

# PARK AVENUE GREEN LIVING MIXED-USE DEVELOPMENT

487 PARK AVENUE  
WORCESTER, MA 01603

## SHEET INDEX

No.	Title	Issue Date
C001	Cover Sheet	April 11, 2024
C101	Site Demo & Sediment and Erosion Control Plan	April 11, 2024
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C104	Site Utilities Plan	April 11, 2024
C105	Landscaping Plan	April 11, 2024
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C502	Site Details - 2	April 11, 2024
C503	Site Details - 3	April 11, 2024
C504	Site Details - 4	April 11, 2024

## REFERENCE PLAN INDEX

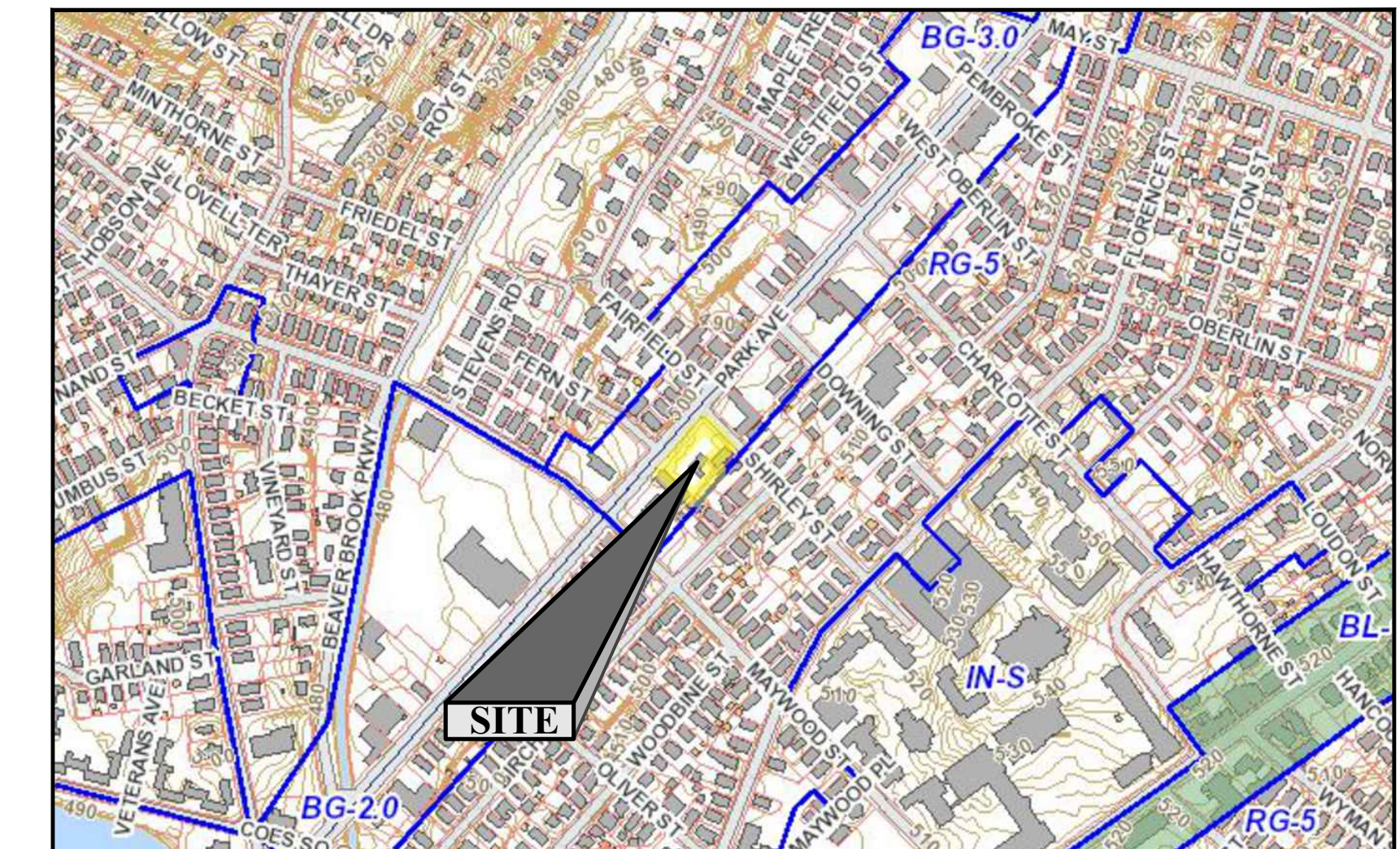
No.	Title	Issue Date
E1	Existing Conditions Plan (HS&T)	August 28, 2023

## REVISIONS/ISSUES

No.	Note	Date
1	Issued for Permitting	March 25, 2024
2	Revised Parking Calculations per DPRS Staff Review	April 11, 2024



**LOCUS PLAN - AERIAL**  
SOURCE: GOOGLE EARTH SCALE: 1"=500'



**LOCUS PLAN - GIS**  
SOURCE: WORCESTER GIS SCALE: 1"=500'

### OWNER/APPLICANT

Gjinko Realty, LLC  
487 Park Avenue  
Worcester, MA 01610

### ARCHITECT

AA Design Services, LLC  
43 Monroe Avenue  
Worcester, MA 01602



100 GROVE STREET | WORCESTER MA 01605  
T 508-856-0321 | F 508-856-0357  
gravesengineering.com



ELECTRONICALLY STAMPED  
BY MICHAEL ANDRADE, P.E.

### GENERAL NOTES

PARCEL DATA:  
STREET ADDRESS: 487 PARK AVENUE, WORCESTER, MA 01610  
AREA: 21,968 SQ. FT. (0.50 AC.)

- NOTES:
- 1) THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ANY FINDINGS SUCH A REPORT MIGHT DISCLOSE.
  - 2) LOCATION OF UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON THE FIELD LOCATION OF VISIBLE STRUCTURES SUCH AS CATCH BASINS, MANHOLES, WATER GATES, ETC. IN ACCORDANCE WITH CHAPTER 82 SECTION 40 INCLUDING AMENDMENTS. ALL CONTRACTORS SHOULD NOTIFY IN WRITING ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES PRIOR TO ANY EXCAVATION WORK AND CALL DIG-SAFE AT 811. THE CITY OF WORCESTER SHALL ALSO BE CONTACTED FOR UTILITY MARKOUTS.
  - 3) PROPERTY LINE DATA AND TOPOGRAPHIC FEATURES ON THIS PLAN ARE BASED ON PLAN PREPARED BY HS&T GROUP, INC., DATED AUGUST 28, 2023.
  - 4) THE SITE PROPERTY IS NOT LOCATED WITHIN ANY DESIGNATION FLOOD ZONES AS SHOWN ON FIRM MAP 25027C0614E, DATED JULY 4, 2011.
  - 5) SITE SOILS PER USDA-NRCS WEB SOIL SURVEY ARE URBAN LAND (MAP UNIT 602). ON-SITE SOIL TESTING HAS NOT BEEN CONDUCTED.

REFERENCES:  
DEED BOOK/PAGE: 49590/392 (WORCESTER REGISTRY OF DEEDS)  
ASSESSORS REFERENCE: 08-006-0004A

### SHEET KEY

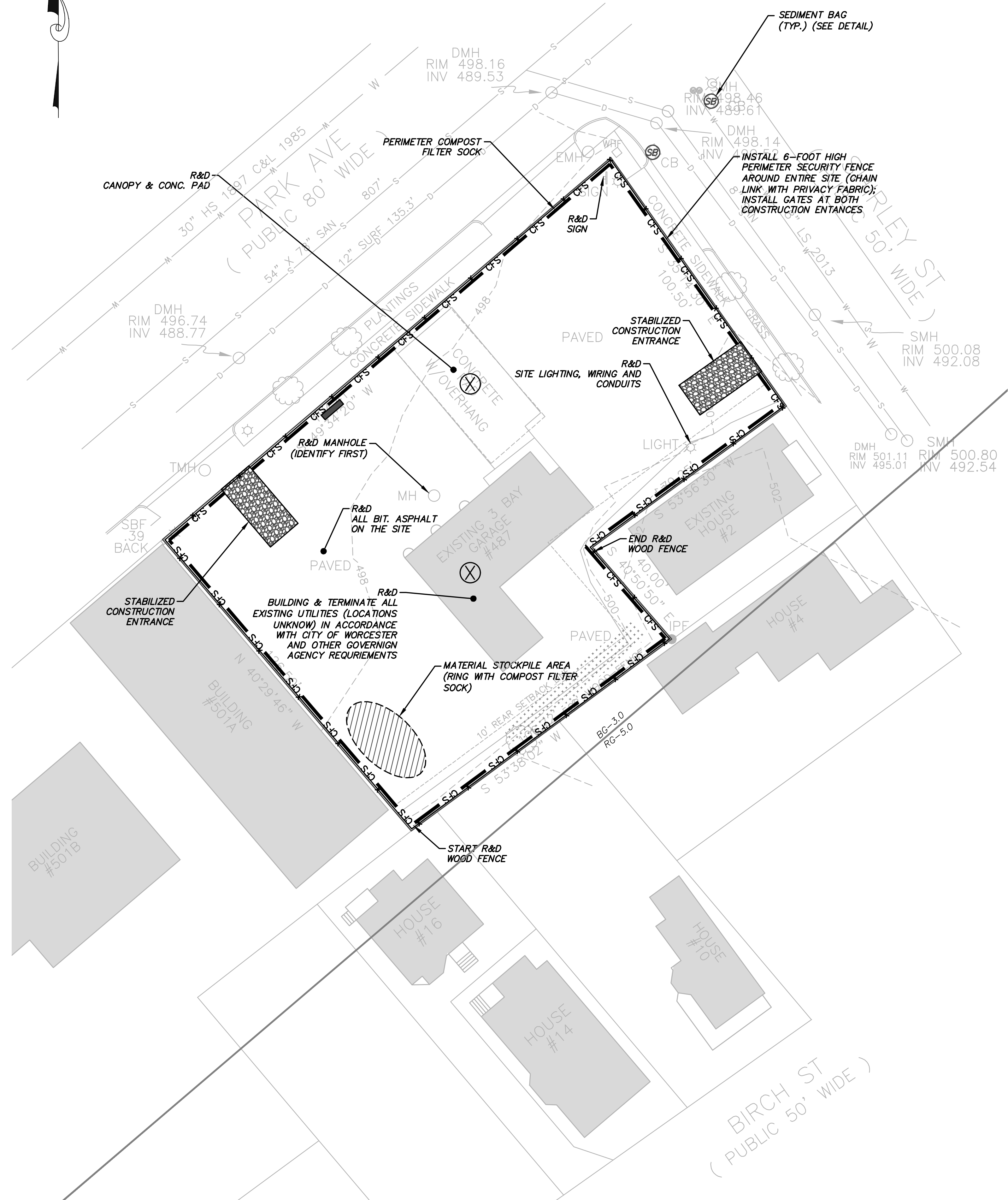
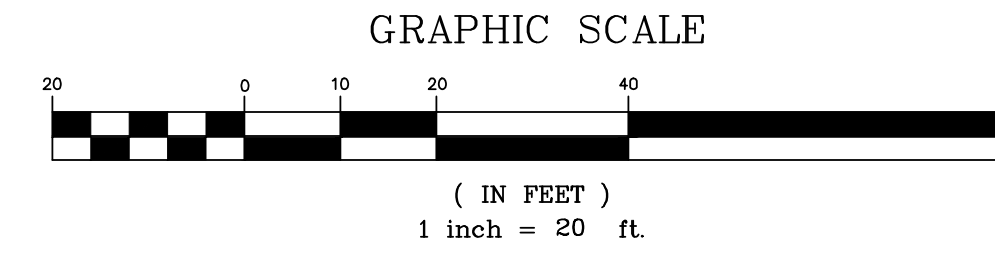
- FEATURES MARKED AS SHALL BE PROTECTED
- FEATURES MARKED AS SHALL BE R&D
- R&D = REMOVE AND DISPOSE (OFFSITE)
- = R&D FEATURE

### SHEET NOTES

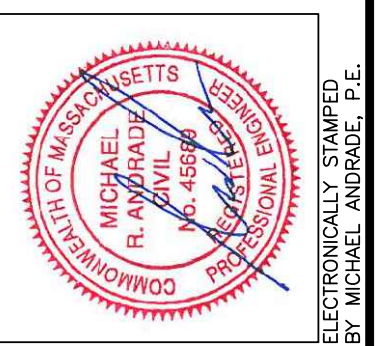
- 1) ALL EXISTING PAVEMENT ABUTTING NEW PAVEMENT SHALL BE NEATLY SAWCUT.
- 2) ALL ITEMS NOTED TO BE REMOVED AND DISPOSED SHALL BE PROPERLY DISPOSED OF OFFSITE.
- 3) STOCKPILE LOCATIONS (FILL MATERIALS, ETC.) SHALL BE COORDINATED WITH THE OWNER AND THE ENGINEER AND SHALL BE RINGED WITH SILT FENCE. ALL DISTURBED AREAS INCLUDING STOCKPILES, THAT WILL NOT BE RE-DISTURBED WITHIN 14 DAYS SHALL BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE.
- 4) THE CONTRACTOR SHALL EMPLOY ANY AND ALL EROSION AND SEDIMENT CONTROL MEASURES TO PREVENT A RELEASE OF SEDIMENT FROM THE SITE.
- 5) SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE WORK.
- 6) SEDIMENT TRACKED ONTO ROADWAYS ADJACENT TO THE SITE SHALL BE SWEEPED CLEAN AND REMOVED EACH DAY.
- 7) PERIMETER SEDIMENT CONTROLS SHOWN ARE INTENDED TO THE MINIMUM REQUIRED; THE CONTRACTOR SHALL EMPLOY AND INSTALL ANY OTHER CONTROLS AS NECESSARY TO PREVENT SEDIMENT RELEASE FROM THE SITE INCLUDING AERIAL (DUST).

### LEGEND

- D DRAIN
- S SEWER
- FM SEWER FORCE MAIN
- W WATER
- OW OVERHEAD UTILITY
- UGT UNDERGROUND TELEPHONE
- UGE UNDERGROUND ELECTRIC
- CATV UNDERGROUND CABLE & TELEVISION
- GAS or G UNDERGROUND GAS
- IR IRRIGATION WATER
- RD ROOF DRAIN
- SW STRAW WATTLE
- HSF HAYBALES AND SILT FENCE
- LOW LIMIT OF WORK
- HANDICAP PARKING STALL
- FLOW DIRECTION (PITCH)
- WELL
- MONITORING WELL
- LIGHT
- TREE, TRUNK DIAM., DECIDUOUS (DEC.) OR CONIFEROUS (CON.)
- 24" DEC.
- STUMP
- SEWER MANHOLE
- DRAIN MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- CATCH BASIN
- DOUBLE CATCH BASIN
- AREA DRAIN
- SPOT ELEVATION (FINISHED GRADE)
- SIGN
- TEST PIT - NUMBER
- TRAFFIC CONTROL SIGNAL
- TREELINE
- EOP EDGE OF PAVEMENT
- D/S DOWN SPOUT
- CCB CAPE COD BERM
- CONC. CONCRETE
- BIT. BITUMINOUS
- FFE FINISHED FLOOR ELEVATION
- H.P. HIGH POINT
- L.P. LOW POINT
- F.G. FINISH GRADE
- GAS VALVE
- WATER VALVE
- HYDRANT
- WATER SHUT-OFF
- BOUND
- FLARED END SECTION
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- LIGHT FIXTURE



NO.	DATE	BY	DESCRIPTION
2	04/11/24	DFS	REVISED PARKING CALCULATIONS
1	03/25/24	DFS	ISSUED FOR PERMITTING



**SITE DEMO, SEDIMENT & EROSION CONTROL PLAN**  
**PARK AVENUE GREEN LIVING - MIXED-USE DEVELOPMENT**  
**487 PARK AVENUE, WORCESTER, MA**

PREPARED FOR: OLSI G/INKO  
487 PARK AVENUE, WORCESTER, MA 01603

DATE: 03/25/24 SCALE: 1"=20'  
DES. BY: DFS  
CHK. BY: MRA  
PRJ. NO.: 23125

C101

**PROJECT ZONING INFORMATION**

CRITERIA	REQUIRED	PROPOSED
USE	AUTO SALES (EXIST.)	MIXED USE
ZONING DISTRICT	BG-3.0	BG-3.0
OVERLAY DISTRICT	NONE	NONE
MINIMUM LOT AREA	5,000 SQ.FT.(1)	21,968 SQ. FT.
MINIMUM FRONTAGE	40 FT./DU (2)	194.41 FT. (3)
FRONT SETBACK	NA	0 FT.
SIDE SETBACK	NA	0 FT.
REAR SETBACK	10 FT.(4)	44.1 FT.
MAXIMUM BLDG. STORIES	NA	6
MAXIMUM BLDG. HEIGHT	100 FT.	75 FT.
BLDG. LOT COVERAGE	N/A	32.9%
MAXIMUM F.A.R.	3:1	1.8:1
LANDSCAPE PARKING BUFFER	5 FT.	2 FT. (5)
LOT IMPERVIOUS COVERAGE	93%	88%
RECREATION AREA	10% OF LOT AREA	3,856 SQ.FT. (17.5%) (6)

ZONING INFORMATION SOURCE: THE ABOVE INFORMATION WAS OBTAINED FROM THE CITY OF WORCESTER ZONING ORDINANCE, AMENDED THROUGH MAY 9, 2023.

**FOOTNOTES:**

- (1) 5,000 SQ.FT. REQ'D FOR RESIDENTIAL USE, NA FOR NON-RESIDENTIAL USE.
- (2) MAX. 200 FT. REQUIRED FOR RESIDENTIAL USE; NA FOR NON-RESIDENTIAL USE.
- (3) RELIEF SOUGHT FOR OF 5.59 FEET OF FRONTAGE (SEE TABLE THIS SHEET).
- (4) 10 FT. REQUIRED FOR BOTH RESIDENTIAL AND NON-RESIDENTIAL USE.
- (5) RELIEF SOUGHT FOR REDUCTION OF LANDSCAPE PARKING BUFFER (SEE TABLE THIS SHEET).
- (6) RECREATION AREA INCLUDES INTERIOR COMMON SPACES AND EXTERIOR AREAS OUTSIDE OF THE PARKING BUFFER.

**SHEET NOTES**

- 1) ALL DIMENSIONS ARE MEASURED FROM TOE OF CURB OR CENTER OF PAINTED LINE.
- 2) THE CONTRACTOR SHALL COORDINATE WITH PLANS BY OTHERS (ARCHITECTURAL, STRUCTURAL, MEP, ETC.)
- 3) PAVEMENT MARKINGS SHALL BE PAINTED WITH WHITE TRAFFIC PAINT CONFORMING TO SECTION M7.01.08 OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION. LINE WIDTH SHALL BE 4 INCHES. HANDICAP SYMBOL MARKINGS SHALL COMPLY WITH 521 CMR WITH WHITE SYMBOL ON BLUE BACKGROUND.
- 4) ALL JOINTS OF EXISTING & PROPOSED BITUMINOUS PAVEMENT SHALL BE SEALED WITH HOT RUBBERIZED ASPHALT JOINT SEALANT AND SANDED.
- 5) THE SITE CONTRACTOR SHALL COORDINATE WITH MECHANICAL/HVAC PLANS FOR ADDITIONAL EXTERIOR EQUIPMENT PADS THAT MAY NOT BE SHOWN ON THESE DRAWINGS.
- 6) THE CONTRACTOR SHALL WORK WITHIN THE PARK AVENUE AND SHIRLEY STREET RIGHT-OF-WAYS WITH THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS WITH REGARD TO THIS PROJECT'S WORK AND THE PROPOSED/CONSTRUCTED STREET IMPROVEMENTS.

**PROJECT RELIEF SOUGHT**

THE PROJECT SEEKS THE FOLLOWING RELIEF FROM THE CITY OF WORCESTER:

**ZONING BOARD OF APPEALS:**

- 1) **VARIANCE** TO ALLOW FOR THE EXISTING FRONTAGE OF 194.41 FEET TO REMAIN IN LIEU OF THE REQUIRED 200 FEET.
- 2) **VARIANCE** TO REDUCE PARKING REQUIREMENTS BY 13 SPACES.

**PLANNING BOARD:**

- 1) **SPECIAL PERMIT** TO ALLOW FOR 50% OF THE PARKING SPACES TO BE COMPACT (ART. IV, SECTION 7, TABLE 4.4, NOTE 3).
- 2) **SPECIAL PERMIT** TO REDUCE THE LANDSCAPE BUFFER FROM THE REQUIRED 5 FEET TO 2 FEET FOR A PORTION OF THE PROJECT (ART. IV, SECTION 7, TABLE 4.4, NOTE 5).



**PARKING SCHEDULE**

ITEM	CALCULATION	PARKING REQUIREMENT
RESIDENTIAL - MULTI-FAMILY DWELLING	40 DU x 2 SPACES/DU	80 SPACES
ARTICLE VII REDUCTION (SECTION 6.A.i) DENSITY	20% UNIT DENSITY BONUS	-16 SPACES (1)
ARTICLE VII REDUCTION (SECTION 6.A.ii.a) TMP	25% PARKING REDUCTION	-16 SPACES (2)
ARTICLE VII REDUCTION (SECTION 6.A.ii.c) PB SPECIAL PERMIT	50% OF ORIGINAL REQUIREMENT	-8 SPACES (3)
<b>RESIDENTIAL PARKING SUBTOTAL</b>	-	<b>40 SPACES</b>
AUTO SERVICE	2 BAYS x 1 SPACE/BAY	2 SPACES
BUSINESS - FOOD SERVICE	10 PERSONS x 0.5 SPACES/OCCUPANCY	5
<b>TOTAL REQUIRED PARKING</b>	-	<b>47 SPACES</b>
<b>TOTAL PARKING PROVIDED</b>	-	<b>34 SPACES</b>
<b>PARKING SHORTFALL</b>	-	<b>13 SPACES (4)</b>

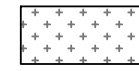
**NOTES:**

- (1) **DENSITY BONUS CALCULATION:** 5% UNITS AT 60% AMI + 10% UNITS AT 80% AMI = 15% + 5% BONUS = 20%; 40 UNITS x 20% = 32 UNITS; 32 UNITS x 2 SPACES/UNIT = 64 SPACES REQUIRED; 80 SPACES - 64 SPACES = -16 SPACES.
- (2) **TMP REDUCTION CALCULATION:** WITH SUBMITTAL OF A TRANSPORTATION MANAGEMENT PLAN (TMP), PARKING REQUIREMENTS ARE REDUCED BY 25%. 64 SPACES x 25% = -16 SPACES. 64 SPACES - 16 SPACES = 48 SPACES REQUIRED..
- (3) **PB SPECIAL PERMIT REDUCTION:** PB SPECIAL PERMIT ALLOWS A MAXIMUM 50% REDUCTION IN PARKING OF THE ORIGINAL REQUIREMENT BEFORE ANY ADJUSTMENTS: 80 SPACES x 50% = 40 SPACES REQUIRED; 48 SPACES - 40 SPACES = - 8 SPACES.
- (4) SEE TABLE THIS SHEET FOR PARKING RELIEF SOUGHT.
- (5) THE PROPOSED PARKING CONSISTS OF THE FOLLOWING:  
15 STANDARD SPACES (9'x18'); INCLUDES 8 EV OPERATIONAL  
17 COMPACT SPACES (8'x18'); 50% OF TOTAL PARKING  
2 VAN ACCESSIBLE HANDICAP SPACES (8'x18'); 2 EV OPERATIONAL  
10 EV OPERATIONAL SPACES (29% OF TOTAL PARKING)

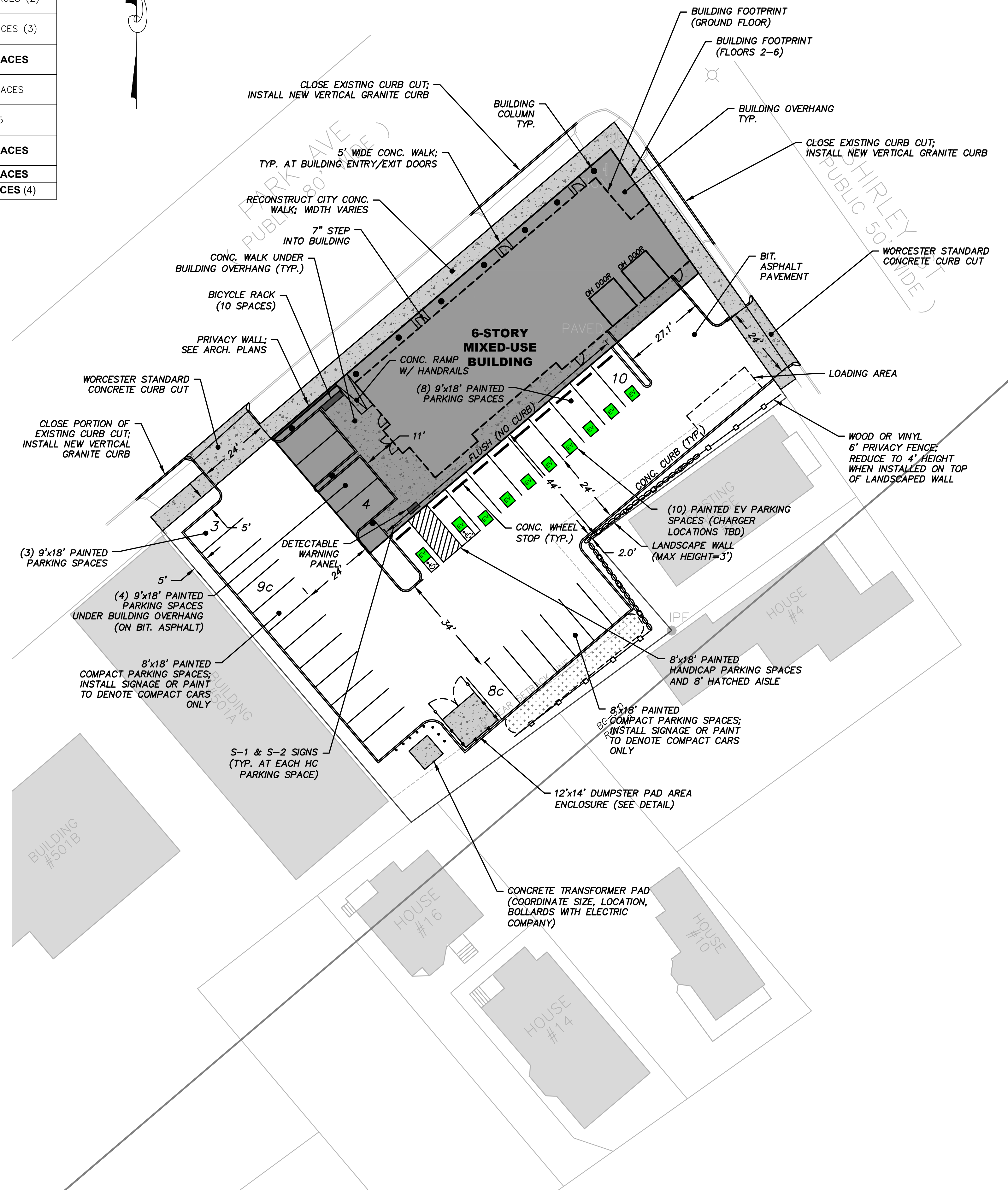
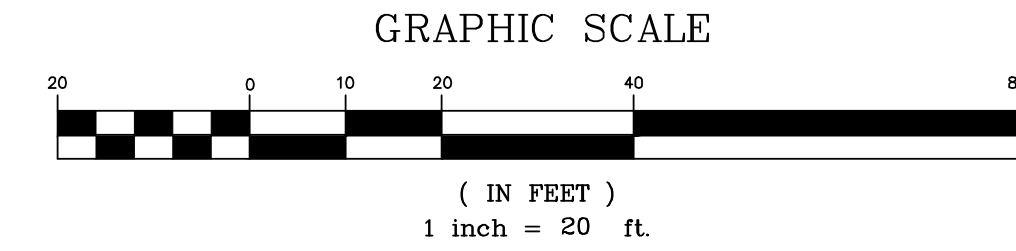
**SIGNAGE KEY**

GEI ID	FEDERAL ID	SIGN SIZE		SIGN LAYOUT	QUANTITY
		WIDTH	HEIGHT		
S-1	R7-8	12"	18"		2
S-2	R7-8a	12"	6"		2

**SNOW STORAGE NOTES**

SNOW SHALL BE STORED WITHIN AREAS AS SHOWN ON THIS SHEET DESIGNATED BY THIS HATCHING 

SNOW STORAGE LOCATIONS SHOWN REPRESENT THE MINIMUM NECESSARY AND THE OWNER SHALL EXPAND SUCH AREAS AS NEEDED. SNOW SHALL NOT BE PLACED SO AS TO INHIBIT VEHICLE SIGHT LINES FOR ENTERING AND EXITING THE SITE AND INTERNAL SITE CIRCULATION NOR PLACED TO INHIBIT SITE DRAINAGE. EXCESS SNOW SHALL BE HAULED OFF-SITE AS NECESSARY.



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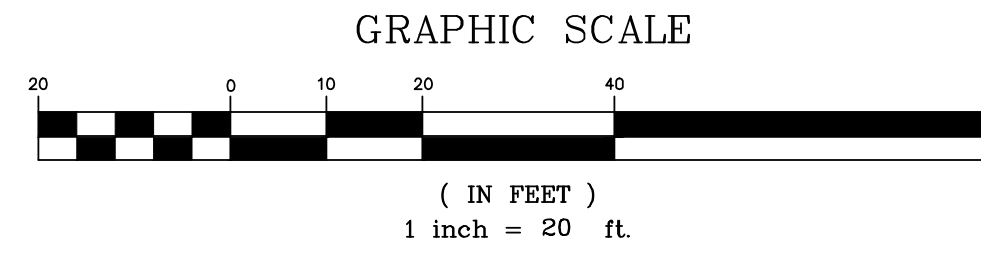
**LAYOUT PLAN**  
**PARK AVENUE GREEN LIVING - MIXED-USE DEVELOPMENT**  
 487 PARK AVENUE, WORCESTER, MA

PREPARED FOR: OLSI G/INKO  
 487 PARK AVENUE, WORCESTER, MA 01603

DATE: 03/25/24 SCALE: 1"=20'  
 DES. BY: DFS  
 DRW. BY: DFS  
 CHK. BY: MRA  
 PRL. NO.: 23125

**SHEET NOTES**

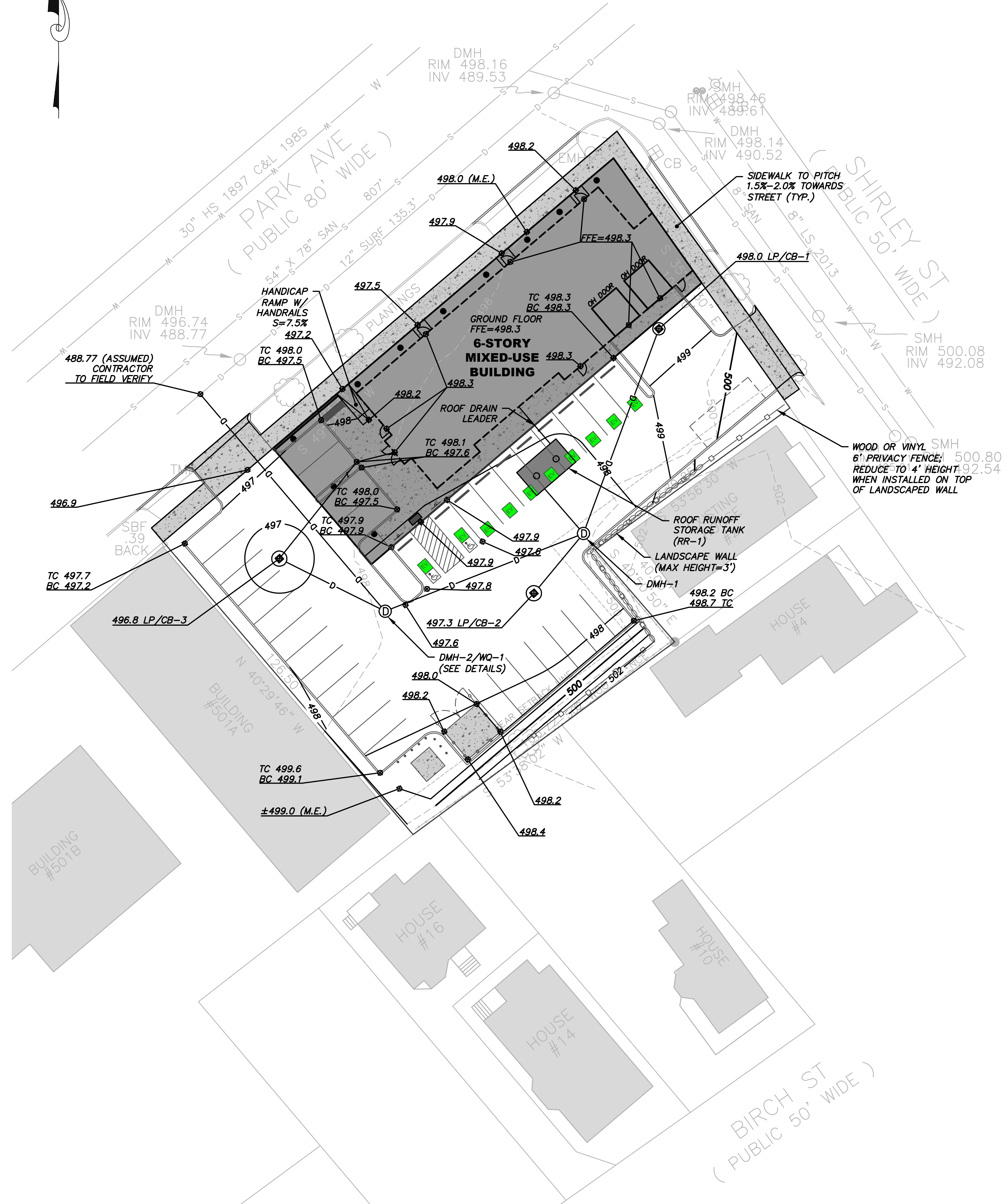
- 1) PROVIDE POSITIVE DRAINAGE IN ALL FINISH GRADED WORK AREAS INCLUDING AWAY FROM ALL BUILDINGS.
- 2) ADJUST ALL STRUCTURES TO PROPOSED FINISH GRADES WITHIN THE LIMIT OF WORK.
- 3) ALL DISTURBED AREAS OUTSIDE OF PAVEMENT SHALL BE RESTORED WITH 6 INCHES OF LOAM AND SEEDED OR LANDSCAPED IN ACCORDANCE WITH THE LANDSCAPING PLANS.
- 4) ALL FINISHED GRASSED SLOPES EQUAL TO OR GREATER THAN A 3:1 SLOPE SHALL BE STABILIZED WITH AN EROSION CONTROL MATTING SUCH AS SC-150 BY NORTH AMERICAN GREEN, CURLEX II BY AMERICAN EXCELSIOR, OR ENGINEER APPROVED EQUAL. COORDINATE MATTING LOCATIONS WITH THE LANDSCAPE PLANS AND GROUND COVER MATERIALS.
- 5) PROPOSED GRADES AS SHOWN SHALL BE CARRIED TO ALL PAVEMENT CORNERS HOWEVER GRADE ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR AS NECESSARY TO PROVIDE POSITIVE DRAINAGE FROM ALL CORNERS.
- 6) SPOT GRADE KEY:  
 (ME) = MATCH EXISTING GRADE  
 TC = TOP OF CURB FINISH GRADE  
 BC = BOTTOM OF CURB FINISH GRADE  
 FFE = BUILDING FINISH FLOOR ELEVATION  
 CB = CATCH BASIN  
 HP = HIGH POINT  
 LP = LOW POINT  
 TW = TOP OF WALL (FINISH GRADE)  
 BW = BOTTOM OF WALL (FINISH GRADE)
- 5) PRIOR TO WORK, THE CONTRACTOR SHALL VERIFY THE DEPTH OF COVER OVER THE EXISTING UNDERGROUND UTILITIES IN THE AREA OF THE PROPOSED WORK. IF ADEQUATE COVER IS NOT PRESENT TO THE PROPOSED FINISH GRADES, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY BEFORE BEGINNING WORK IN THIS AREA.
- 6) HANDICAP RAMPS AND ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN CONFORMANCE WITH 521 CMR "ARCHITECTURAL ACCESS BOARD" REGULATIONS. SHOULD ANY DISCREPANCIES BE DISCOVERED ON THESE DRAWINGS THAT MAY PREVENT FULL COMPLIANCE WITH SAID REGULATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH THE WORK.



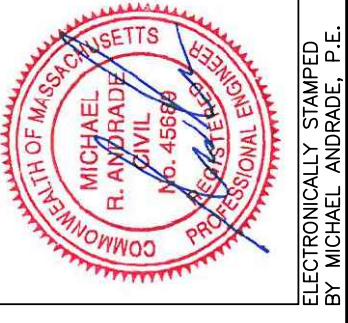
PROPOSED STORM DRAIN ELEVATION TABLE									
STRUCTURE	RIM ELEV.	STRUCTURE ELEVATIONS			NOTES	PIPE DATA			
		PENETRATIONS	INVERT	INVERT		FROM	TO	LENGTH (ft.)	SLOPE (%)
CB-1	498.0	8" DR18 OUT (DMH-1)	494.00			CB-1	DMH-1	69.7	1.50
DMH-1	497.7	8" DR18 IN (CB-1)	492.95						
		10" PVC IN (RR-1)	494.91						
		8" DR18 IN (CB-2)	492.95						
		8" DR18 IN (CB-2)	492.95						
		12" HDPE OUT (DMH-2)	492.85			DMH-1	DMH-2	66.0	2.00
CB-2	497.3	8" DR18 OUT (DMH-1)	493.30			CB-2	DMH-1	23.0	1.50
DMH-2	497.3	8" DR18 IN (CB-3)	492.55						
		12" HDPE IN (DMH-1)	491.49						
		12" DR18 OUT (EXISTING PARK AVE)	491.39			DMH-2	PARK AVE	92.7	2.83
		8" DR18 OUT (DMH-2)	493.13			CB-3	DMH-2	36.4	1.59
RR-1	497.8	10" PVC IN (ROOF LEADERS)	495.50						
		10" PVC OUT (DMH-1)	495.30			RR-1	DMH-1	19.5	2.00

**DRAINAGE TABLE KEY:**

INV.: PIPE INVERT ELEVATION  
 ID: INSIDE DIAMETER  
 CB-#: CATCH BASIN-NUMBER  
 DMH-#: DRAIN MANHOLE-NUMBER  
 HDPE: HIGH DENSITY POLYETHYLENE DRAINAGE PIPE  
 PVC: SCH40 PVC PIPE  
 DI: DUCTILE IRON  
 TBD: TO BE DETERMINED  
 WQU-1: STORMWATER WATER QUALITY UNIT, STORMCEPTOR 450i OR ENGINEER APPROVED EQUAL  
 RR: ROOF RUNOFF STORMWATER TANK  
 DR18: DR-18 PVC PIPE (BLUE BRUTE OR EQUAL)



REVISIONS	
NO.	DESCRIPTION
2	REVISED PARKING CALCULATIONS
1	ISSUED FOR PERMITTING



**GRADING & DRAINAGE PLAN**  
**PARK AVENUE GREEN LIVING - MIXED-USE DEVELOPMENT**  
 487 PARK AVENUE, WORCESTER, MA

PREPARED FOR: OLSI G/INKO  
 487 PARK AVENUE, WORCESTER, MA 01603

DATE: 03/25/24 SCALE: 1"=20'  
 DES. BY: DFS  
 DRW. BY: DFS  
 CHK. BY: MRA  
 PRL. NO.: 23125

**SHEET NOTES**

- 1) PRIOR TO WORK, THE CONTRACTOR SHALL VERIFY THE DEPTH OF COVER OVER THE EXISTING UNDERGROUND UTILITIES IN THE AREA OF THE PROPOSED WORK. IF ADEQUATE COVER IS NOT PRESENT TO THE PROPOSED FINISH GRADES, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER IMMEDIATELY BEFORE BEGINNING WORK IN THIS AREA.
- 2) UTILITY MATERIALS, CONSTRUCTION, & TESTING SHALL COMPLY WITH THE WORCESTER DEPARTMENT OF PUBLIC WORKS SPECIFICATIONS, LATEST EDITION.
- 3) THE CONTRACTOR SHALL COORDINATE THE UTILITY WORK WITH THE PROPOSED BUILDING PLANS.
- 4) ALL UTILITY WORK SHALL BE COORDINATED BY THE CONTRACTOR WITH THE PROPER UTILITY COMPANIES.
- 5) THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING WATER AND SEWER SERVICE UTILITIES. IF CONFLICTS ARE FOUND THAT PROHIBIT THE INSTALLATION OF THE UTILITIES AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH THE WORK.
- 6) NEW CATCH BASIN FRAMES AND GRATES SHALL BE CITY STANDARD (MODEL: EJIW 7288Z1 (3-FLANGE), 7288Z (4-FLANGE), OR LEBARON LF288 CAST IRON FRAME & EJIW 7288M OR LEBARON L28SG1 CAST IRON GRATE.
- 7) EXISTING WATER AND SEWER UTILITIES SHALL REMAIN.
- 8) THE SITE CONTRACTOR SHALL COORDINATE WITH AND PROVIDE NECESSARY EXCAVATION FOR ELECTRICAL CONDUIT BETWEEN THE BUILDING AND SITE LIGHTING LOCATIONS.

**LIGHTING NOTES**

- 1) PHOTOMETRIC INFORMATION BASED ON COOPER LIGHTING SOLUTIONS GALN GALLEON MODEL GALN-SA4D-730-1-SL3 LED FIXTURE MOUNTED AT A HEIGHT OF 15 FEET AGL. COLOR TEMPERATURE = 3,000K.
- 2) THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND PROVIDE ALL NECESSARY WORK FOR UNDERGROUND ELECTRICAL WIRING AND CONDUITS FOR PROPOSED LIGHTING.
- 3) FC = FOOTCANDLE
- 4) PROPOSED BUILDING WALL PACK LIGHT FIXTURES ARE NOT SHOWN.
- 5) ALL LIGHT FIXTURES SHALL BE DARK SKY COMPLIANT.

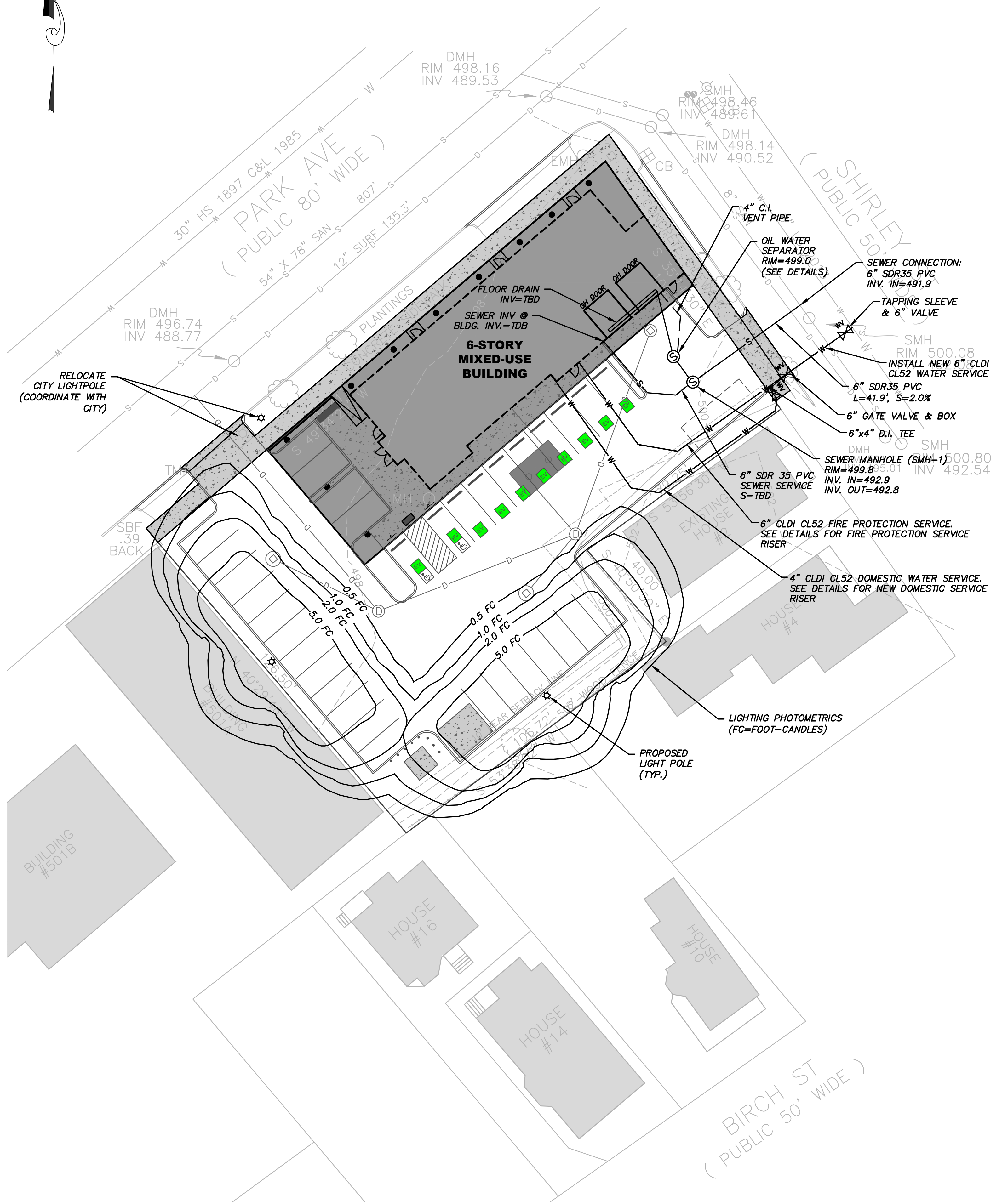
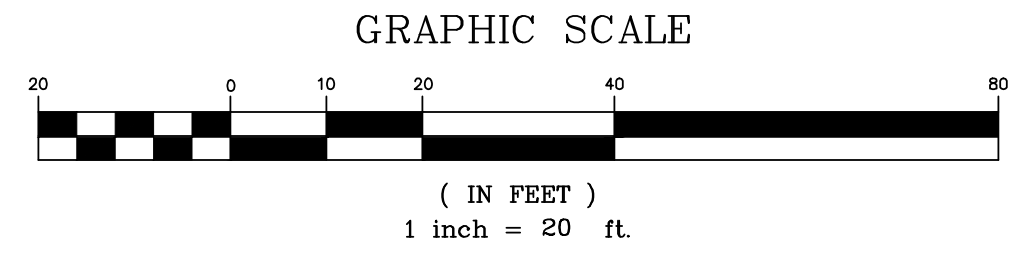
**Dimensional Details**

Number of Light Spheres	"A" Width	"B" Standard Arm Length	"C" Extended Arm Length	"D" Old Arm Length	"E" Old Length	"F" OMLA Length
1-4	15-1/2"	7"	10"	10-5/8"	-	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	-	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	10-5/16"	-
9-10	33-3/4"	7"	16"	10-5/8"	10-5/16"	-

**McGraw-Edison** **GLEON Galleon**

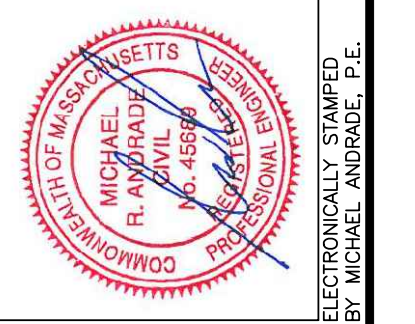


LIGHT POLE FIXTURE NOTES



**GRAVES ENGINEERING, INC.**  
 100 GROVE STREET WORCESTER, MA 01603  
 T 508-856-0321 | F 508-856-0377  
 gravesengineering.com

NO.	DATE	BY	DESCRIPTION
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**UTILITIES PLAN**  
**PARK AVENUE GREEN LIVING - MIXED-USE DEVELOPMENT**  
 487 PARK AVENUE, WORCESTER, MA

PREPARED FOR: OLSI G/INKO  
 487 PARK AVENUE, WORCESTER, MA 01603

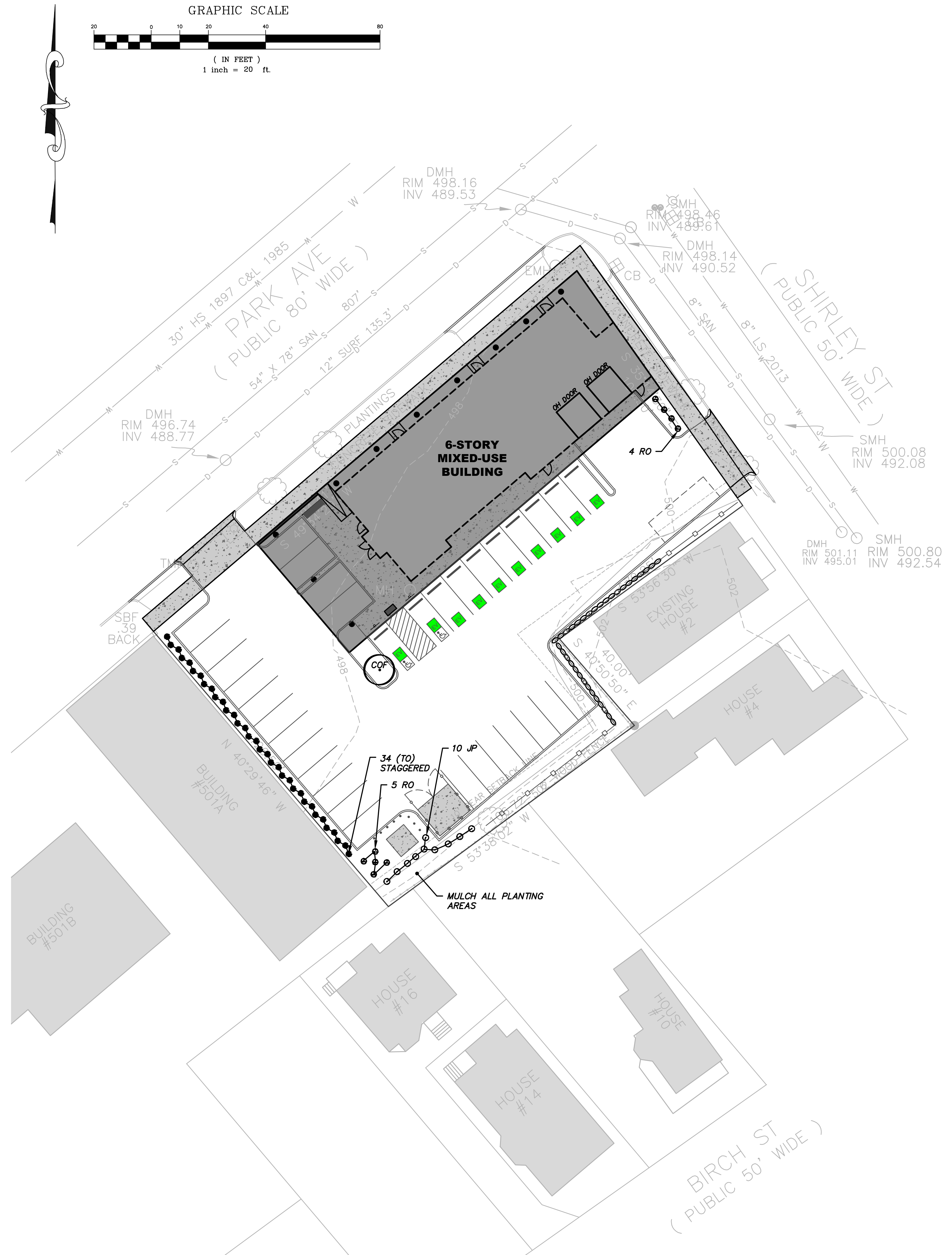
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 PRL. NO.: 23125

**SHEET NOTES**

- 1) ALL PLANTINGS SHALL BE ASIAN LONGHORN BEETLE AND EMERALD ASH BORER RESISTANT, NON-HOST SPECIES. SPECIES NOTED ON THIS PLAN MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
- 2) ALL PLANTINGS SHALL BE WATERED AND FERTILIZED AS NECESSARY UNTIL ESTABLISHED. THE CONTRACTOR SHALL INSTALL A SLOW-RELEASE WATERING BAG AT EACH TREE PLANTING.
- 3) TREES SHALL BE SUPPORTED BY TEMPORARY STAKING AS NECESSARY UNTIL ESTABLISHED.

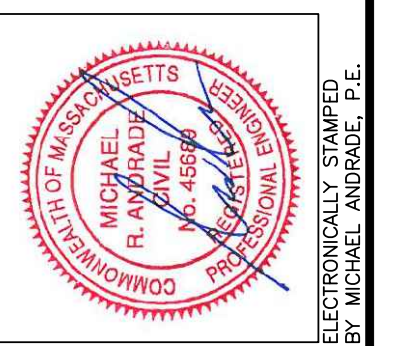
**PLANTING LIST**

CODE	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
<b>ORNAMENTAL TREES</b>					
COF	1	CORNUS FLORIDA	FLOWERING DOGWOOD	3" CAL.	⊙ 6" ABOVE GROUND
<b>SHRUBS</b>					
TO	34	T. OCCIDENTALIS SMARAGD	EMERALD GREEN ARBORVITAE	4'-5' HT.	PLANT WHERE SHOWN; 24"-36" O.C.
RO	9	RHODODENDRON 'ROBLEZA'	AUTUMN BONFIRE	2' HT.	3 GALLON
JP	10	JUNIPERUS HORIZONTALIS	BLUE RUG JUNIPER	2' HT.	2 GALLON



**GRAVES ENGINEERING, INC.**  
 100 GROVES STREET | WORCESTER, MA 01603  
 T 508-856-0321 | F 508-856-0357  
 gravesengineering.com

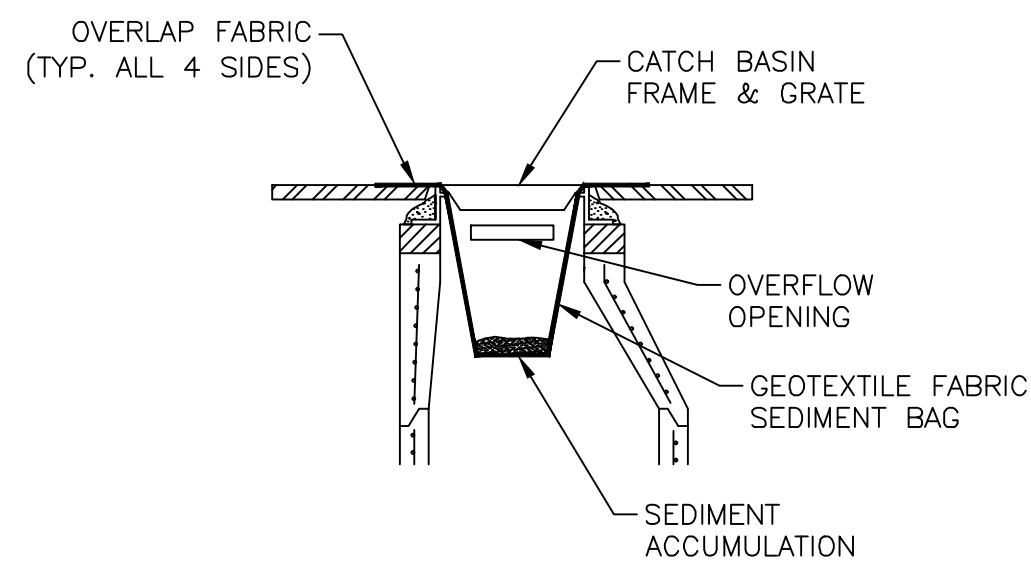
NO.	DATE	BY	DESCRIPTION
2	04/11/24	DFS	REVISED PARKING CALCULATIONS
1	03/25/24	DFS	ISSUED FOR PERMITTING



**LANDSCAPE PLAN**  
**PARK AVENUE GREEN LIVING - MIXED-USE DEVELOPMENT**  
 487 PARK AVENUE, WORCESTER, MA

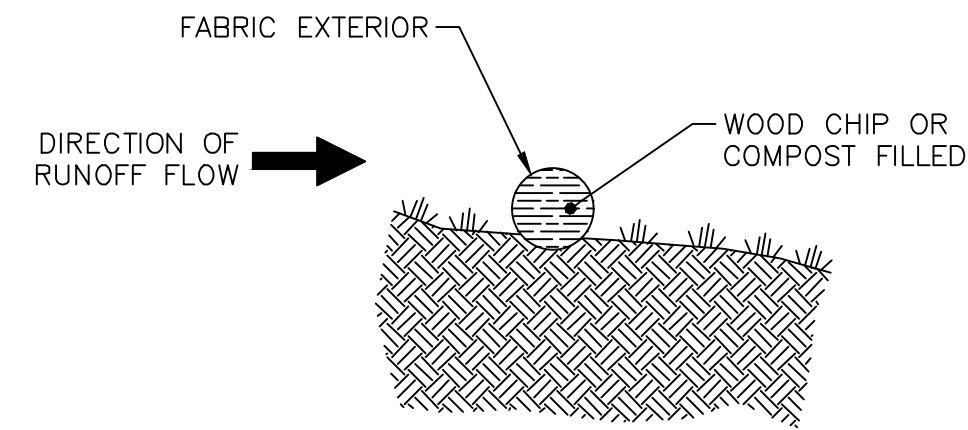
PREPARED FOR: OLSI G/INKO  
 487 PARK AVENUE, WORCESTER, MA 01603

DATE: 03/25/24 SCALE: 1"=20'  
 DES. BY: DFS  
 DRW. BY: DFS  
 CHK. BY: MRA  
 PRJ. NO.: 23125



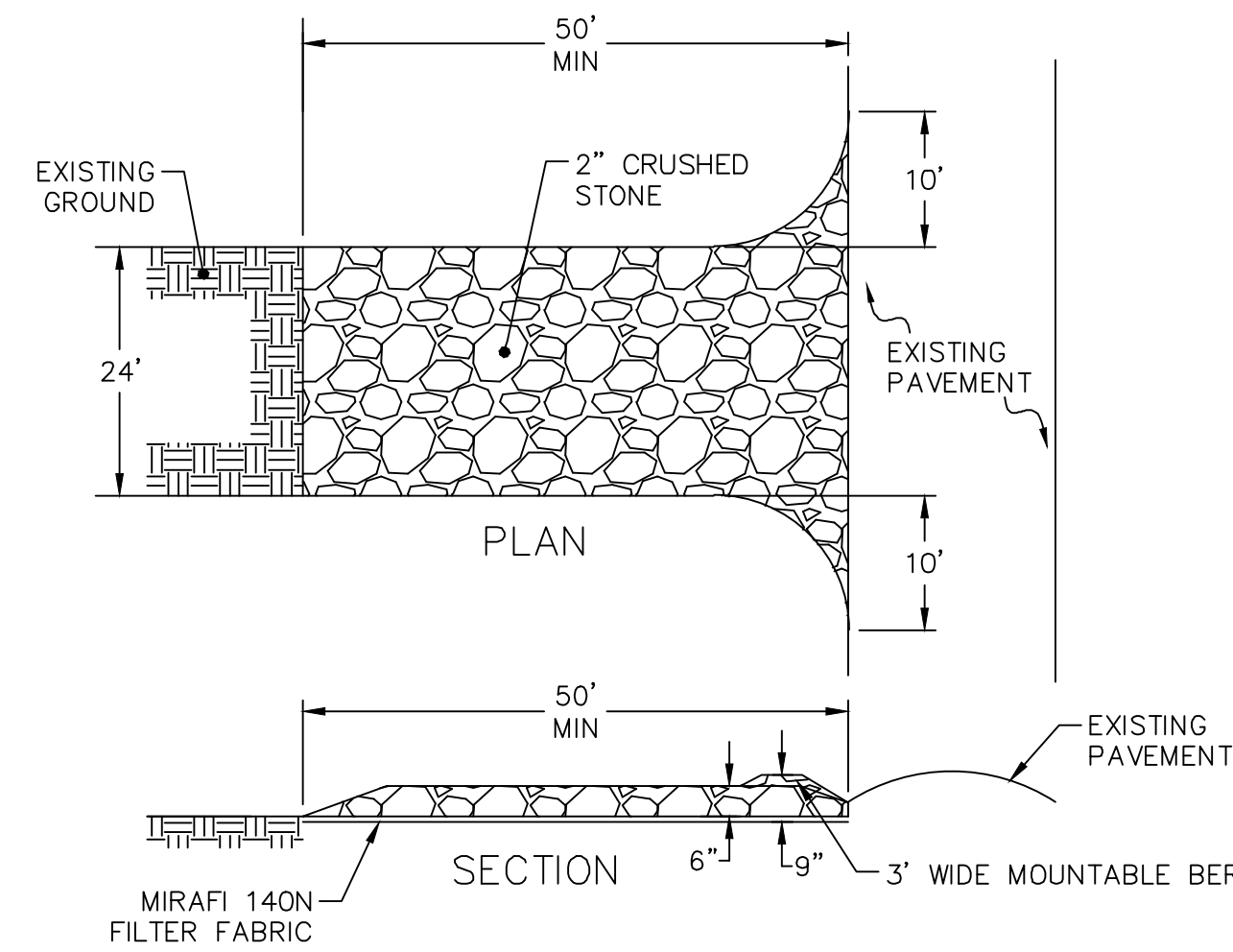
**CATCH BASIN SEDIMENT BAG** NTS

- NOTES:
- 1) SEDIMENT BAG SHALL BE SILTSACK BY ACF ENVIRONMENTAL, OR APPROVED EQUAL.
  - 2) OIL ABSORPTION MEDIUM MAY ALSO BE PLACED IN BAG (OPTIONAL).
  - 3) INSTALL AND MAINTAIN PER MANUFACTURER'S INSTRUCTIONS.
  - 4) A SEDIMENT BAG SHALL BE PROVIDED FOR PROPOSED CATCH BASINS THAT ARE ACCEPTING STORMWATER RUNOFF PRIOR TO FINAL STABILIZATION.

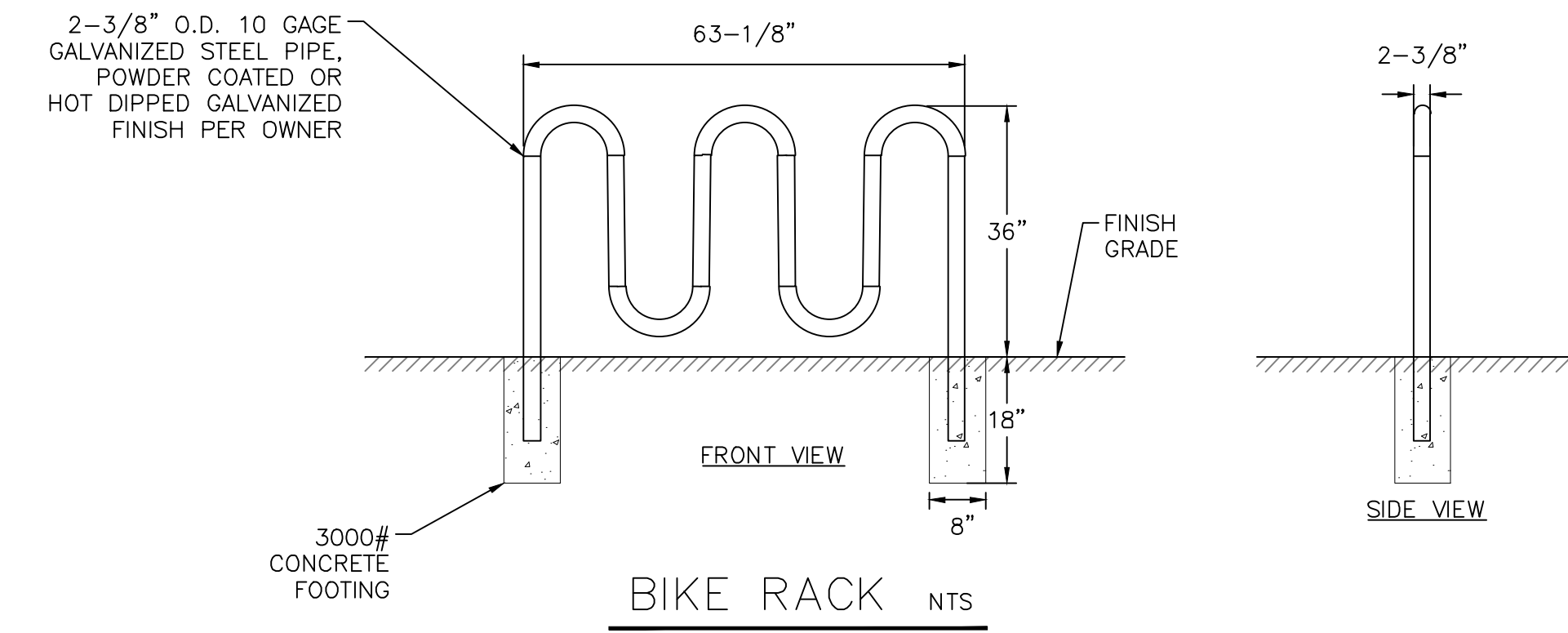


**COMPOST FILTER SOCK** NTS

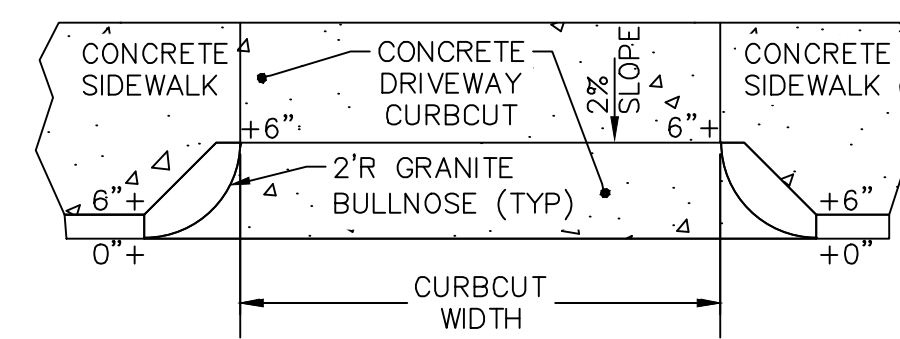
- NOTE:
- 1) PROVIDE A 3' TO 6' LEVEL AREA BETWEEN THE SILT SOCK AND THE TOE OF ANY SLOPE TO PROVIDE AREA FOR SEDIMENT ACCUMULATION.



**STABILIZED CONSTRUCTION ENTRANCE** NTS

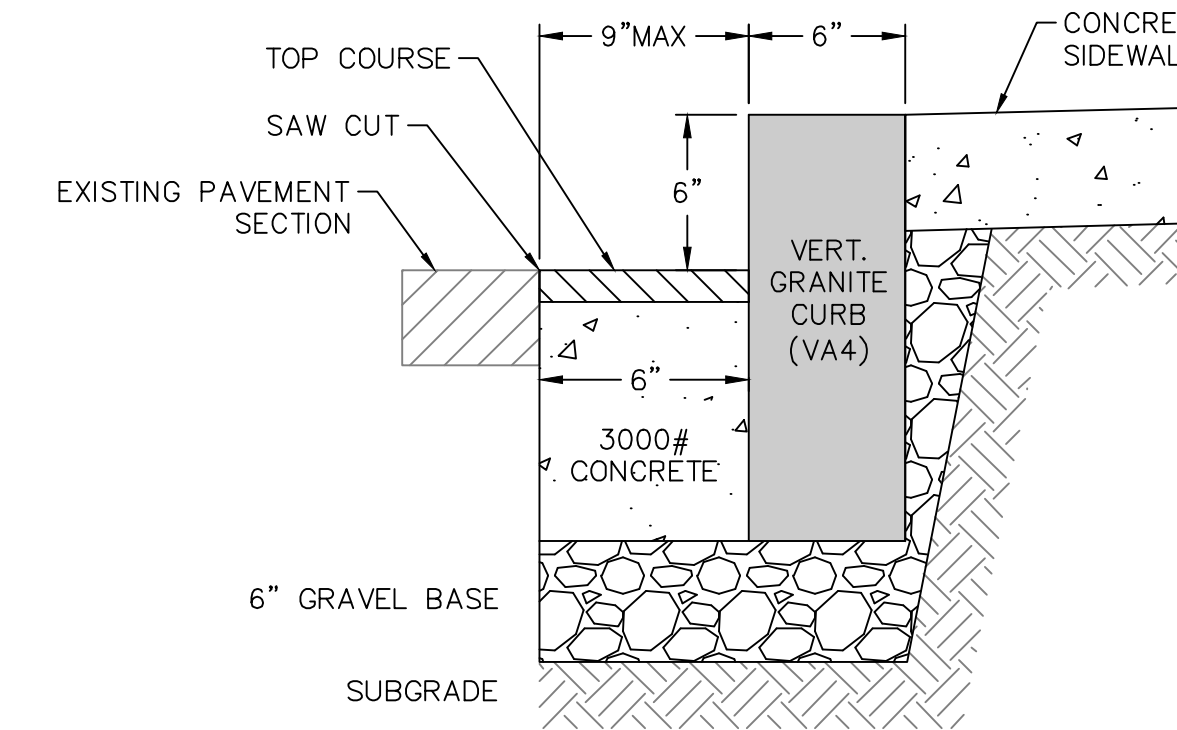


**BIKE RACK** NTS

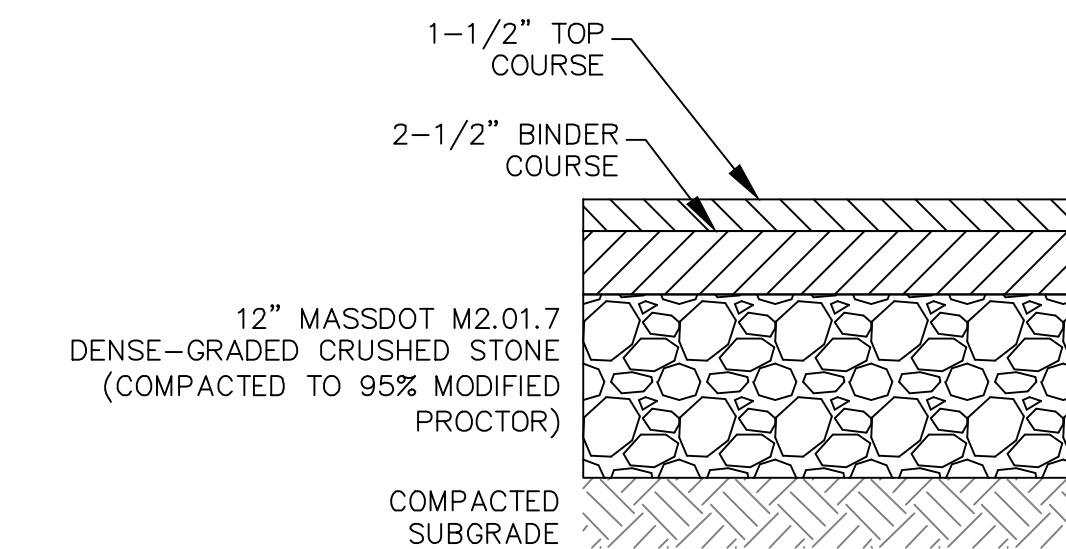


**WORCESTER STANDARD CURB CUT** NTS

- NOTES:
- 1) CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONCRETE WALK DETAIL ON THESE PLANS (6\"/>

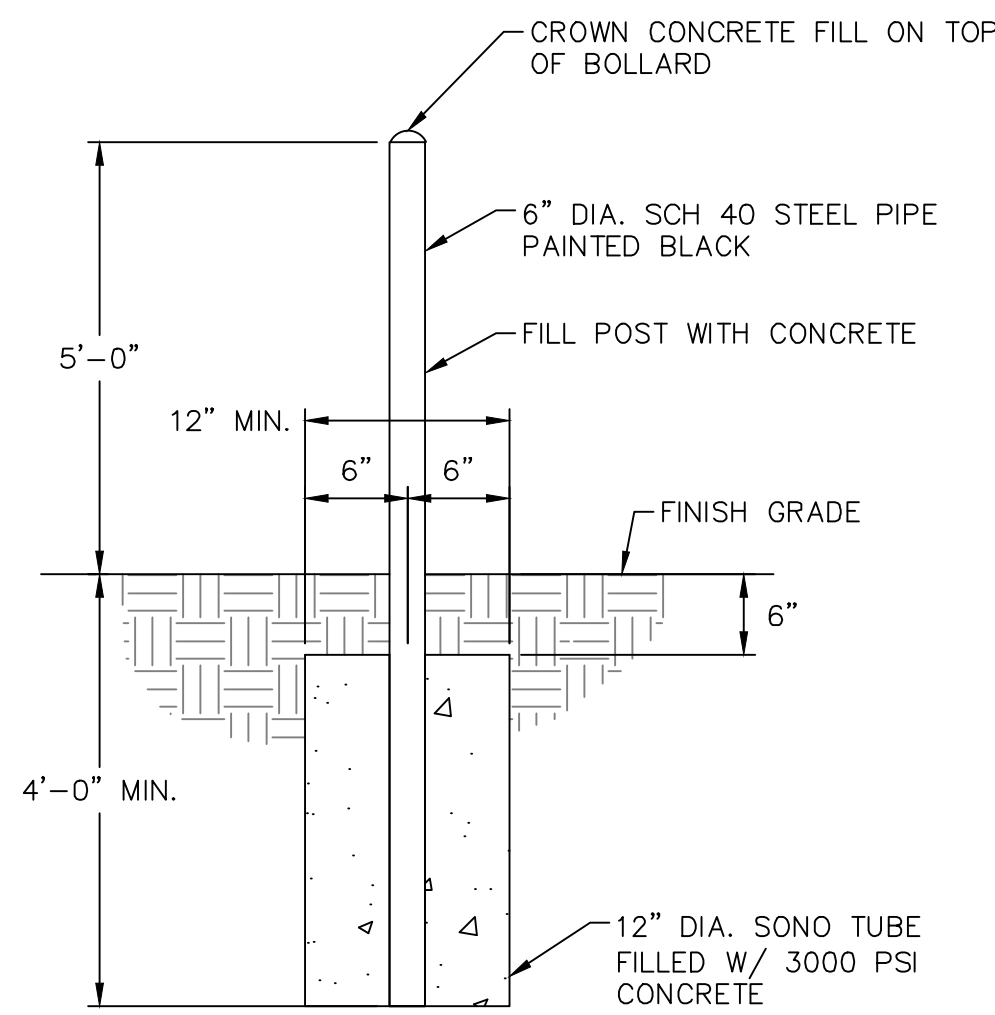


**VERTICAL GRANITE CURB ALONG EXISTING ROADWAY** NTS



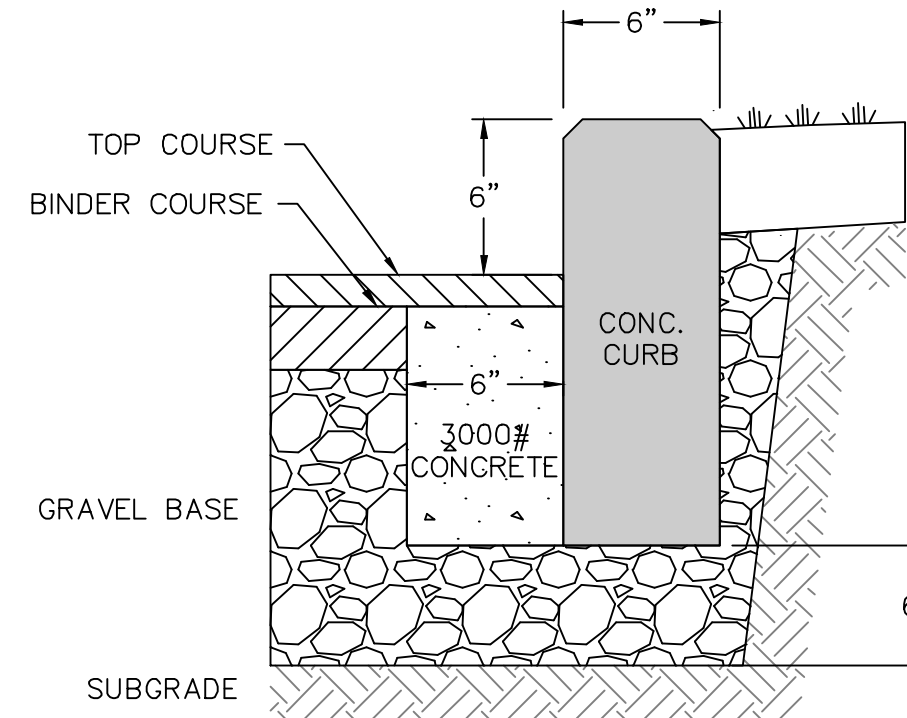
**PAVEMENT SECTION** NTS

- NOTES:
- 1) TAMP ALL ASPHALT EDGES THAT ABUT LAWN, LANDSCAPED OR OTHER SOFT SURFACE.
  - 2) BINDER COURSE: - MASSDOT M3.11.03, TABLE A, "HMA INTERMEDIATE COURSE DENSE BINDER" OR SUPERPAVE INTERMEDIATE COURSE - 19.0MM (MIXTURE DESIGNATION SIC - 19.0).
  - 3) TOP COURSE: - MASSDOT M3.11.03, TABLE A, "SURFACE COURSE STANDARD TOP" OR SUPERPAVE SURFACE COURSE - 12.5MM (MIXTURE DESIGNATION SSC - 12.5).

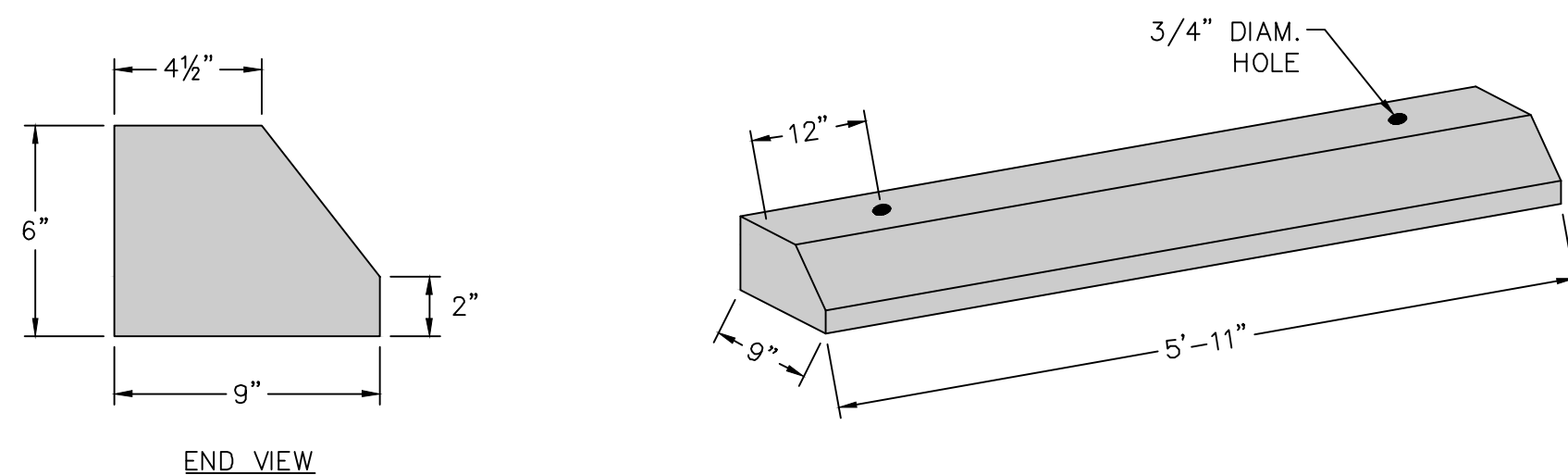


**BOLLARD** NTS

- NOTE:
- 1) THIS DETAIL APPLIES TO BOLLARD INSTALLED AROUND THE PROPOSED TRANSFORMER AND COMPLIES WITH NGRID SPECIFICATIONS.

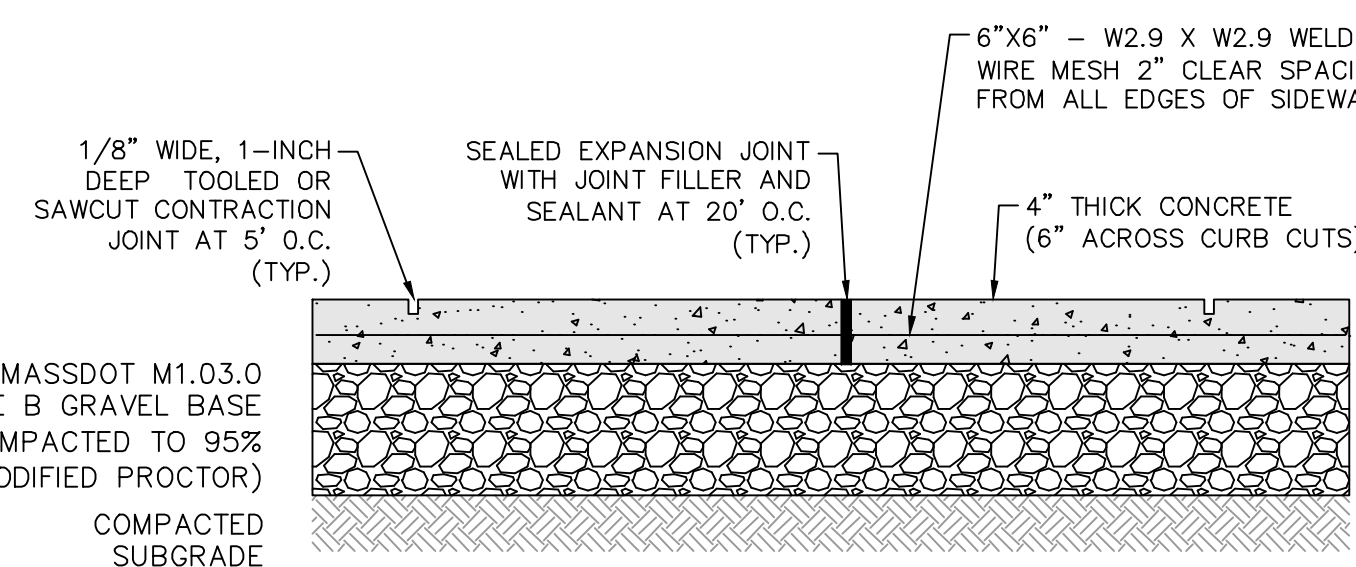


**PRECAST CONCRETE CURB** NTS



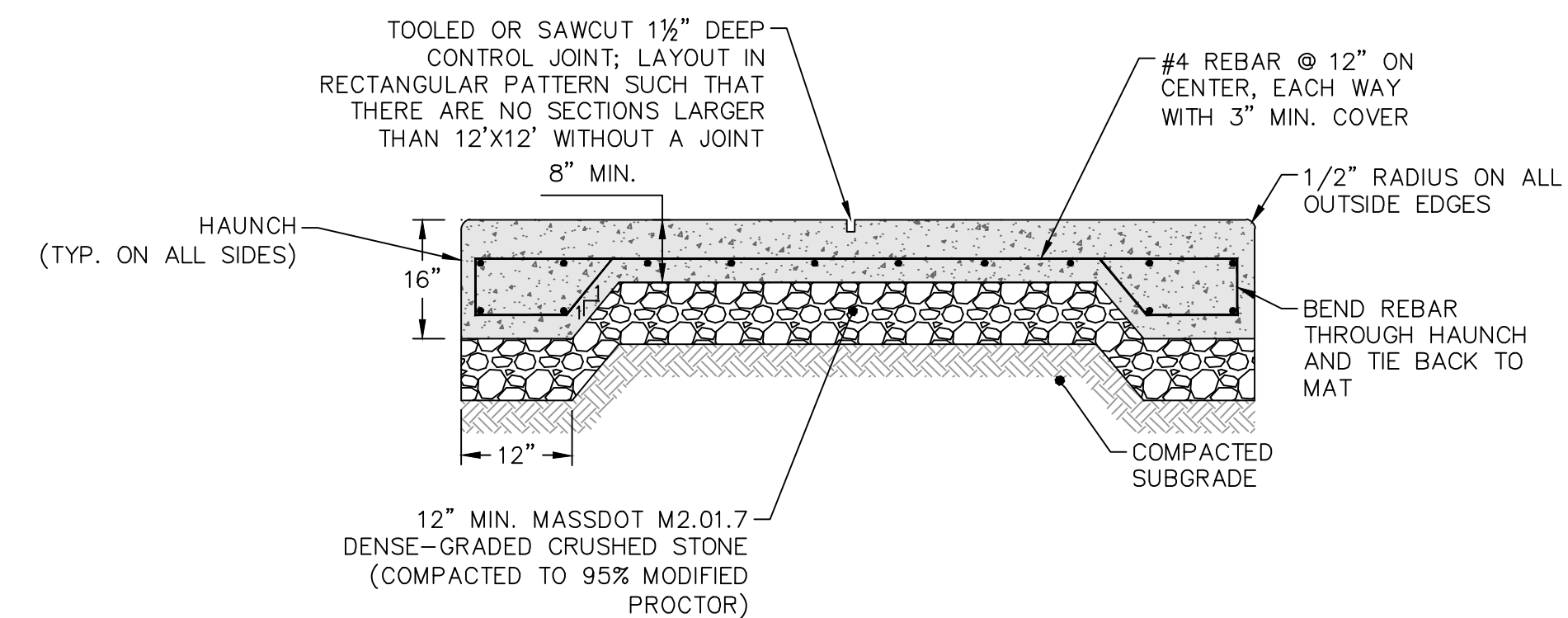
**WHEEL STOP** NTS

- NOTES:
- 1) WHEEL STOPS SHALL BE CONSTRUCTED OF 4,000 PSI CONCRETE (28 DAYS) AND SECURED TO THE GROUND WITH STEEL PINS.
  - 2) RUBBER OR OTHER MATERIAL WHEEL STOPS MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.



**CONCRETE SIDEWALK** NTS

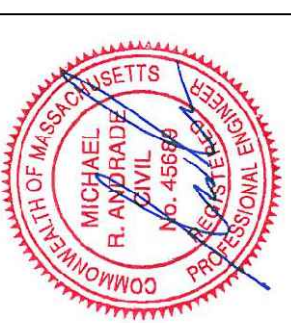
- NOTES:
- 1) CONCRETE MIX DESIGN SHALL BE FOR EXTERIOR USE; AIR-ENTRAINED, 4,000 PSI MIN. (28-DAY), 3/4\"/>
  - 2) WHEN THE WALKWAY ABUTS A STRUCTURE OR EXISTING HARD SURFACE (CONCRETE, ETC.), INSTALL AN EXPANSION JOINT ACROSS THE ENTIRETY OF THE ABUTTING FACE WITH PREFORMED FIBER JOINT FILLER AND FILL WITH 1\"/>
  - 3) WALKWAYS SHALL HAVE A LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF FOOT TRAFFIC. THERE SHALL BE NO SMOOTHED TOOL JOINTS; BROOM FINISH SHALL EXTEND TO THE EDGES OF THE PAD AND ACROSS ANY JOINTS.

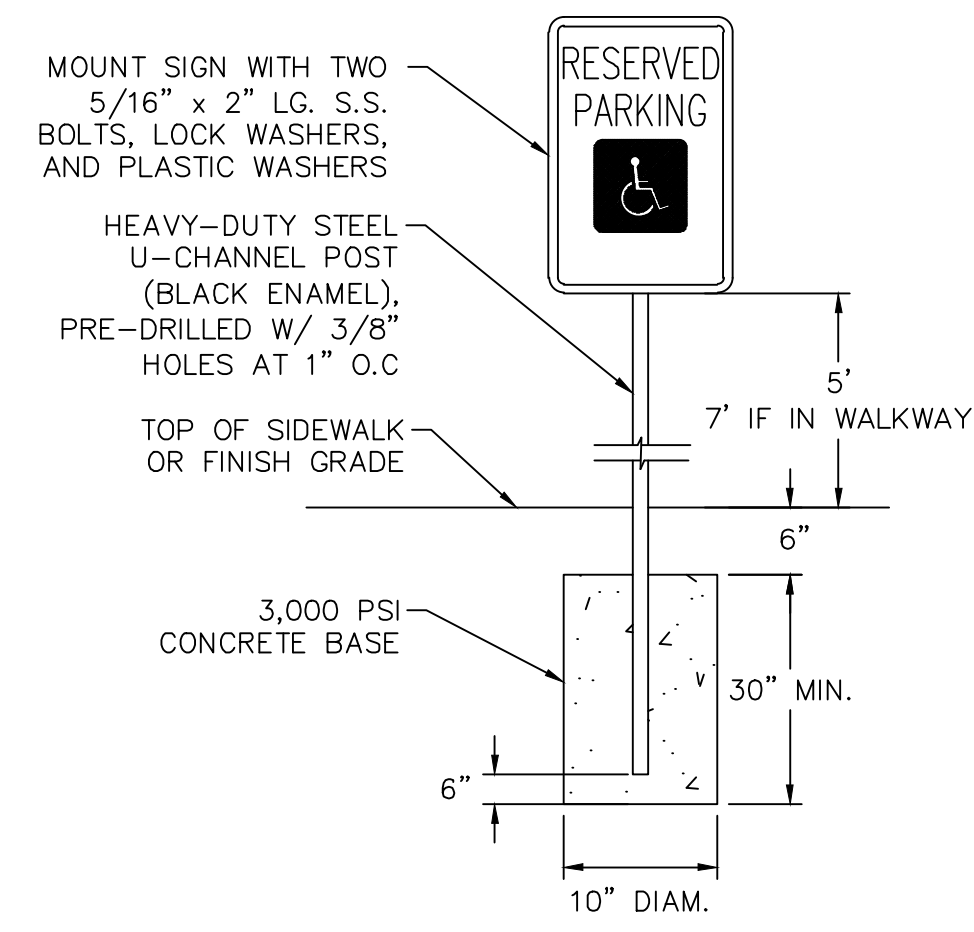


**CONCRETE PAD-HEAVY DUTY** NTS

- NOTES:
- THIS DETAIL APPLIES TO THE PROPOSED DUMPSTER PAD.
- 1) CONCRETE MIX DESIGN SHALL BE FOR EXTERIOR USE; AIR-ENTRAINED, 4,000 PSI MIN. (28-DAY), 3/4\"/>
  - 2) OMIT THE HAUNCH WHEN ABUTTING ANOTHER HARD SURFACE SUCH AS EXISTING CONCRETE (BITUMINOUS IS NOT A HARD SURFACE).
  - 3) WHEN THE PAD ABUTS A STRUCTURE OR EXISTING HARD SURFACE (CONCRETE, ETC.), INSTALL AN EXPANSION JOINT ACROSS THE ENTIRETY OF THE ABUTTING FACE WITH PREFORMED FIBER JOINT FILLER AND FILL WITH 1\"/>
  - 4) PAD SHALL HAVE A MEDIUM BROOM FINISH. THERE SHALL BE NO SMOOTHED TOOL JOINTS; BROOM FINISH SHALL EXTEND TO THE EDGES OF THE PAD AND ACROSS ANY JOINTS.

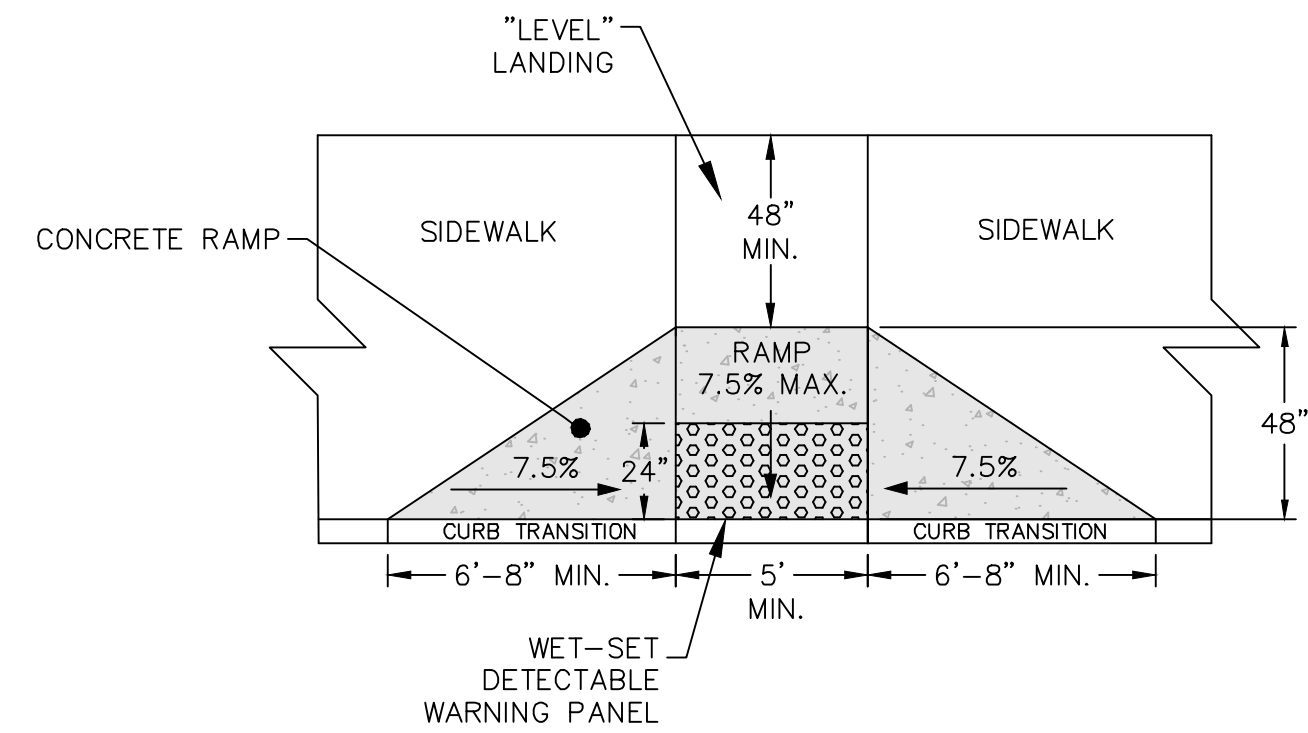
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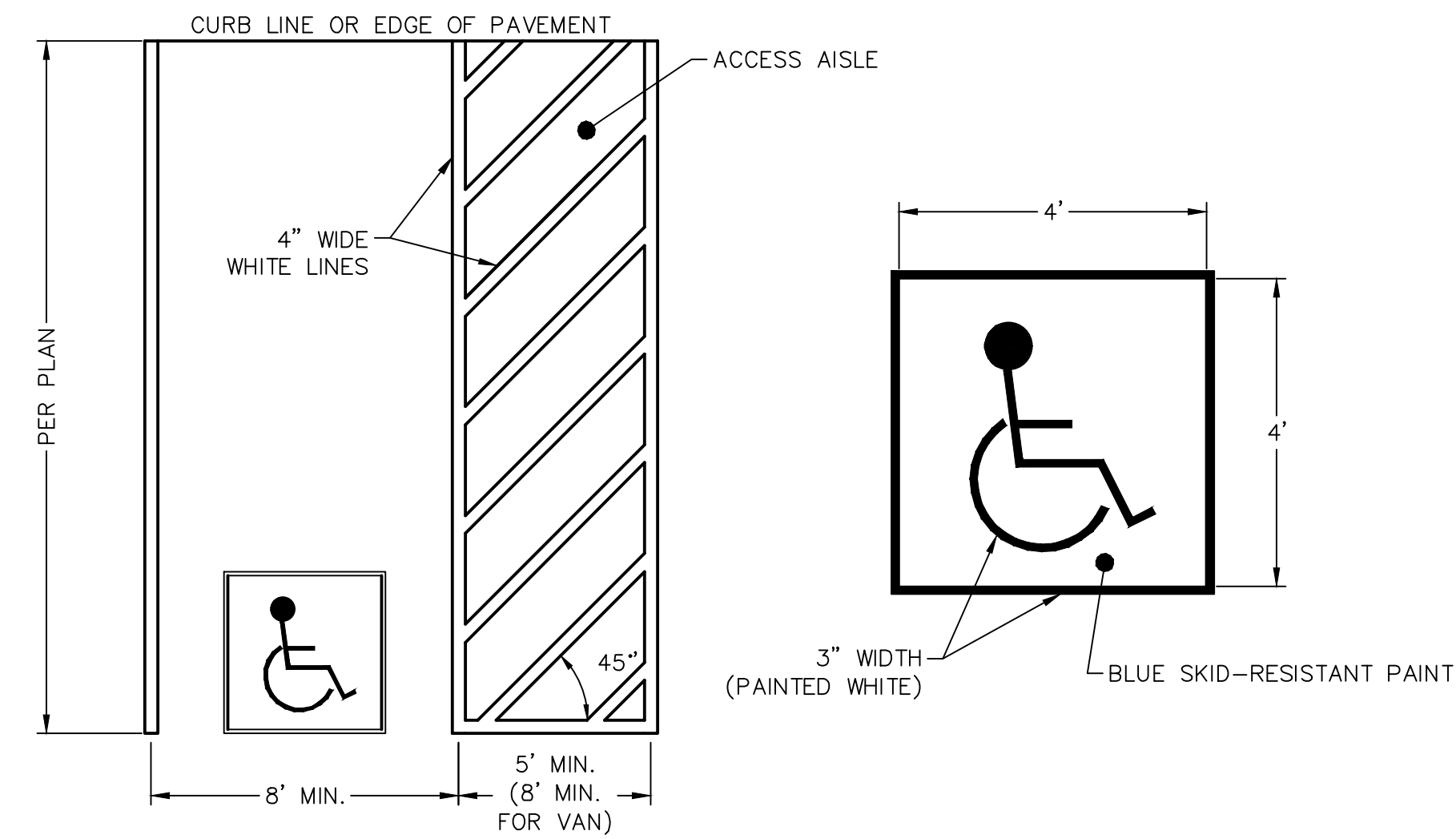
**SIGN** NTS

**NOTE:**  
1) THIS DETAIL APPLIES TO THE CONSTRUCTION OF ALL PROPOSED SIGNS; (SIGN TYPE AND DIMENSIONS MAY VARY FROM THOSE SHOWN). HANDICAP VAN ACCESSIBLE PLACARD SHALL BE MOUNTED DIRECTLY BELOW PRIMARY SIGN.



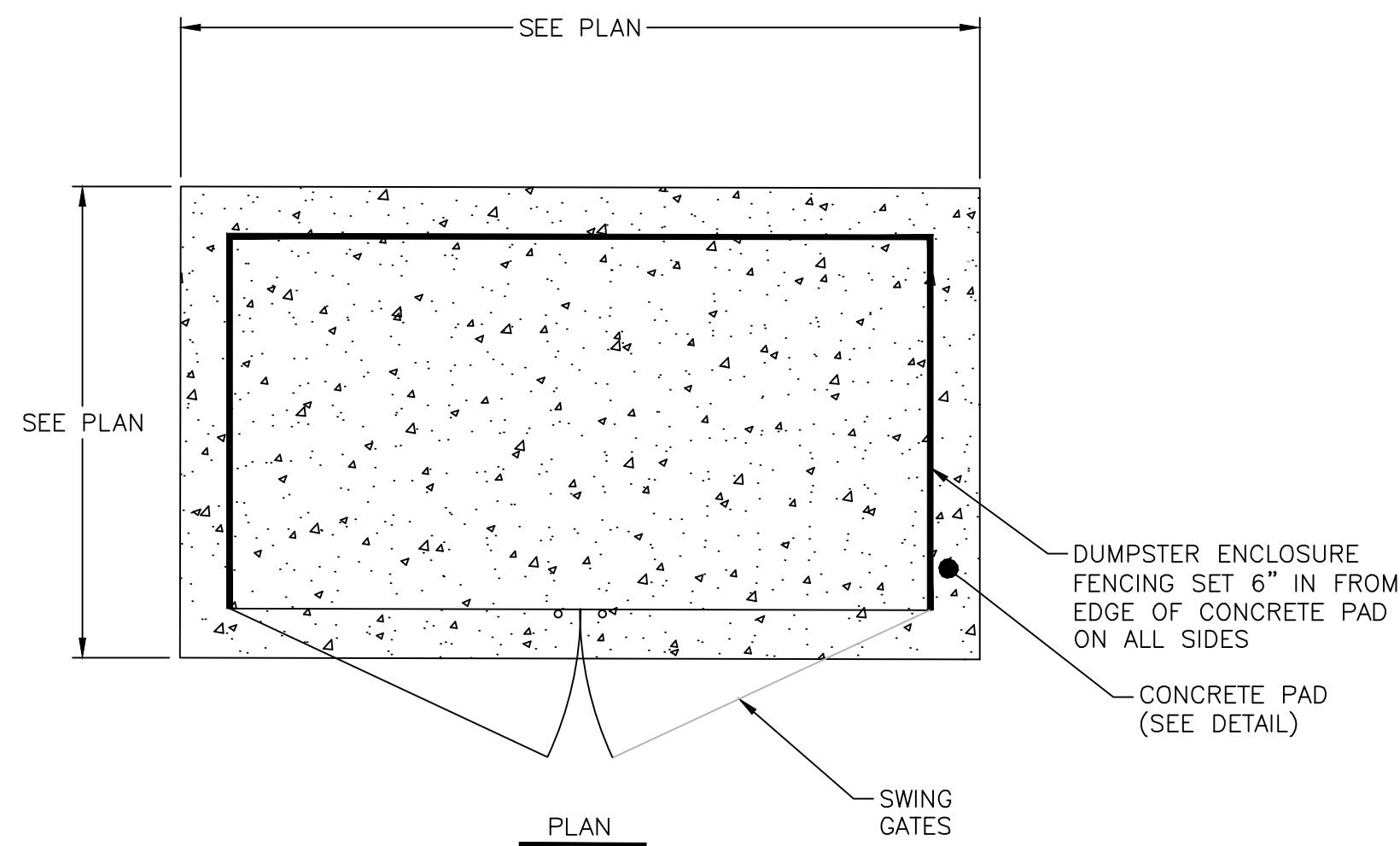
**CONCRETE CURB CUT WHEELCHAIR RAMP** NTS

**NOTES:**  
1) FOR SIDEWALKS PART OF AN ACCESSIBLE ROUTE, THE MAXIMUM ALLOWABLE RUNNING SLOPE SHALL BE 4.5% AND THE MAXIMUM ALLOWABLE CROSS SLOPE SHALL BE 1.5% (1.0% MIN.).  
2) "LEVEL LANDING" SHALL BE SLOPED NO MORE THAN 1.5% IN ANY DIRECTION (1.0% MIN. FOR CROSS SLOPE).  
3) A "LEVEL LANDING" 48" MIN. IN LENGTH MUST BE PROVIDED AT THE TOP OF EACH RAMP.

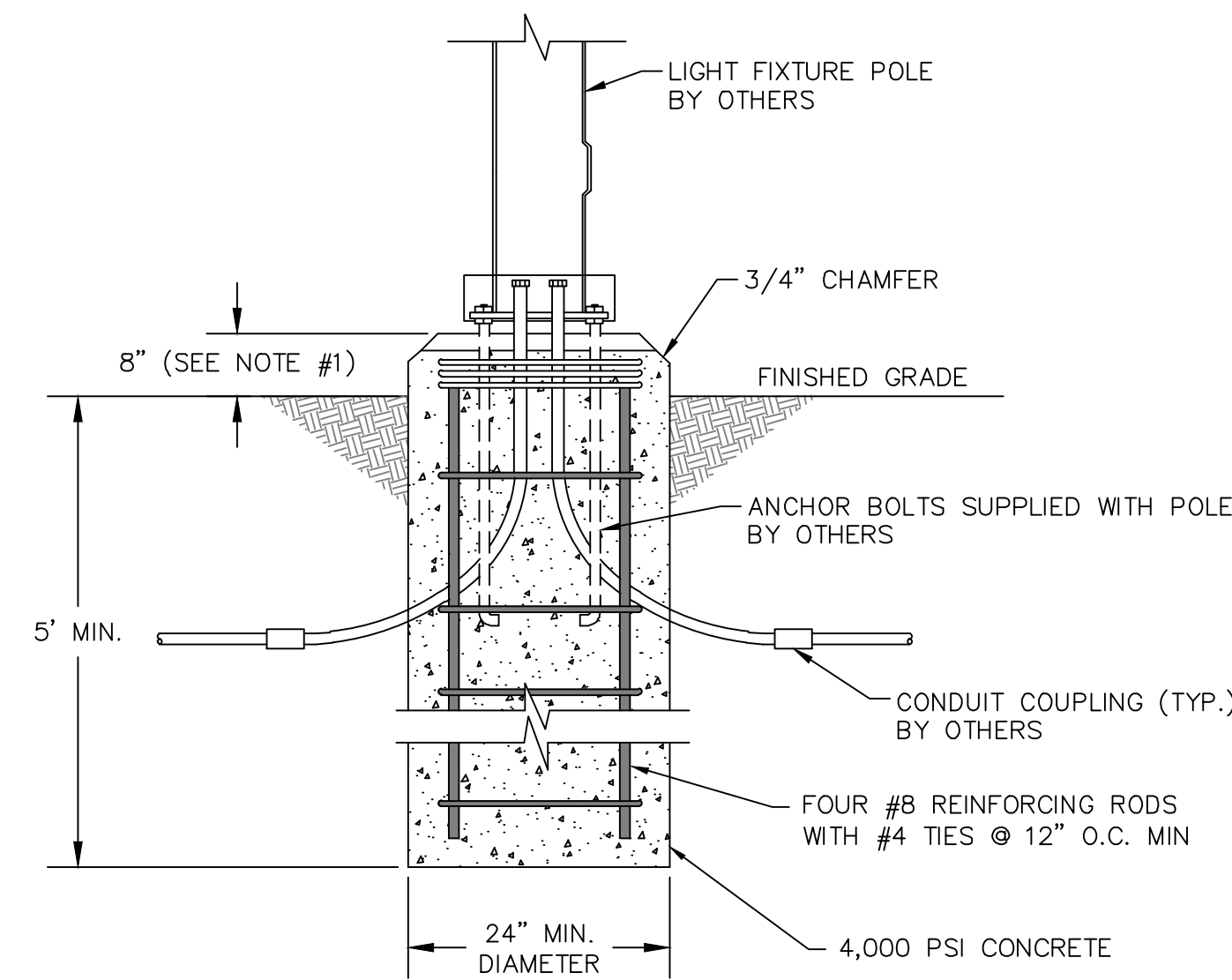


**HANDICAP PARKING SPACE** NTS

**NOTE:**  
1) PAVEMENT MARKINGS SHALL BE PAINTED WITH WHITE TRAFFIC PAINT CONFORMING TO SECTION M7.01.08 OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION. LINE WIDTH SHALL BE 4 INCHES. HANDICAP SYMBOL MARKINGS SHALL COMPLY WITH 521 CMR WITH WHITE SYMBOL ON BLUE BACKGROUND.

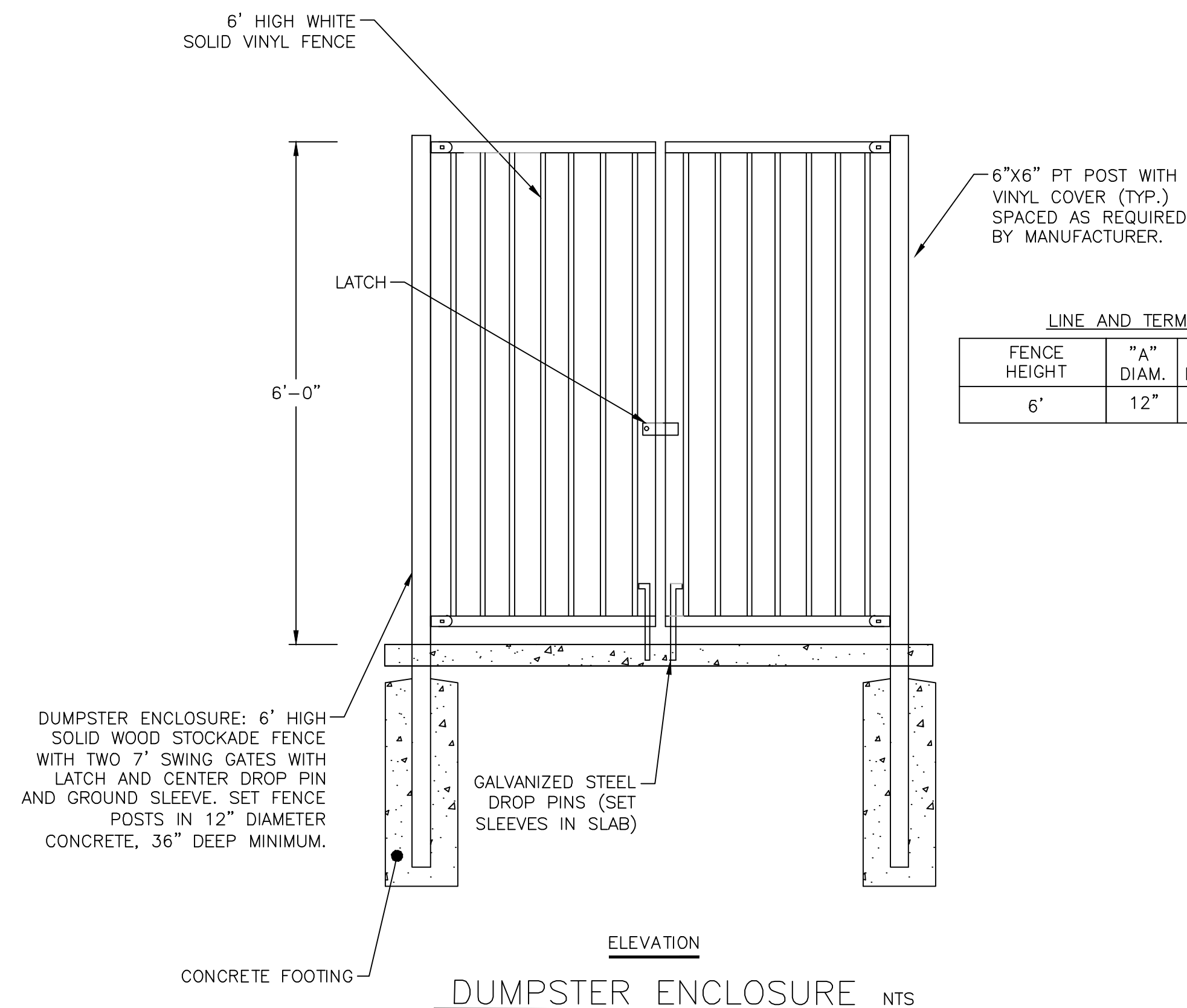


**PLAN**



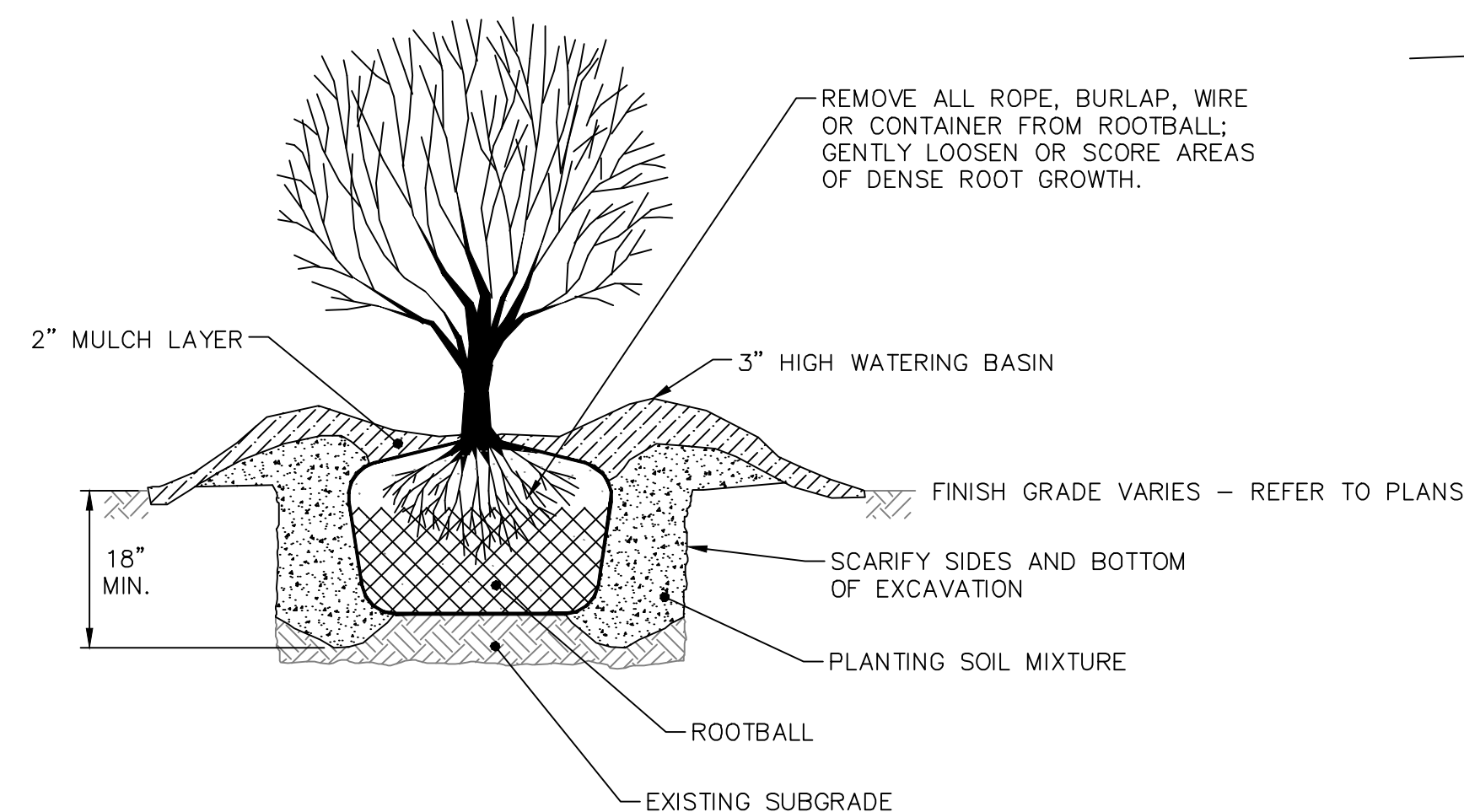
**LIGHT POLE BASE** NTS

**NOTES:**  
1) INCREASE EXPOSED HEIGHT TO 30" IN AND ADJACENT TO VEHICULAR TRAFFIC AREAS.  
2) CONTRACTOR SHALL COORDINATE WITH ELECTRICAL PLANS AND CONTRACTOR FOR BOLTS AND BOLT PATTERN FOR LIGHT POLE ANCHOR BOLTS.



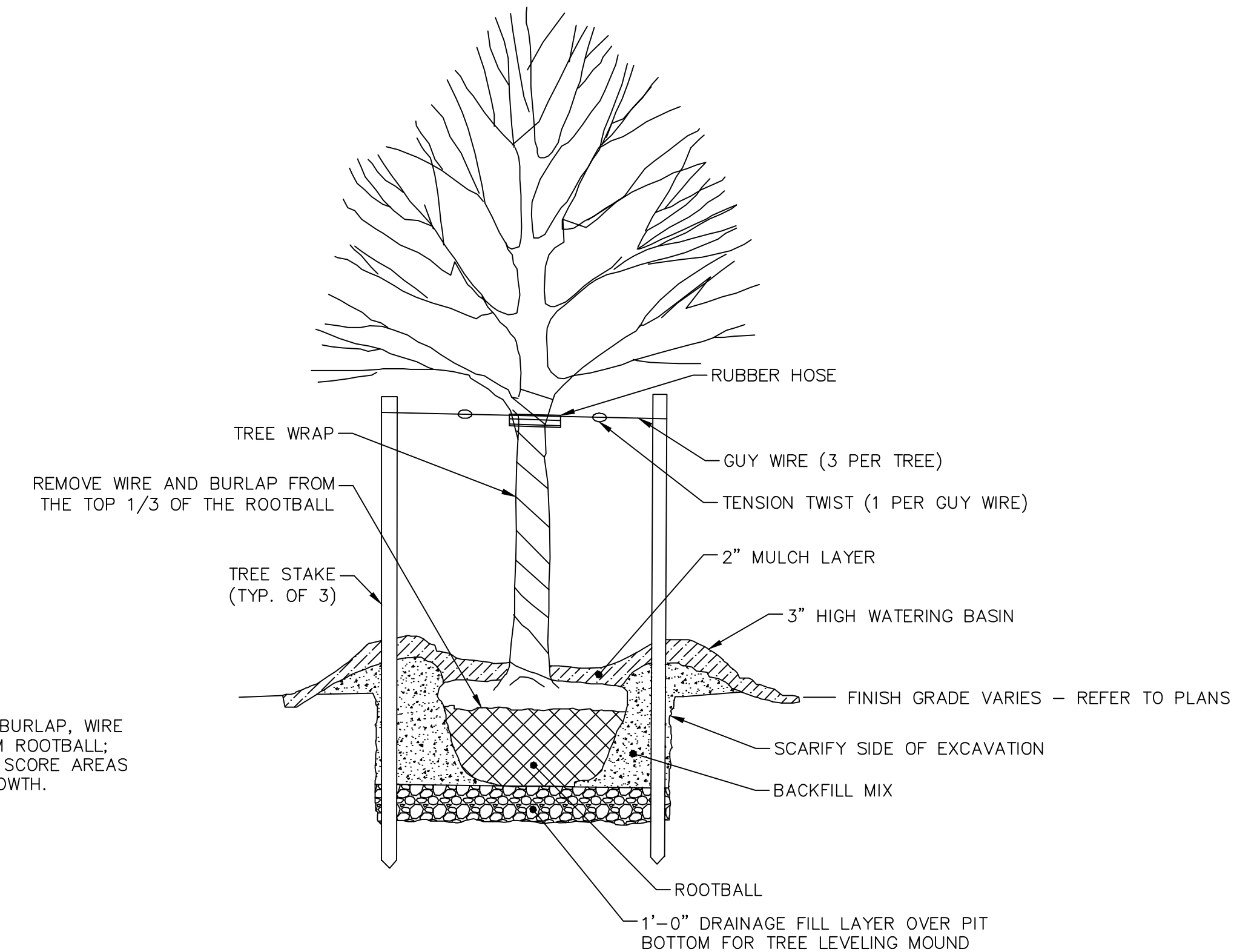
**DUMPSTER ENCLOSURE** NTS

LINE AND TERMINAL POSTS			
FENCE HEIGHT	"A" DIAM.	"B" DEPTH	"C" POST EMBEDMENT
6'	12"	48"	45"



**SHRUB PLANTING** NTS

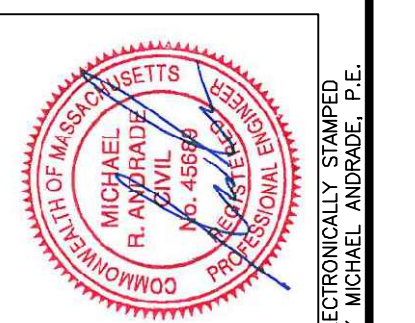
**NOTE:**  
1) SET SHRUB ROOT CROWN FLUSH TO 2" HIGHER THAN FINISH GRADE.



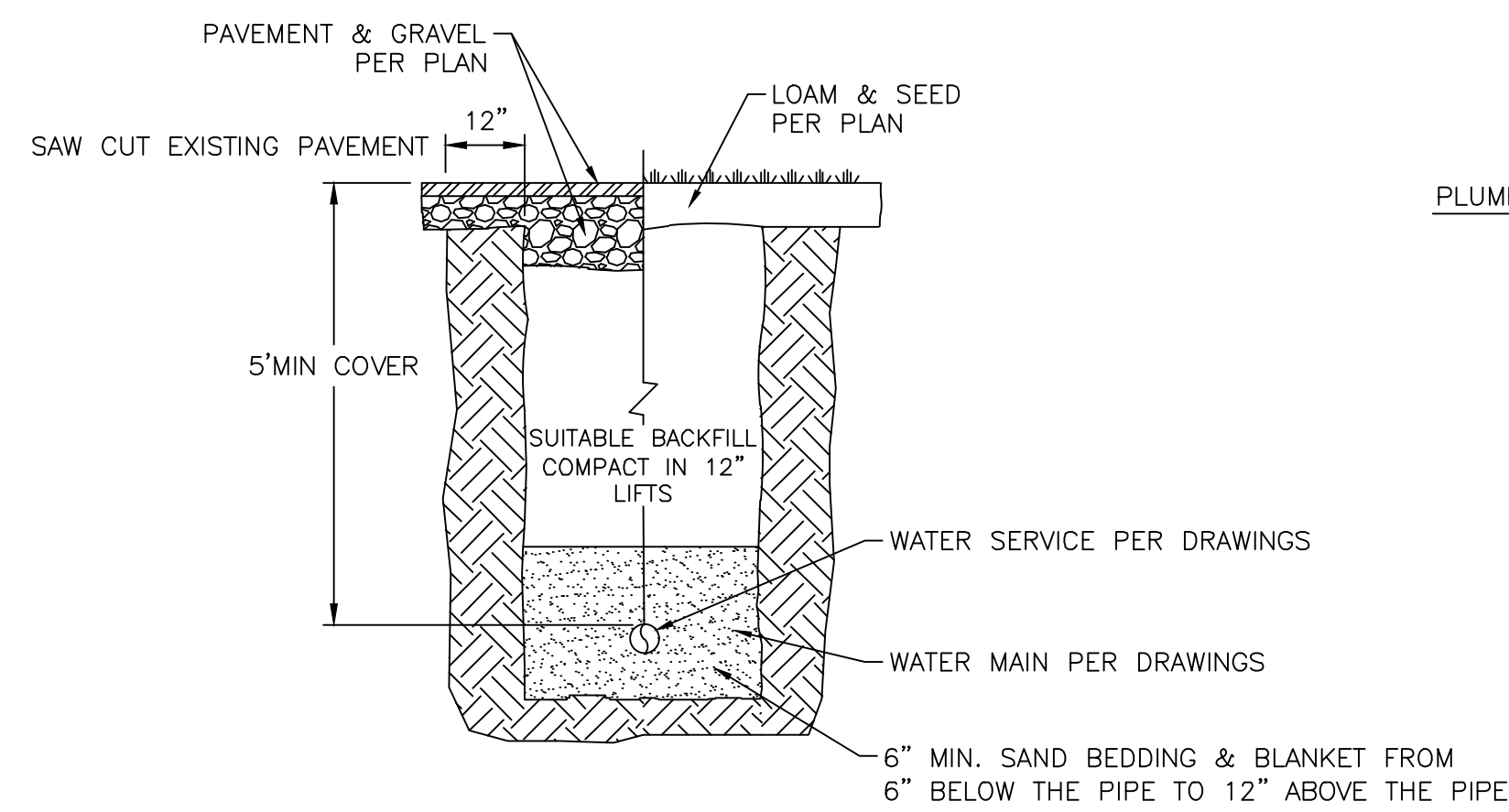
**TREE PLANTING** NTS

**NOTES:**  
1) SET TREE ROOT CROWN 2" ABOVE FINISH GRADE.  
2) DO NOT PLACE SOIL OVER ROOTBALL.

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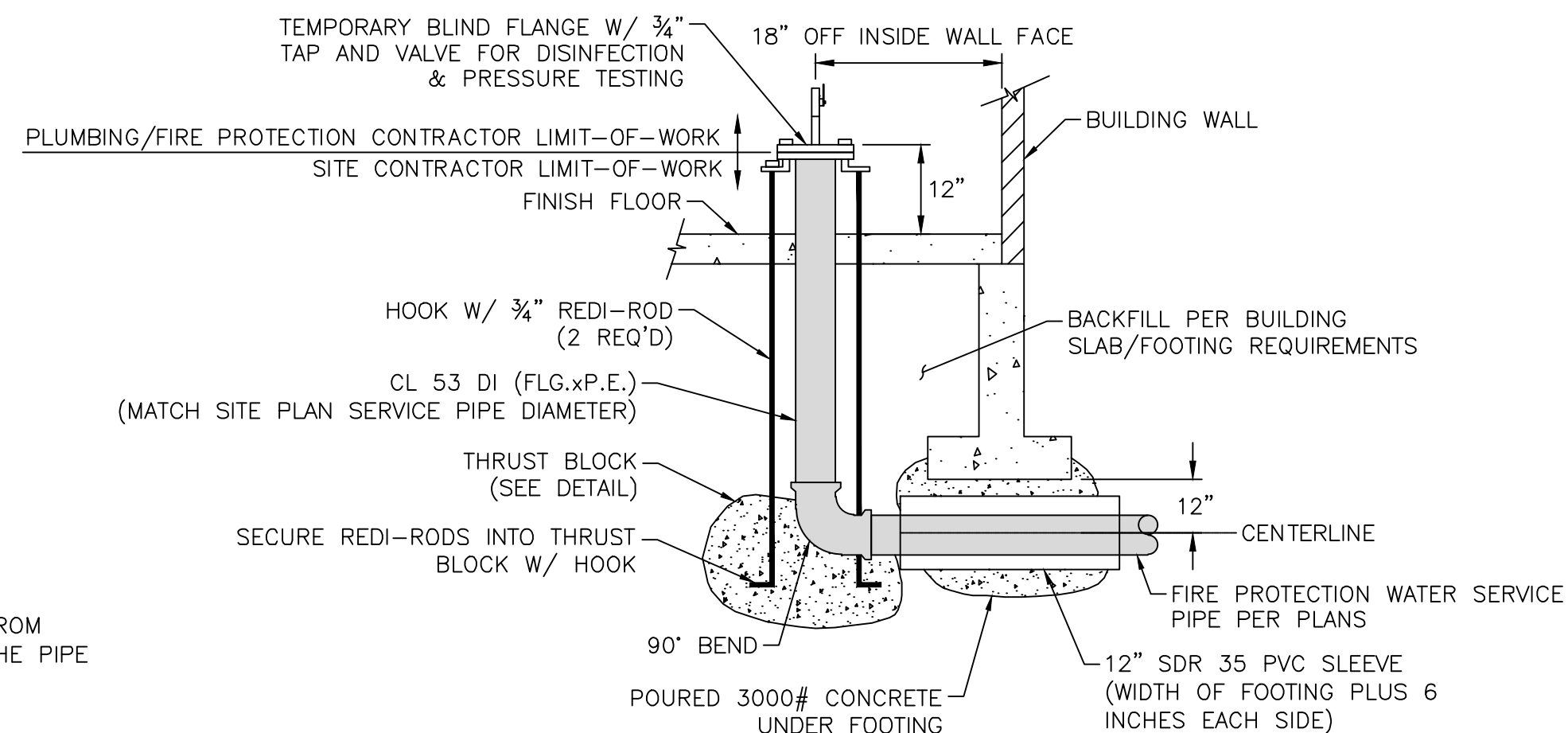




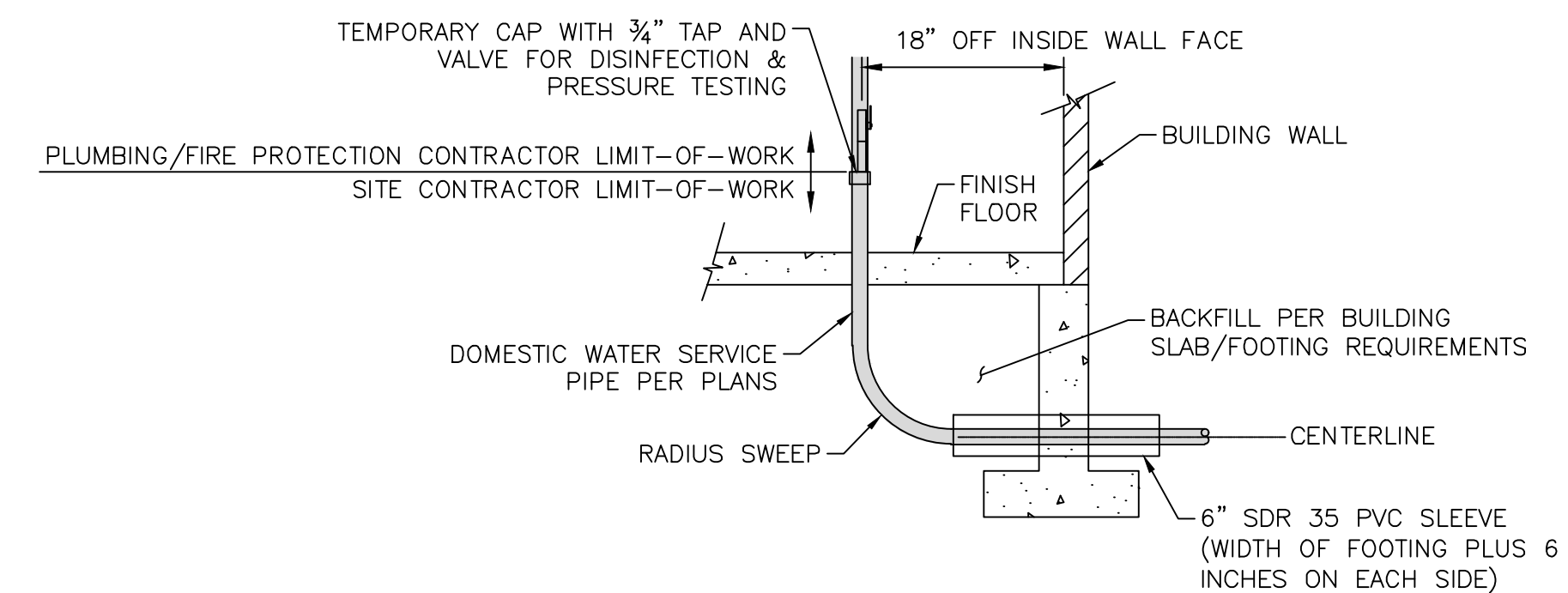


WATER SERVICE TRENCH SECTION NTS

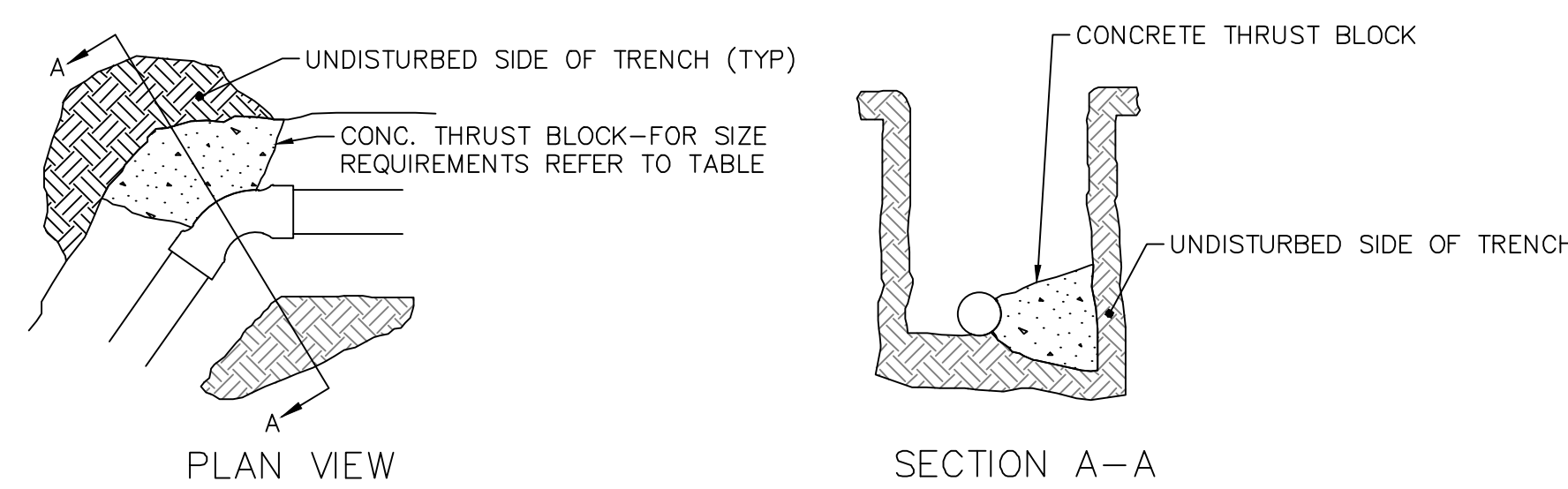
NOTE:  
1) SUITABLE BACKFILL SHALL BE AN AASHTO CLASS III SOIL, EITHER TRENCH SPOILS OR AN IMPORTED SAND AND GRAVEL WITH FINES AND COMPACTED TO 90% OF THE PROCTOR DENSITY.



FIRE PROTECTION WATER SERVICE RISER NTS



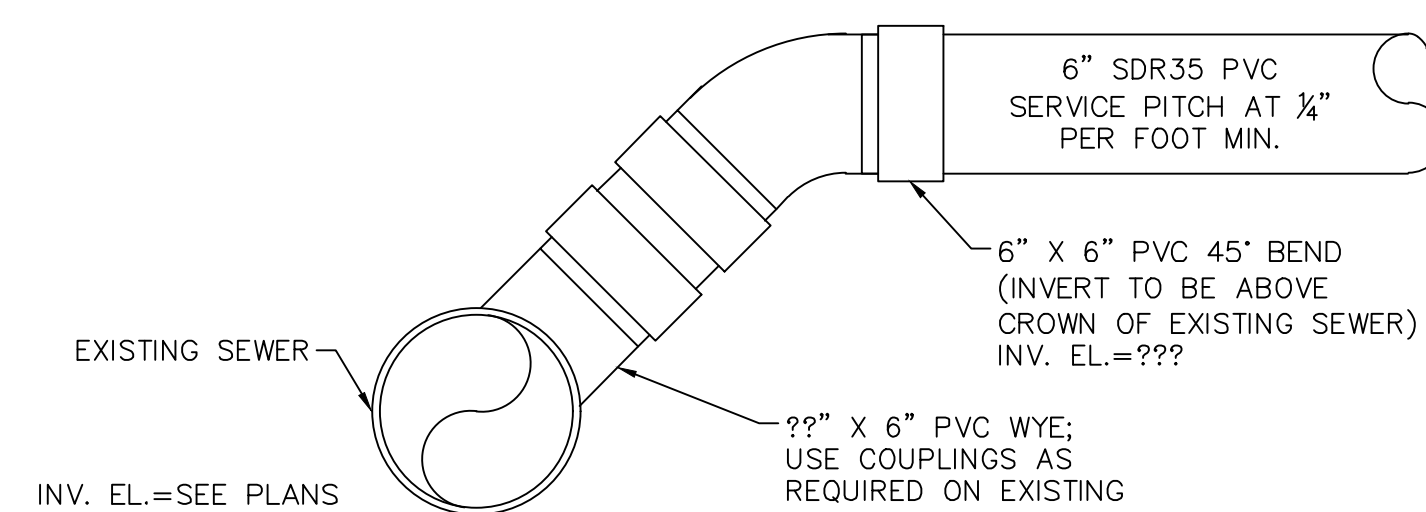
DOMESTIC WATER SERVICE RISER NTS



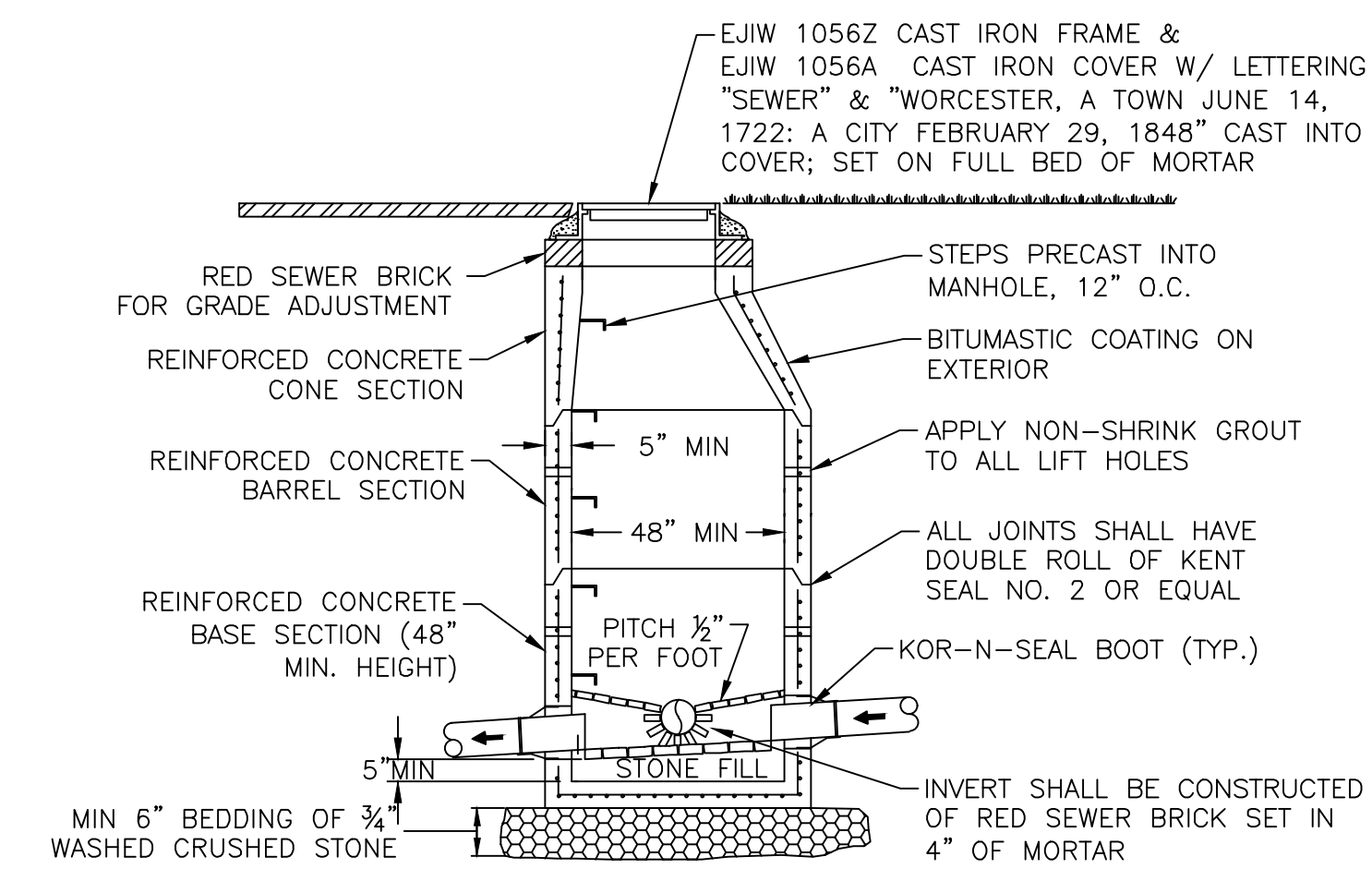
BEARING AREA AGAINST UNDISTURBED SOIL (SQ. FT.)						
PIPE SIZE	90 DEG. BEND	45 DEG. BEND	22.5 DEG. BEND	TEE or FLG.	HYDRANT	
1"-3"	0.7	0.7	0.7	0.7	N/A	
4"	2.0	2.0	2.0	2.0	N/A	
6"	4.0	4.0	4.0	4.0	N/A	
8"	7.0	4.0	4.0	5.0	N/A	
10"	11.0	6.0	4.0	7.0	N/A	
12"	14.0	8.0	4.0	10.0	N/A	

\* BASED UPON 150 PSI PRESSURE AND 2,000 LBS./SQ.FT. ALLOWABLE SOIL PRESSURE

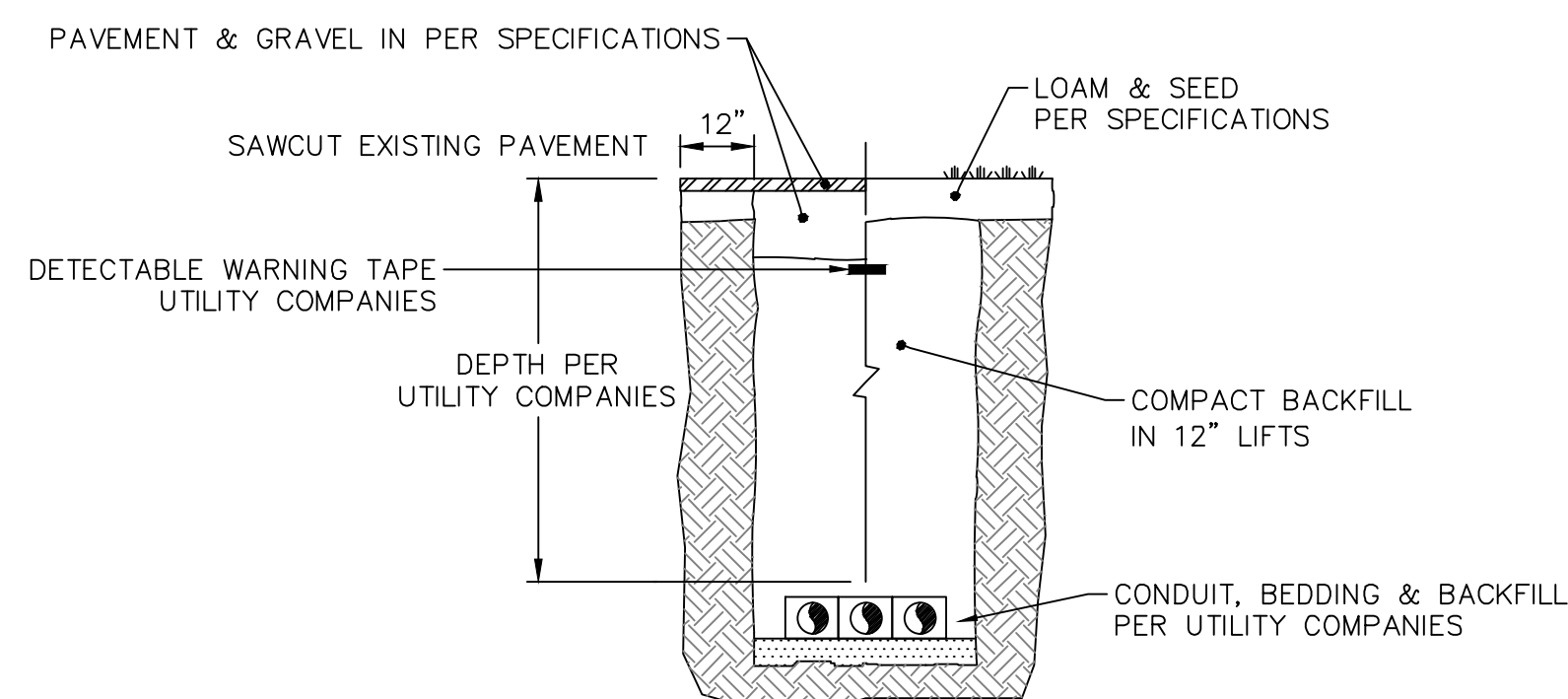
THRUST BLOCK DETAIL NTS



SEWER SERVICE CONNECTION DETAIL NTS

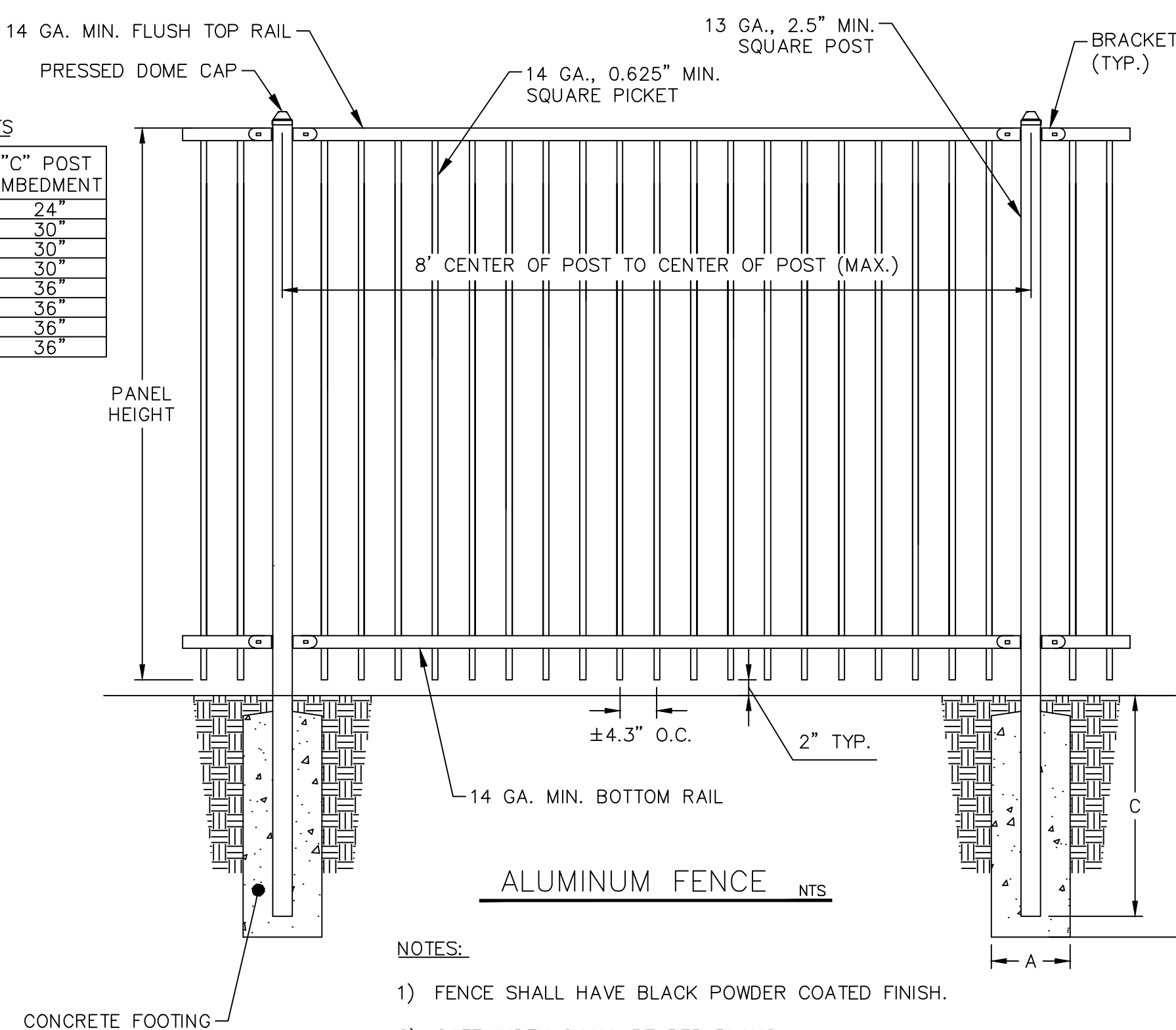


SEWER MANHOLE NTS

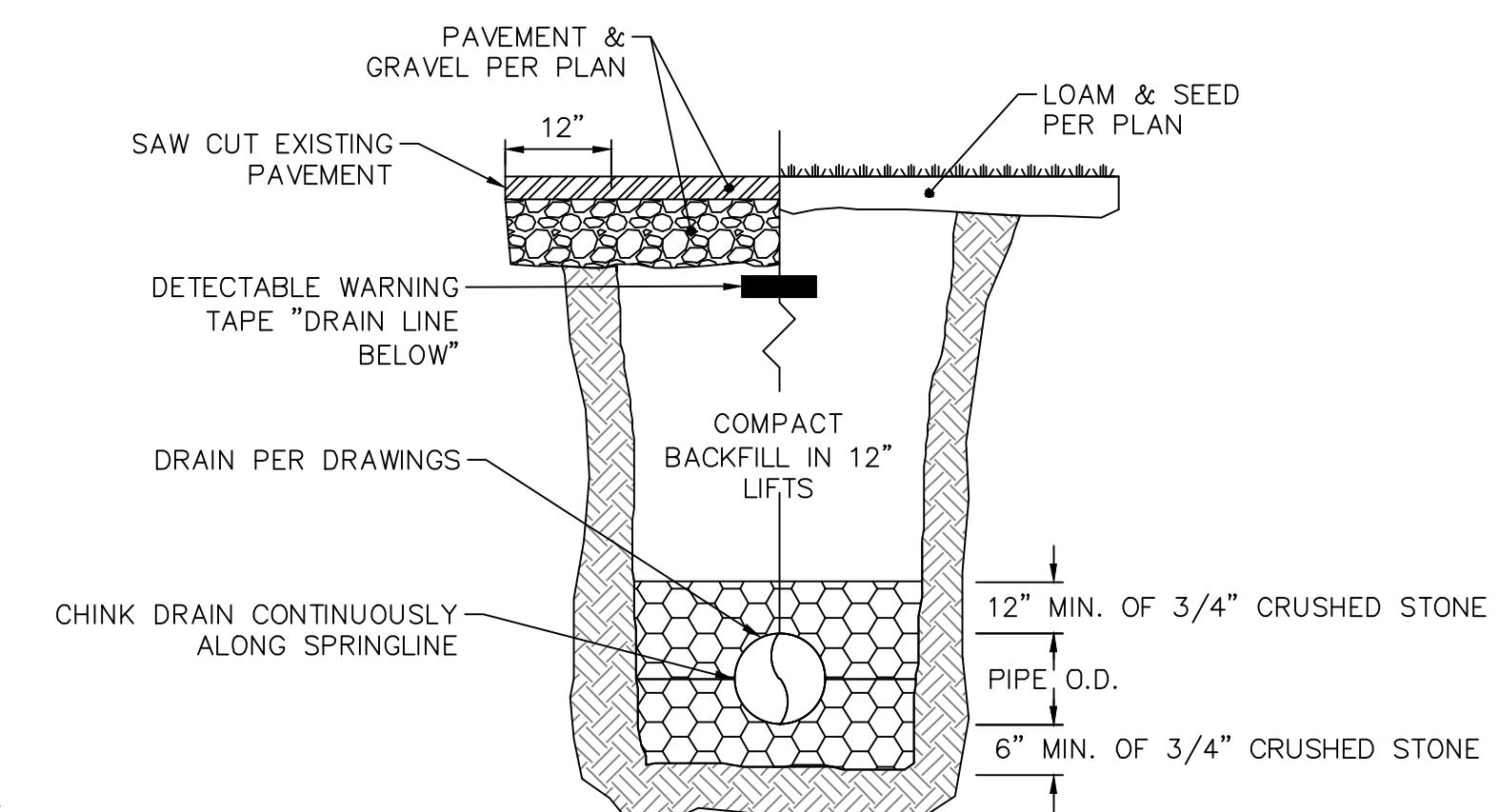


ELECTRICAL, CABLE & TELEPHONE SERVICE TRENCH SECTION NTS

LINE AND TERMINAL POSTS				
PANEL HEIGHT	TYPE POST	"A" DIAM.	"B" DEPTH	"C" POST EMBEDMENT
3'-4'	LINE	6"	26"	24"
	TERMINAL	10"	32"	30"
5'	LINE	8"	32"	30"
	TERMINAL	10"	32"	30"
6'-9'	LINE	12"	38"	36"
	TERMINAL	12"	38"	36"
10'-12'	LINE	18"	38"	36"
	TERMINAL	18"	38"	36"



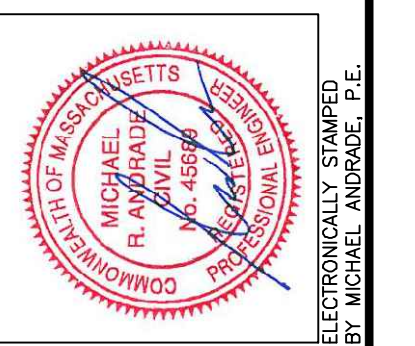
NOTES:  
1) FENCE SHALL HAVE BLACK POWDER COATED FINISH.  
2) GATE WIDTH SHALL BE PER PLANS.  
3) GATE POSTS SHALL BE 8 GA., 4.0" SQUARE POSTS.

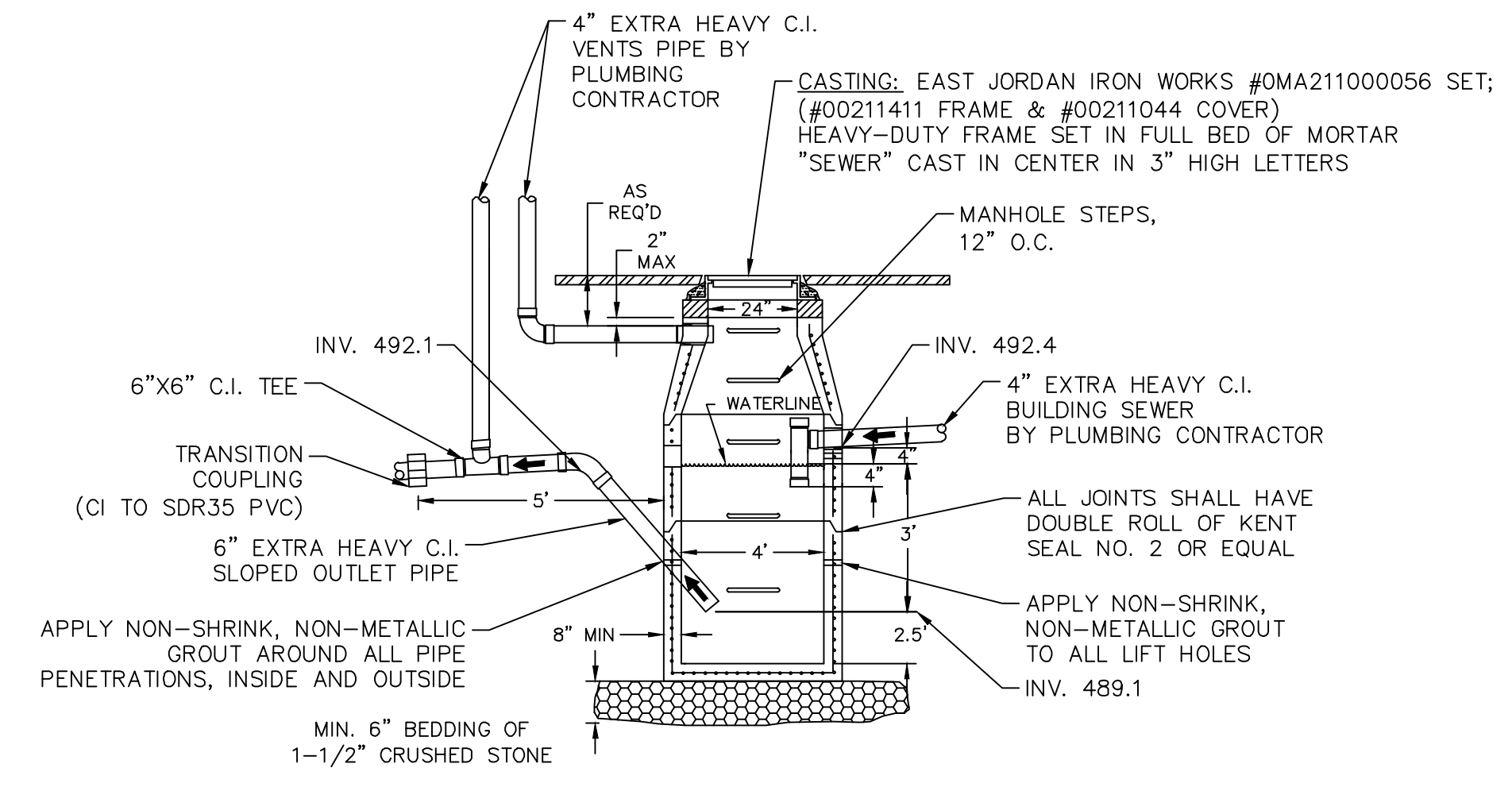
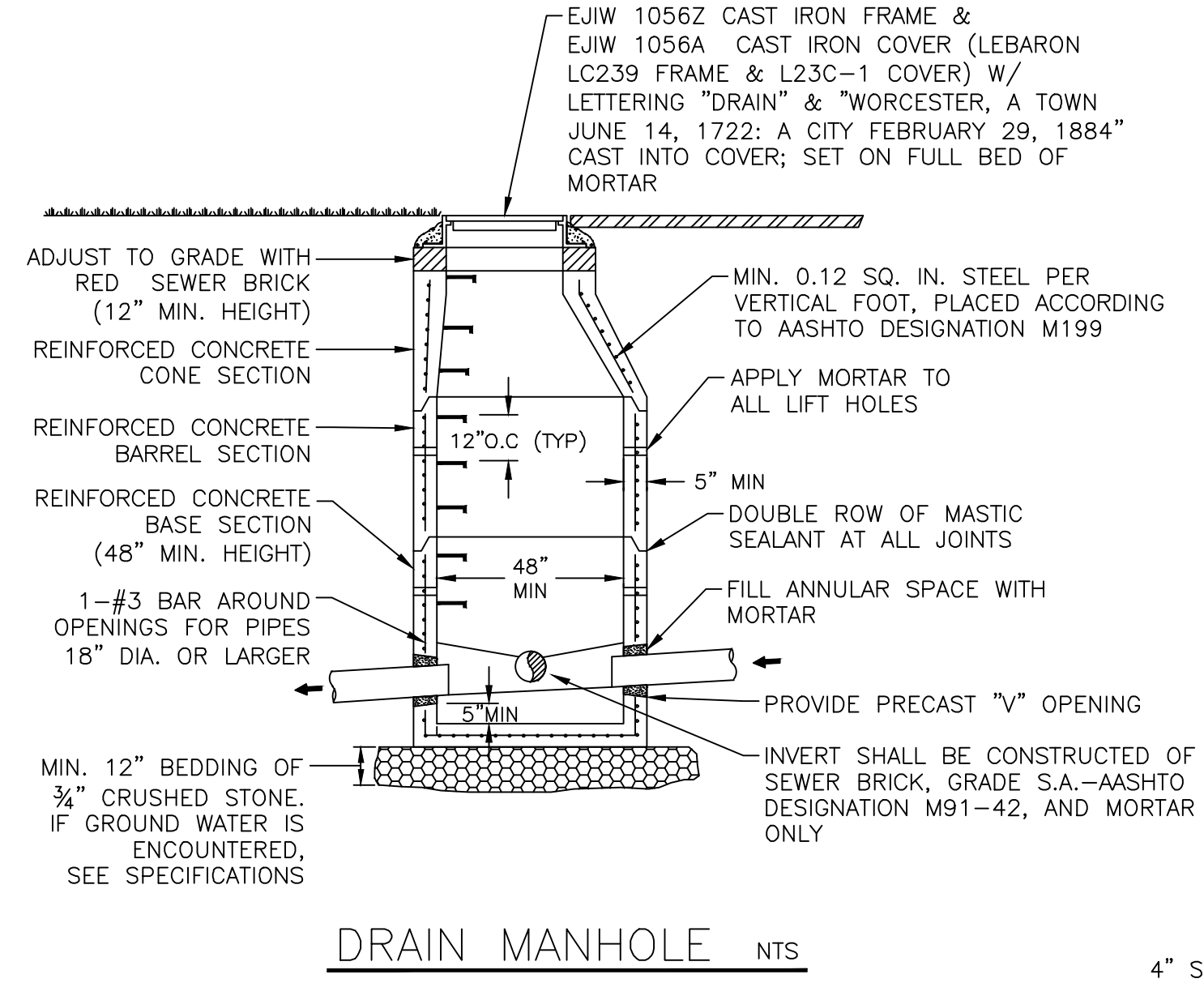
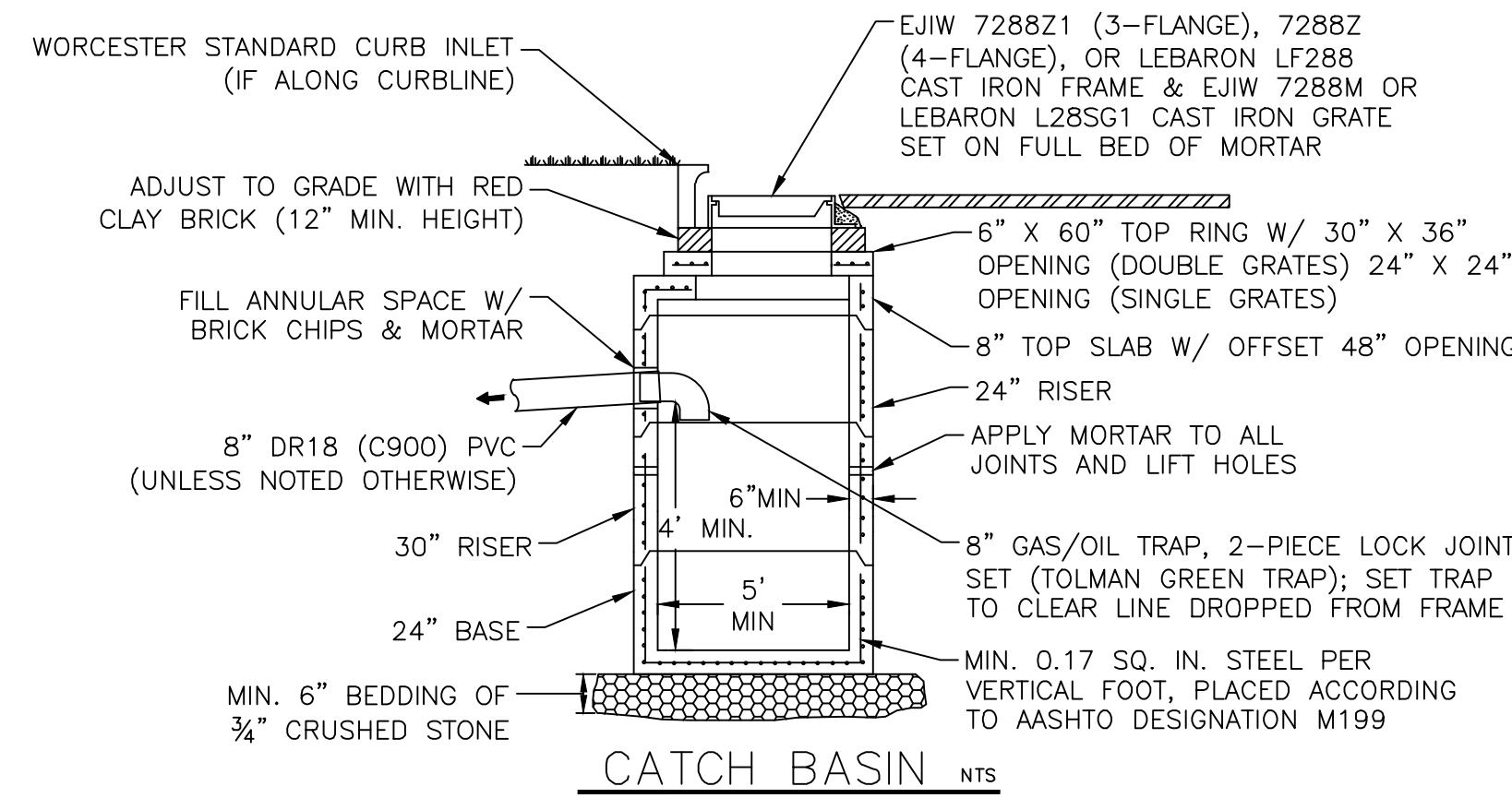


HDPE/PVC DRAIN TRENCH SECTION NTS

NOTES:  
1) BACKFILL SHALL BE AN AASHTO CLASS III SOIL; EITHER TRENCH SPOILS OR AN IMPORTED SAND AND GRAVEL WITH FINES AND COMPACTED TO 90% OF THE PROCTOR DENSITY.  
2) BACKFILL OF HDPE PIPE SHALL CONFORM TO ASTM D2321 AND/OR MANUFACTURER'S SPECIFICATIONS.

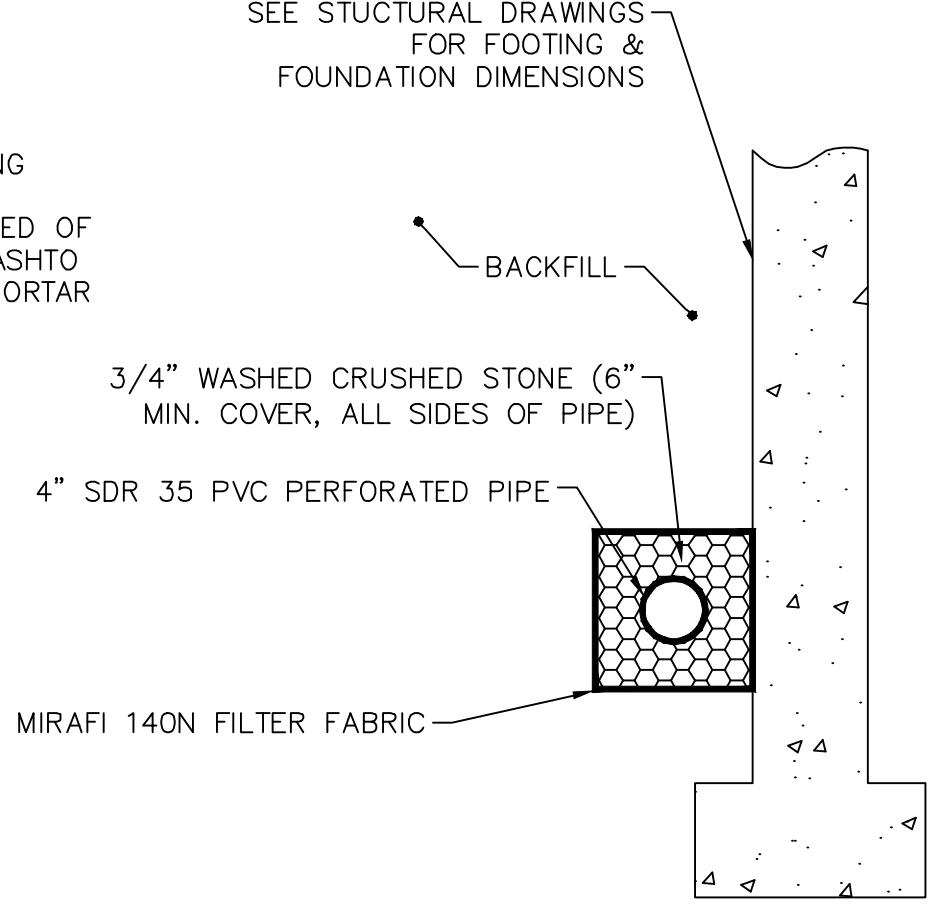
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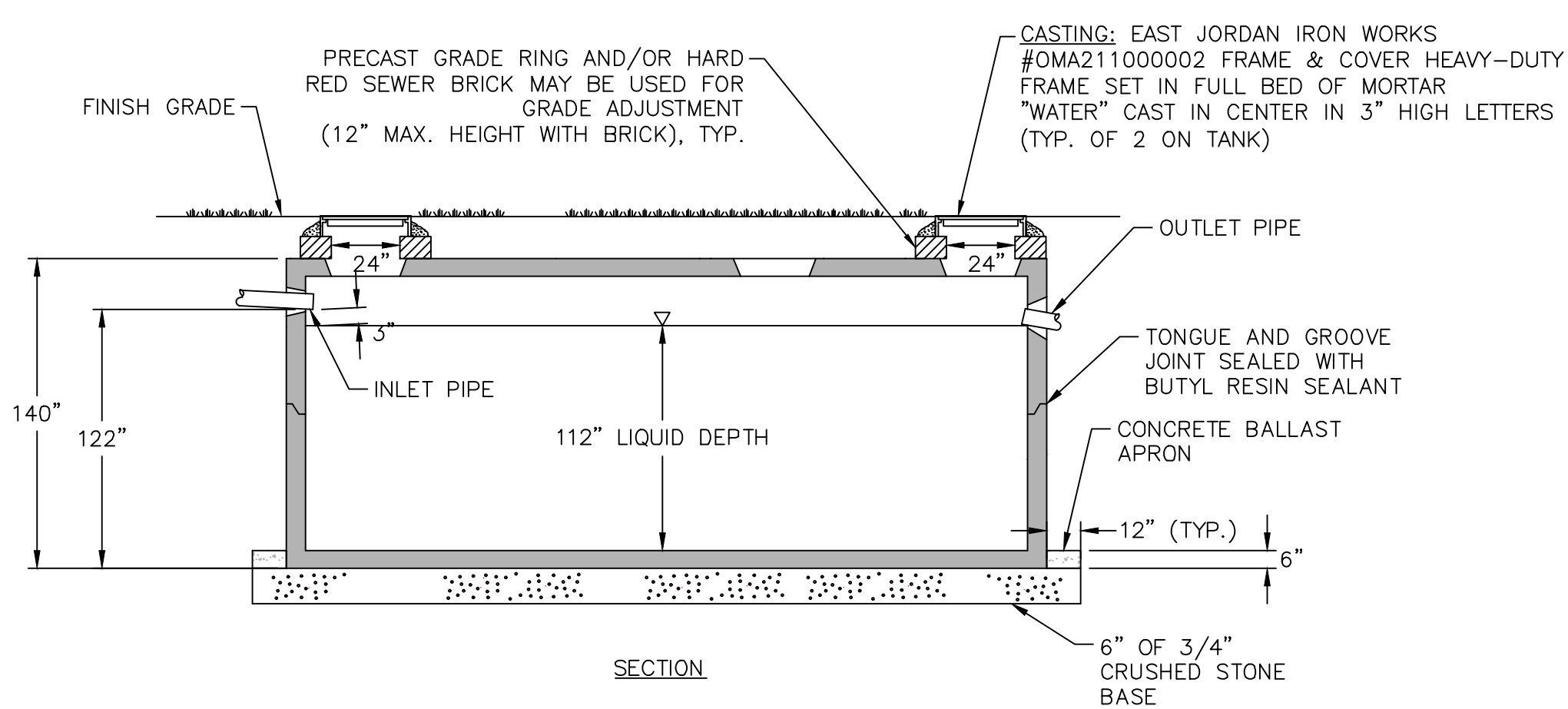
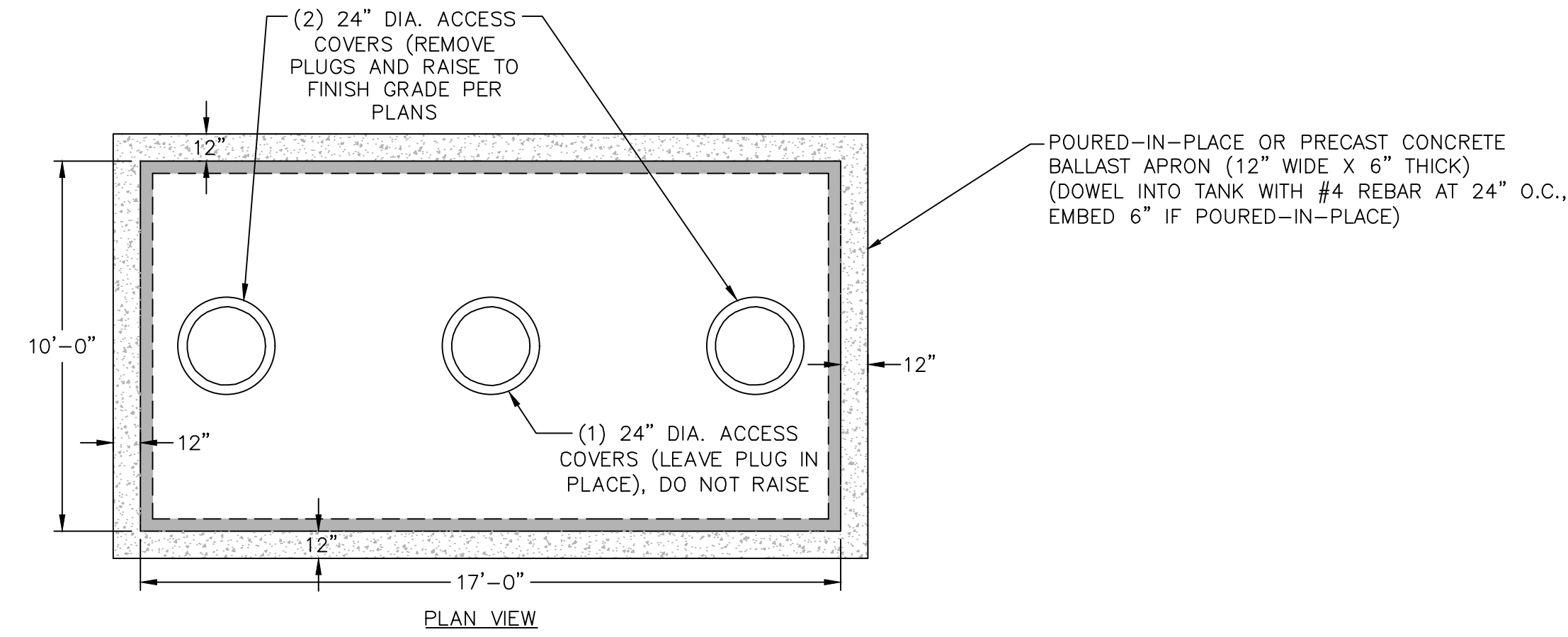
**NOTES:**

- OIL WATER SEPARATOR CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT MASSACHUSETTS PLUMBING CODE; IN THE EVENT OF DISCREPANCY BETWEEN THE CODE AND THIS DRAWING, THE CODE SHALL SUPERCEDE.
- ALL PIPING INCLUDING VENTS FROM BUILDING TO TRANSITION COUPLING SHALL BE CAST IRON INSTALLED BY PLUMBING CONTRACTOR.



**NOTE:**

- PERIMETER DRAIN SHALL CONNECT TO THE PROPOSED SITE DRAINAGE SYSTEM WITH A POSITIVE SLOPE AND OUTFALL.
- SEE ARCHITECTURAL PLANS FOR DRAIN LOCATIONS.



10,000 GALLON ROOF RUNOFF STORAGE TANK NTS

**NOTE:**

- THE TANK SHALL CONFORM TO THE 310 CMR (TITLE 5) REQUIREMENTS FOR CONSTRUCTION AND WATERTIGHTNESS.
- THE DESIGN IS BASED UPON THE DIMENSIONS OF A TANK MANUFACTURED BY SHEA CONCRETE PRODUCTS, AMESBURY, MA (MODEL 8X17-75 TK-10000C2C)
- TANK SHALL BE DESIGNED TO BE WATERTIGHT AND WITHSTAND HS-20 LOADING MINIMUM.

**STORMCEPTOR DESIGN NOTES**

THE STANDARD STC450I CONFIGURATION WITH ROUND, SOLID FRAME AND COVER, AND INLET PIPE IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

**SITE SPECIFIC DATA REQUIREMENTS**

STRUCTURE ID	WATER QUALITY FLOW RATE (cfs [L/s])	PEAK FLOW RATE (cfs [L/s])	RETURN PERIOD OF PEAK FLOW (yrs)	RIM ELEVATION

PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

NOTES / SPECIAL REQUIREMENTS:

**FRAME AND COVER**  
(MAY VARY)  
NOT TO SCALE

**FRAME AND GRATE**  
(MAY VARY)  
NOT TO SCALE

**GENERAL NOTES:**

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. [www.conteches.com](http://www.conteches.com)
- STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STORMCEPTOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' (0.61M) AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEERS OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M308 AND BE CAST WITH THE CONTECH LOGO.
- STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

**INSTALLATION NOTES:**

- ANY SUB-BASE BACKFILL DEPTH AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

**Stormceptor®**  
ENGINEERED SOLUTIONS LLC

8038 Centre Pointe Dr., Suite 1000, Columbus, OH 43269  
602.338.1122 • 614.291.7076 • 614.415.7833 FAX

STC450I  
STORMCEPTOR  
STANDARD DETAIL

**NOTE:**

- THIS DETAIL IS AN ACCEPTABLE MANUFACTURER; REFER TO THE SPECIFICATIONS FOR OTHERS.

WATER QUALITY UNIT NTS

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