

# SITE IMPROVEMENTS PERMANENT SUPPORTIVE HOUSING

WORCESTER COMMUNITY HOUSING RESOURCES  
50 ORIOL DRIVE  
WORCESTER, MA 01605

## SHEET INDEX

No.	Title	Issue Date
C001	Cover Sheet	November 11, 2024
C101	Existing Conditions Plan	November 11, 2024
C102	Site Demo & Sediment and Erosion Control Plan	November 11, 2024
C103	Layout & Grading Plan	November 11, 2024
C501	Site Details - 1	November 11, 2024
C502	Site Details - 2	November 11, 2024

## REVISIONS/ISSUES

No.	Note	Date
1	Issued for Permitting	November 11, 2024

## REFERENCE PLAN INDEX

No.	Title	Issue Date
-	ALTA/NSPS Land Title Survey (B&R Survey, Inc.)	March 1, 2024
DD	Renovations to Permanent Supportive Housing (Davis Square Architects)	February 22, 2024
Rev. 4	Definitive Site Plan, Permanent Supportive Housing (Graves Engineering, Inc.)	January 19, 2023
SK-1	Proposed Lighting Improvement Sketch (Graves Engineering, Inc.)	February 14, 2023

### PLAN NOTE

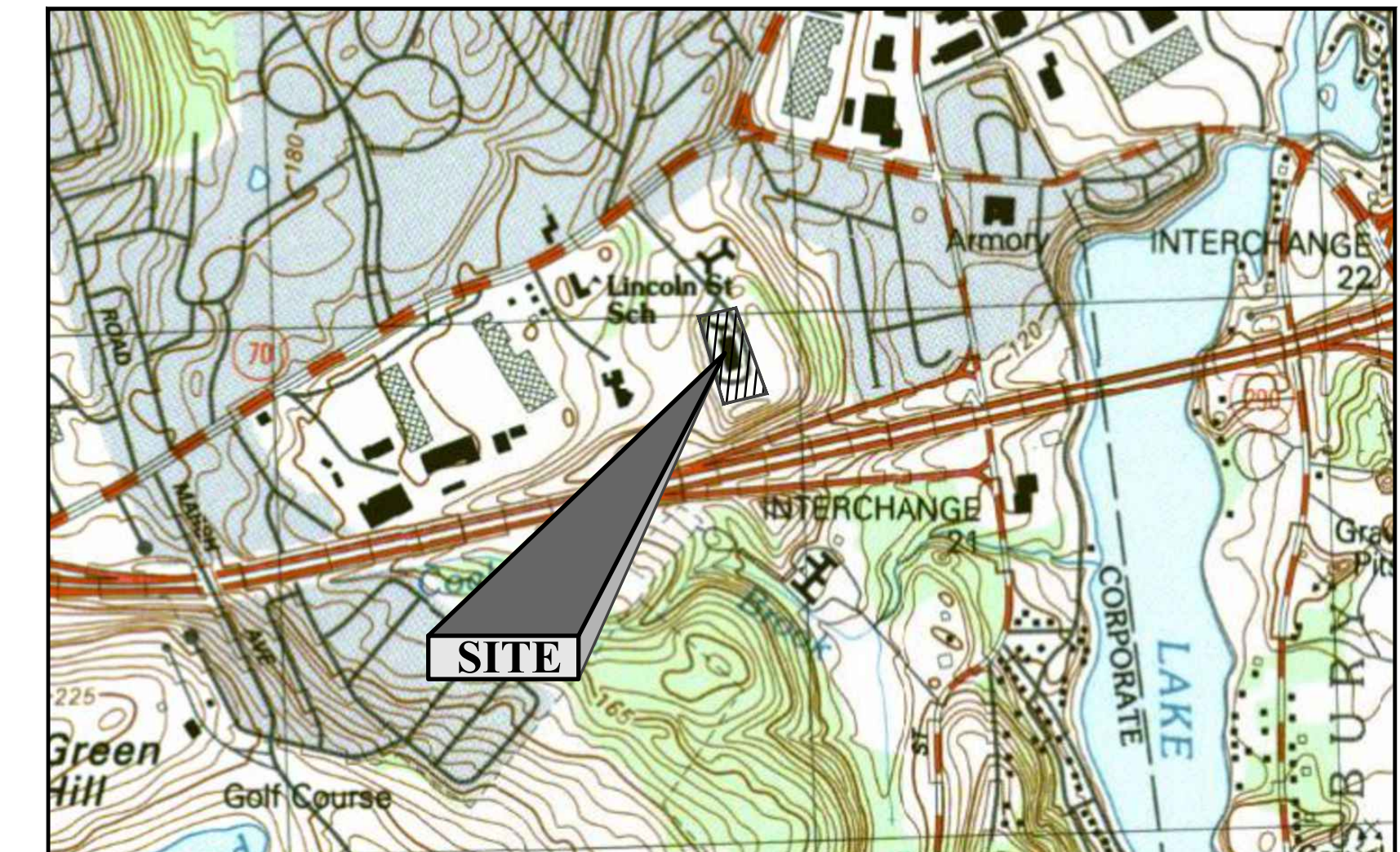
PROPOSED WORK SHOWN ON THESE DRAWINGS IS INTENDED TO SUPPLEMENT PREVIOUS GRAVES ENGINEERING, INC. PLANS AS REFERENCED IN THE "REFERENCE PLAN INDEX". IN AREAS WHERE WORK OVERLAPS, THESE DRAWINGS SHALL SUPERSEDE THE REFERENCE PLANS.



**LOCUS PLAN - AERIAL**

SOURCE: GOOGLE EARTH

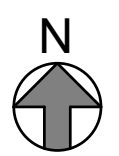
SCALE: 1"=1,000'



**LOCUS PLAN - USGS**

SOURCE: MASSMAPPER

SCALE: 1"=1,000'



### OWNER

Worcester Community Housing Resources  
11 Pleasant Street, Suite 300  
Worcester, MA 01609

### ARCHITECT

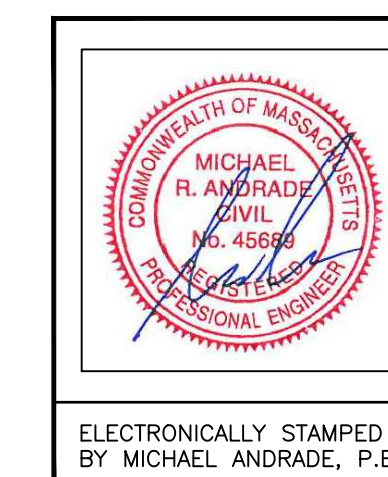
Davis Square Architects  
240A Elm Street  
Somerville, MA 02144

### SURVEYOR

B&R Survey, Inc.  
100 Grove Street  
Worcester, MA 01605

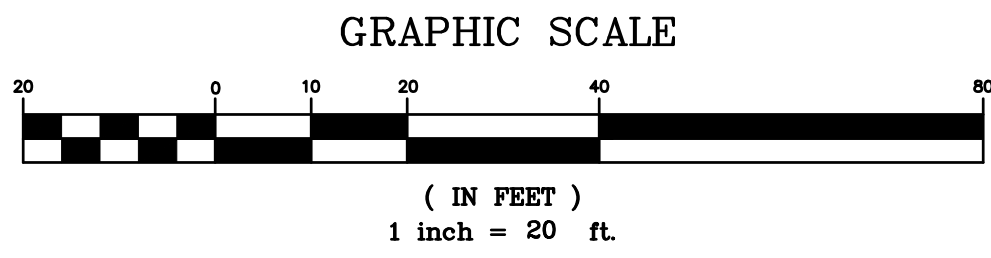


100 GROVE STREET | WORCESTER MA 01605  
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gravesengineering.com

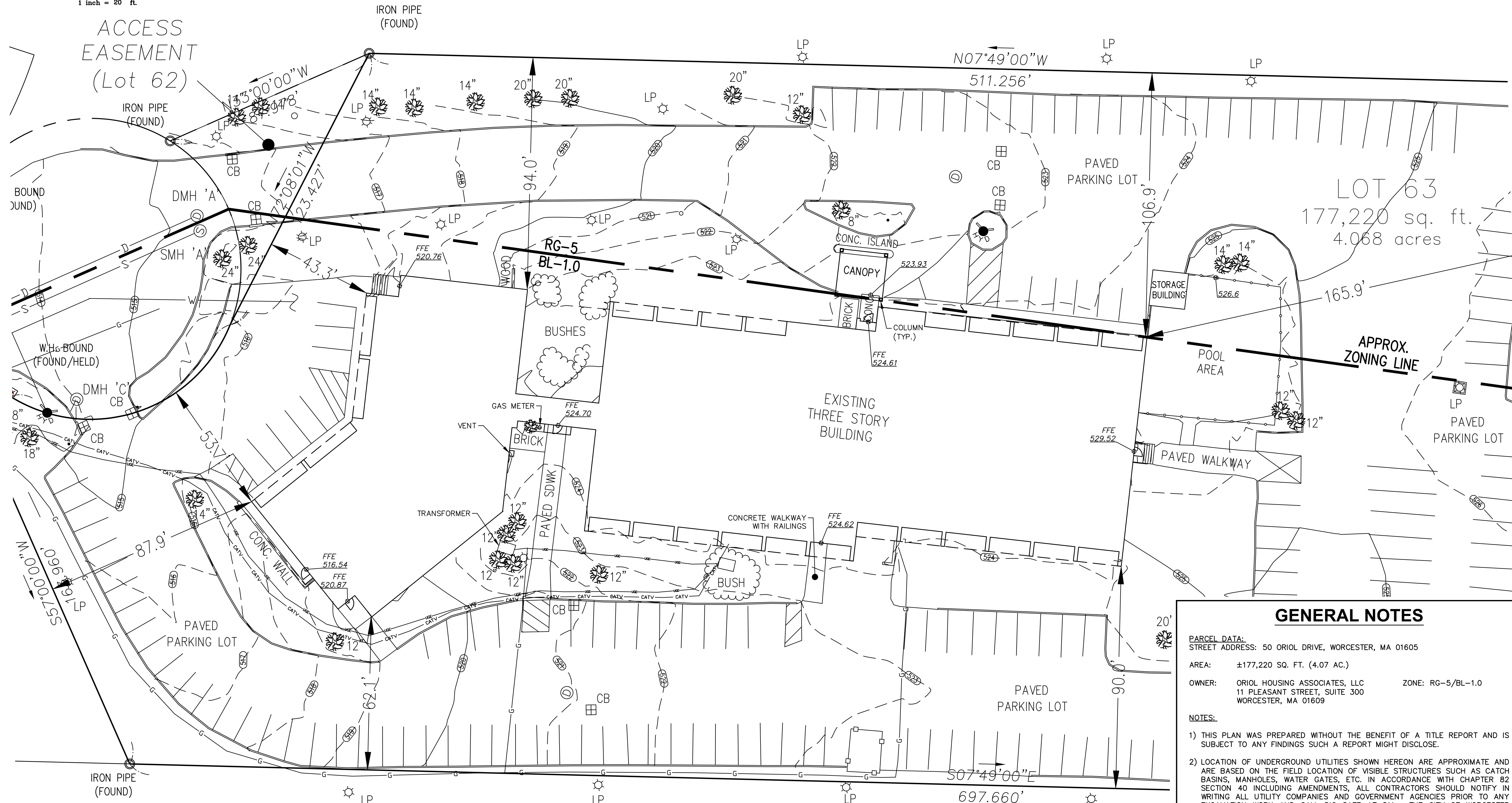


ELECTRONICALLY STAMPED  
BY MICHAEL ANDRADE, P.E.





N/F  
**LINCOLN HEIGHTS, INC.**  
 Cert. #9156, Bk. 46  
 L.C. Plan #15937-S



N/F  
**FIRST ASSEMBLY OF GOD  
 OF WORCESTER**  
 Cert. #9597, Bk. 48  
 LOT 48  
 L.C. Plan #15937-4

**GENERAL NOTES**

PARCEL DATA:  
 STREET ADDRESS: 50 ORIOL DRIVE, WORCESTER, MA 01605

AREA: ±177,220 SQ. FT. (4.07 AC.)

OWNER: ORIOL HOUSING ASSOCIATES, LLC      ZONE: RG-5/BL-1.0  
 11 PLEASANT STREET, SUITE 300  
 WORCESTER, MA 01609

**NOTES:**

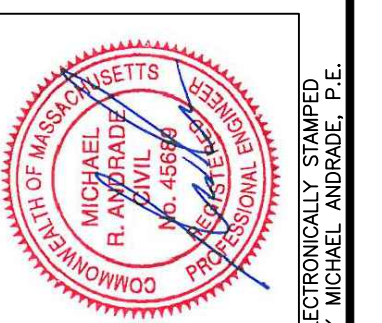
- 1) THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ANY FINDINGS SUCH A REPORT MIGHT DISCLOSE.
- 2) LOCATION OF UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON THE FIELD LOCATION OF VISIBLE STRUCTURES SUCH AS CATCH BASINS, MANHOLES, WATER GATES, ETC. 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 A PLAN PREPARED BY B&R SURVEY, INC., DATED MARCH 1, 2024.
- 4) THE VERTICAL DATUM FOR THIS PROJECT IS NAVD 88; SEE PLANS FOR PROJECT BENCHMARK. HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE COORDINATE SYSTEM. DATUMS ARE AS ESTABLISHED BY GPS METHODS.
- 5) THE SITE PROPERTY IS NOT LOCATED WITHIN ANY DESIGNATED SPECIAL FLOOD ZONES AS SHOWN ON FIRM MAP 25027C0620E, DATED JULY 4, 2011.

REFERENCES:  
 DEED BOOK/PAGE: 69471/240 (WORCESTER REGISTRY OF DEEDS)  
 ASSESSORS REFERENCE: 46-047-00001

**GRAVES**  
 ENGINEERING, Inc.

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

NO.	DATE	BY	ISSUED FOR	DESCRIPTION
1	11/11/24	ROM	FOR PERMITTING	



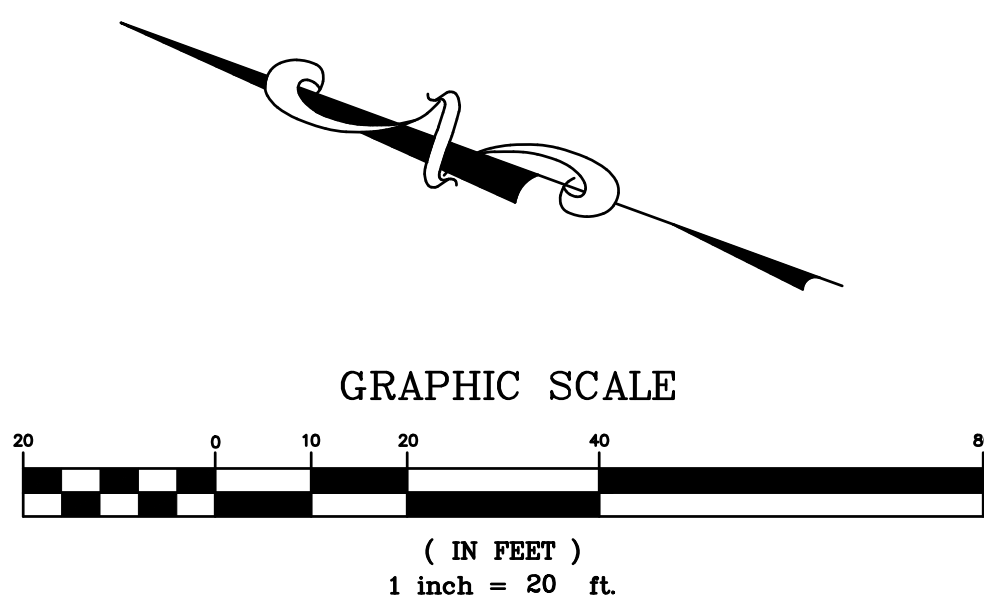
**EXISTING CONDITIONS PLAN  
 PERMANENT SUPPORTIVE HOUSING  
 50 ORIOL DRIVE, WORCESTER, MA 01605**

PREPARED FOR: WORCESTER COMMUNITY HOUSING RESOURCES  
 11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01609

DATE: 11/11/24      SCALE: 1"=20'  
 DES. BY: ROM      CHK. BY: MRA      PRJ. NO.: 22147  
 DRW. BY: ROM

**C101**





**PLAN NOTE**

PROPOSED WORK SHOWN ON THESE DRAWINGS IS INTENDED TO SUPPLEMENT PREVIOUS GRAVES ENGINEERING, INC. PLANS AS REFERENCED IN THE "REFERENCE PLAN INDEX" ON SHEET C001. IN AREAS WHERE WORK OVERLAPS, THESE DRAWINGS SHALL SUPERSEDE THE REFERENCE PLANS.

**SHEET KEY**

FEATURES MARKED AS (P) SHALL BE PROTECTED  
FEATURES MARKED AS (X) SHALL BE R&D  
R&D = REMOVE AND DISPOSE (OFFSITE)  
//// = R&D FEATURE  
..... = R&D AREA

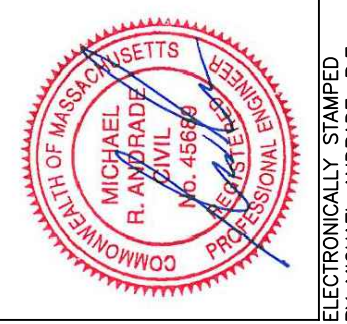


**SHEET NOTES**

- 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.

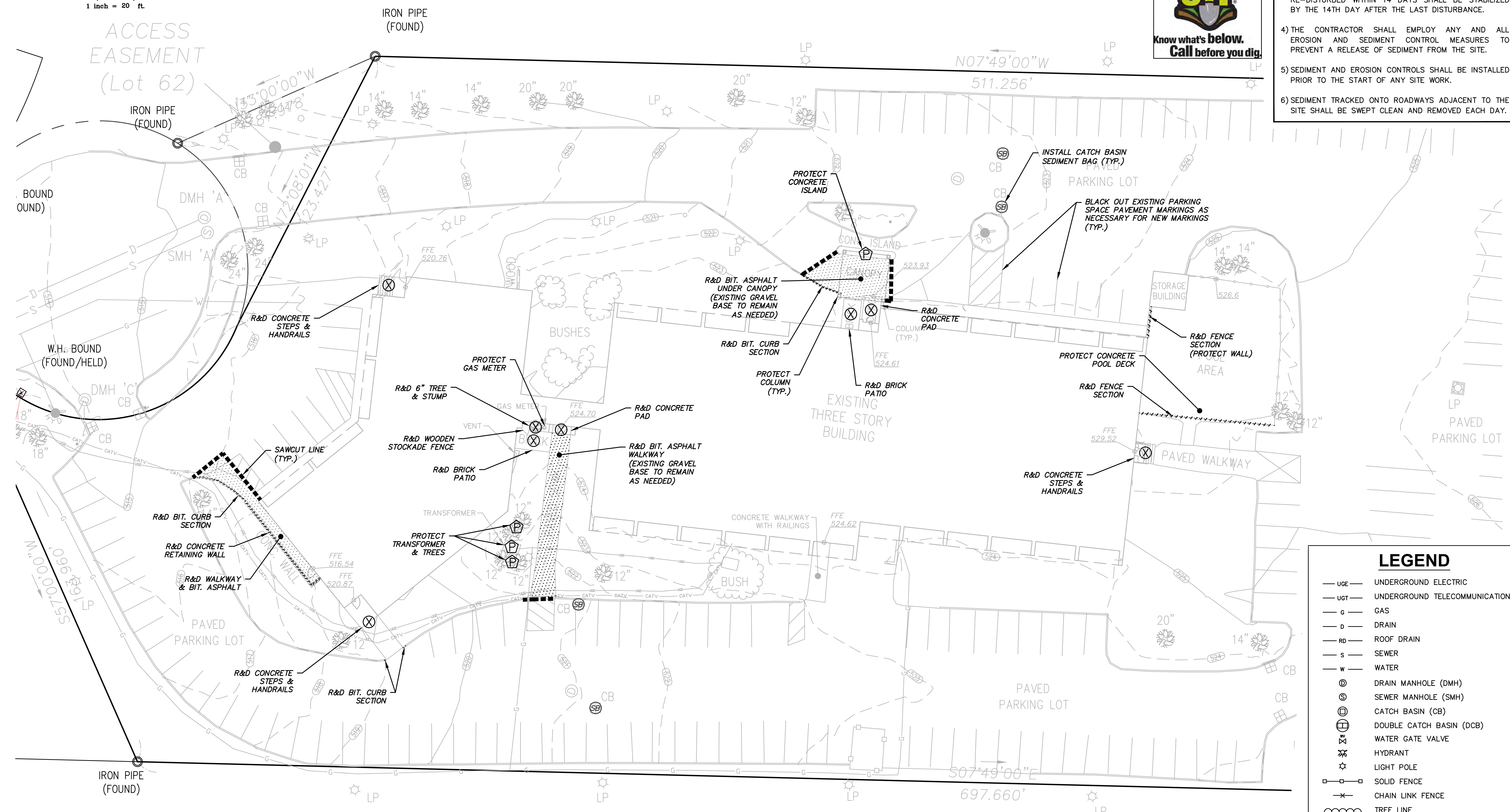
**GRAVES ENGINEERING, Inc.**  
100 GROVE STREET | WORCESTER MA 01605  
T 508-856-0321 | F 508-856-0357  
gravesengineering.com

NO.	DATE	BY	DESCRIPTION
1	11/11/24	ROM	ISSUED FOR PERMITTING



**SITE DEMO & SEDIMENT AND EROSION CONTROL PLAN**  
**PERMANENT SUPPORTIVE HOUSING**  
50 ORIOLE DRIVE, WORCESTER, MA 01605  
PREPARED FOR: WORCESTER COMMUNITY HOUSING RESOURCES  
11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01605  
DATE: 11/11/24 SCALE: 1"=20'  
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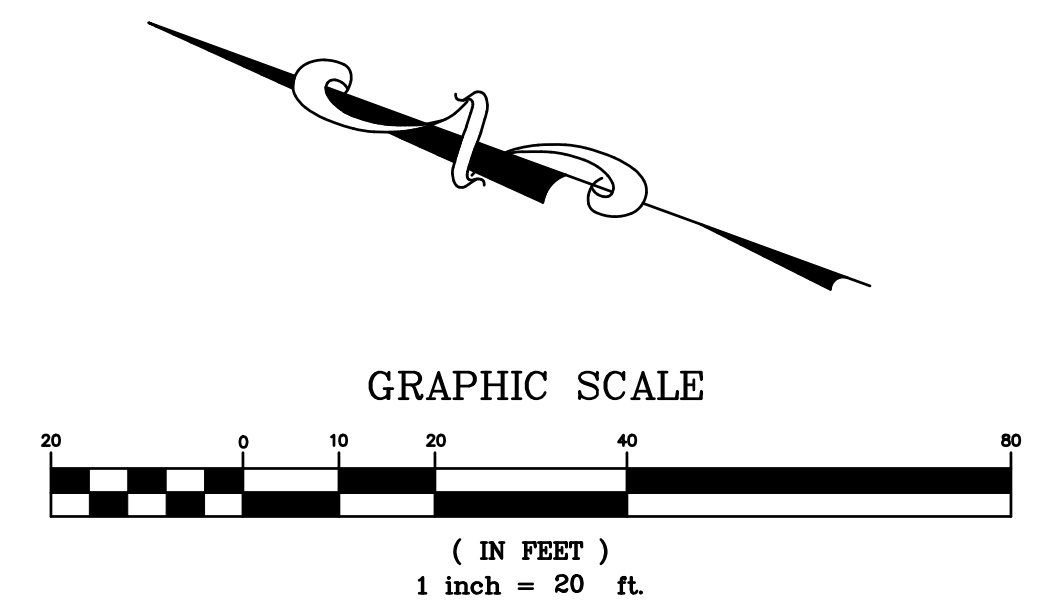
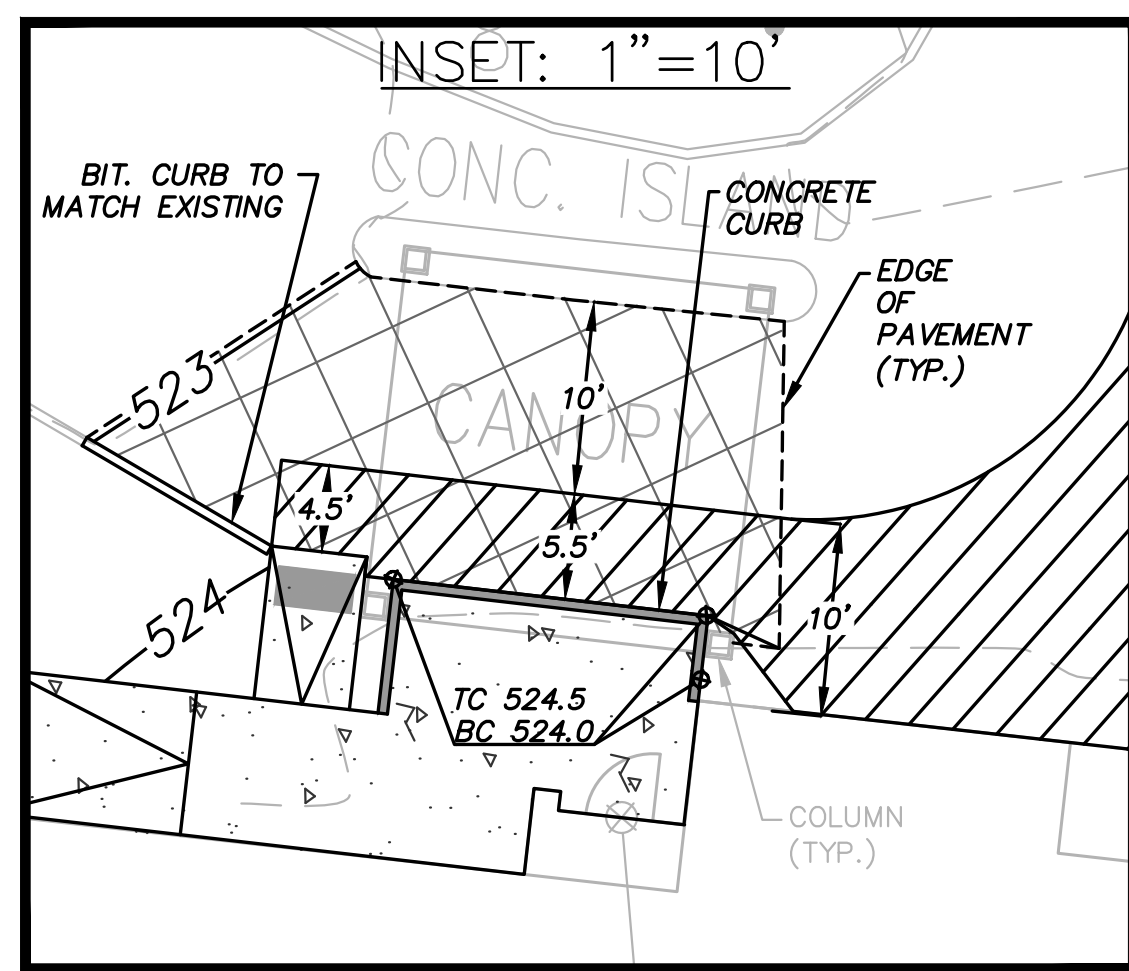
C102



**LEGEND**

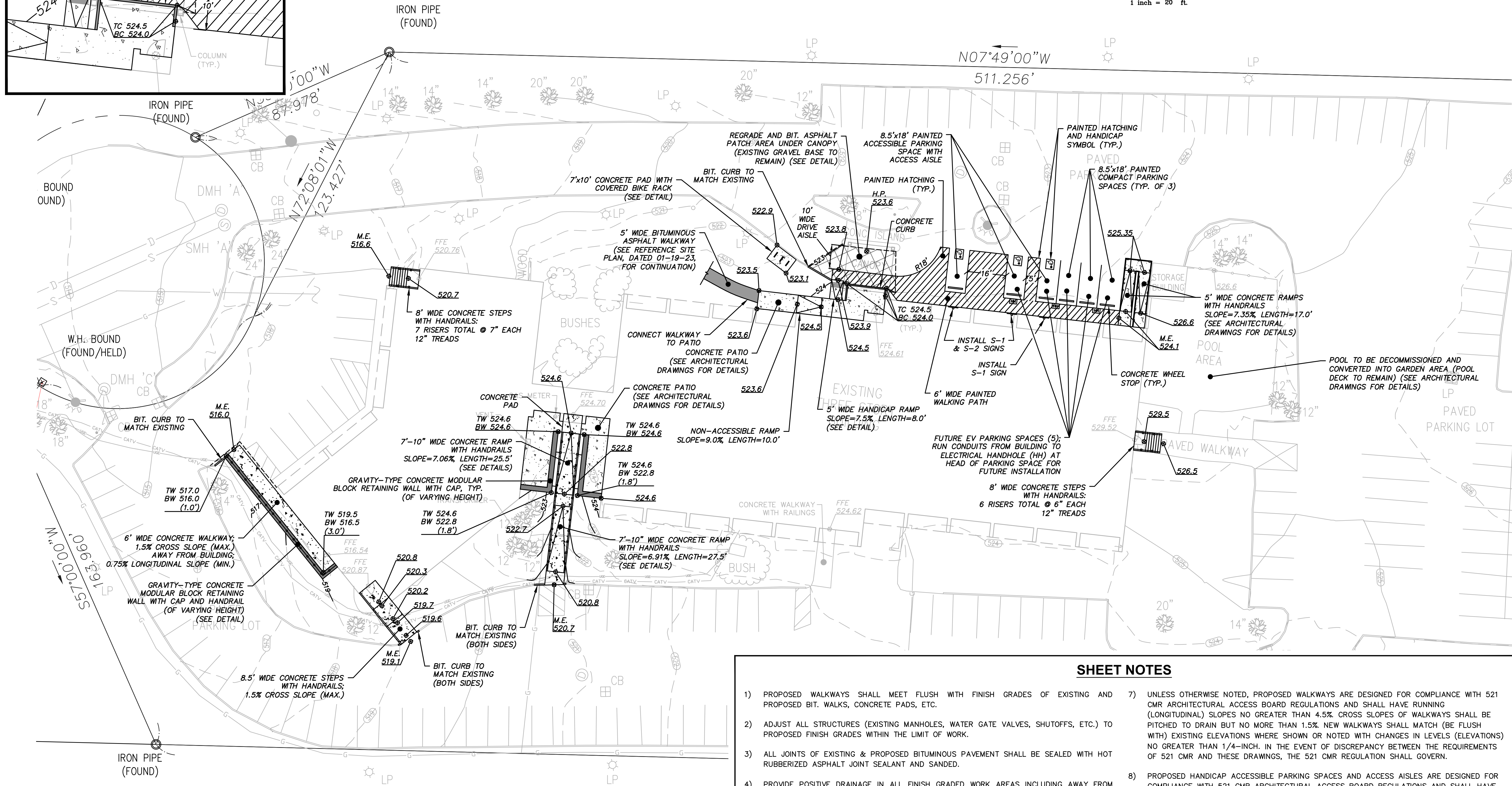
- UGE — UNDERGROUND ELECTRIC
- UGT — UNDERGROUND TELECOMMUNICATIONS
- G — GAS
- D — DRAIN
- RD — ROOF DRAIN
- S — SEWER
- W — WATER
- ⊙ — DRAIN MANHOLE (DMH)
- ⊙ — SEWER MANHOLE (SMH)
- ⊙ — CATCH BASIN (CB)
- ⊙ — DOUBLE CATCH BASIN (DCB)
- ⊙ — WATER GATE VALVE
- ⊙ — HYDRANT
- ⊙ — LIGHT POLE
- — SOLID FENCE
- — CHAIN LINK FENCE
- — TREE LINE
- — BITUMINOUS PAVEMENT (BIT.)
- — CONCRETE (CONC.)
- — TREE, SIZE, DECIDUOUS (DEC.), CONIFEROUS (CON.)
- — HAYBALE & SILT FENCE
- — INV. INVERT
- — SPOT ELEVATION
- — GENERAL DIRECTION OF RUNOFF
- — EOP EDGE OF PAVEMENT





**PLAN NOTE**

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**SHEET NOTES**

- 1) PROPOSED WALKWAYS SHALL MEET FLUSH WITH FINISH GRADES OF EXISTING AND PROPOSED BIT. WALKS, CONCRETE PADS, ETC.
- 2) ADJUST ALL STRUCTURES (EXISTING MANHOLES, WATER GATE VALVES, SHUTOFFS, ETC.) TO PROPOSED FINISH GRADES WITHIN THE LIMIT OF WORK.
- 3) ALL JOINTS OF EXISTING & PROPOSED BITUMINOUS PAVEMENT SHALL BE SEALED WITH HOT RUBBERIZED ASPHALT JOINT SEALANT AND SANDED.
- 4) PROVIDE POSITIVE DRAINAGE IN ALL FINISH GRADED WORK AREAS INCLUDING AWAY FROM ALL BUILDINGS.
- 5) 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.
- 6) ALL NEW PAVEMENT AND CONCRETE SURFACES SHALL BE CONSTRUCTED TO PROPOSED GRADES AS SHOWN AND SHALL BE SMOOTH AND UNIFORM ELIMINATING DEFORMITIES, DEPRESSIONS, PUDDLES, AND TRIP HAZARDS. PROVIDE POSITIVE DRAINAGE ON ALL NEW PAVEMENT AND CONCRETE SURFACES, AWAY FROM BUILDINGS, AND TO EXISTING CATCH BASINS, OUTFALLS OR OTHER COLLECTION POINTS.
- 7) UNLESS OTHERWISE NOTED, PROPOSED WALKWAYS ARE DESIGNED FOR COMPLIANCE WITH 521 CMR ARCHITECTURAL ACCESS BOARD REGULATIONS AND SHALL HAVE RUNNING (LONGITUDINAL) SLOPES NO GREATER THAN 4.5%. CROSS SLOPES OF WALKWAYS SHALL BE PITCHED TO DRAIN BUT NO MORE THAN 1.5%. NEW WALKWAYS SHALL MATCH (BE FLUSH WITH) EXISTING ELEVATIONS WHERE SHOWN OR NOTED WITH CHANGES IN LEVELS (ELEVATIONS) NO GREATER THAN 1/4-INCH. IN THE EVENT OF DISCREPANCY BETWEEN THE REQUIREMENTS OF 521 CMR AND THESE DRAWINGS, THE 521 CMR REGULATION SHALL GOVERN.
- 8) PROPOSED HANDICAP ACCESSIBLE PARKING SPACES AND ACCESS AISLES ARE DESIGNED FOR COMPLIANCE WITH 521 CMR ARCHITECTURAL ACCESS BOARD REGULATIONS AND SHALL HAVE SLOPES NO GREATER THAN 2.0% IN ANY DIRECTION ACROSS SUCH AREAS. IN THE EVENT OF DISCREPANCY BETWEEN THE REQUIREMENTS OF 521 CMR AND THESE DRAWINGS, THE 521 CMR REGULATION SHALL GOVERN.
- 9) SPOT GRADE KEY:  
 (E) = EXISTING GRADE TO BE MAINTAINED  
 TC = TOP OF CURB FINISH GRADE  
 BC = BOTTOM OF CURB FINISH GRADE  
 FFE = BUILDING FINISH FLOOR ELEVATION  
 VIF = VERIFY IN FIELD (CONTRACTOR)  
 TP = TOP OF PAD FINISH GRADE  
 BP = BOTTOM OF PAD FINISH GRADE  
 CB = CATCH BASIN  
 HP = HIGH POINT  
 LP = LOW POINT  
 ME = MATCH EXISTING  
 TW = TOP OF WALL  
 BW = BOTTOM OF WALL

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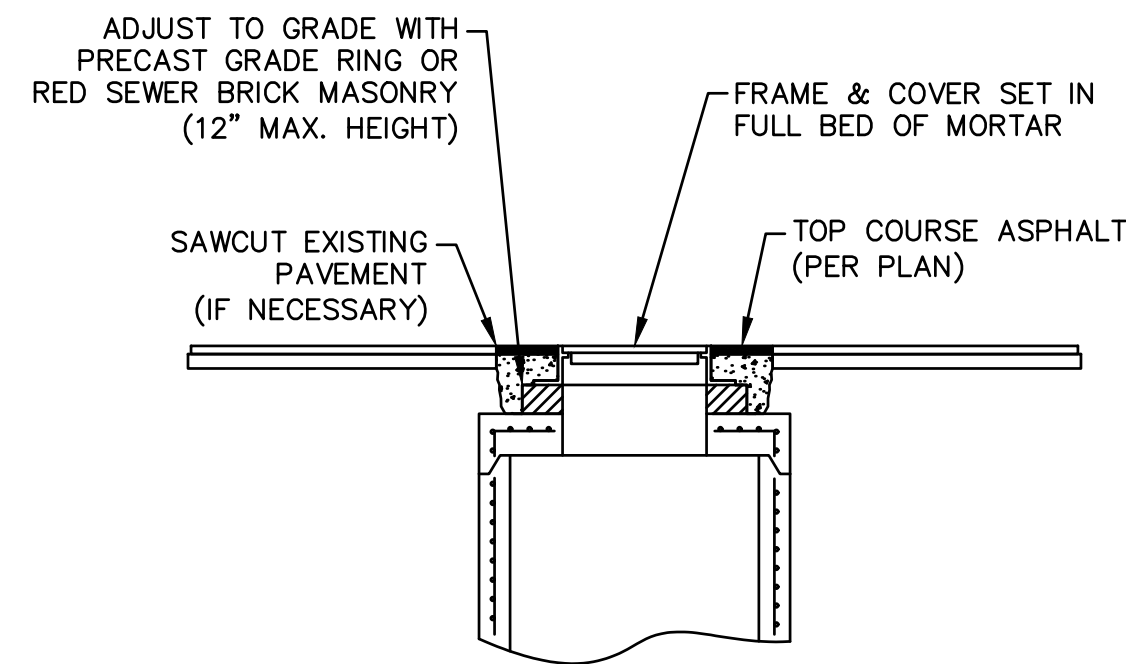
REVISIONS

**LAYOUT & GRADING PLAN**  
**PERMANENT SUPPORTIVE HOUSING**  
**50 ORIOR DRIVE, WORCESTER, MA 01605**

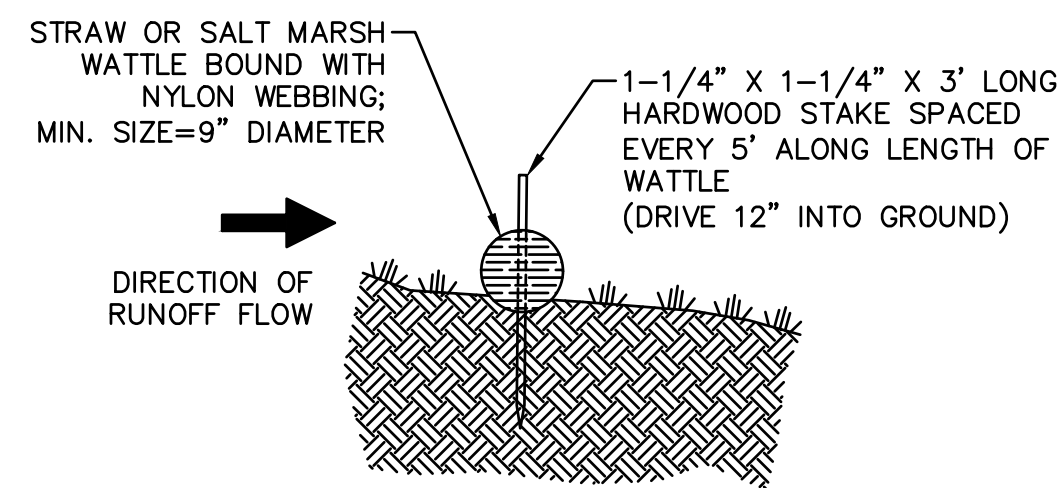
PREPARED FOR:  
 WORCESTER COMMUNITY HOUSING RESOURCES  
 11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01605

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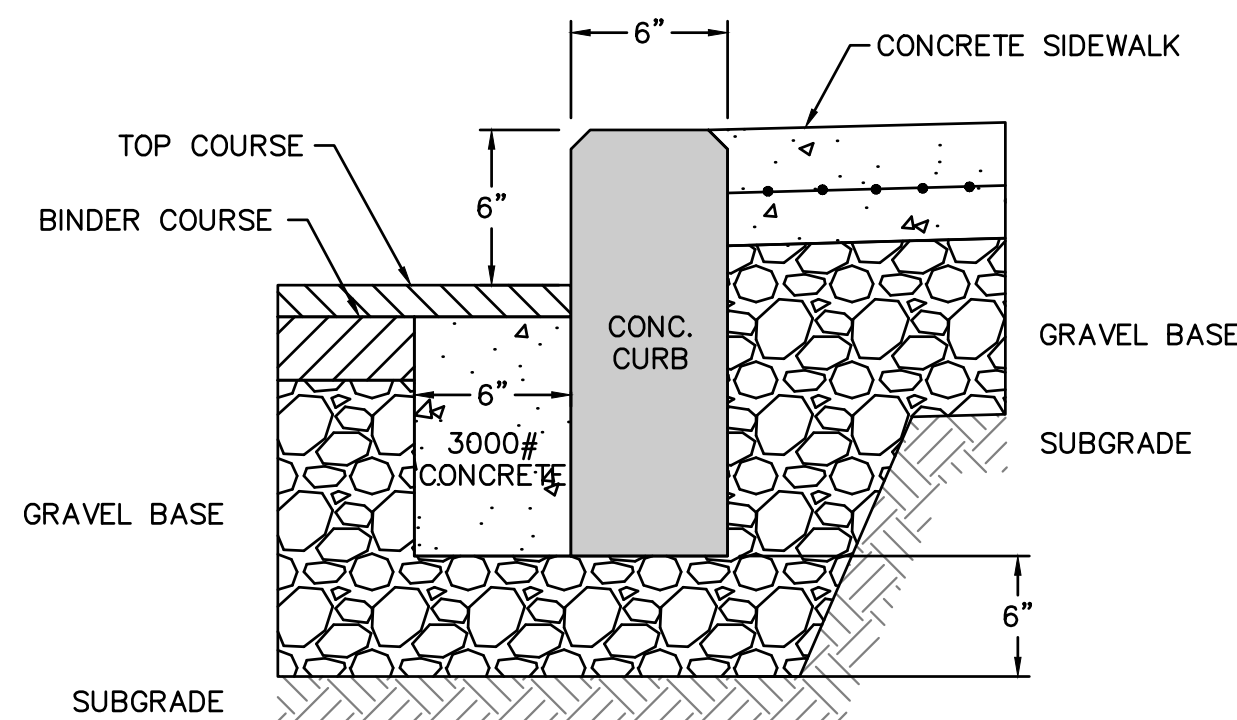


STRUCTURE ADJUSTMENT NTS

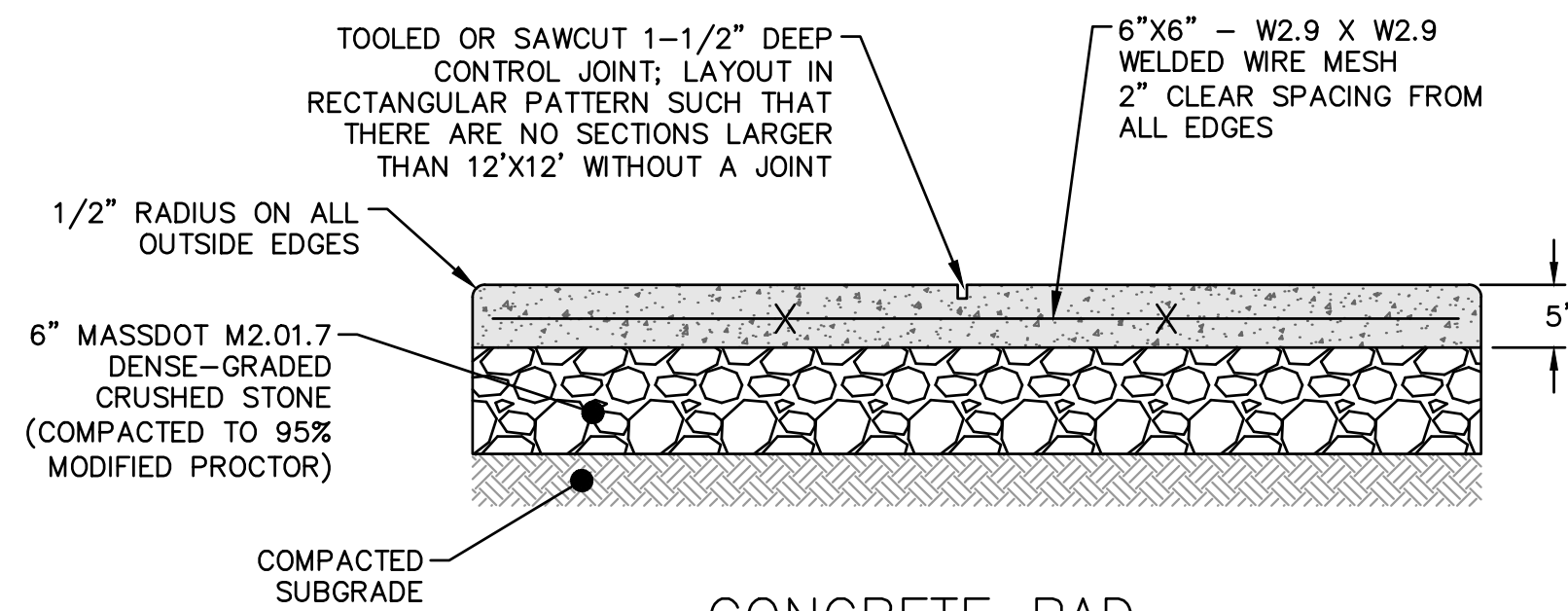


STRAW WATTLE NTS

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

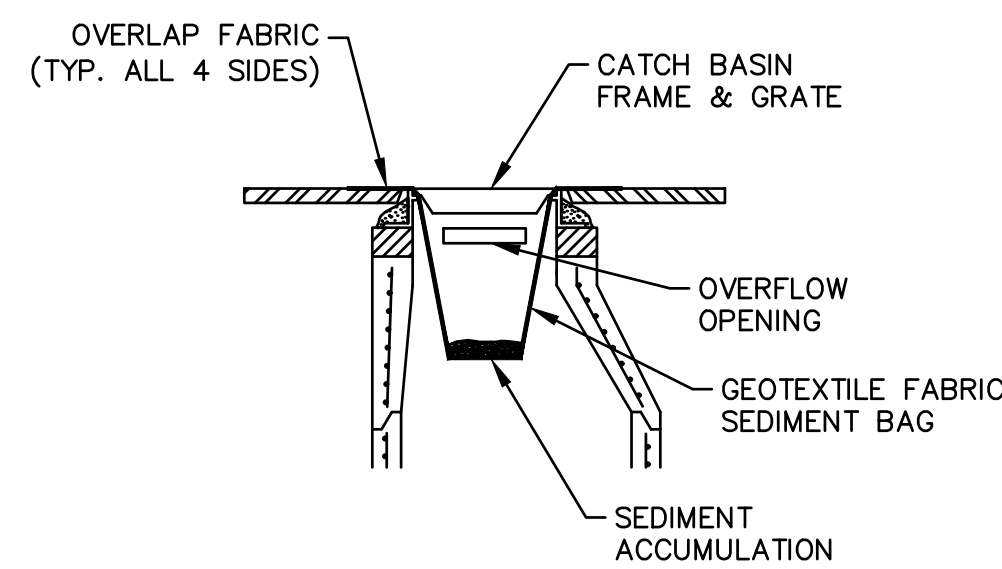


PRECAST CONCRETE CURB W/ CONCRETE SIDEWALK NTS



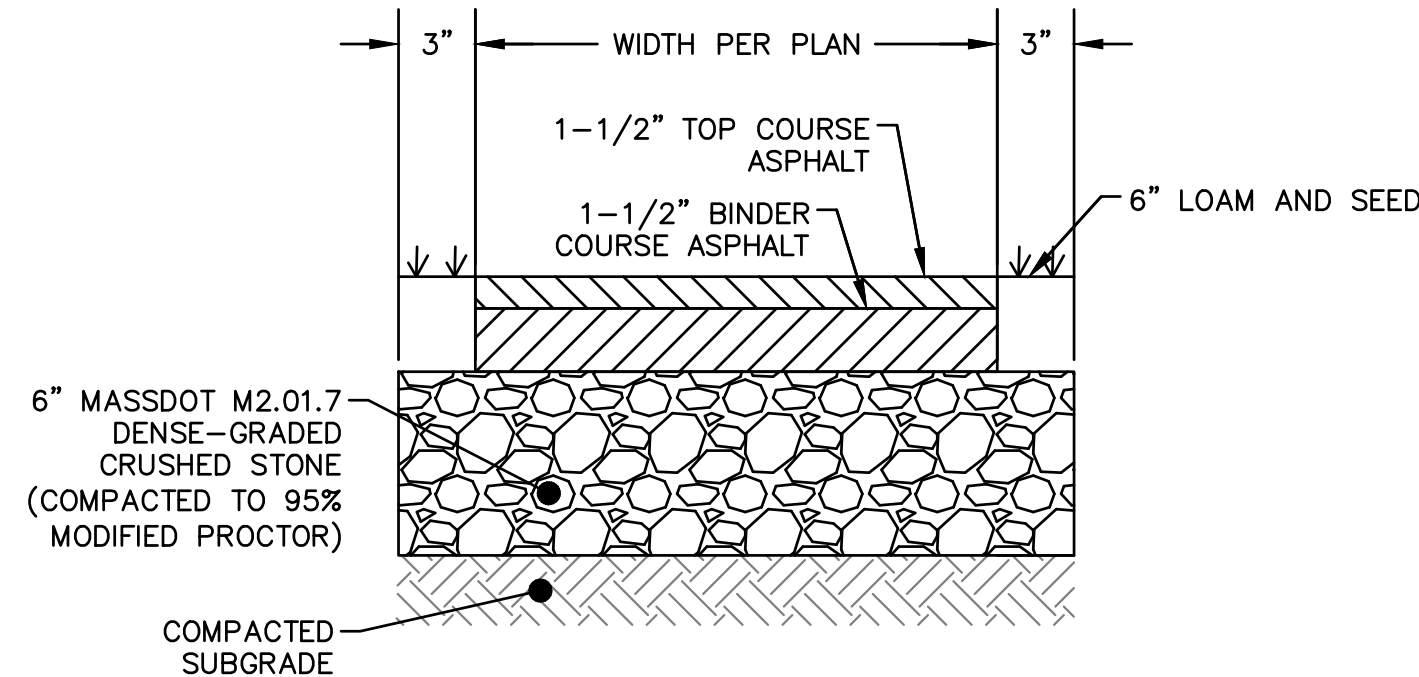
CONCRETE PAD NTS

- NOTES:
- 1) THIS DETAIL APPLIES TO ALL PROPOSED CONCRETE PADS.
  - 2) CONCRETE MIX DESIGN SHALL BE FOR EXTERIOR USE; AIR-ENTRAINED, 4,000 PSI MIN. (28-DAY), 3/4" AGGREGATE.
  - 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" DEEP OF POLYURETHANE JOINT SEALANT.
  - 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.



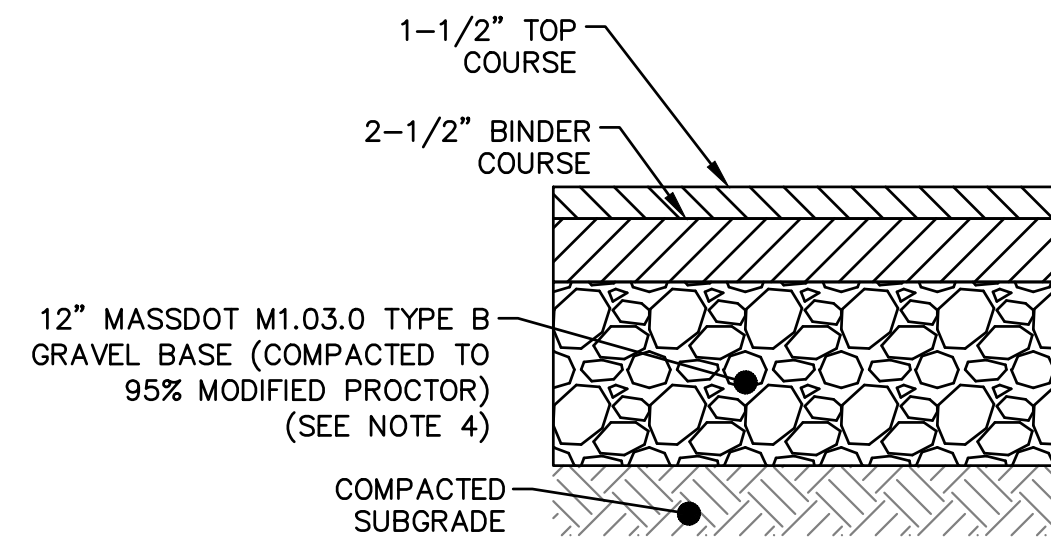
CATCH BASIN SEDIMENT BAG NTS

- 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.



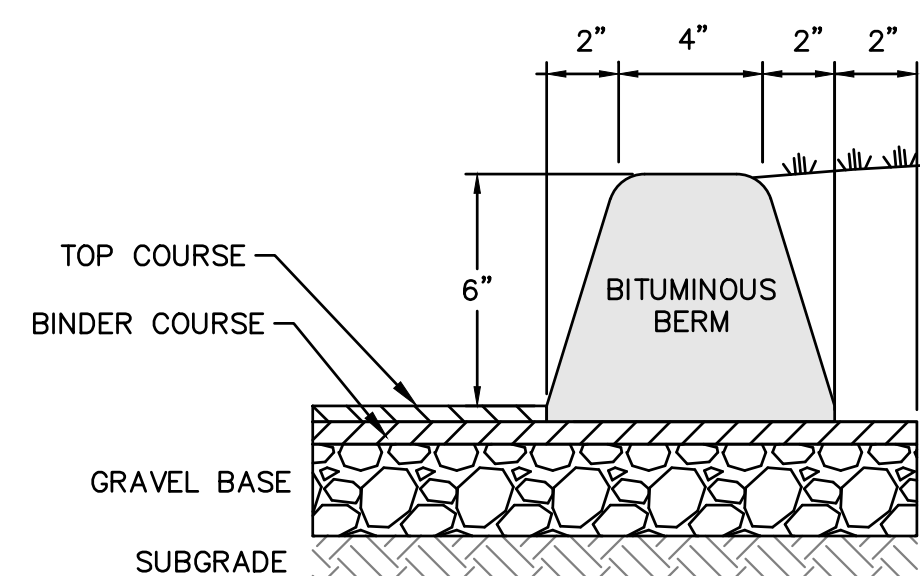
BITUMINOUS WALKWAY NTS

- NOTE:
- 1) DO NOT EXTEND BASE GRAVEL AS SHOWN WHEN WALKWAYS AREA ABUTTING ROAD, WALKWAY, OR OTHER HARD SURFACE.



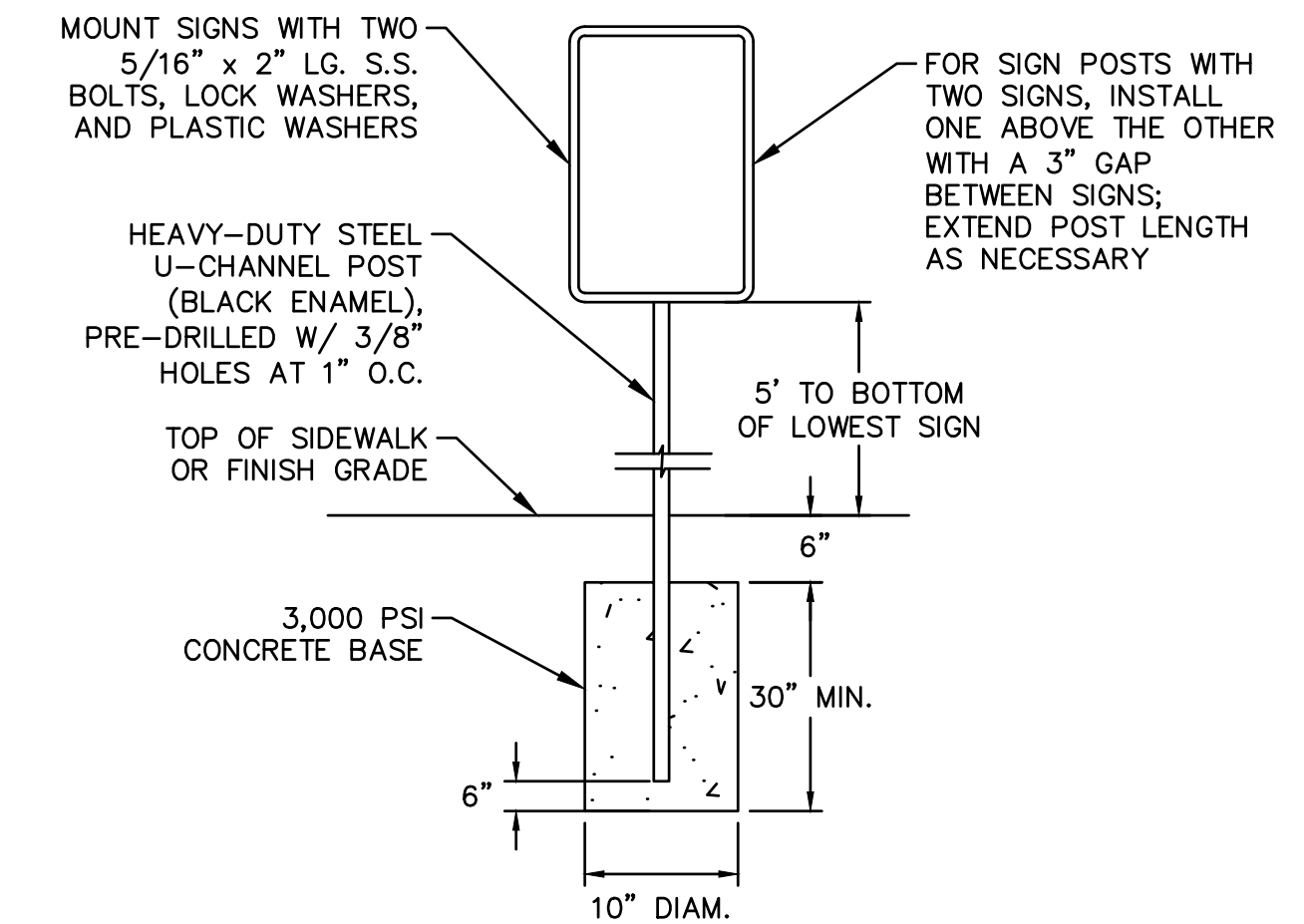
PAVEMENT SECTION NTS

- NOTES:
- 1) TAMP ALL ASPHALT EDGES THAT ABUT LAWN, LANDSCAPED AREA, 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).
  - 4) FOR PATCH AREAS, ONLY THE ASPHALT DEPTHS SHOWN APPLY; EXISTING GRAVEL BASE TO REMAIN, BE SHAPED, AND COMPACTED.



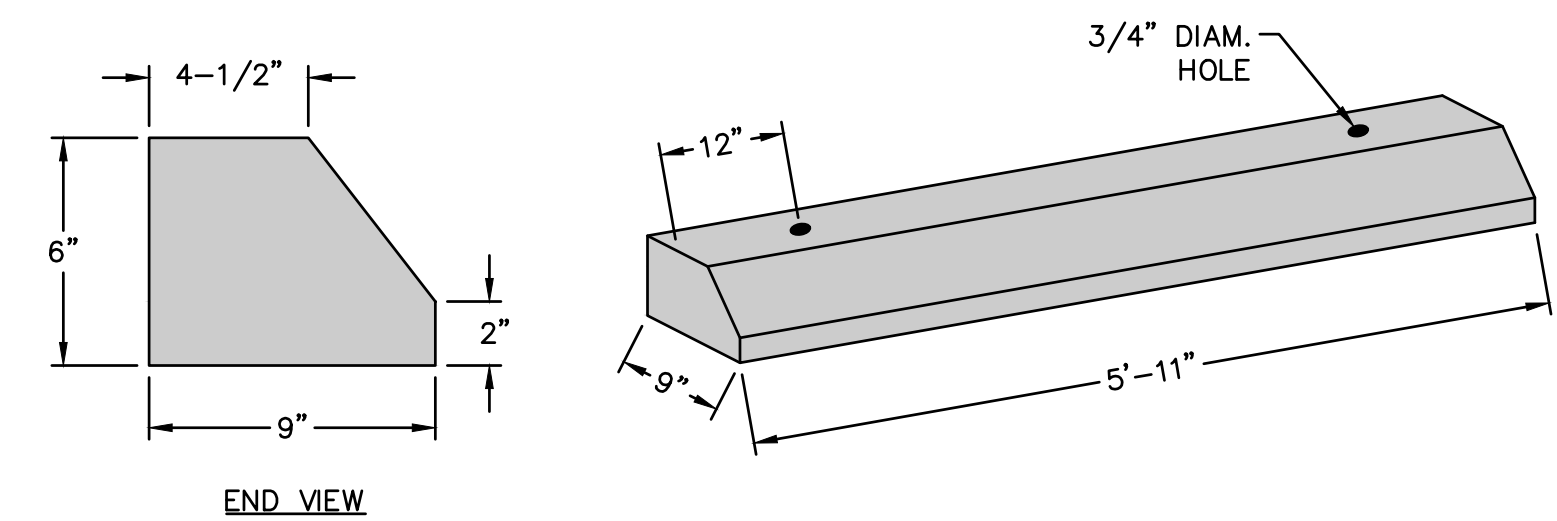
BITUMINOUS BERM-TYPE 3 NTS

- NOTES:
- 1) BERM SHALL BE LAID ON BINDER COURSE AND KEYED INTO TOP COURSE.
  - 2) BERM ASPHALT: - MASSDOT M3.11.03, TABLE A, "HMA DENSE MIX".



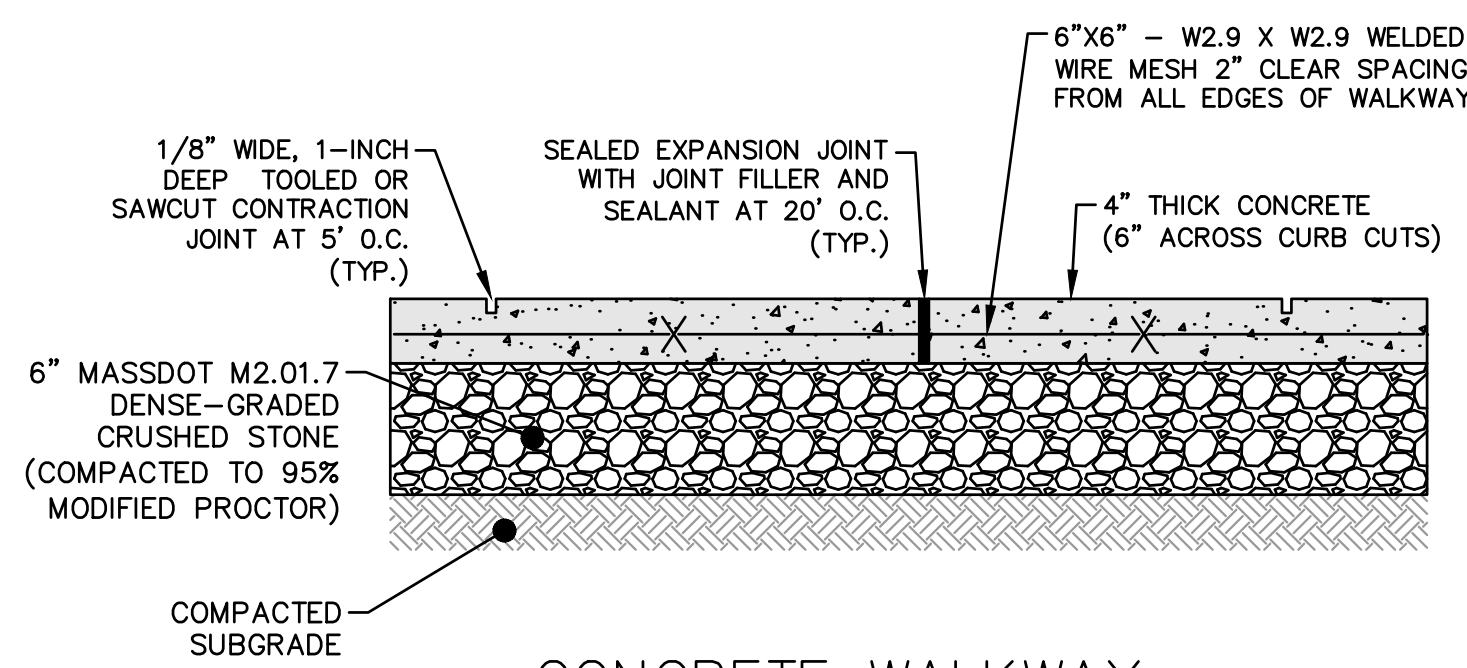
SIGN NTS

SIGNAGE KEY					
GEI ID	FEDERAL ID	SIGN SIZE		SIGN LAYOUT	QUANTITY
		WIDTH	HEIGHT		
S-1	R7-8	12"	18"		3
S-2	R7-8a	12"	6"		2



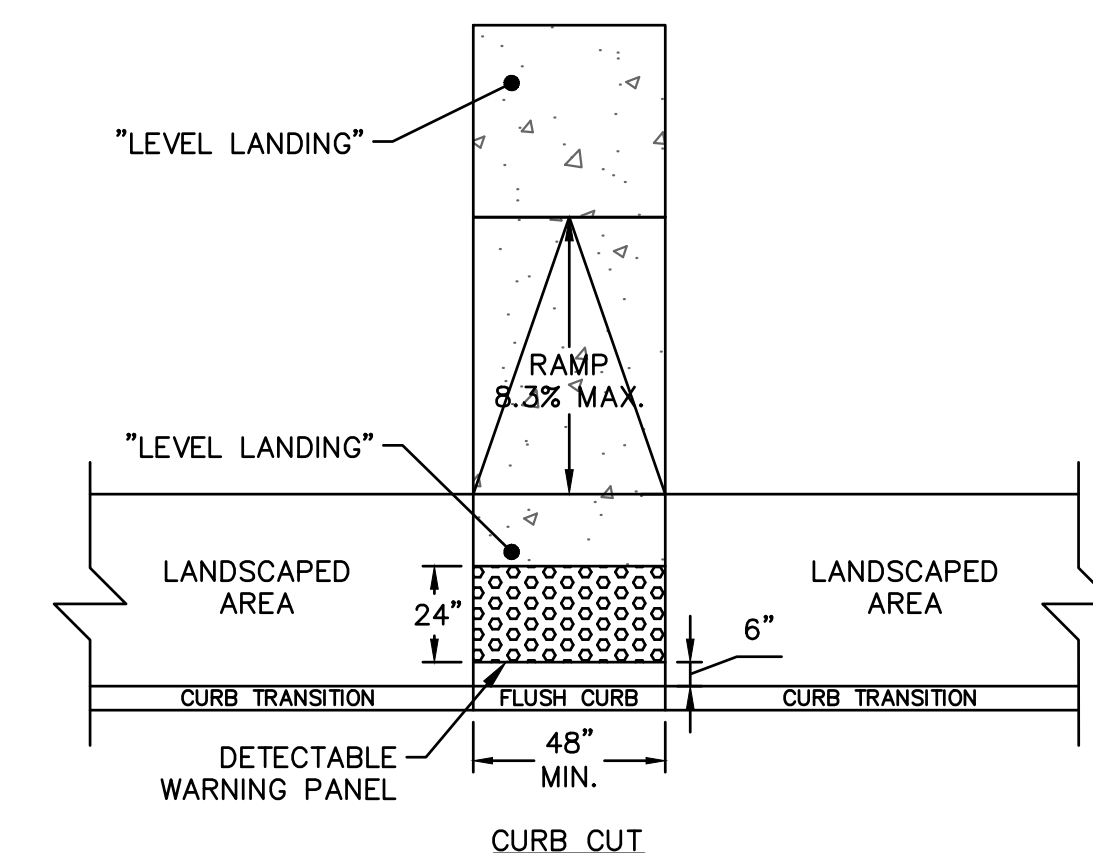
WHEEL STOP NTS

- 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 WALKWAY NTS

- NOTES:
- 1) CONCRETE MIX DESIGN SHALL BE FOR EXTERIOR USE; AIR-ENTRAINED, 4,000 PSI MIN. (28-DAY), 3/4" AGGREGATE.
  - 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" DEEP OF POLYURETHANE JOINT SEALANT.
  - 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.



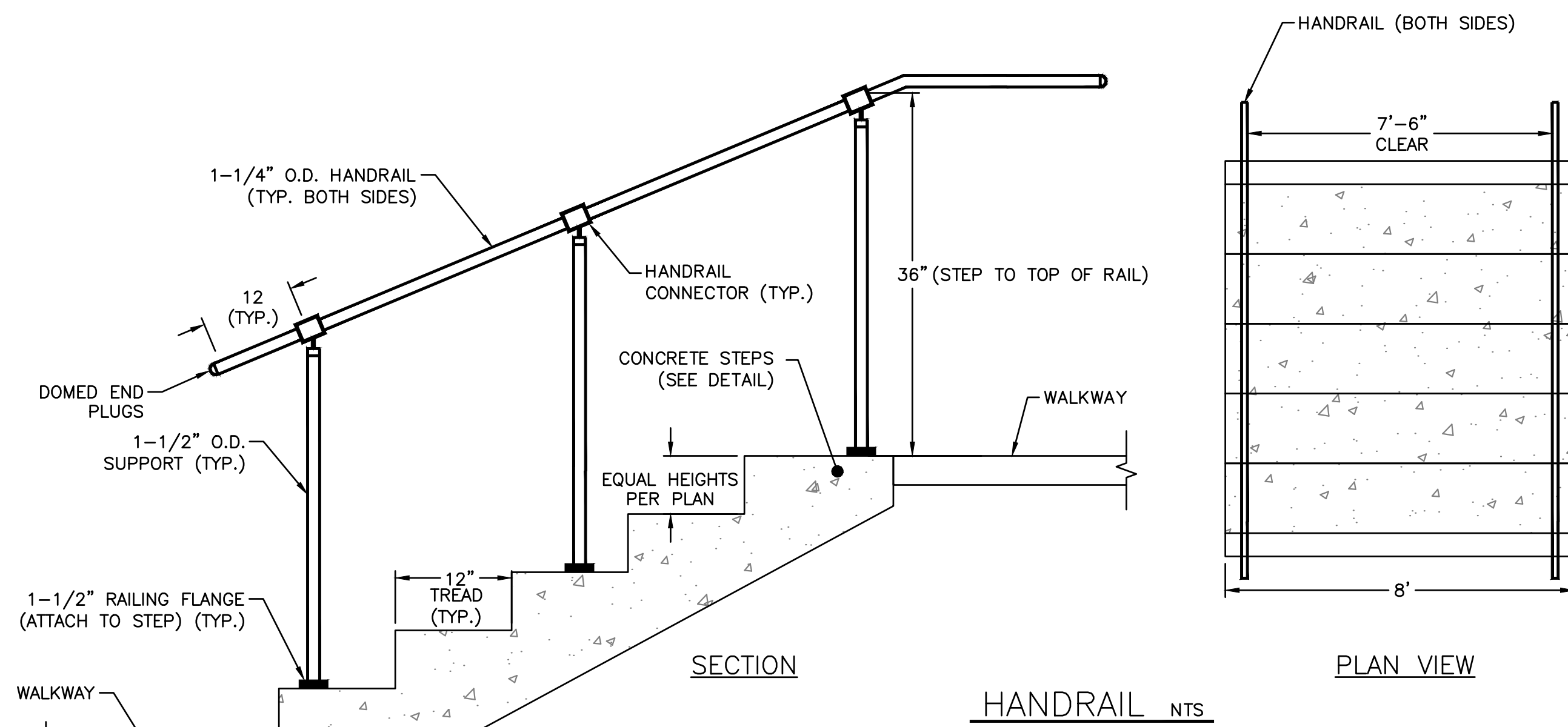
HANDICAP ACCESSIBLE CURB CUT NTS

- NOTES:
- 1) FOR SIDEWALKS PART OF AN ACCESSIBLE ROUTE, THE MAXIMUM ALLOWABLE RUNNING SLOPE SHALL BE 5.0% 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 BOTTOM OF THE RAMP.

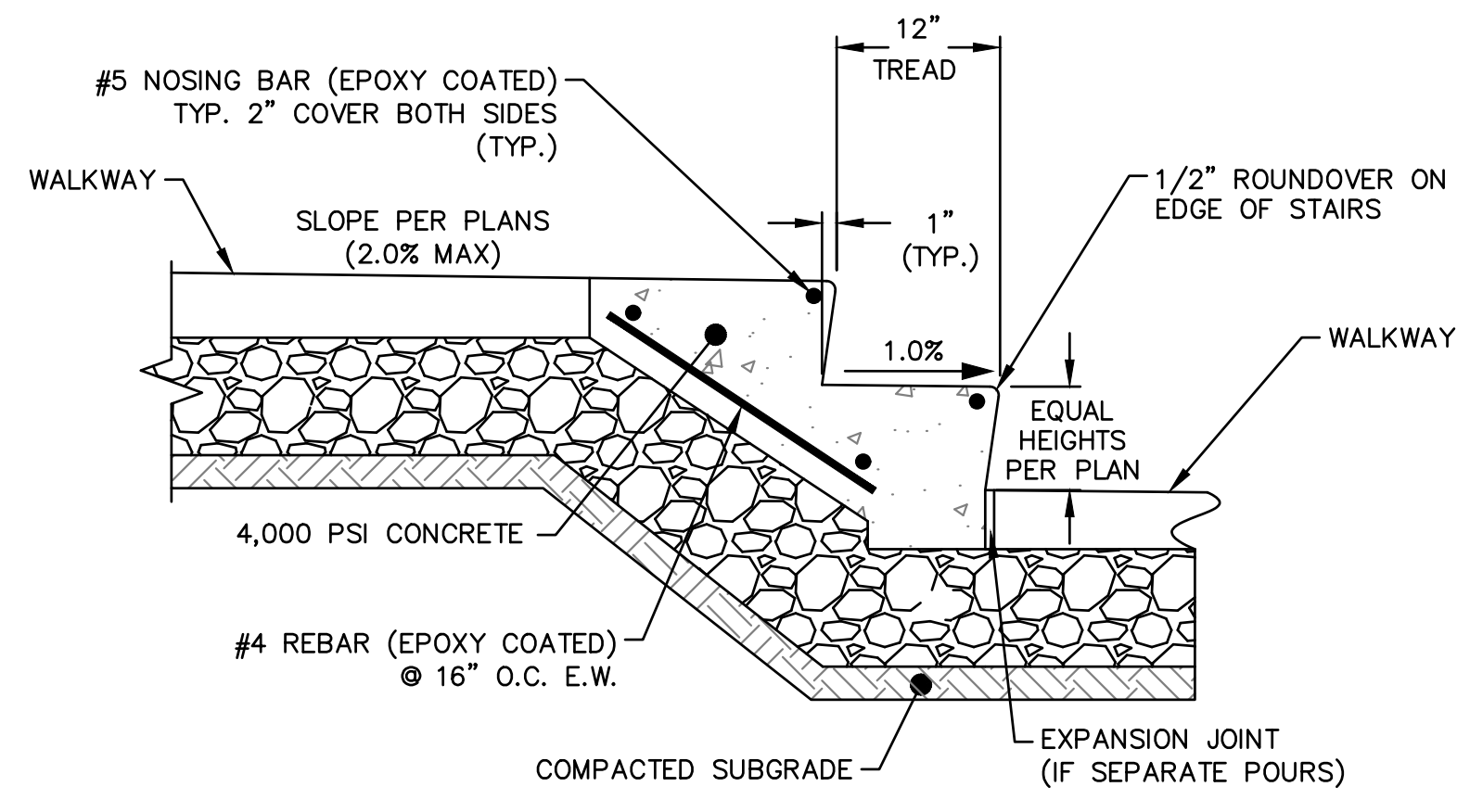
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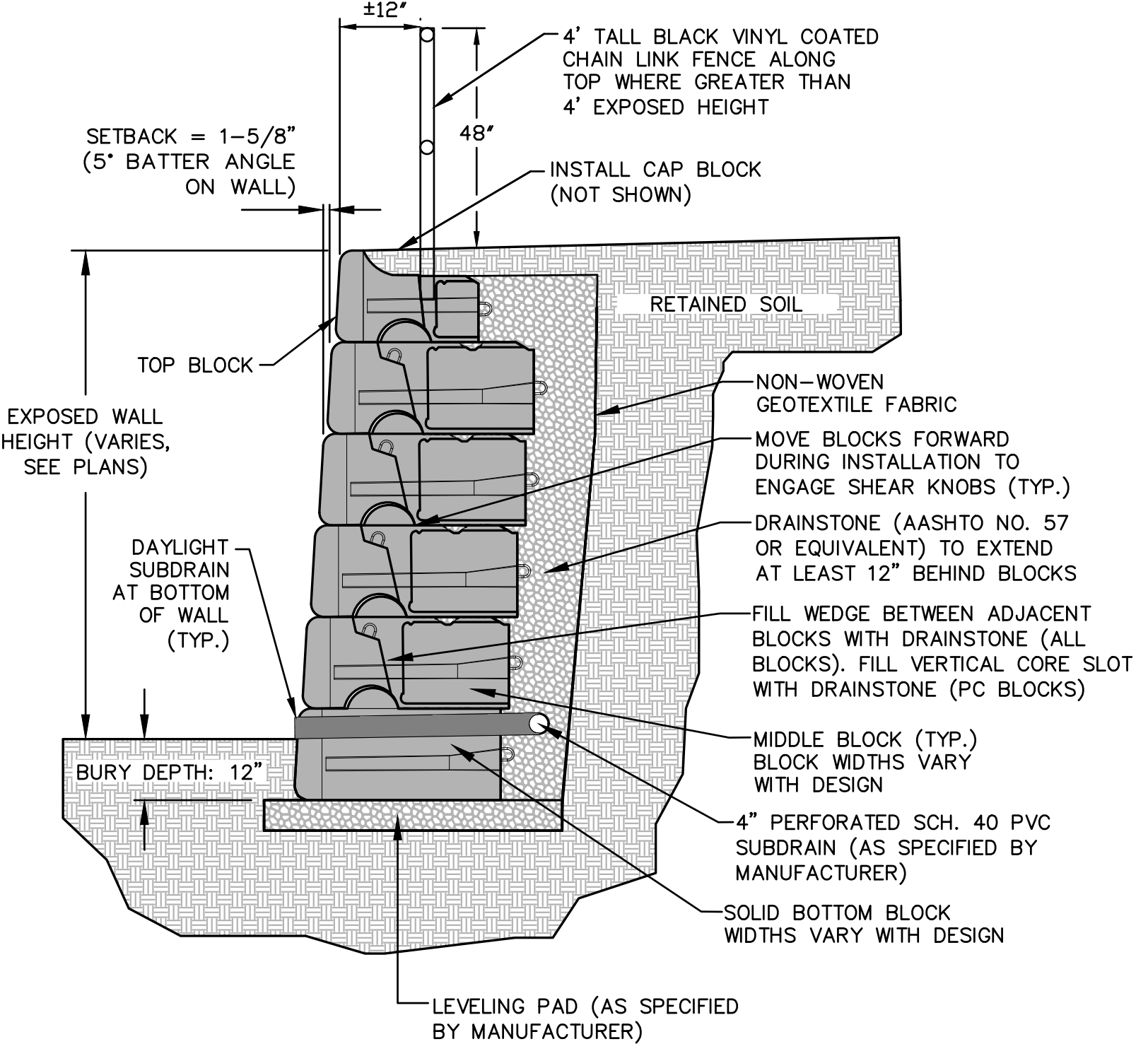




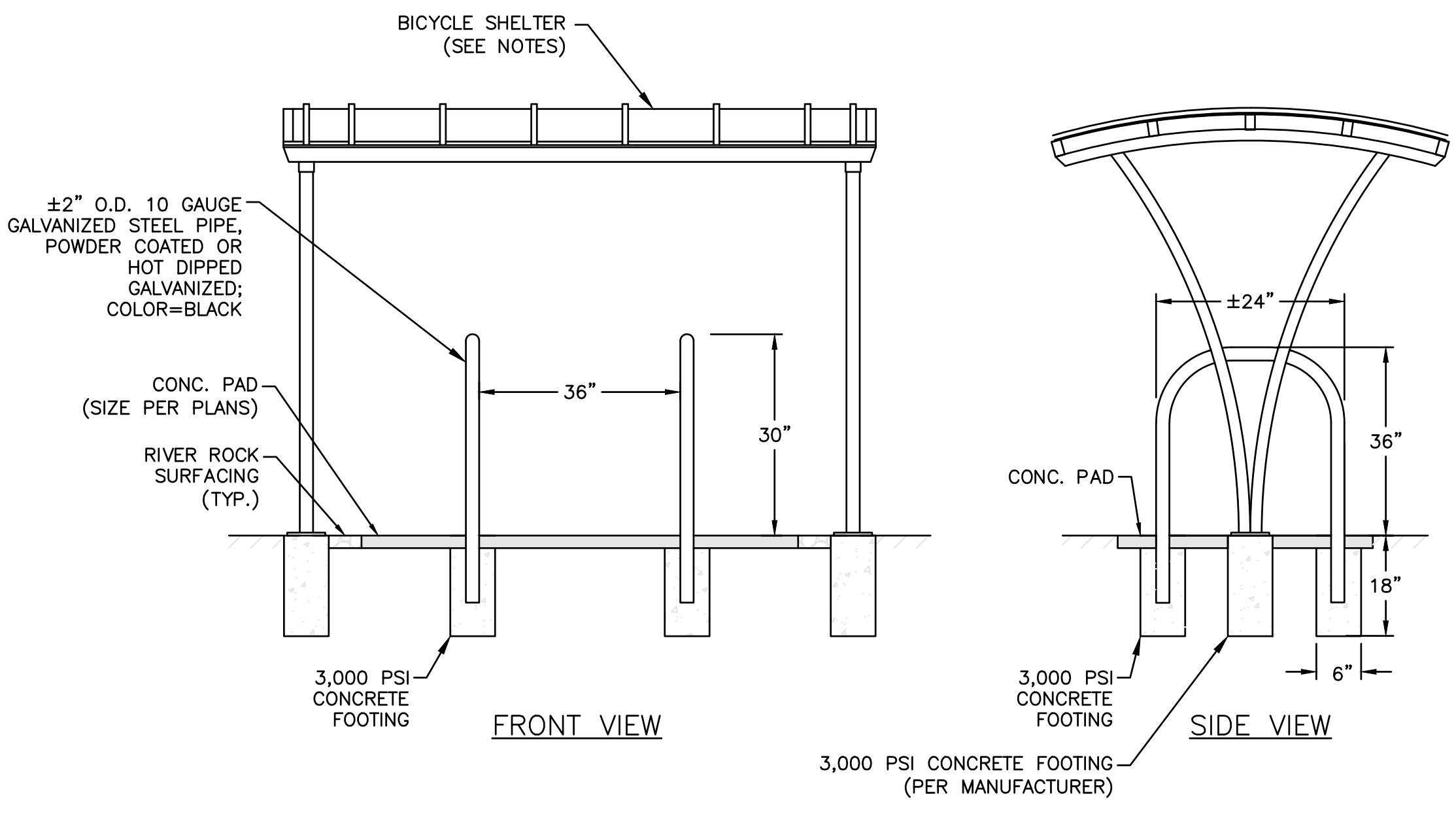
- NOTES:**
- HANDRAIL MATERIALS SHALL BE STEEL PIPE: ASTM C53, GRADE A, SCHEDULE 40, SEAMLESS PIPE. STEEL PIPE TO BE HOT-DIPPED GALVANIZED SHALL BE CHEMICALLY SUITED TO METAL COATINGS COMPLYING WITH THE FOLLOWING REQUIREMENTS: CARBON BELOW 0.25%, SILICON BELOW 0.24%, PHOSPHORUS BELOW 0.05%, AND MANGANESE BELOW 1.35%.
  - COLOR FOR ALL HANDRAILS, POSTS, AND FITTINGS SHALL BE BLACK.
  - HANDRAILS, POSTS, AND FITTINGS SHALL BE FINISHED USING A HOT-DIP GALVANIZING AND FACTORY-APPLIED POWDERCOAT ARCHITECTURAL FINISH PROCESS SUCH AS COLORGALV THERMOSET BY DUNCAN GALVANIZING OR APPROVED EQUAL. COMPLY WITH ASTM A123 FOR FABRICATED PRODUCTS AND ASTM A153 FOR HARDWARE.
  - PROVIDE ALL FASTENERS AND ATTACHMENTS OF THE SAME MATERIAL AND FINISH AS THE METAL TO WHICH IT IS APPLIED. ATTACHMENT HARDWARE FOR FASTENING TO FIXED IN-PLACE CONSTRUCTION SHALL BE STAINLESS STEEL ONLY.
  - FOR VERTICAL POST CONNECTIONS WITH A BASE FLANGE TO CONCRETE OR OTHER FIXED IN-PLACE CONSTRUCTION, USE STAINLESS STEEL EXPANSION BOLTS OR SLEEVE ANCHORS (1/2-INCH DIAMETER BY 3 INCHES LONG MIN. OR AS OTHERWISE RECOMMENDED BY MANUFACTURER).
  - ALL EXPOSED PIPE ENDS, INCLUDING HANDRAIL ENDS, SHALL BE CLOSED WITH MATCHING PLUGS.



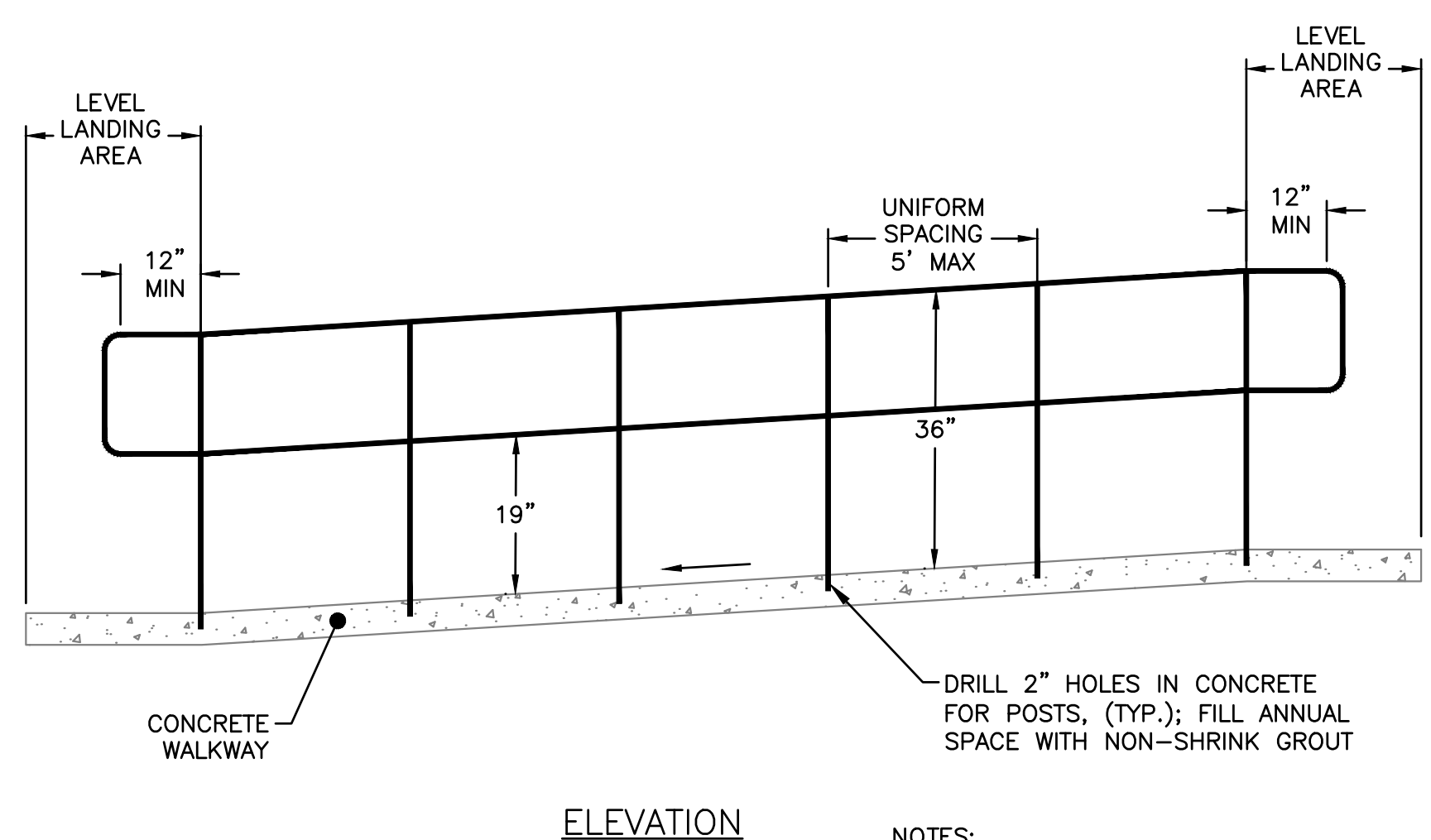
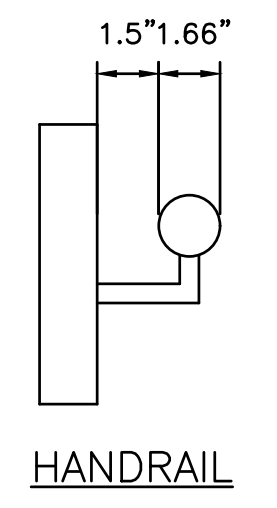
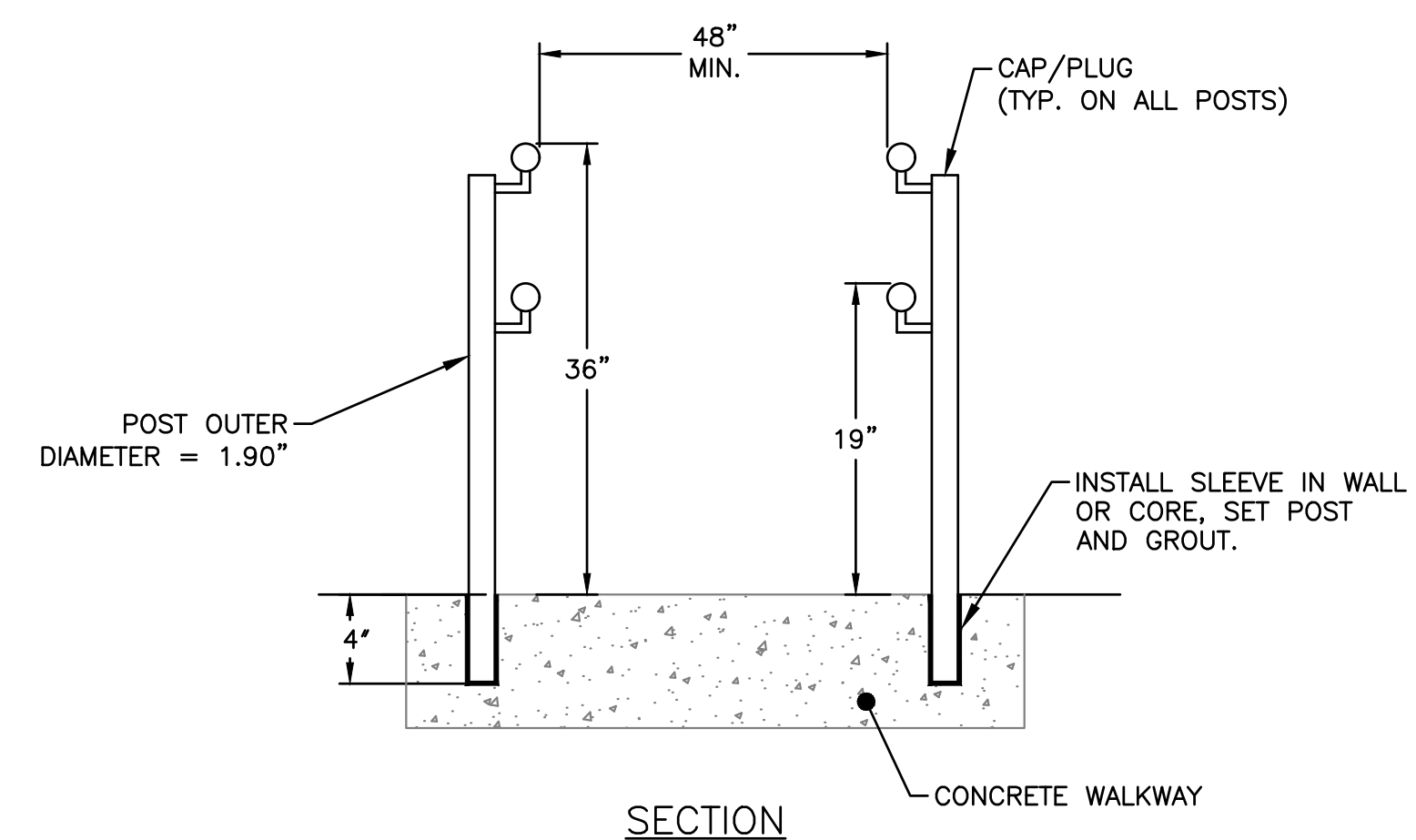
- CONCRETE STEPS NTS**
- NOTE:**
- SEE WALKWAY DETAIL FOR MATERIALS (WALKWAY AND SUBBASE).



- NOTES:**
- BLOCK TEXTURE (FINISH) SHALL BE SIMILAR TO "LIMESTONE" BY REDI-ROCK INTERNATIONAL, LLC. AND BASED ON CONTRACTOR-SELECTED WALL MANUFACTURER.
  - BLOCK COLOR SHALL BE GRAY.
  - CONTRACTOR IS RESPONSIBLE FOR WALL MANUFACTURER'S COST OF PREPARING STRUCTURAL ENGINEERING DRAWINGS.
  - CONTRACTOR IS RESPONSIBLE FOR OBTAINING A BUILDING PERMIT AS REQUIRED.
  - DESIGN SUBJECT TO CHANGE BASED ON STRUCTURAL ENGINEER-PREPARED DRAWINGS AND OWNER MATERIAL SELECTIONS.

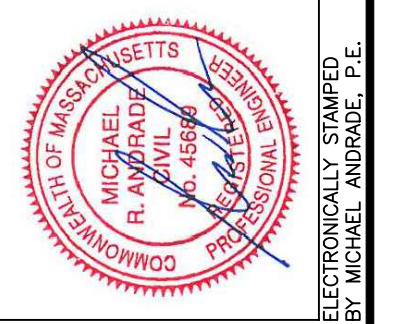


- COVERED BICYCLE RACK NTS**
- NOTES:**
- IN LIEU OF FOOTINGS, RACKS MAY BE SURFACE MOUNTED TO A CONCRETE PAD OR OTHER HARD SURFACE USING MANUFACTURER'S FLANGES AND APPROPRIATE STAINLESS STEEL ANCHOR BOLTS.
  - EACH RACK HAS CAPACITY FOR TWO BICYCLES. FOR MULTIPLE RACKS, SPACE EACH RACK 36 INCHES FROM THE ADJACENT RACK.
  - THE BICYCLE SHELTER SHALL BE OF APPROPRIATE SIZE TO FULLY COVER THE BICYCLE RACK(S) LAYOUT. CONFIRM SIZE AND MANUFACTURER WITH THE ENGINEER AND OWNER PRIOR TO ORDERING; DUO-GARD "PARACHUTE" OR ENGINEER AND OWNER APPROVED EQUAL.



- NOTES:**
- HANDRAILS SHALL COMPLY WITH THE MA ARCHITECTURAL ACCESS BOARD REGULATIONS (MA AAB). IN THE EVENT OF A DISCREPANCY BETWEEN MA AAB AND THESE DRAWINGS, MA AAB SHALL GOVERN.
  - HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION WITH A DIAMETER OF 1.66\".
  - SET POSTS IN 8\" DIAMETER, 18\" DEEP CONCRETE BASE.
  - HANDRAILS SHALL BE SCH. 40 STEEL AND HOT DIPPED GALVANIZED. FIELD WELDS SHALL BE COVERED WITH BRUSH-ON ZINC COATING.

NO.	DATE	BY	DESCRIPTION
1	11/11/24	ROM	ISSUED FOR PERMITTING



**SITE DETAILS - 2**  
**PERMANENT SUPPORTIVE HOUSING**  
 50 ORiol DRIVE, WORCESTER, MA 01605

PREPARED FOR: WORCESTER COMMUNITY HOUSING RESOURCES  
 11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01605

DATE: 11/11/24  
 SCALE: AS NOTED  
 DES. BY: ROM  
 DRW. BY: ROM  
 CHK. BY: MRA  
 PRJ. NO.: 22147



# DEFINITIVE SITE PLAN

## PERMANENT SUPPORTIVE HOUSING

50 ORIOL DRIVE  
WORCESTER, MA 01605

### SHEET INDEX

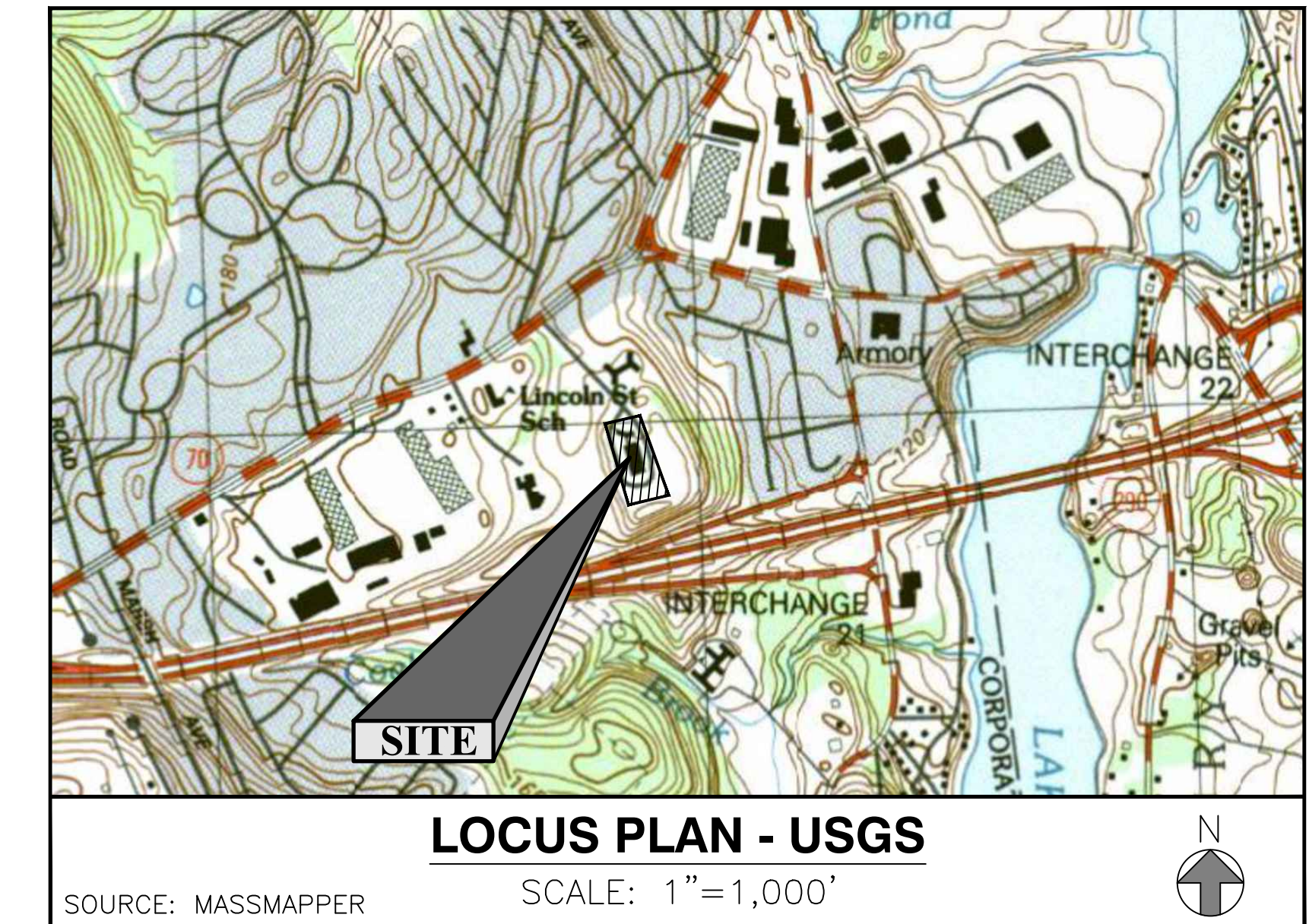
No.	Title	Issue Date
C001	Cover Sheet	October 26, 2022
C101	Site Plan	October 26, 2022
C501	Site Details - 1	October 26, 2022
C502	Site Details - 2	December 13, 2022

### REVISIONS/ISSUES

No.	Note	Date
1	Issued for Permitting	October 26, 2022
2	Revised per DPRS Staff Review	December 13, 2022
3	Revised per DPRS	January 4, 2023
4	Revised per PB Approval	January 19, 2023

### REFERENCE PLAN INDEX

No.	Title	Issue Date
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#### OWNER

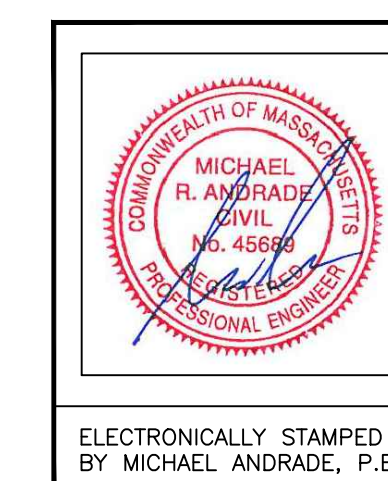
GS Hotel Management LLC  
50 Oriol Drive  
Worcester, MA 01605

#### APPLICANT

Worcester Community Housing Resources  
11 Pleasant Street, Suite 300  
Worcester, MA 01609



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





**SHEET NOTES**

- 1) ALL JOINTS OF EXISTING & PROPOSED BITUMINOUS PAVEMENT SHALL BE SEALED WITH HOT RUBBERIZED ASPHALT JOINT SEALANT AND SANDED.
- 2) CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH 6 INCHES OF LOAM AND SEED (LAWN MIX) UNLESS SPECIFIED OTHERWISE ON THESE PLANS.
- 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) THE OWNER MAY CHOOSE TO RESURFACE THE PARKING AREA IN PART OR IN ITS ENTIRETY, SUBJECT TO FUNDING. IF THIS OCCURS, THE INTENT IS ONLY TO RESURFACE AND NOT EXPAND BEYOND THE LIMITS OF EXISTING PAVED AREAS. PAVEMENT MARKINGS SHALL MATCH THIS PLAN.
- 5) PROPERTY LINE AND SITE FEATURES SHOWN ON THIS PLAN ARE COMPILED FROM WORCESTER GIS AND OTHER ONLINE SOURCES AND SHALL BE CONSIDERED APPROXIMATE. SITE FEATURES WERE FIELD CHECKED WITH HAND MEASUREMENTS BY GRAVES ENGINEERING, INC. ON OCTOBER 18, 2022.
- 6) THE PROPOSED WORK SHOWN ON THESE DRAWINGS RESULTS IN NO NET INCREASE OF IMPERVIOUS SURFACES.
- 7) EXCEPT WHERE NOTED, EXISTING BUILDING WALL PACK FIXTURES AT ENTRANCES AND SITE LIGHTING SHALL REMAIN (ALL ARE L.E.D. FIXTURES AND ARE DARK SKY COMPLIANT). ALL NEW LIGHTING AS SHOWN SHALL BE WALL PACKS (GALN GALLEON GALN-SA1D-730-1-SL3-WM) OR POLE MOUNTED (GALN GALLEON GALN-SA4D-730-1-SL3).

**PARKING SCHEDULE**

**REQUIRED PARKING**  
RESIDENTIAL: 2 SPACES/UNIT  
90 UNITS TOTAL  
TOTAL SPACES REQUIRED: 90 X 2 = 180

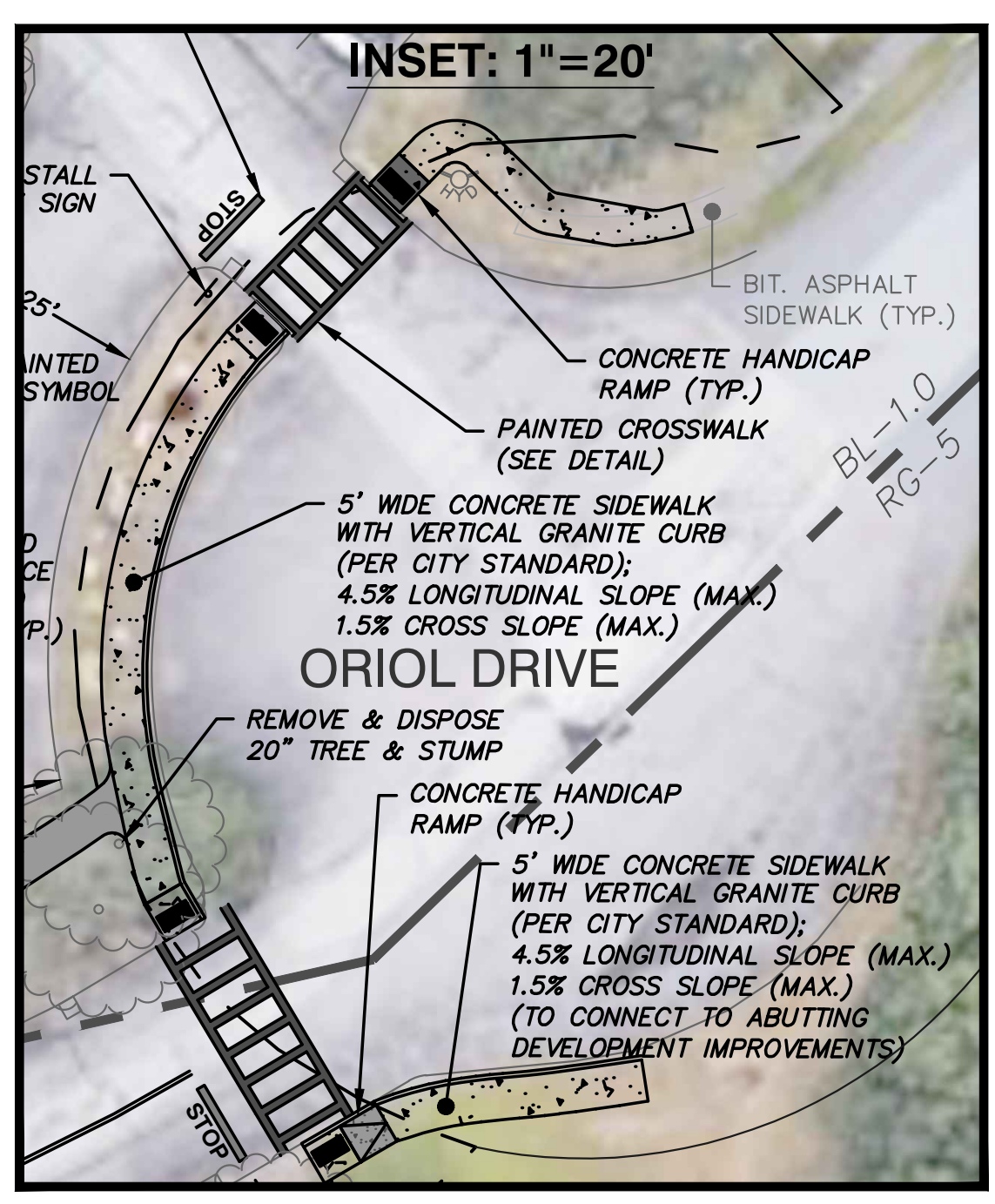
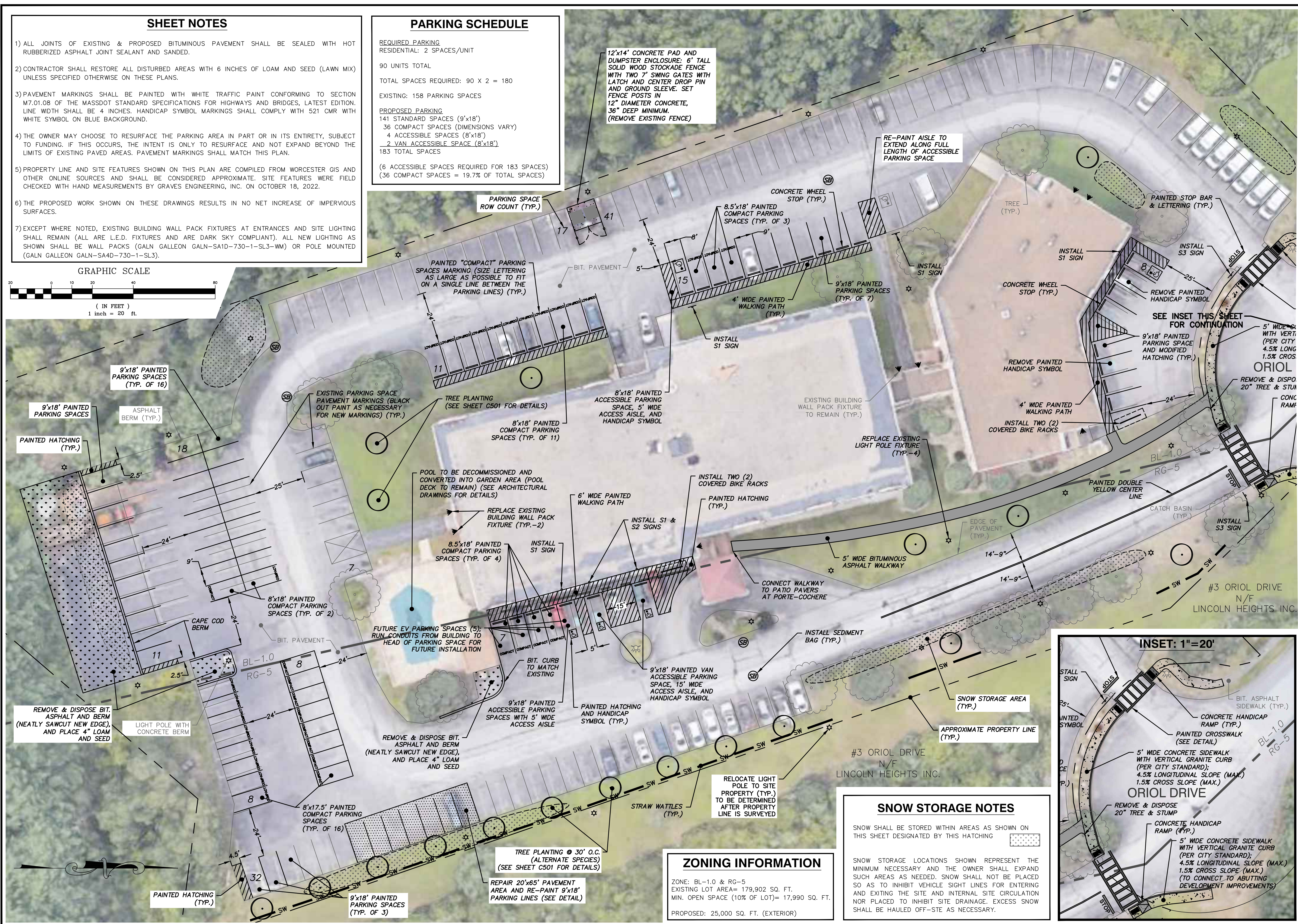
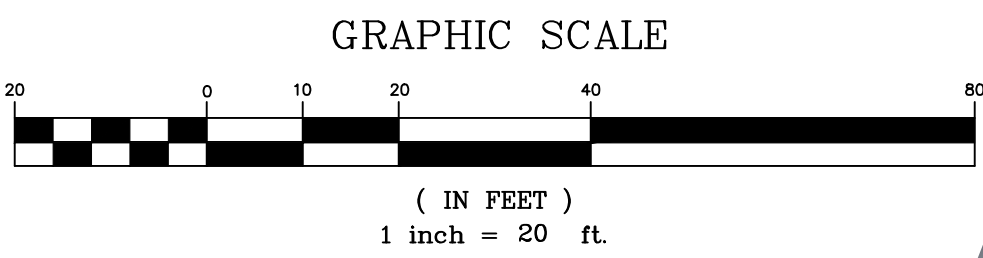
EXISTING: 158 PARKING SPACES

**PROPOSED PARKING**  
141 STANDARD SPACES (9'x18')  
36 COMPACT SPACES (DIMENSIONS VARY)  
4 ACCESSIBLE SPACES (8'x18')  
2 VAN ACCESSIBLE SPACE (8'x18')  
183 TOTAL SPACES

(6 ACCESSIBLE SPACES REQUIRED FOR 183 SPACES)  
(36 COMPACT SPACES = 19.7% OF TOTAL SPACES)

12'x14' CONCRETE PAD AND DUMPSTER ENCLOSURE: 6' TALL SOLID WOOD STOCKADE FENCE WITH TWO 7" SWING GATES WITH LATCH AND CENTER DROP PIN AND GROUND SLEEVE. SET FENCE POSTS IN 12" DIAMETER CONCRETE, 36" DEEP MINIMUM. (REMOVE EXISTING FENCE)

RE-PAINT AISLE TO EXTEND ALONG FULL LENGTH OF ACCESSIBLE PARKING SPACE



**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.

**ZONING INFORMATION**

ZONE: BL-1.0 & RG-5  
EXISTING LOT AREA= 179,902 SQ. FT.  
MIN. OPEN SPACE (10% OF LOT)= 17,990 SQ. FT.  
PROPOSED: 25,000 SQ. FT. (EXTERIOR)

**GRAVES ENGINEERING, Inc.**  
100 GROVE STREET | WORCESTER MA 01605  
T 508-856-0321 | F 508-856-0357  
gravesengineering.com

NO.	DATE	BY	DESCRIPTION
4	01/19/23	ROM	REVISED PER PB APPROVAL
3	01/04/23	ROM	REVISED PER DPRS
2	12/13/22	ROM	REVISED PER DPRS STAFF REVIEW
1	10/26/22	ROM	ISSUED FOR PERMITTING

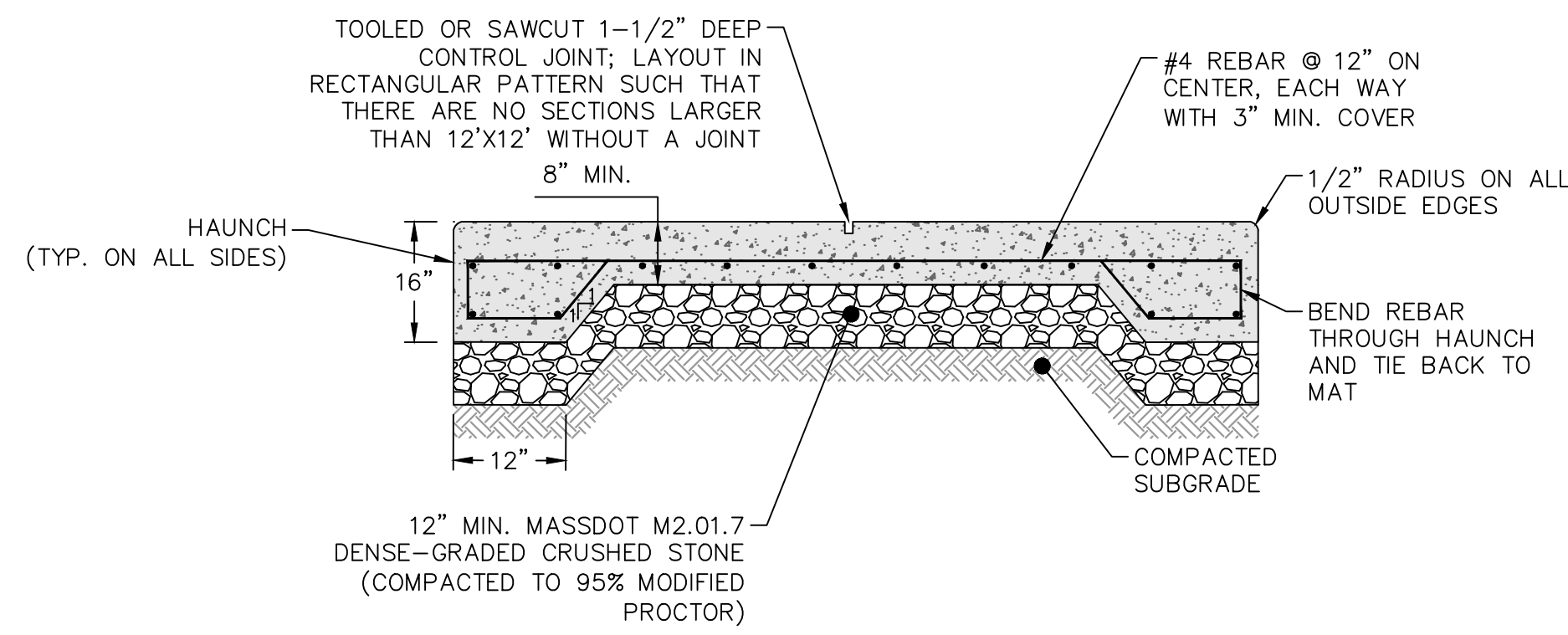
**SITE PLAN**  
PERMANENT SUPPORTIVE HOUSING  
50 ORIOLE DRIVE, WORCESTER, MA 01605  
WORCESTER COMMUNITY HOUSING RESOURCES  
11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01609  
SCALE: 1"=20'

DES. BY: ROM  
CHK. BY: MRA  
DRW. BY: ROM  
PRJ. NO.: 22147

DATE: 10/26/22

PREPARED FOR:  
MICHAEL R. ANDRAGE, P.E.  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF MASSACHUSETTS  
LICENSE NO. 10000

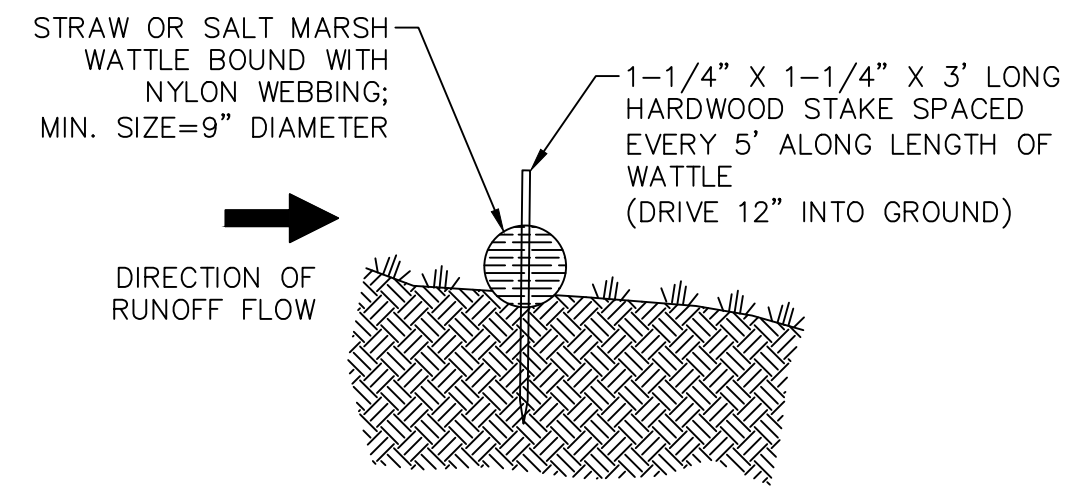




CONCRETE PAD-HEAVY DUTY NTS

NOTES:

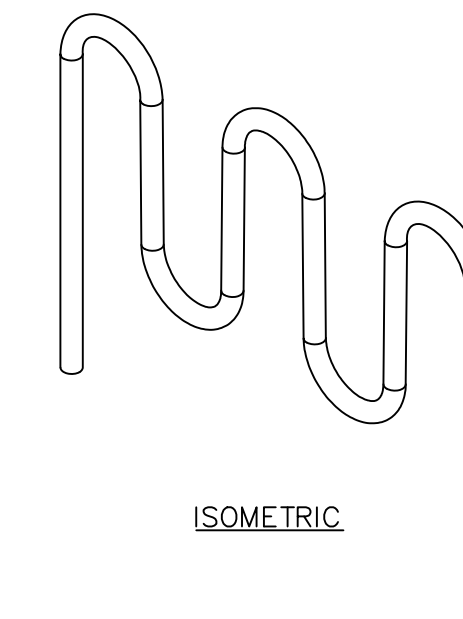
- 1) THIS DETAIL APPLIES TO THE PROPOSED DUMPSTER PAD.
- 2) CONCRETE MIX DESIGN SHALL BE FOR EXTERIOR USE; AIR-ENTRAINED, 4,000 PSI MIN. (28-DAY), 3/4" AGGREGATE.
- 3) OMIT THE HAUNCH WHEN ABUTTING ANOTHER HARD SURFACE SUCH AS EXISTING CONCRETE (BITUMINOUS IS NOT A HARD SURFACE).
- 4) WHEN THE PAD ABUTS 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" DEEP OF POLYURETHANE JOINT SEALANT.
- 5) 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.



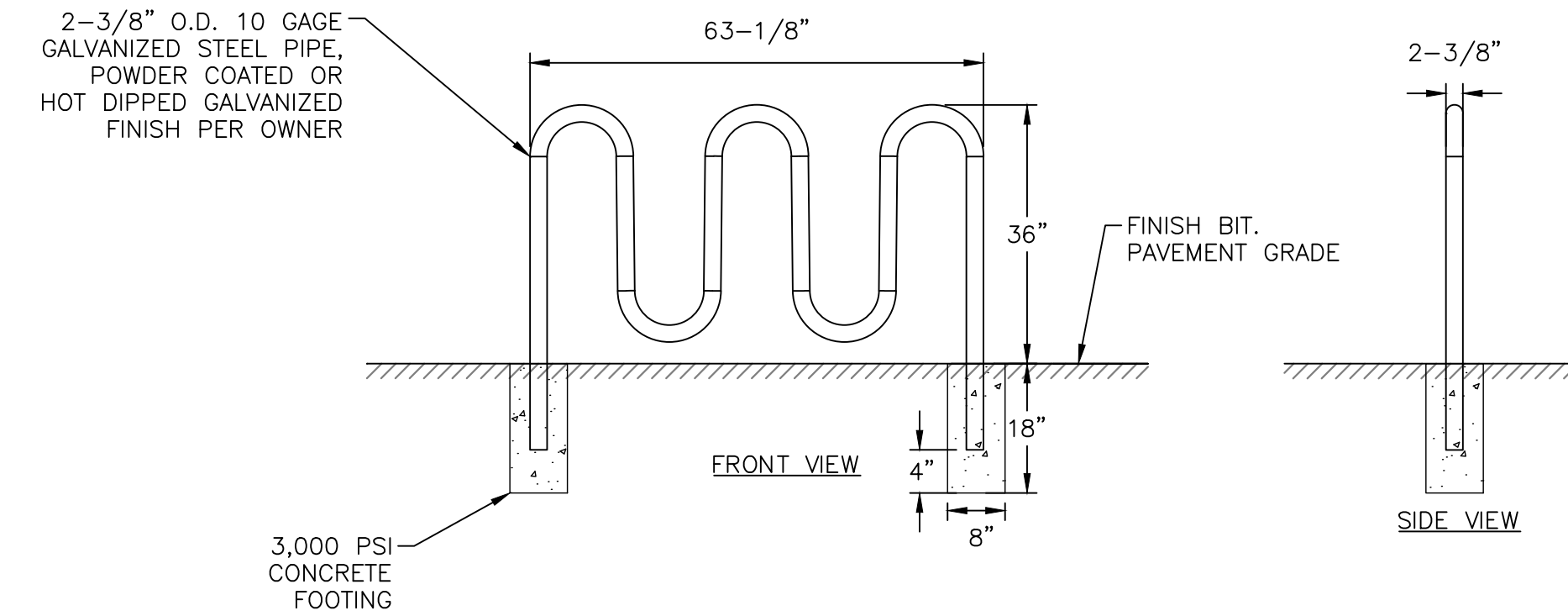
STRAW WATTLE NTS

NOTE:

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



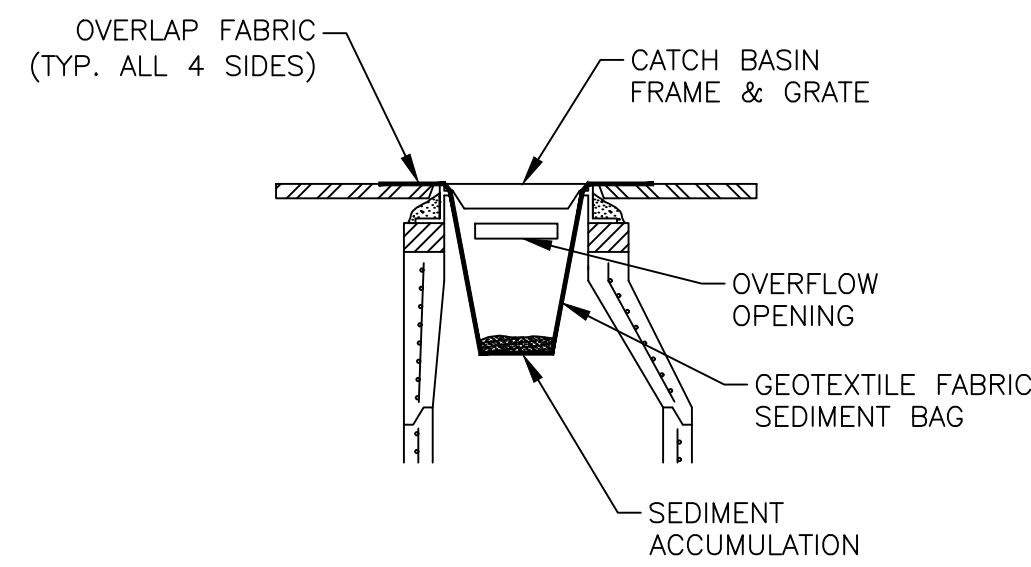
ISOMETRIC



BIKE RACK - FOOTING NTS

NOTES:

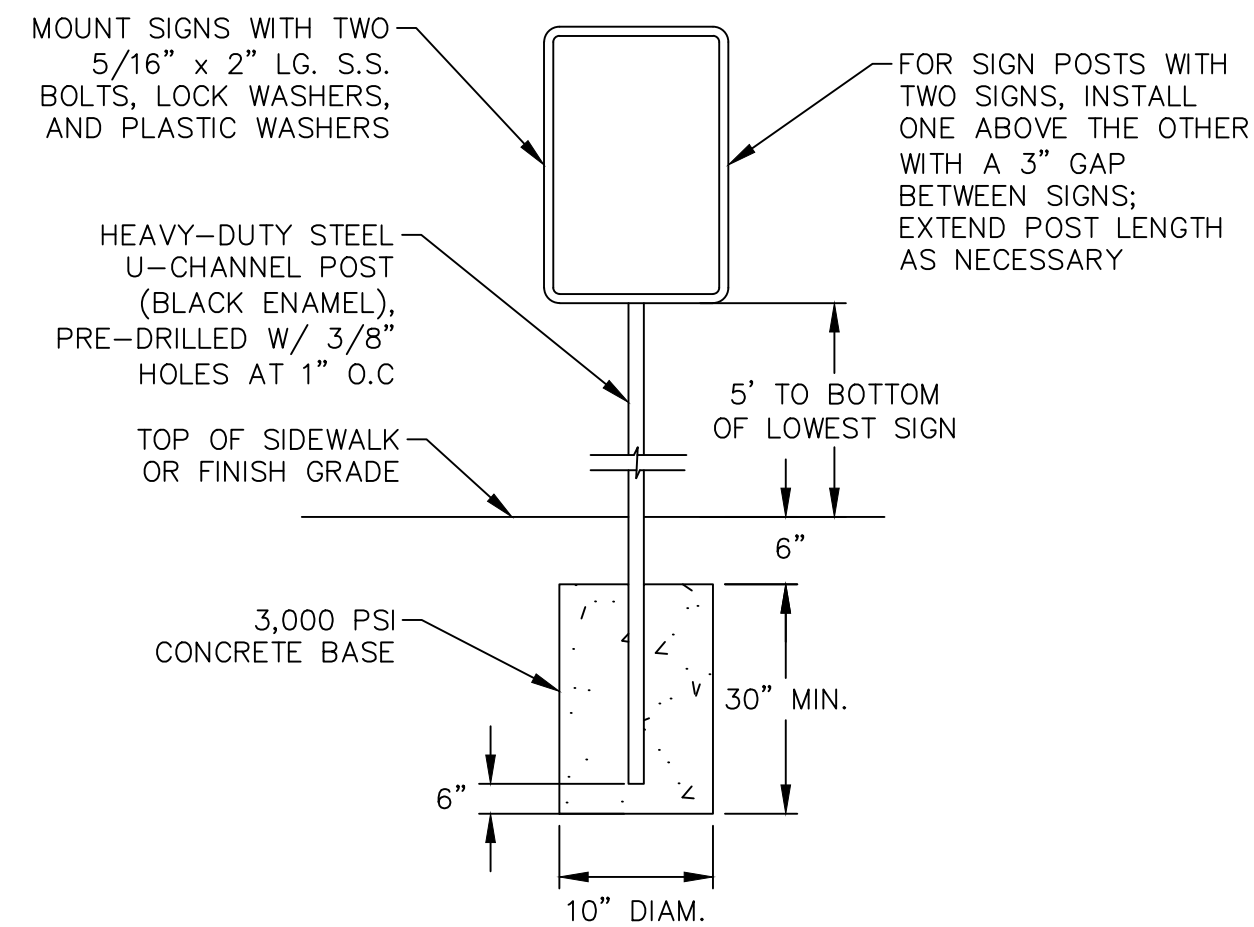
- 1) BIKE RACK SHALL BE COVERED WITH A STRUCTURE (DESIGN TO BE SELECTED BY OWNER).
- 2) SECOND RACK TO BE INSTALLED IMMEDIATELY ADJACENT TO THE FIRST RACK AND IN THE SAME PLANE.



CATCH BASIN SEDIMENT BAG NTS

NOTES:

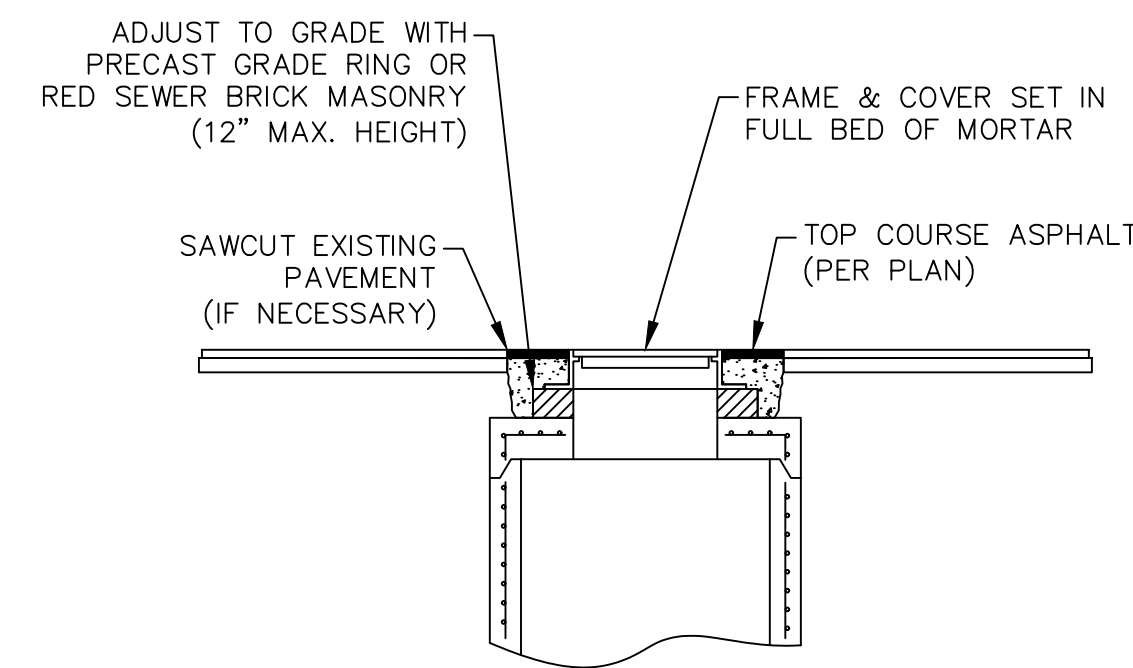
- 1) SEDIMENT BAG SHALL BE SILTSACK BY ACF ENVIRONMENTAL, OR APPROVED EQUAL.
- 2) OIL ABSORPTION MEDIUM MAY ALSO BE PLACED IN BAG (OPTIONAL).
- 3) INSTALL AND MAINTAIN PER MANUFACTURER'S INSTRUCTIONS.



SIGN NTS

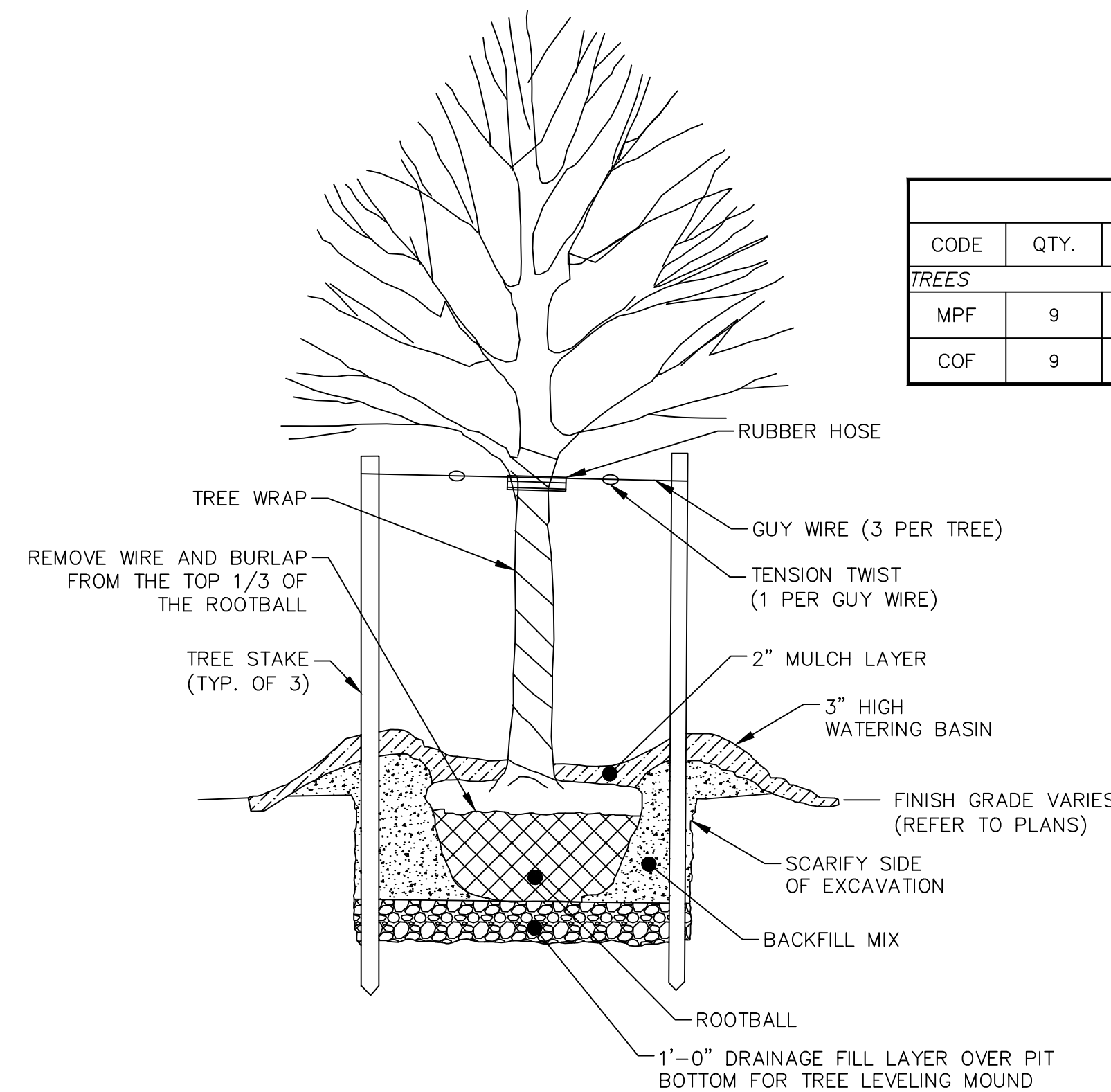
NOTE:

- 1) OMIT CONCRETE BASE WHEN SIGN SHALL BE MOUNTED TO BUILDING. MOUNT SIGN 5 FT. ABOVE FINISH GRADE AS SHOWN.



STRUCTURE ADJUSTMENT NTS

PLANTING LIST					
CODE	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
<b>TREES</b>					
MPF	9	MALUS 'PRARIE FIRE'	'PRARIE FIRE' CRABAPPLE	3.0-3.5" CALIPER	@ 6" ABOVE GROUND
COF	9	CORNUS FLORIDA	FLOWERING DOGWOOD	3.0-3.5" CALIPER	@ 6" ABOVE GROUND



TREE PLANTING NTS

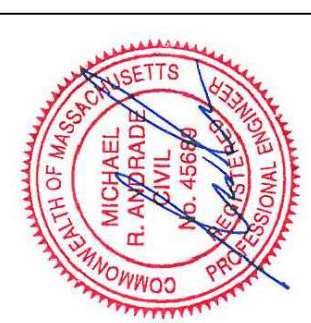
NOTES:

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

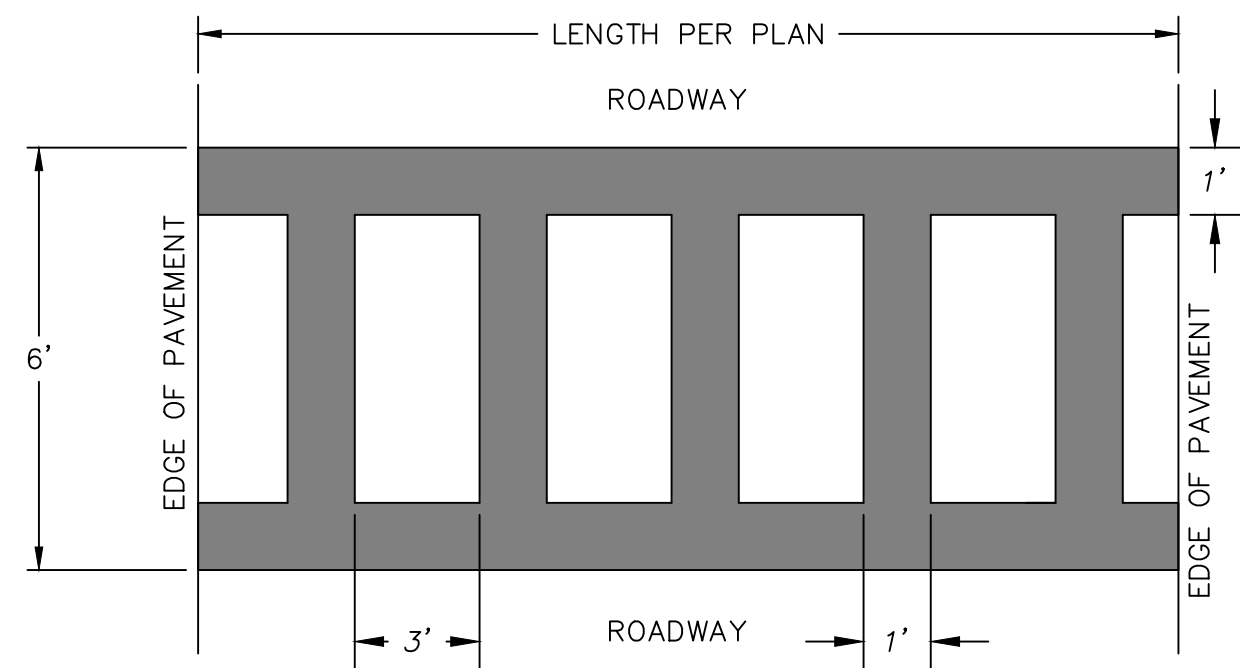
LANDSCAPE NOTES

- 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) A 6-FOOT DIAMETER BARK MULCH BED WITH A DEPTH OF 3 INCHES SHALL BE PLACED AROUND THE TRUNK OF EACH PROPOSED TREE.
- 3) ALL PLANTINGS SHALL BE WATERED AND FERTILIZED AS NECESSARY UNTIL ESTABLISHED. THE CONTRACTOR SHALL INSTALL A SLOW-RELEASE WATERING BAG AT EACH TREE PLANTING AND MAINTAIN THE BAG FILLED WITH WATER UNTIL FINAL COMPLETION.
- 4) TREES SHALL BE SUPPORTED BY TEMPORARY STAKING AS NECESSARY UNTIL ESTABLISHED.

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1	10/26/22	ROM	ISSUED FOR PERMITTING



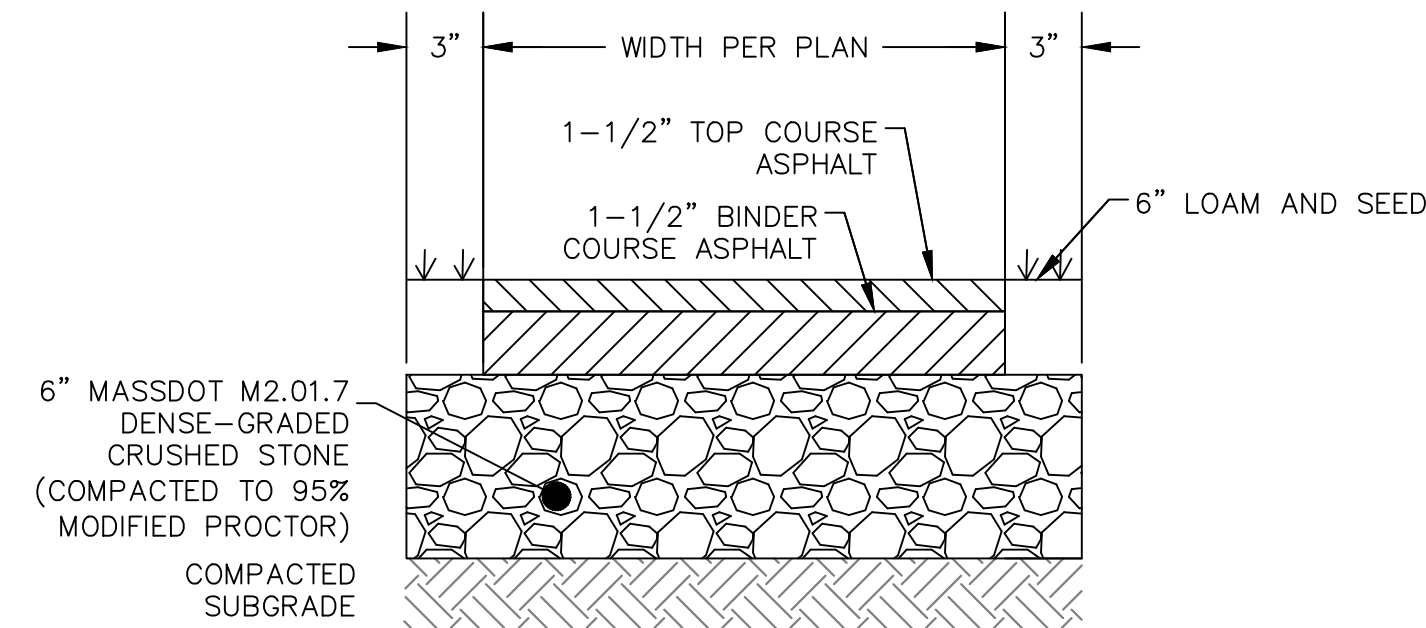




CROSSWALK NTS

NOTES:

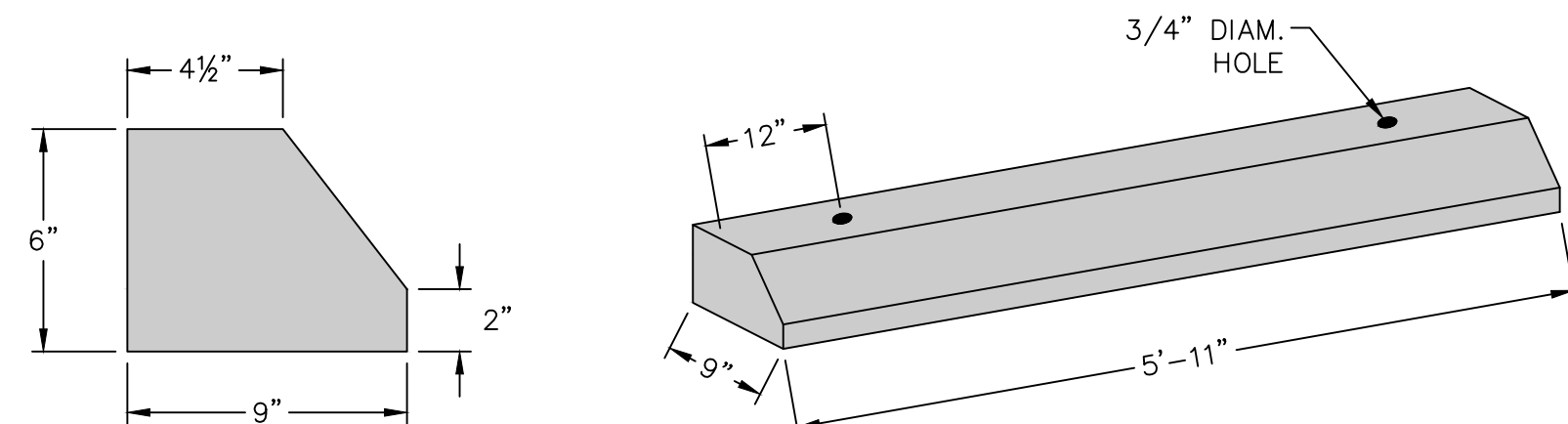
- 1) PAVEMENT MARKINGS SHALL COMPLY WITH THE MUTCD, CURRENT EDITION, OR THE ADA AND AAB, LATEST EDITIONS.
- 2) MARKING PAINT SHALL BE IN ACCORDANCE WITH SECTION M7 OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES. FAST-DRYING, LOW-VOC, CHLORINATED TRAFFIC PAINT SHALL BE USED CONFORMING TO SECTION M7.01.10.
- 3) COLOR OF MARKINGS SHALL BE WHITE.



BITUMINOUS WALKWAY NTS

NOTE:

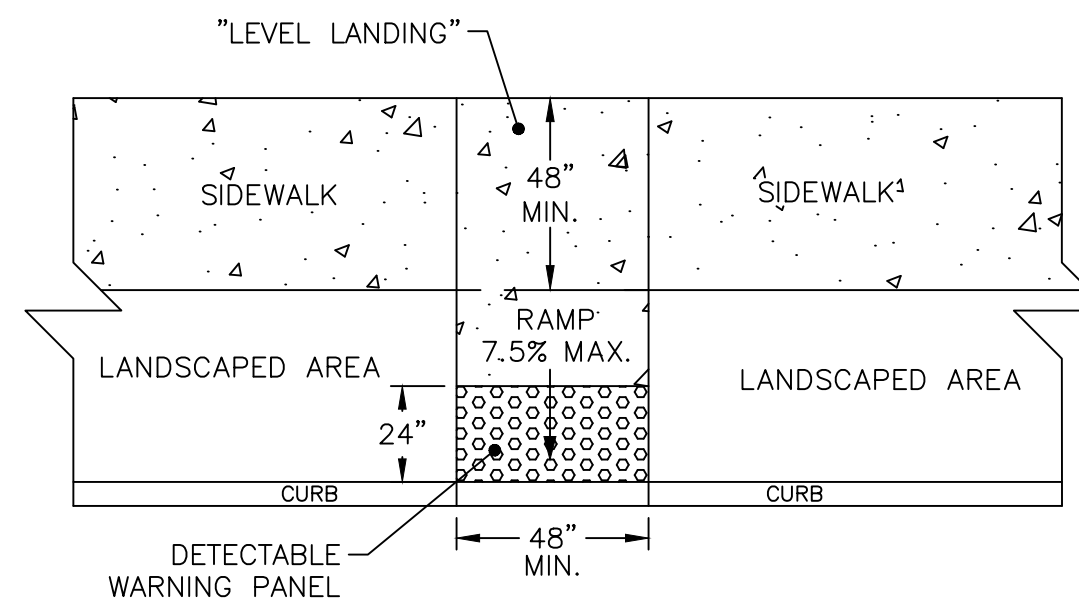
- 1) DO NOT EXTEND BASE GRAVEL AS SHOWN WHEN WALKWAYS AREA ABUTTING ROAD, WALKWAY, OR OTHER HARD SURFACE.



WHEEL STOP NTS

NOTES:

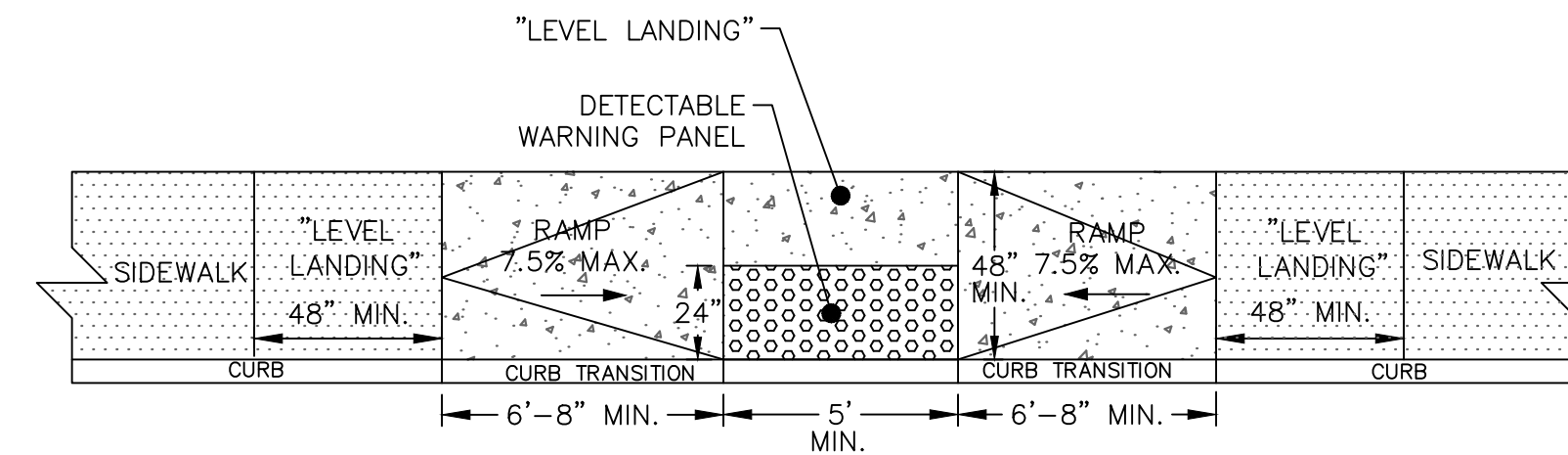
- 1) WHEEL STOPS SHALL BE CONSTRUCTED OF 4,000 PSI CONCRETE (28 DAYS) AND SECURED TO THE GROUND WITH STEEL PINS.
- 2) RUBBER OR OTHER MATERIAL WHEEL STOPS MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.



HANDICAP RAMPS NTS

NOTES:

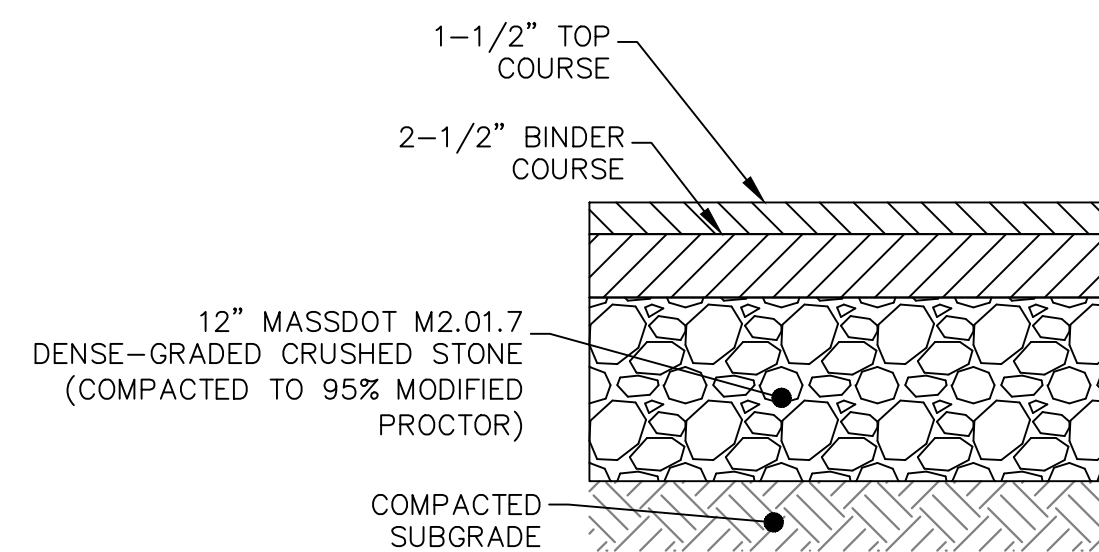
- 1) FOR SIDEWALKS PART OF AN ACCESSIBLE ROUTE, THE MAXIMUM ALLOWABLE RUNNING SLOPE SHALL BE 4.5% AND THE MAXIMUM ALLOWABLE CROSS SLOPE SHALL BE 1.5% (1.0% MIN.).
- 2) "LEVEL LANDING" SHALL BE SLOPED NO MORE THAN 1.5% IN ANY DIRECTION (1.0% MIN. FOR CROSS SLOPE).
- 3) A "LEVEL LANDING" 48" MIN. IN LENGTH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



CONCRETE SIDEWALK NTS

NOTES:

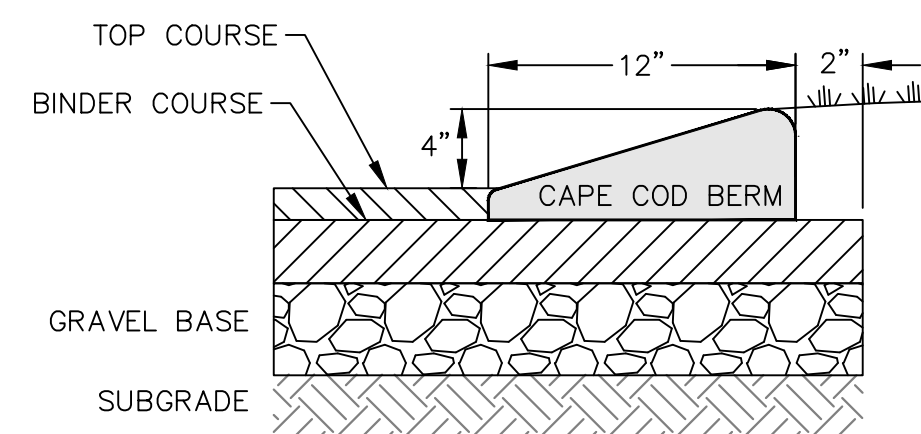
- 1) CONCRETE MIX DESIGN SHALL BE FOR EXTERIOR USE; AIR-ENTRAINED, 4,000 PSI MIN. (28-DAY), 3/4" AGGREGATE.
- 2) WHEN THE WALKWAY ABUTS A STRUCTURE OR EXISTING HARD SURFACE (CONCRETE, ETC.), INSTALL AN EXPANSION JOINT ACROSS THE ENTIRETY OF THE ABUTTING FACE WITH PREFORMED FIBER JOINT FILLER AND FILL WITH 1" DEEP POLYURETHANE JOINT SEALANT.
- 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.



PAVEMENT SECTION NTS

NOTES:

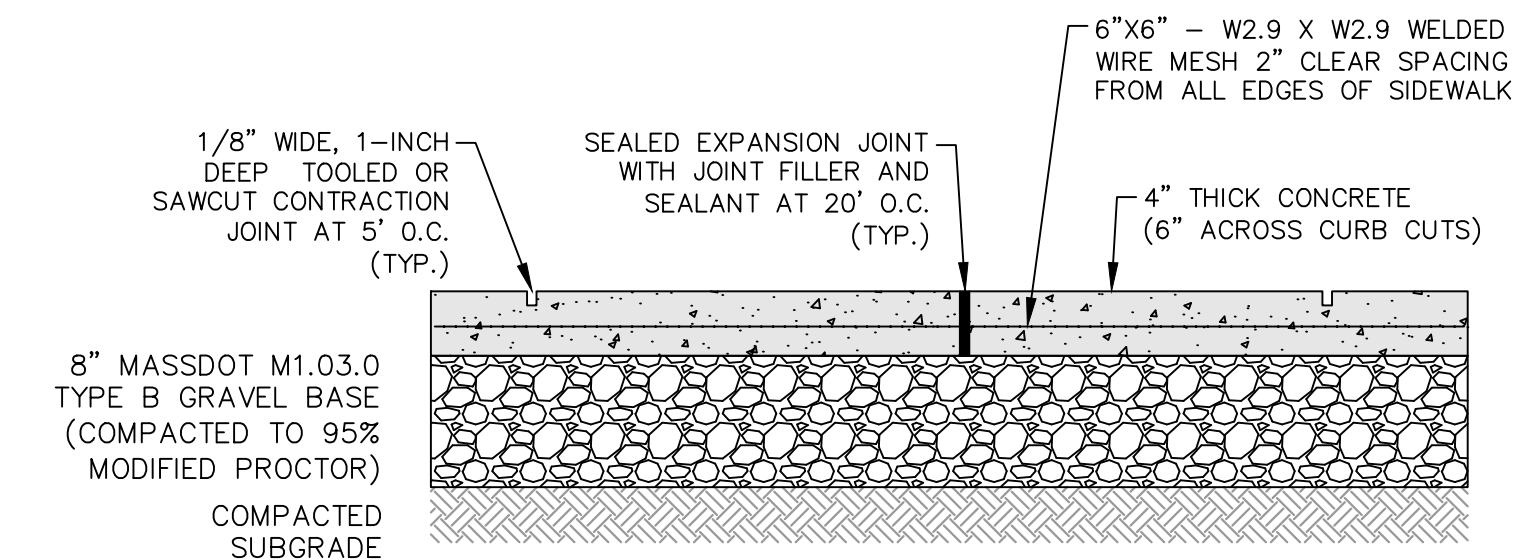
- 1) TAMP ALL ASPHALT EDGES THAT ABUT LAWN, LANDSCAPED OR OTHER SOFT SURFACE.
- 2) BINDER COURSE: - MASSDOT M3.11.03, TABLE A, "HMA INTERMEDIATE COURSE DENSE BINDER" OR SUPERPAVE INTERMEDIATE COURSE - 19.0MM (MIXTURE DESIGNATION SIC - 19.0).
- 3) TOP COURSE: - MASSDOT M3.11.03, TABLE A, "SURFACE COURSE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



NOTE:

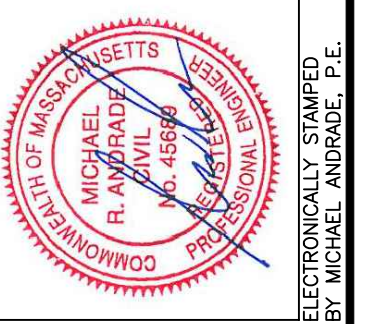
1. BERM SHALL BE LAID ON BINDER COURSE AND KEYED INTO TOP COURSE.

CAPE COD BERM NTS



VERTICAL GRANITE CURB W/ CONCRETE SIDEWALK NTS

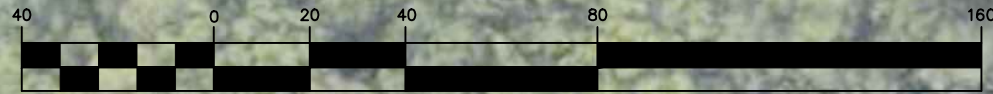
		REVISIONS	
NO.	DATE	BY	DESCRIPTION
4	01/19/23	ROM	REVISED PER PB APPROVAL
3	01/04/23	ROM	REVISED PER DPRS
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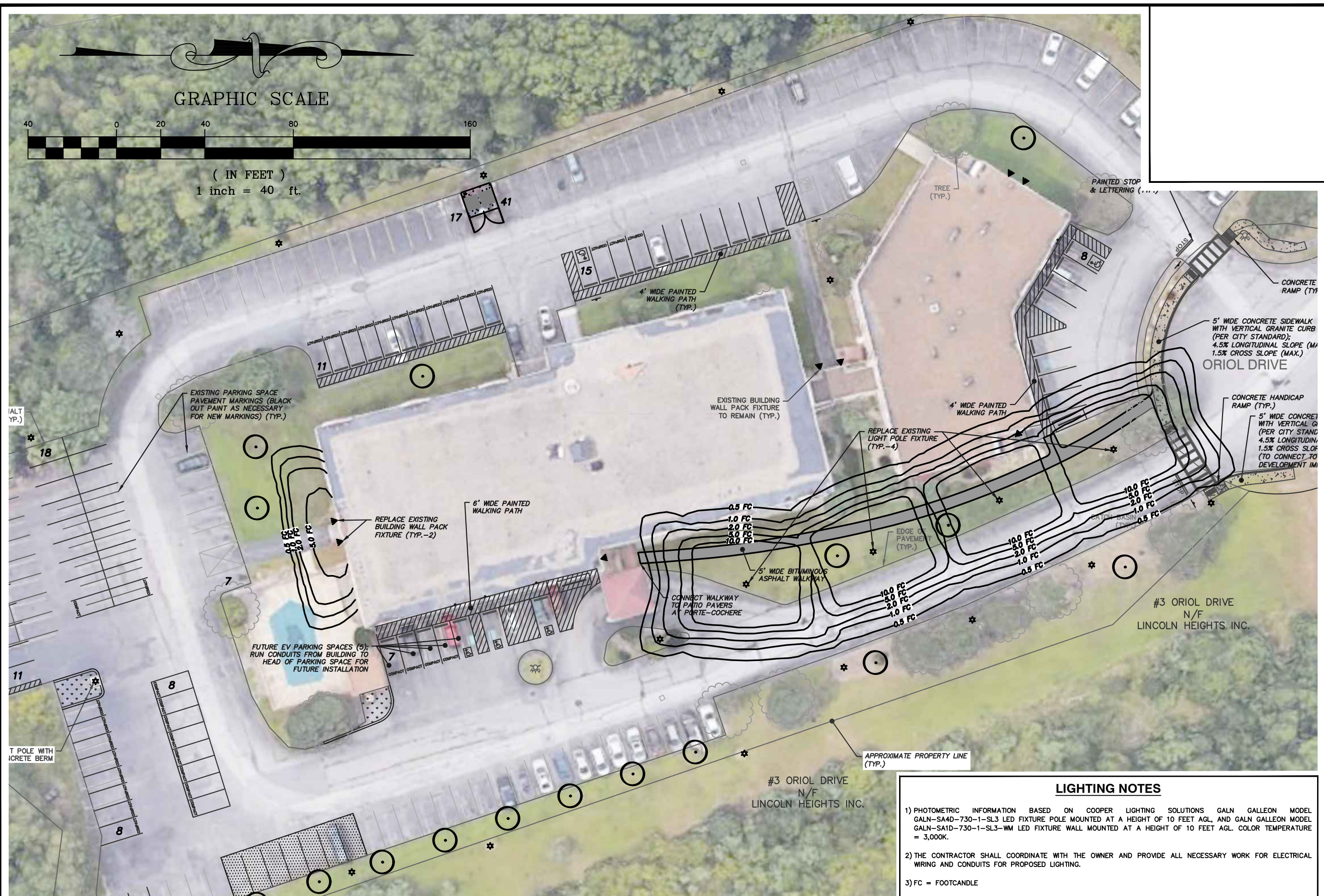
<b>SITE DETAILS - 2</b>		PRJ. NO.: 22147
<b>PERMANENT SUPPORTIVE HOUSING</b>		CHK. BY: MRA
<b>50 ORIOLE DRIVE, WORCESTER, MA 01605</b>		DRW. BY: ROM
WORCESTER COMMUNITY HOUSING RESOURCES		DES. BY: ROM
11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01609		SCALE: AS NOTED
PREPARED FOR:	DATE: 12/13/22	



GRAPHIC SCALE



( IN FEET )  
1 inch = 40 ft.



LIGHTING NOTES

- PHOTOMETRIC INFORMATION BASED ON COOPER LIGHTING SOLUTIONS GALN GALLEON MODEL GALN-SA4D-730-1-SL3 LED FIXTURE POLE MOUNTED AT A HEIGHT OF 10 FEET AGL, AND GALN GALLEON MODEL GALN-SA1D-730-1-SL3-WM LED FIXTURE WALL MOUNTED AT A HEIGHT OF 10 FEET AGL. COLOR TEMPERATURE = 3,000K.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND PROVIDE ALL NECESSARY WORK FOR ELECTRICAL WIRING AND CONDUITS FOR PROPOSED LIGHTING.
- FC = FOOTCANDLE

PROPOSED LIGHTING IMPROVEMENT SKETCH  
PERMANENT SUPPORTIVE HOUSING  
50 ORIOLE DRIVE, WORCESTER, MA 01605



100 GROVE STREET | WORCESTER, MA 01605  
T 508-856-0321 | F 508-856-0387  
gravesengineering.com

NO.	DATE	BY	REVISIONS	DESCRIPTION

CLIENT: WORCESTER COMMUNITY HOUSING RESOURCES  
11 PLEASANT STREET, SUITE 300, WORCESTER, MA 01609  
DATE: 02/14/23 SCALE: 1"=40' DES. BY: ROM DRW. BY: ROM CHK. BY: MRA PRJ. NO.: 22147