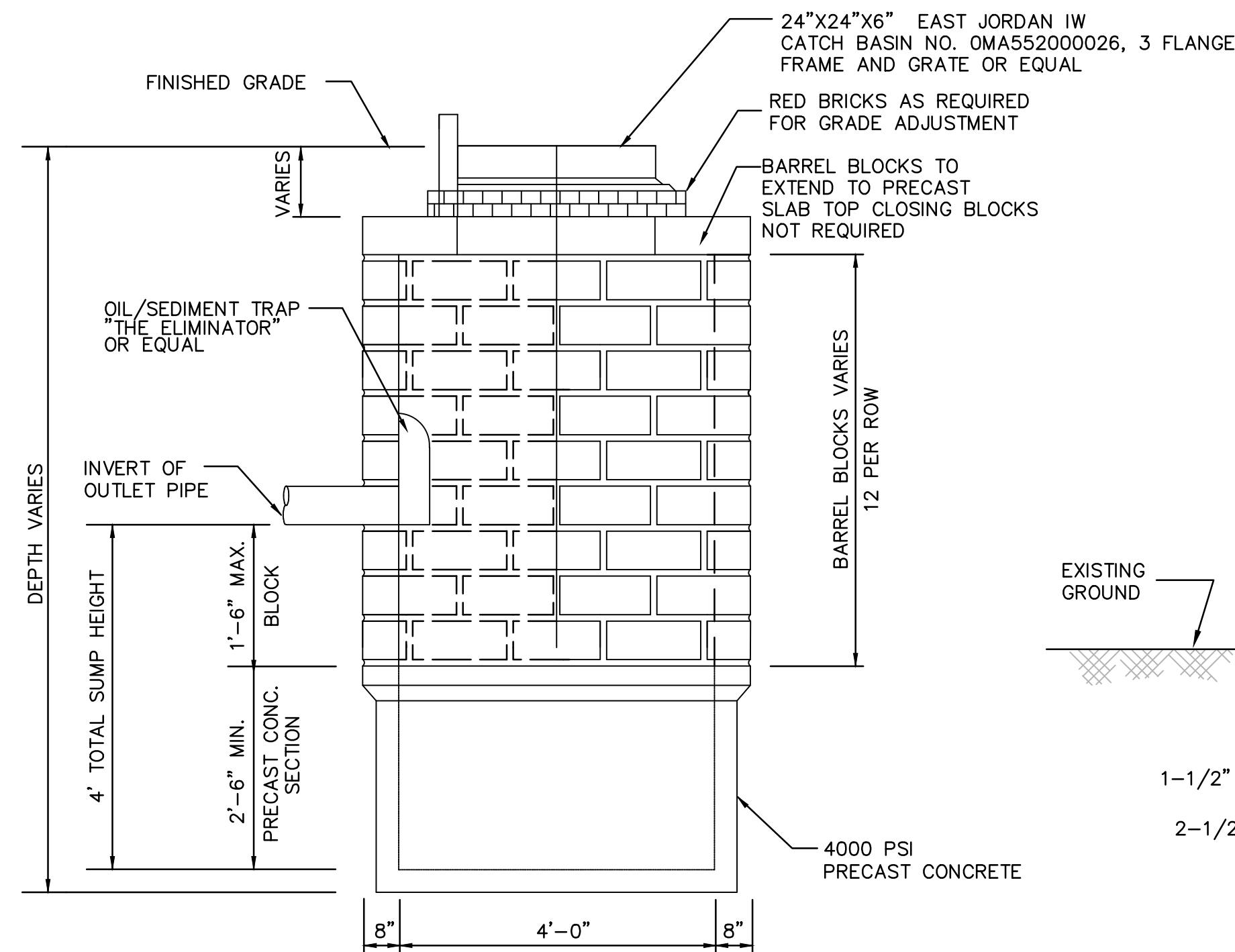
OFFSET TOP FOR ALL MANHOLES & CATCH BASINS
NOT TO SCALE



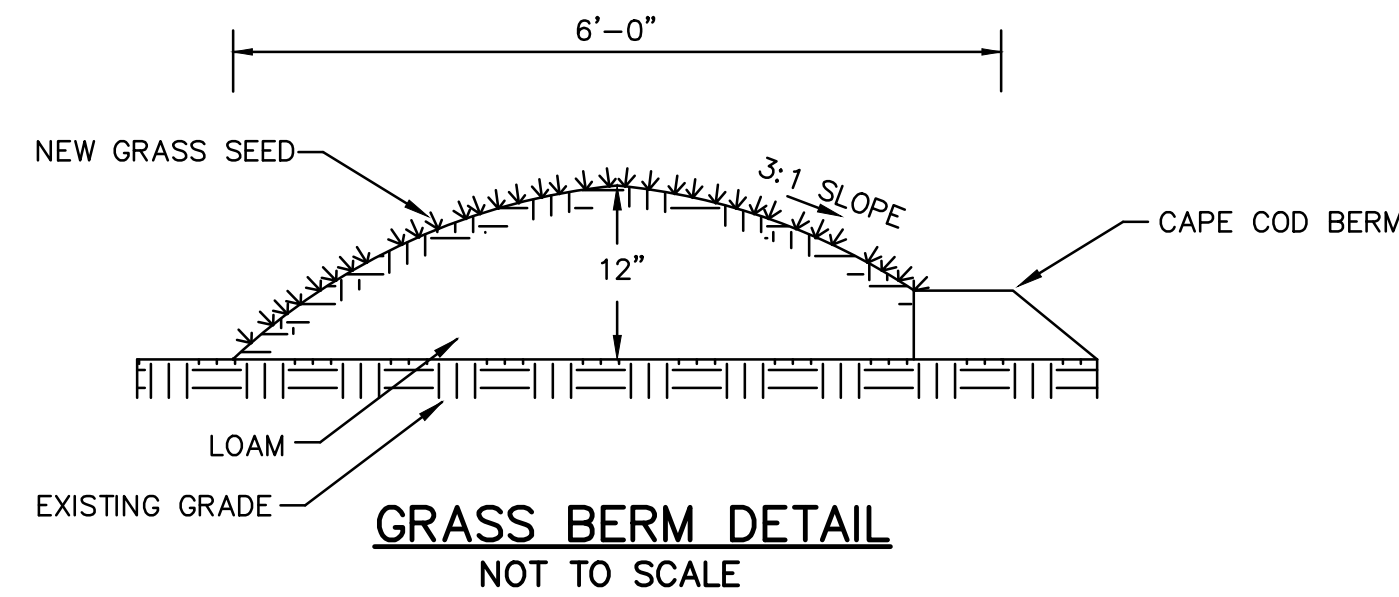
TYPICAL DRAIN/SEWER TRENCH DETAIL
NOT TO SCALE



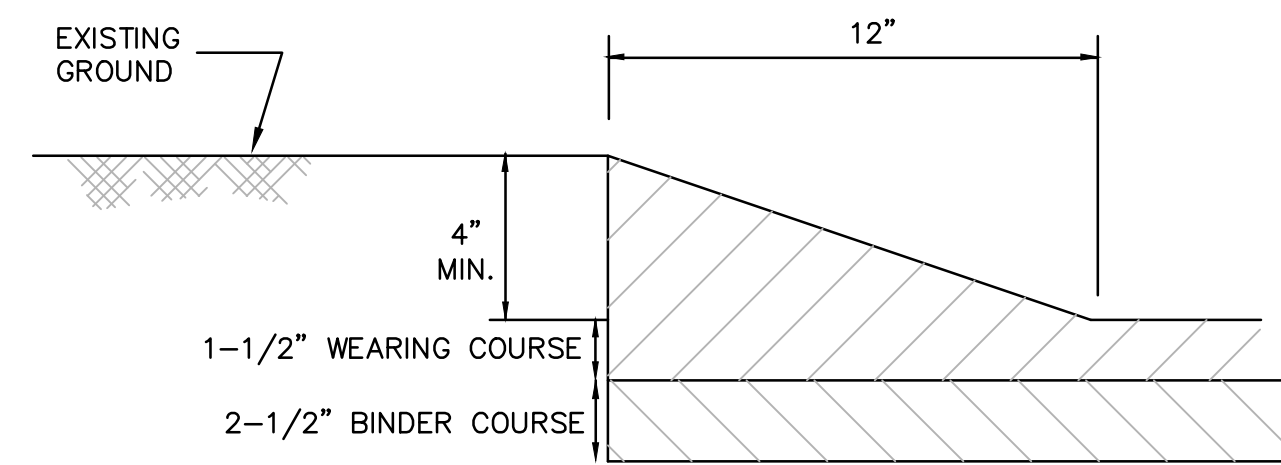
TYPICAL CONCRETE BLOCK DRAIN MANHOLE
NOT TO SCALE



TYPICAL CONCRETE BLOCK CATCH BASIN
NOT TO SCALE

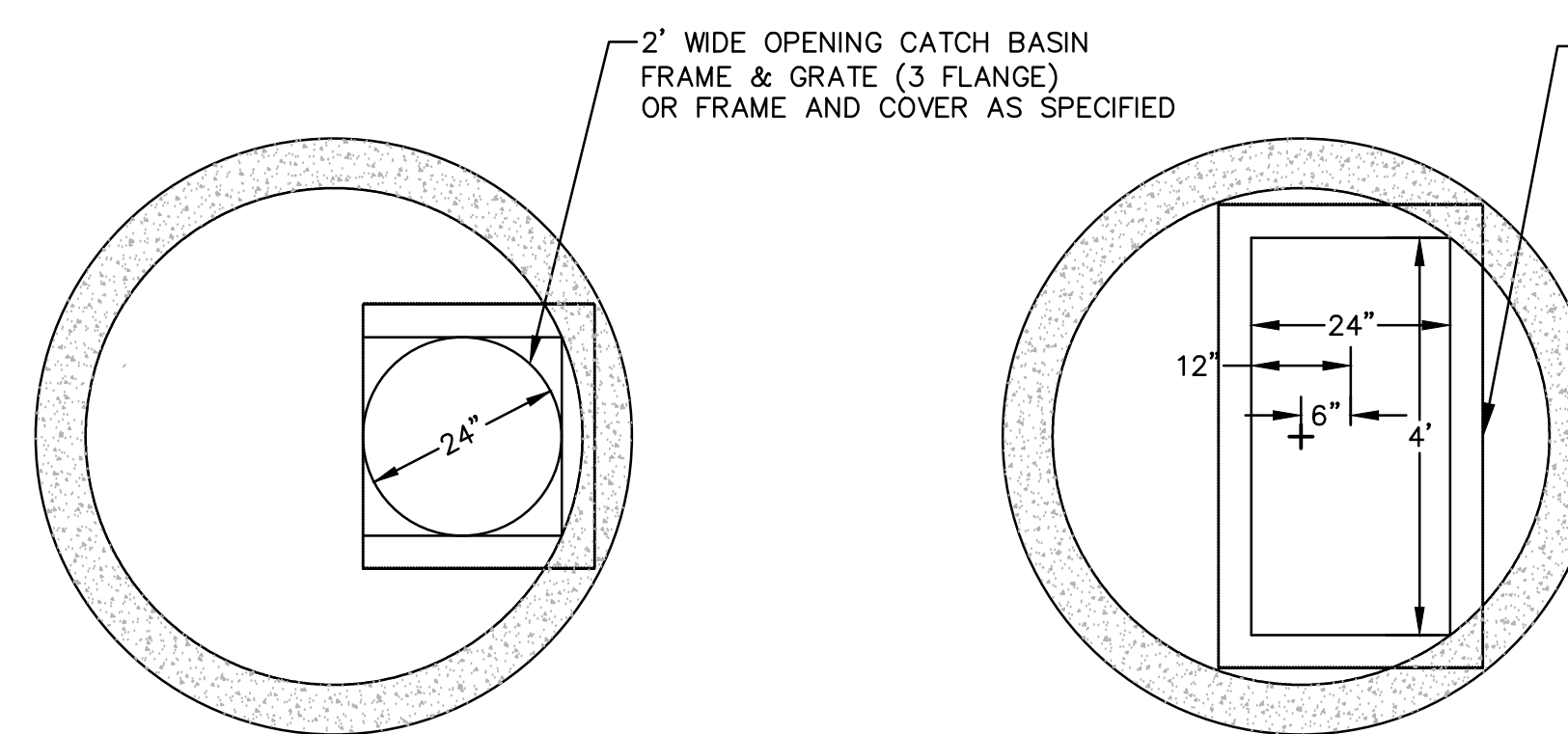


GRASS BERM DETAIL
NOT TO SCALE



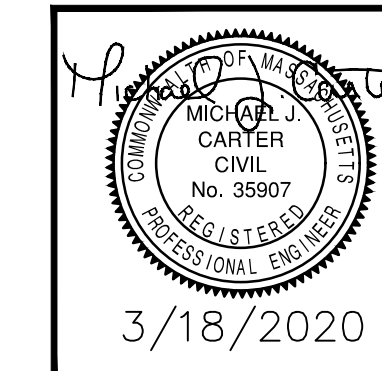
- NOTES:**
1. INCLUDE PAYMENT FOR BERM UNDER ITEM 1 1/2" WEARING COURSE PAVEMENT ITEM.
 2. COMPACT BERM WITH 75 LB. STEEL HAND ROLLER.
 3. INSTALL MONOLITHIC BERM ON BOTH SIDES OF ROAD.

MONOLITHIC BERM DETAIL
NOT TO SCALE



SECTION-CATCH BASIN OR DRAIN MANHOLE

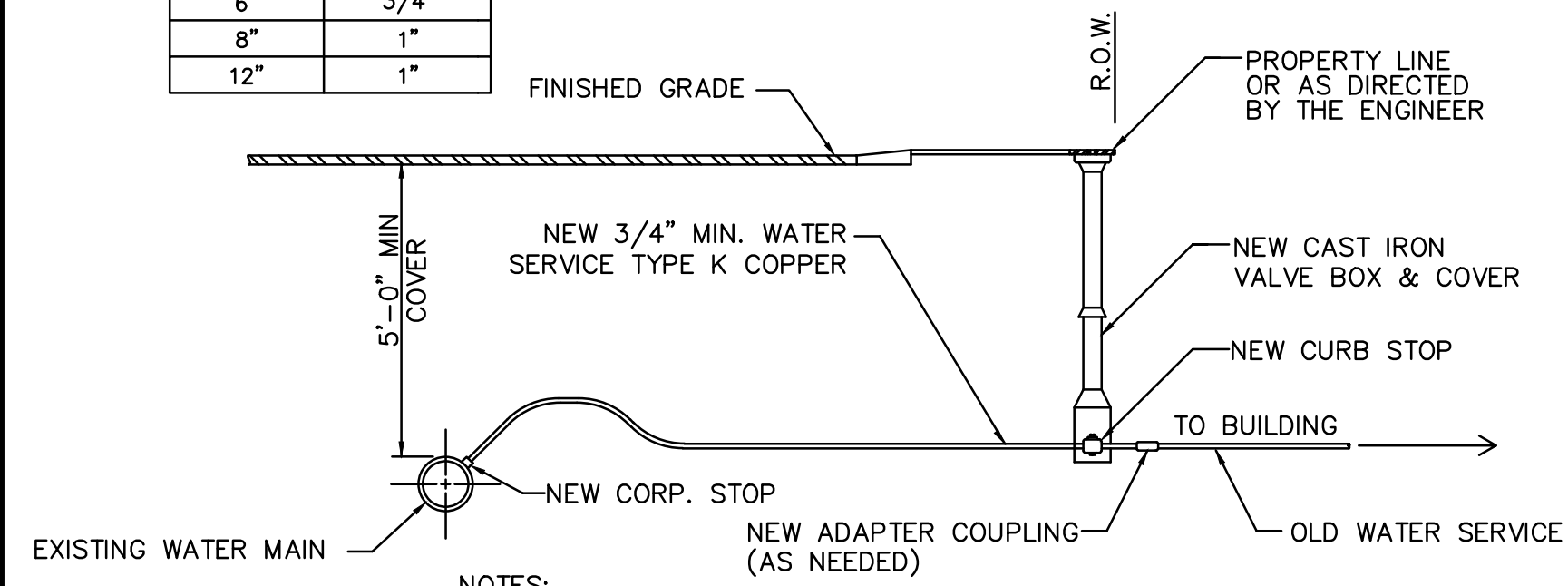
SECTION-DOUBLE GRATE CATCH BASIN



TOWN OF FAIRHAVEN, MASSACHUSETTS ROADWAY IMPROVEMENT PROJECT		
FARMFIELD STREET & HARBOR VIEW AVENUE DETAILS I		
GCG ASSOCIATES, INC.		
WILMINGTON	MASSACHUSETTS	
SCALE: AS NOTED	DATE: MARCH 18, 2020	
JOB NO./FILE NAME: 1841.dwg	DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C.	PLAN NO. 7 OF 9

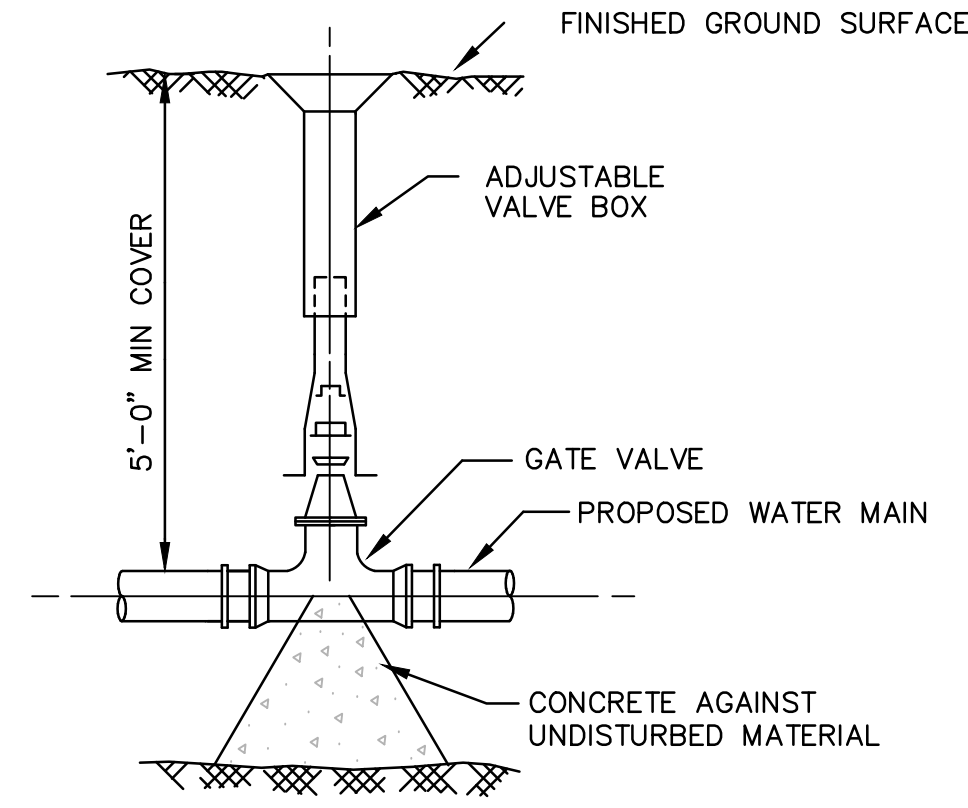
MAXIMUM SIZE TAPPED CONNECTION *	
WATER MAIN DIAMETER	MAXIMUM TAP DIAMETER
4"	1/2"
6"	3/4"
8"	1"
12"	1"

* WHERE THE SIZE OF THE CONNECTION EXCEEDS THAT GIVEN IN THE TABLE, A BOSS SHALL BE PROVIDED OR THE TAP SHALL BE MADE BY MEANS OF MULTIPLE CORP. STOPS AND BRANCH FITTINGS, TAPPED TEE, OR TAPPED SADDLE.

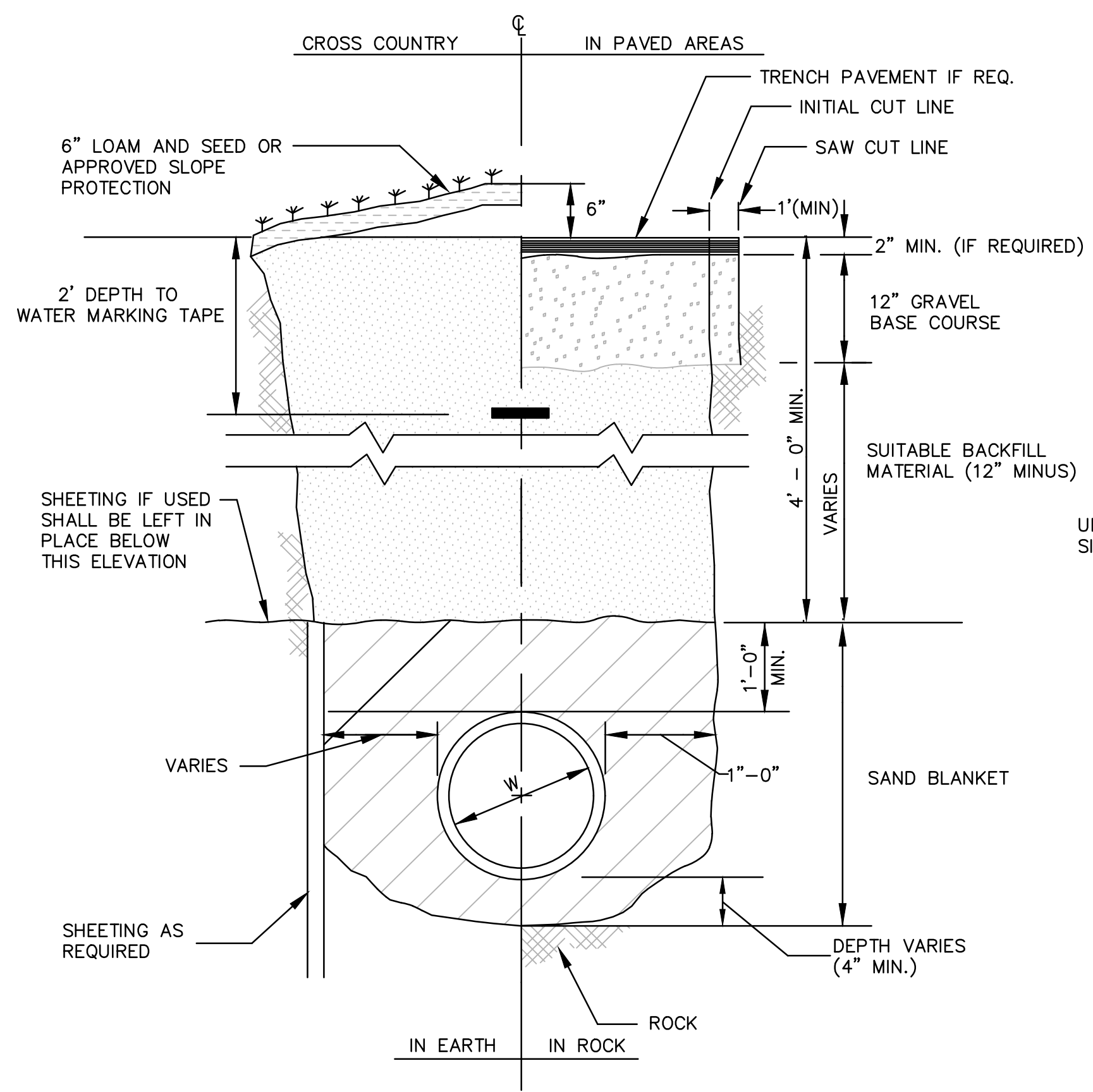


- NOTES:**
1. ALL WATER SERVICES AND CURB STOPS SHALL BE REPLACED UP TO THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER. ALL FITTINGS REQUIRED SHALL BE INCLUDED IN THE PRICE OF THE PIPE.
 2. ALL NEW WATER SERVICES, CORPORATIONS & CURBSTOPS SHALL BE AS SHOWN ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 3. ALL 2" WATER SERVICES REQUIRE SADDLE CONNECTIONS OR TAPPING TEES.

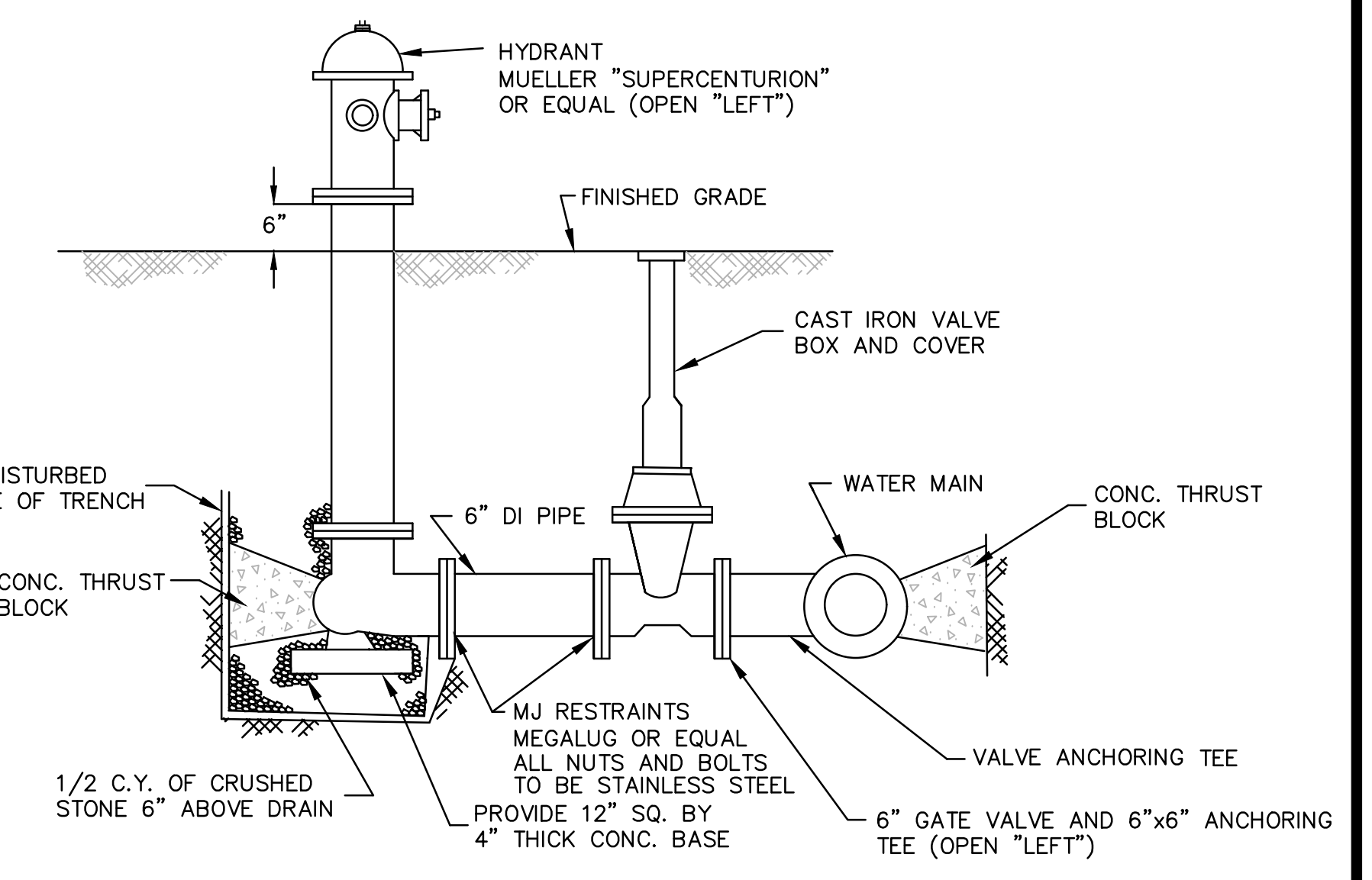
WATER SERVICE CONNECTION
NTS



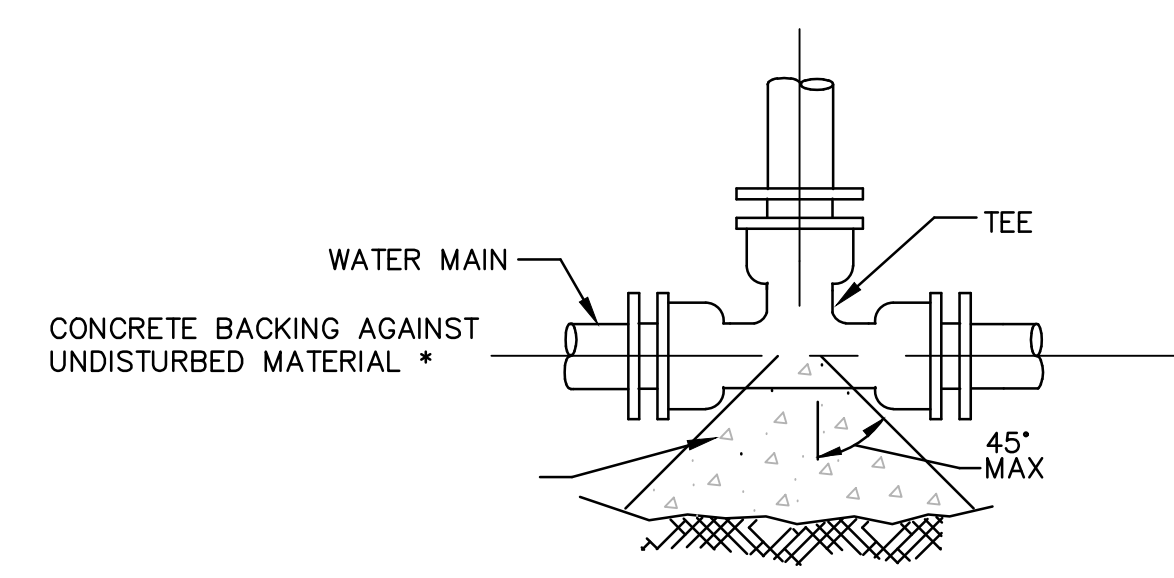
WATER VALVE DETAIL
NTS



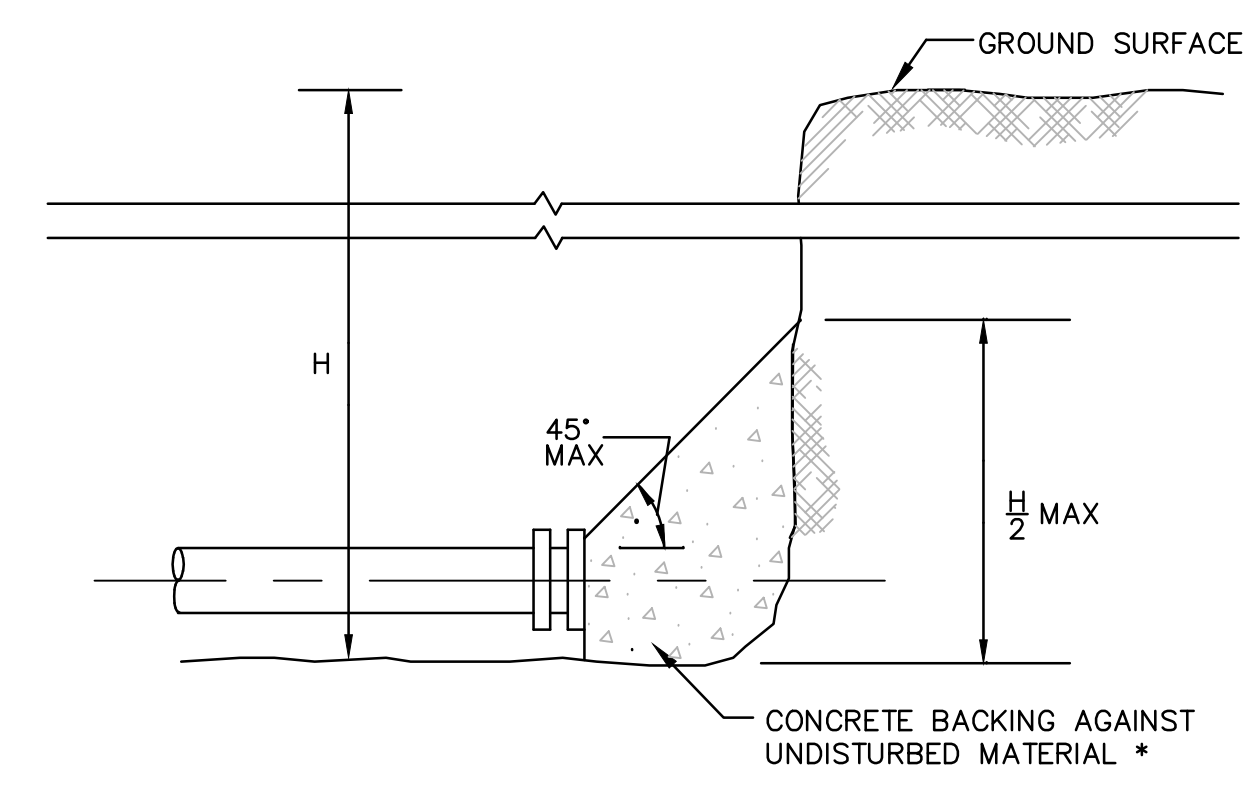
TYPICAL WATER MAIN/SERVICE TRENCH DETAIL
NOT TO SCALE



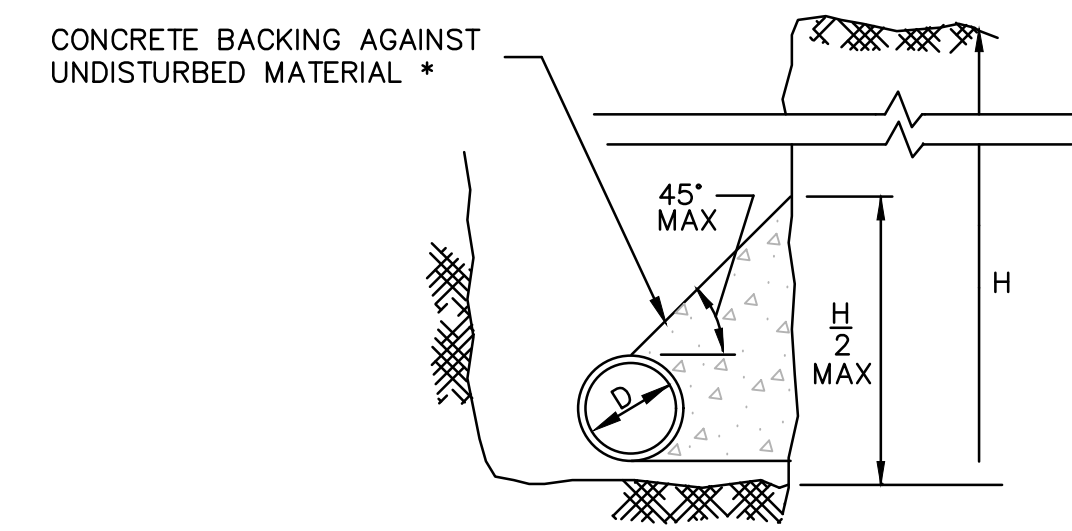
HYDRANT DETAIL
NTS



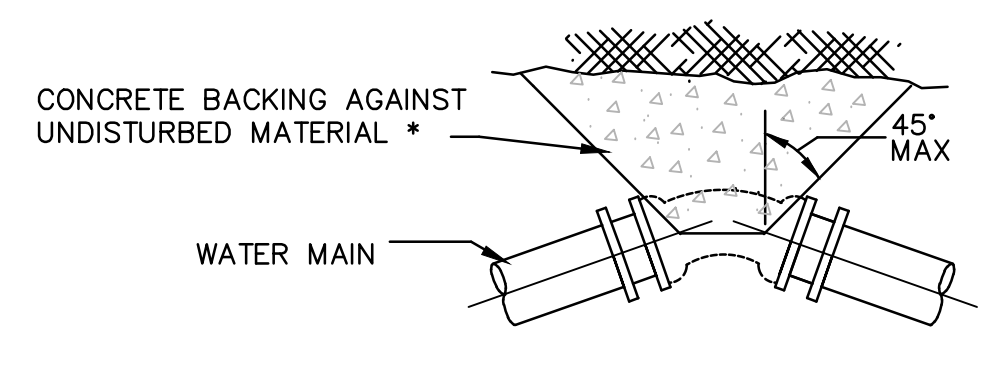
TYPICAL WATER MAIN TEE THRUST BLOCK DETAILS
NTS



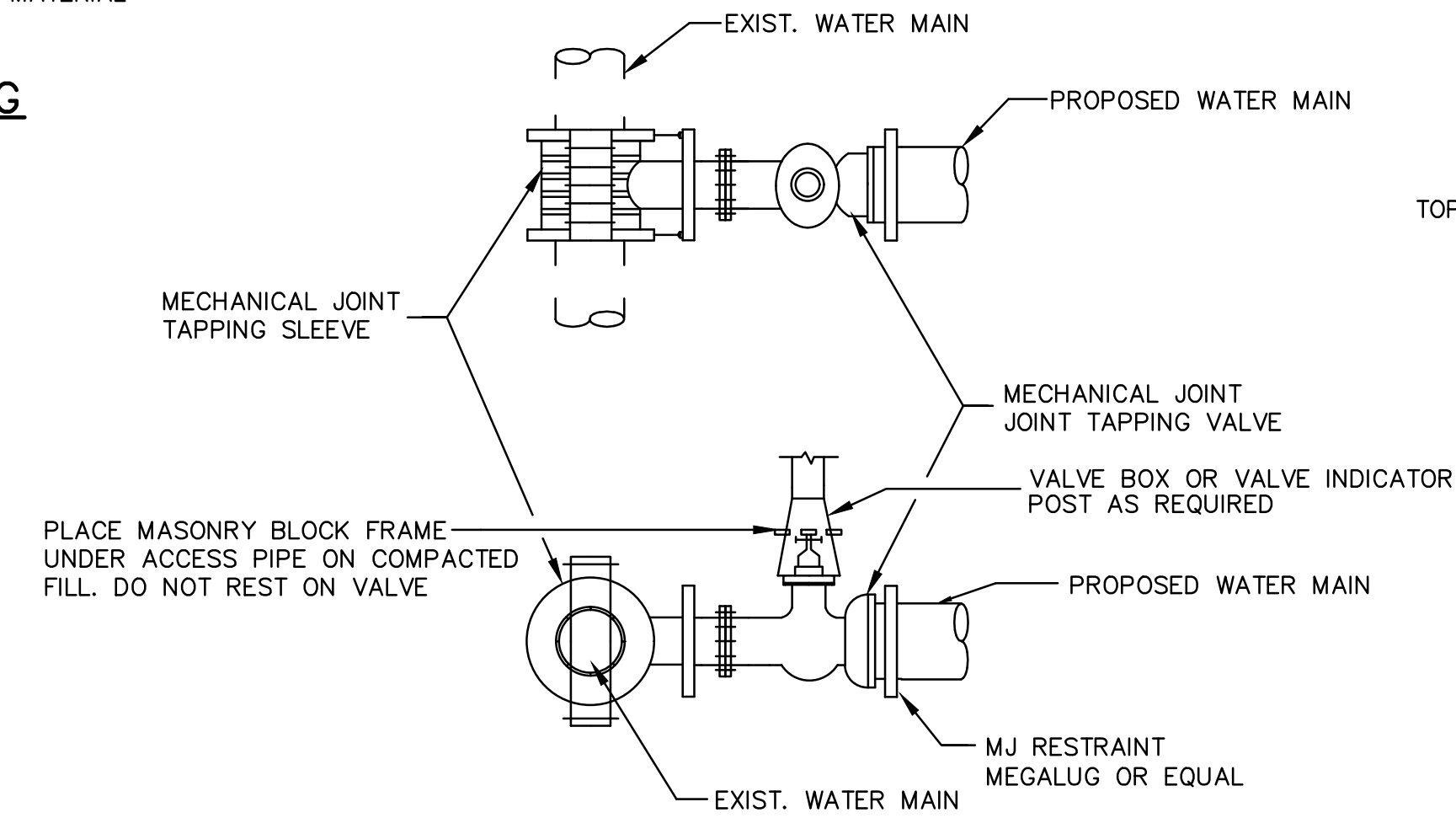
TYPICAL WATER MAIN PLUG THRUST BLOCK DETAILS
NTS



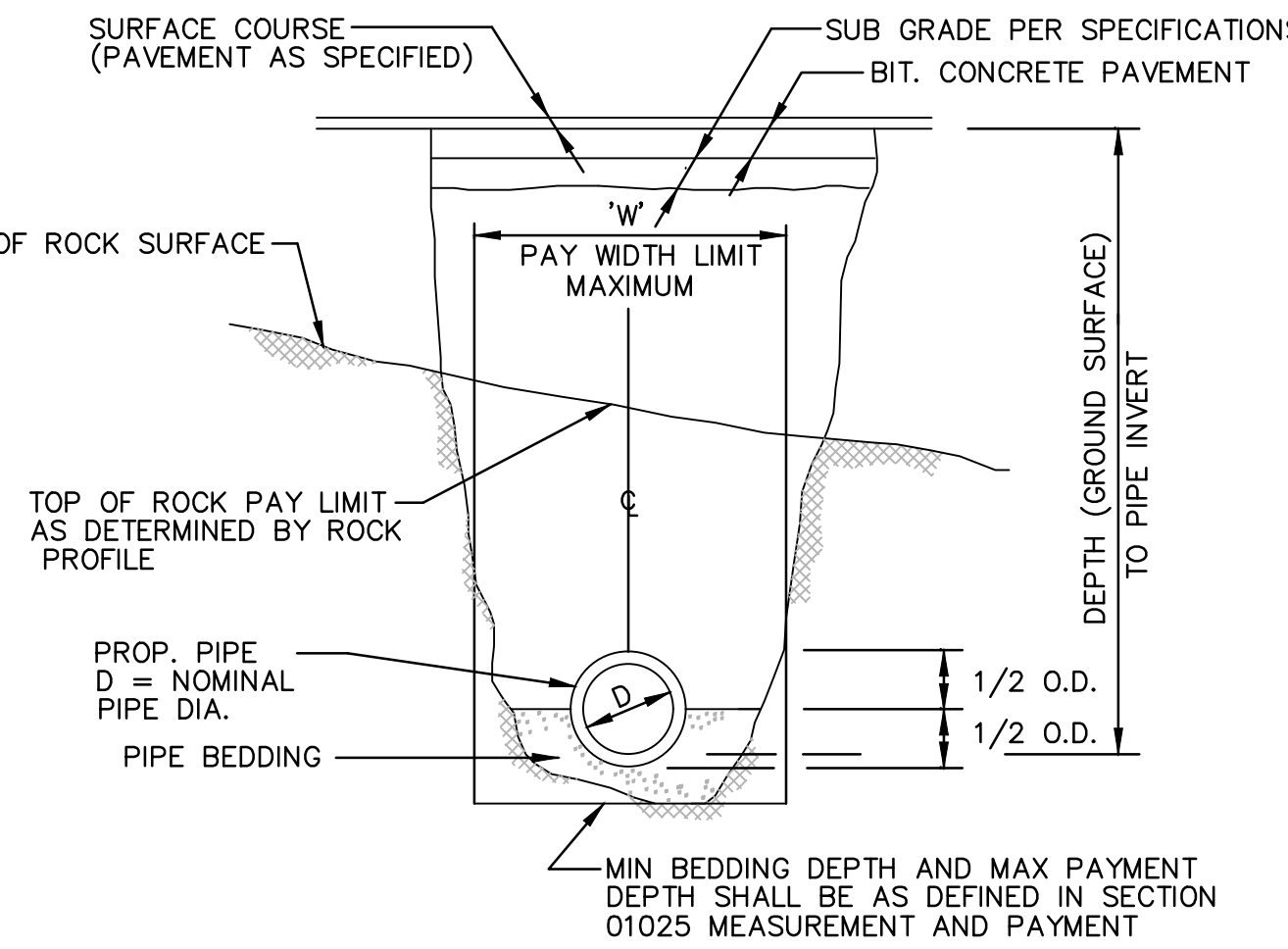
TYPICAL WATER MAIN THRUST BLOCK SECTION DETAILS
NTS



TYPICAL WATER MAIN BEND THRUST BLOCK DETAILS
NTS



TYPICAL TAPPING SLEEVE AND VALVE
N.T.S.



TRENCH IN ROCK PAYMENT LIMITS
NTS

- NOTES:**
1. THE PAY LIMIT FOR ROCK REMOVAL OUTSIDE MANHOLES SHALL BE WITHIN A VERTICAL LINE OFFSET ONE FOOT (1') OUTSIDE THE WIDEST DIMENSION OF THE STRUCTURE OR SHALL BE THE MAXIMUM CONNECTING TRENCH WIDTH, WHICHEVER IS GREATER.

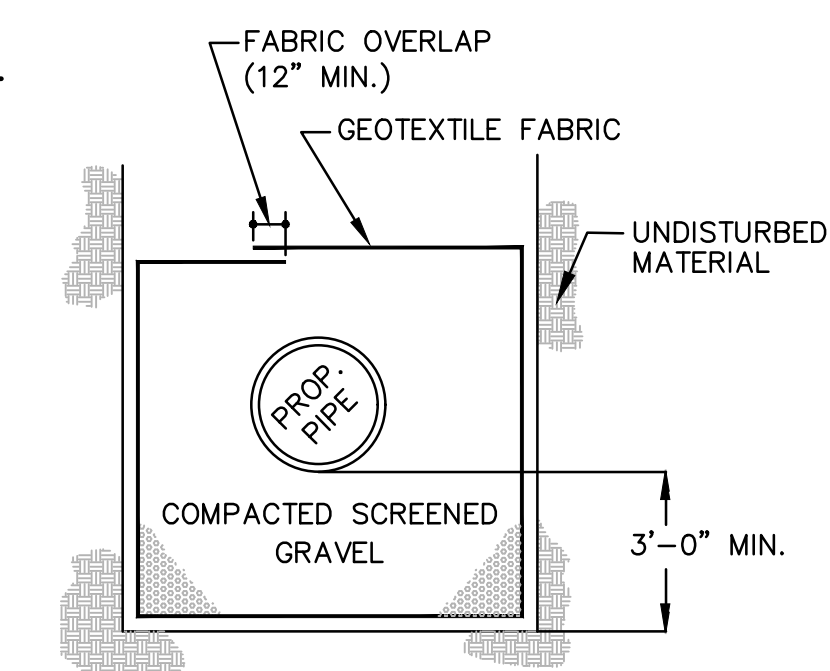
MAXIMUM PAYMENT FOR ROCK EXCAVATION CHART		
DEPTH FROM GROUND SURFACE TO INVERT OF PIPE	MAXIMUM PAY WIDTH 'W'	NOMINAL PIPE DIA.
	0'-24"	OVER 24"
DEPTH ≤ 12'	5'-0"	D+3'-0"
12' < DEPTH < 20'	7'-0"	D+5'
DEPTH > 20'	9'-0"	D+7'

THRUST BLOCK BEARING AREAS FOR WATER PIPE

TABLE OF BEARING AREAS IN SQ. FT. AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS*			
SIZE OF MAIN (IN.)	90° BEND	TEES AND PLUGS	45° BEND
6	4	2.5	2
8	6	4	3
12	12	9	7
16	21	16	12

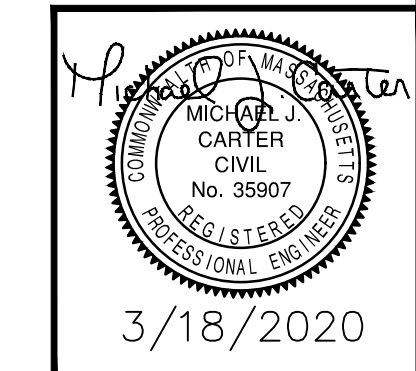
* TYPE OF SOIL IS MEDIUM CLAYEY, 6 OR MORE BLOWS PER FOOT, OR LOOSE GRANULAR, 9 OR MORE BLOWS PER FOOT. SOIL CONDITIONS OTHER THAN THOSE GIVEN WILL REQUIRE LARGER BEARING AREAS.

- NOTES:**
1. FOR FITTINGS WITH LESS THAN 45° DEFLECTION, USE BEARING AREAS FOR 45° BEND.
 2. BEARING AREAS BASED ON HORIZONTAL PASSIVE SOIL PRESSURE OF 2000 P.S.F. AND INTERNAL WATER PRESSURE OF 150 P.S.I.G. JOINTS SHALL NOT BE ENCASED IN CONCRETE. BEARING AREAS MAY BE DISREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND THE ROCK FACE.
 3. ALL FITTINGS AND VALVES SHALL BE DUCTILE IRON MECHANICAL JOINT AND RESTRAINED WITH MJ RESTRAINTS. (MEGALUG OR EQUAL). ALL BOLTS AND NUTS TO BE STAINLESS STEEL.
 4. WATER MAINS SHALL BE C.L.D.I. CLASS 52 - DOUBLE CEMENT LINED.
 5. ALL WORK RELATED TO THRUST BLOCKS SHALL BE PAID FOR UNDER THE CONCRETE ITEM.



NOTE: PLACEMENT OF GEOTEXTILE FABRIC SHALL EXTEND 5' ON EITHER SIDE OF POOR SUBGRADE CONDITIONS.

TRENCH EXCAVATION WITH UNSUITABLE SOIL CONDITIONS
NOT TO SCALE



TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

FARMFIELD STREET & HARBOR VIEW AVENUE
DETAILS II

GCG ASSOCIATES, INC.
WILMINGTON MASSACHUSETTS

SCALE: AS NOTED DATE: MARCH 18, 2020

JOB NO. \FILE NAME: 1841.dwg DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C. PLAN NO. 8 OF 9

3/18/2020

GENERAL

THIS PLAN PROPOSES EROSION CONTROL MEASURES TO ADEQUATELY CONTROL ACCELERATED SEDIMENTATION AND REDUCE THE DANGER FROM STORM WATER RUNOFF AT THE SITE. THE RUNOFF SHALL BE CONTROLLED BY THE INTERCEPTION, DIVERSION, AND SAFE DISPOSAL OF PRECIPITATION. RUNOFF SHALL ALSO BE CONTROLLED BY STAGING CONSTRUCTION ACTIVITY AND PRESERVING NATURAL VEGETATION WHEREVER POSSIBLE.

EXISTING VEGETATION SHALL BE PROTECTED AND ONLY THAT CLEARING AND GRUBBING ABSOLUTELY NECESSARY TO THE PROPOSED CONSTRUCTION SHALL BE PERFORMED. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND CONTOUR, UNLESS OTHERWISE INDICATED ON THE PLANS. THE CONTRACTOR SHALL TAKE SPECIAL CARE WITH HIS CONSTRUCTION METHODS AND SHALL COMPLY WITH THE FOLLOWING GUIDELINES.

SEDIMENTATION CONTROL

ALL AREAS SHALL BE PROTECTED FROM SEDIMENTATION DURING AND AFTER CONSTRUCTION, PARTICULARLY THE STORAGE OF EXCAVATED OR STOCKPILED MATERIAL. THE CONTRACTOR SHALL CAREFULLY STRIP ALL TOPSOIL, LOAM, OR ORGANIC MATTER PRIOR TO THE TRENCHING OR OTHER OPERATIONS AND SHALL STORE THEM SEPARATELY FROM ALL OTHER MATERIALS DURING EXCAVATION. EACH STOCKPILE MUST BE ADEQUATELY RINGED WITH SEDIMENT CONTROL MATERIAL (i.e., STRAW FILTER TUBES).

DEBRIS AND OTHER WASTE RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION WILL NOT BE DISCARDED ON SITE.

STABILIZING OF SLOPES SHALL BE DONE IMMEDIATELY AFTER CONSTRUCTION OF SLOPES. SLOPES STEEPER THAN 3:1 SHALL BE PROTECTED WITH EROSION MATS. THESE MATS ARE MANUFACTURED COMBINATIONS OF MULCH AND NETTING AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL OTHER AREAS SHALL BE MULCHED WITH STRAW AT A RATE OF 1.5 TO 2 TONS PER ACRE. STRAW MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT WINDBLOWING.

EROSION AND SEDIMENTATION CONTROL PLAN

SEDIMENTATION CONTROL SYSTEM – THE SEDIMENTATION CONTROL SYSTEM SHALL CONSIST OF STRAW FILTER TUBES. THE SEDIMENTATION CONTROL SYSTEM SHALL BE INSTALLED IMMEDIATELY AFTER A CUT SLOPE HAS BEEN GRADED, BEFORE A FILL SLOPE HAS BEEN CREATED, AND AS INDICATED ON THE PLANS. DESIGN THE SYSTEM TO INTERCEPT SILT AND SEDIMENT BEFORE IT REACHES THE WETLANDS OR WATERCOURSES. DEPOSITS OF SEDIMENT AND SILT ARE TO BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE FENCE. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. THE SEDIMENTATION CONTROL SYSTEM IS TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE SYSTEM IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE FENCE ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.

STRAW FILTER TUBES (IN ADDITION TO CRUSHED STONE) USED FOR EROSION CONTROL SHALL BE RINGED AT CATCH BASINS LOCATED IN AREAS THAT WILL NOT BE PAVED AND WHERE SEDIMENT MAY ENTER THE CATCH BASIN OR AS DIRECTED BY THE RESIDENT ENGINEER. DEPOSITS OF SEDIMENT AND SILT ARE TO BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE EROSION CHECKS. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. STRAW FILTER TUBES ARE TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE SYSTEM IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE EROSION CHECKS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.

SILT SACK – SILT SACKS SHALL BE PLACED WITHIN ALL CATCH BASINS PRIOR TO CONSTRUCTION OR IMMEDIATELY AFTER INSTALLATION OF NEW CATCH BASINS. DEPOSITS OF SEDIMENT ARE TO BE PERIODICALLY REMOVED DURING CONSTRUCTION AND SPREAD AS DESCRIBED ABOVE. SILT SACKS SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND SURROUNDING AREAS ARE STABILIZED.

IN ALL AREAS, REMOVAL OF TREES, BUSHES, AND OTHER VEGETATION, AND DISTURBANCE TO THE SOIL, IS TO BE KEPT TO AN ABSOLUTE MINIMUM WHILE ALLOWING PROPER DEVELOPMENT OF THE SITE.

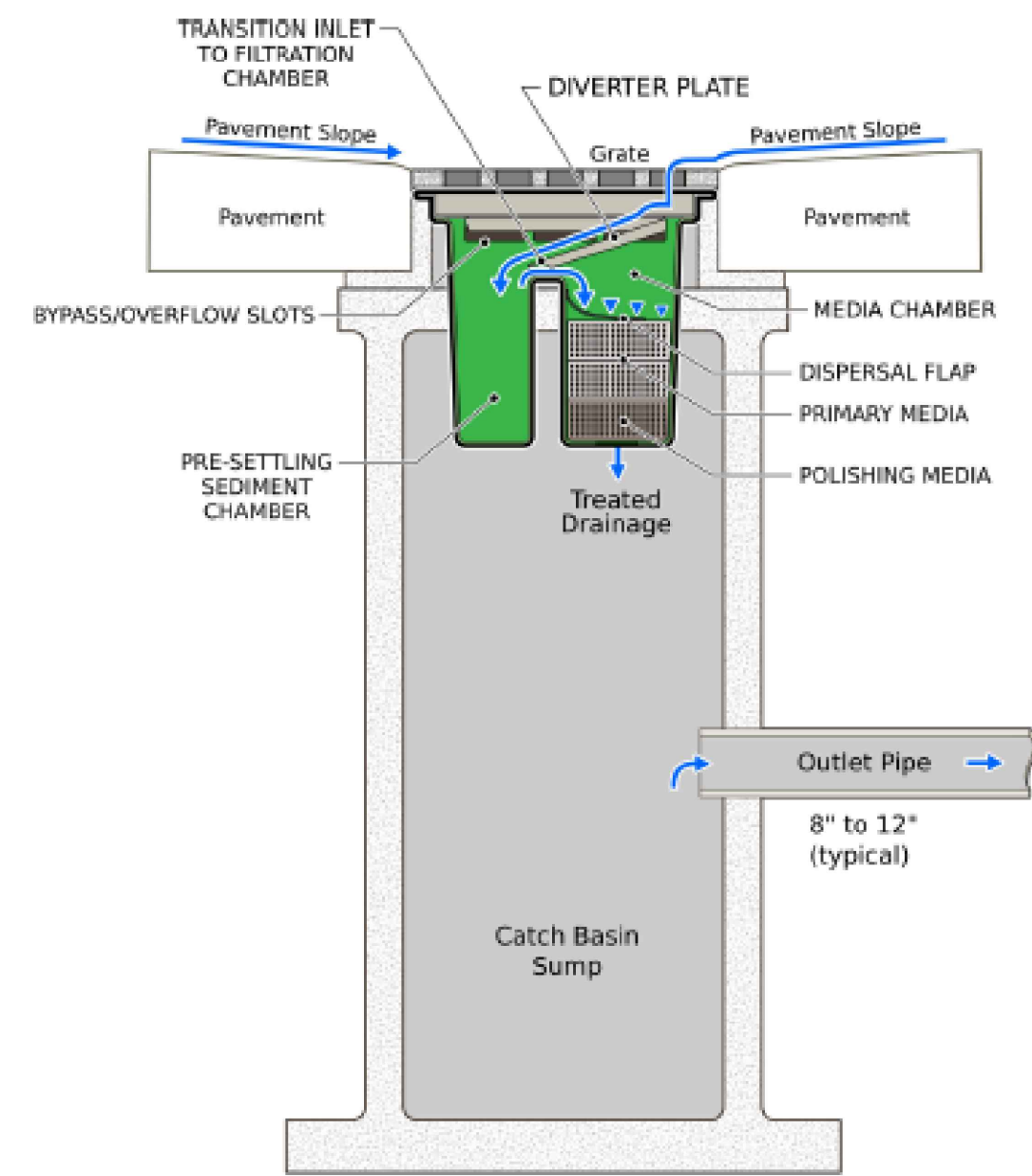
DEWATERING OF GROUNDWATER MAY BE NECESSARY DURING CONSTRUCTION. ALL DEWATERING ACTIVITIES SHALL BE CONDUCTED IN A MANNER THAT WILL NOT INTRODUCE SILT, SEDIMENT, CONTAMINATION, ETC. INTO A WETLAND RESOURCE AREA OR AN ADJACENT UPLAND RESOURCE AREA. DISCHARGED GROUNDWATER SHALL BE PROPERLY DETAINED, SETTLED, FILTERED OR OTHERWISE TREATED PRIOR TO ENTERING A WETLAND RESOURCE AREA OR AN ADJACENT UPLAND RESOURCE AREA (SEE DEWATERING DETAIL).

EROSION AND SEDIMENT CONTROL MAINTENANCE PROCEDURES

DURING CONSTRUCTION, AS SMALL AN AREA OF SOIL AS POSSIBLE SHOULD BE EXPOSED FOR AS SHORT A TIME AS POSSIBLE. AFTER CONSTRUCTION, GRADE, RESPREAD TOPSOIL, AND STABILIZE SOIL BY SEEDING AND MULCHING TO PREVENT EROSION.

ALL SEDIMENTATION AND EROSION CONTROL DEVICES SHALL BE INSPECTED DURING CONSTRUCTION ON A DAILY BASIS AND FOLLOWING ALL STORMS BY THE RESIDENT ENGINEER. THE CONTRACTOR SHALL MAINTAIN AND MAKE REPAIRS AND REMOVE SEDIMENT AS REQUESTED BY THE RESIDENT ENGINEER. THIS WORK SHALL BE PERFORMED WITHIN 24 HOURS OF REQUEST.

THE CONTRACTOR SHALL CLEAN SEDIMENT AND DEBRIS FROM ALL DRAINAGE STRUCTURES AND PIPES. AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REPAIR ALL ERODED AREAS AND ENSURE A GOOD STAND OF TURF IS ESTABLISHED THROUGHOUT. THE CONTRACTOR SHALL REPAIR ALL ERODED OR DISPLACED RIPRAP, AND CLEAN SEDIMENT COVERED STONES.



The storm water runoff filtration system shall consist of a unit or units to be installed in existing or designed catch basins.

The water runoff filtration units shall be properly sized for the catch basin opening and predicted run-off.

The water runoff filtration system shall contain a pre-settling sediment chamber and a contaminant filtration chamber.

The media within the filtration chamber shall be a layered dual media system.

The first or primary filtration media shall consist of 8" in two or more mesh bags. This primary media shall be a non-leaching absorbent cellulose material that will attach hydrocarbons.

The second filter media shall consist of 4" of specially textured activated carbon to achieve a final polishing effect on the hydrocarbons in the discharge water as well as removing other organics, metals, and other contaminants.

Run-off water entering the unit shall be first diverted into the sediment chamber and from there shall flow into the filtering chamber through a transition inlet.

The units shall have sufficient overflow capacity to prevent ponding or flooding on the surface.

Filtration systems effectiveness shall be verified through third party testing.

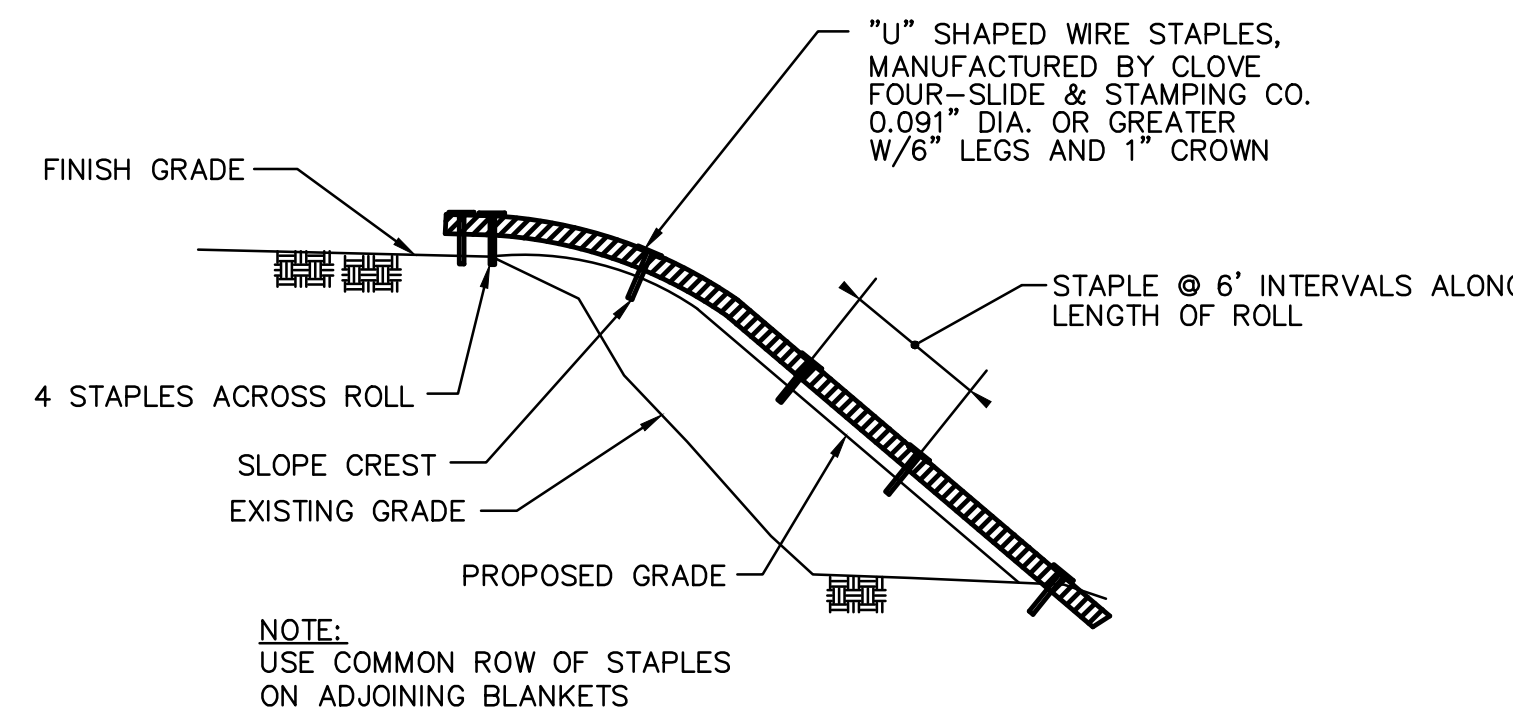
The filtration system shall be the Ultra-HydroKleen® Stormwater Filtration System or equivalent.

ULTRA-HYDROKLEEN FILTRATION SYSTEM

N.T.S.

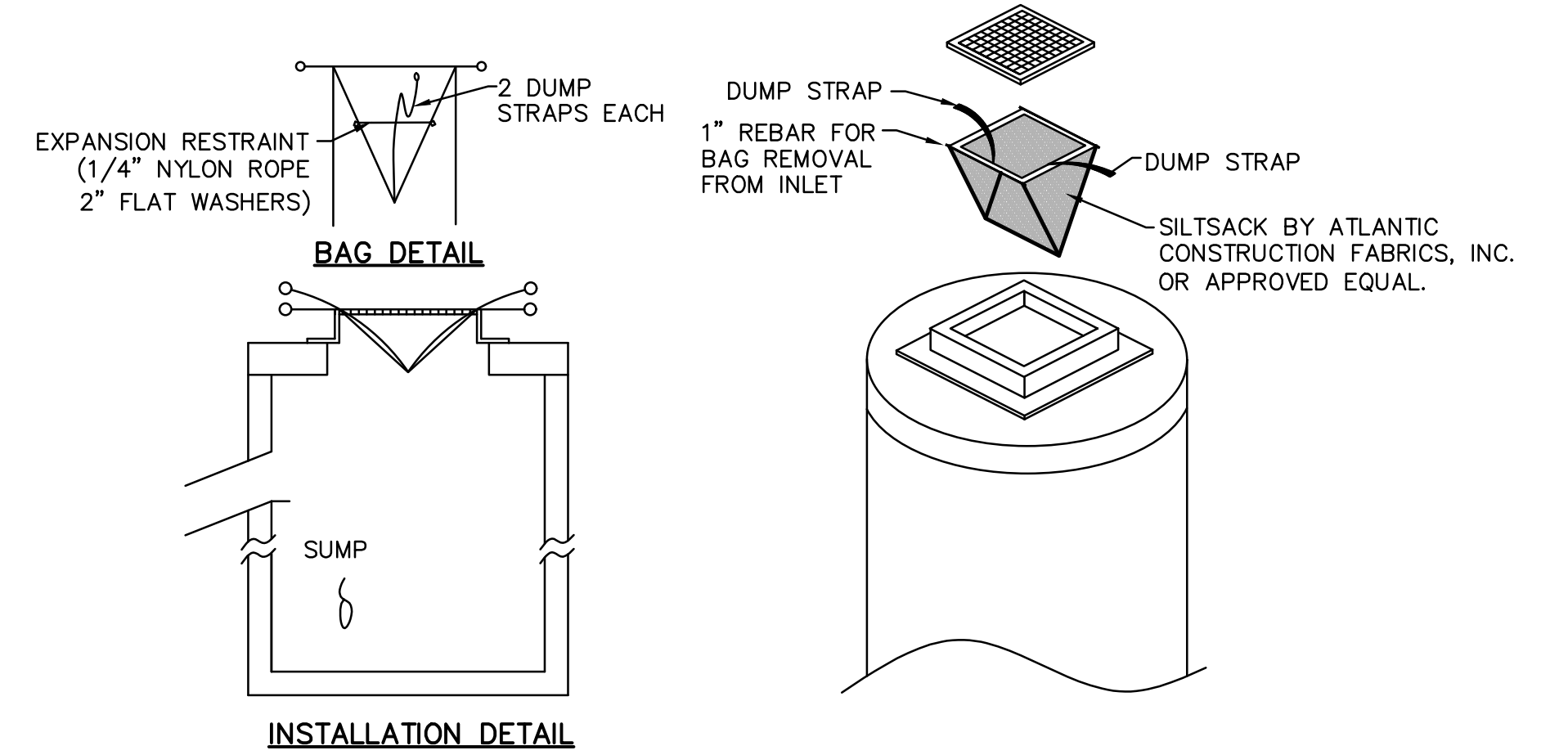
NOTES:

1. ULTRA-HYDROKLEEN FILTRATION SYSTEMS SHALL BE SIZED, FURNISHED AND INSTALLED DCB'S 1/2 AND CB'S 3/4.
2. ULTRA-HYDROKLEEN FILTRATION SYSTEMS TO BE INSTALLED AFTER TOP COURSE OF PAVING IS INSTALLED.
3. ULTRA-HYDROKLEEN FILTRATION SYSTEMS NOT REQUIRED IN CB'S 5/6.



EROSION CONTROL BLANKET DETAIL

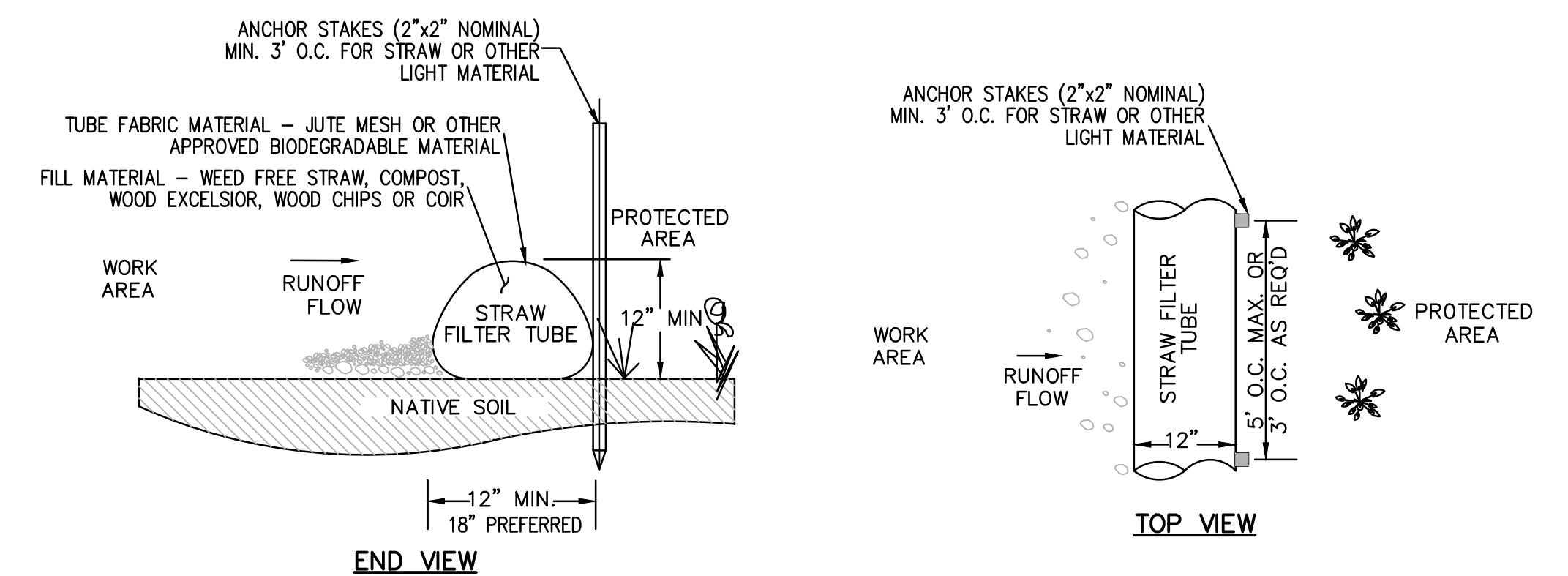
N.T.S.



1. SILT SACKS SHALL BE INSTALLED IN ALL CATCH BASINS DURING CONSTRUCTION PERIOD.
2. INSPECTION SHALL BE WEEKLY AND REPAIR/REPLACEMENT MADE PROMPTLY AS NEEDED.
3. SILT SACKS SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

SILTSACK DETAIL

N.T.S.

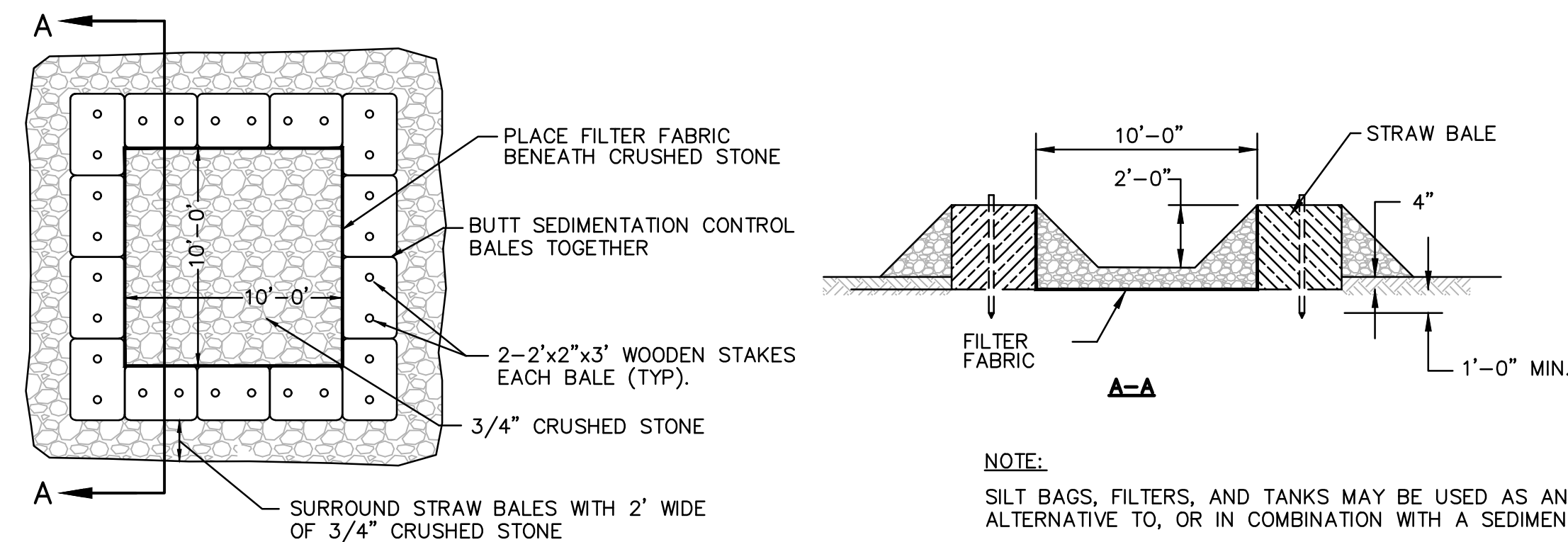


NOTES:

1. TUBES MAY BE FILLED ON SITE OR SHIPPED.
2. ENSURE PROPER LOCATION AT SITE FOR EFFECTIVENESS.
3. TUBES SHALL BE PLACED AND STAKED IN PLACE AS REQUIRED TO ENSURE STABILITY AGAINST WATER FLOWS.
4. TUBES FILLED WITH LIGHT MATERIAL SHALL BE STAKED AT A MAXIMUM OF 3 FEET ON CENTER. FOR HEAVIER MATERIAL, 5 FEET ON CENTER.
5. TUBES SHALL BE TAMPED TO ENSURE GOOD CONTACT WITH SOIL.
6. INSPECT AFTER EACH RAINFALL OR DAILY DURING RAINFALL EVENTS. CORRECT ALL DEFICIENCIES IMMEDIATELY.
7. FAILURE INCLUDES BUT IS NOT LIMITED TO WASHOUT, OVERTOPPING, CLOGGING, AND EROSION. IF OVERTOPPING OR WASHOUT OCCURS, NEW FILTER TUBES WITH ADDITIONAL STAKING OR STRAW MATERIAL SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
8. FILTER TUBES SHALL BE REMOVED ONCE SITE WORK IS COMPLETE. SITE IS STABLE, ADEQUATE GROWTH HAS BEEN ESTABLISHED AND AS DIRECTED BY THE ENGINEER. TUBE FABRIC SHALL BE CUT, REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR AT NO ADDITIONAL COST.

STRAW FILTER TUBE DETAIL

N.T.S.



SEDIMENTATION CONTROL SYSTEM FOR ONSITE DEWATERING

N.T.S.

TOWN OF FAIRHAVEN, MASSACHUSETTS
ROADWAY IMPROVEMENT PROJECT

FARMFIELD STREET &
HARBOR VIEW AVENUE
EROSION CONTROL PLAN

GCG ASSOCIATES, INC.

WILMINGTON MASSACHUSETTS

SCALE: AS NOTED DATE: MARCH 18, 2020

JOB NO./FILE NAME: 1841.dwg DESIGNED BY: L.P.B. DRAWN BY: L.P.B. CHECKED BY: M.J.C. PLAN NO. 9 of 9

