TOWN OF BOXFORD

BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT
HARRY LEE COLE SCHOOL

STEVE CLIFFORD, DIRECTOR OF FACILITIES
BOXFORD PUBLIC SCHOOLS
28 MIDDLETON ROAD
BOXFORD, MA 01921
978-887-0771 ext. 225

JAMES PEARSON, PE, TECHNICAL SPECIALIST
55 WALKERS BROOK DRIVE
READING, MA 01867
978-532-1900

COMMONWEALTH OF MASSACHUSETTS
JAMES L. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER
11/22/2022

- RENDERING FOR ILLUSTRATIVE PURPOSES ONLY -

FOR PERMITTING - NOT FOR CONSTRUCTION

MAY 6, 2022
REVISED NOVEMBER 22, 2022

LANDSCAPE ARCHITECTURAL, CIVIL, ENVIRONMENTAL, ELECTRICAL AND UTILITY DESIGN:
55 Walkers Brook Drive, Suite 100
Reading, MA 018667
(978) 532 1900
www.westonandsampson.com

Locus Map

N

HARRY LEE COLE SCHOOL
26 MIDDLETON ROAD, BOXFORD, MA 01921

ZONING

SCHOOL:	HARRY LEE COLE SCHOOL
SITE ADDRESS:	26 and 28 MIDDLETON ROAD
PARCEL MAP/LOT	32-1-21
ZONING DISTRICT	O - OFFICIAL OR OPEN SPACE DISTRICT
OVERLY DISTRICT	NONE

Description	Required	Proposed
Minimum Lot Dimensions		
Area (Acres)	N/A	N/A
Frontage on street	N/A	N/A
Minimum Required Yard Dimensions/Setbacks		
Front Yard (1)	50	N/A
Side Yard	N/A	N/A
Rear Yard	N/A	N/A
Max. Bldg. Height		
Stories	3	N/A
Feet	35	N/A
Coverage (2)		
Building Coverage % of lot area	25%	N/A
Accessory Buildings or Structures		
Min. Bldg. Separation	20	N/A
Side/rear setbacks	20	N/A

WAIVER REQUESTS

1. **196-29. NEW DRIVEWAYS**
   B(2). DRIVEWAYS: The first 25 feet in from the paved portion of the public way shall have a max slope of 3%; the max driveway slope along the centerline shall be 12%; any slopes over 8% shall be paved. To preserve tha stability of the ex natural topography, no cut or fill in excess or 8 feet of the natural topography shall be allowed within the limits of the driveway cross section.

SHEET INDEX

GENERAL NOTES

1. TOPOGRAPHIC AND EXISTING CONDITIONS INFORMATION COMPILED BY WESTON & SAMPSON, OCTOBER 2020.
2. REFER TO EXISTING CONDITIONS LEGEND. ANY QUANTITIES SHOWN ON THE PLANS ARE FOR BIDDING PURPOSES ONLY. ALL BIDDERS ARE REQUIRED TO INSPECT THE PROJECT SITE IN ITS ENTIRETY PRIOR TO SUBMITTING THEIR BID, AND BECOME FAMILIAR WITH ALL CONDITIONS AS THEY MAY AFFECT THEIR BID. CONTRACTOR AND SUB-CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS PRIOR TO COMMENCING THE CONSTRUCTION.
3. LOCATIONS OF ANY UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF SUCH UTILITIES, PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO PROJECT REPRESENTATIVE PRIOR TO EXCAVATION WORK.
4. ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION, PERMANENT CONSTRUCTION AND WORK OF ADJACENT CONTRACTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
5. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS-BUILT" DRAWINGS.
6. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT LIMITS, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
7. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS NEEDED TO PROTECT HIS EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD AT NO EXPENSE TO THE OWNER USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
8. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.
9. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER'S REPRESENTATIVE.
10. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS, SOIL, SEDIMENT, AND FOREIGN MATERIAL AND OPERATIONAL THROUGHOUT THE LIFE OF THE CONTRACT. REMOVE ALL SOIL, SEDIMENT, DEBRIS AND FOREIGN MATERIAL FROM ALL DRAINAGE STRUCTURES.
11. CONTRACTOR'S STAGING AREA MUST BE WITHIN THE CONTRACT LIMIT LINE AND/OR IN AREAS APPROVED BY OWNER. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER.
12. THE CONTRACTOR SHALL KEEP ALL STREETS AND WALKS THAT ARE NOT RESTRICTED FROM PUBLIC USE DURING CONSTRUCTION BROOM CLEAN AT ALL TIMES. THE CONTRACTOR SHALL USE ACCEPTABLE METHODS AND MATERIALS TO MAINTAIN ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION.
13. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH TOWN OF BOXFORD ORDINANCES.

EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. INCLUDING BUT NOT LIMITED TO, DRAINAGE INLETS, MANHOLES AND CATCH BASINS WITHIN THE LIMIT OF WORK AND DRAINAGE STRUCTURES OUTSIDE THE LIMIT OF WORK THAT ARE IMPACTED BY THE WORK FOR THE ENTIRE DURATION OF CONSTRUCTION. REFER TO SPECIFICATIONS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL MEET ALL OF THE STATE OF MASSACHUSETTS D.E.P. REGULATIONS FOR SEDIMENT AND EROSION CONTROL AT NO ADDITIONAL COST TO THE OWNER.
4. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE.
5. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES. SEE SITE PLAN, NOTES, DETAILS AND SPECIFICATIONS.

DEMOLITION & SITE PREPARATION NOTES

1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS.
3. UNLESS SPECIFICALLY NOTED TO BE REMOVED AND STOCKPILED (R&S) OR REUSED AND RELOCATED (R&R), ALL SITE FEATURES CALLED TO BE REMOVED AND DEMOLISHED (R&D) SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC. TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO ADDITIONAL COST TO THE OWNER.
4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
6. IT SHALL BE THE CONTRACTOR'S OPTION, WITH CONCURRENCE OF THE OWNER'S REPRESENTATIVE, TO REUSE EXISTING GRAVEL PAVEMENT BASE COURSE IF IT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS FOR GRAVEL BORROW.

LAYOUT & MATERIALS NOTES

1. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, MATERIALS, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
2. THE LAYOUT OF SITE AMENITIES MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
4. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS OF ALL PROPOSED GATES.
7. ALL LAYOUT LINES, OFFSETS, OR REFERENCES TO LOCATING OBJECTS ARE EITHER PARALLEL OR PERPENDICULAR UNLESS OTHERWISE DESIGNATED WITH ANGLE OFFSETS NOTED.
8. REFER TO DETAIL DRAWINGS FOR CONSTRUCTION DETAILS.
9. ONLY CLEAN FILL SHALL BE USED. CLEAN FILL SHALL BE CLEAR FROM TRASH, DEBRIS, ASPHALT, BRICK, CONCRETE, METAL, WOOD, RECYCLED CONSTRUCTION MATERIALS, OR OTHER DELETERIOUS MATERIALS.
10. TO FACILITATE LAYOUT OF PROPOSED SITE FEATURES AND FACILITIES, LAYOUT INFORMATION FOR CERTAIN FUTURE WORK, WHICH IS NOT INCLUDED WITHIN THE SCOPE OF THIS CONTRACT HAS BEEN PROVIDED ON THE LAYOUT AND MATERIALS PLAN FOR INFORMATION ONLY.

GRADING & DRAINAGE NOTES

1. ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF WATER, UTILITY STORMWATER DRAINAGE AND/OR SEPTIC UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE TOWN, AND STATE OF MASSACHUSETTS.
2. THE CONTRACTOR SHALL VERIFY ALL GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER'S REPRESENTATIVE.
3. ALL GRADING IS TO BE SMOOTH AND CONTINUOUS WHERE PROPOSED SURFACE MEETS EXISTING SURFACE, BLEND THE TWO PAVEMENTS AND ELIMINATE ROUGH SPOTS AND ABRUPT GRADE CHANGES AND MEET LINE AND GRADE OF EXISTING CONDITIONS WITH NEW IMPROVEMENTS.
4. CONTRACTOR SHALL ENSURE ALL AREAS ARE PROPERLY PITCH TO DRAIN, WITH NO SURFACE WATER PONDING OR PUDDLING.
5. ALL NEW WALKWAYS MUST CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT (ADA), AND MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) REGULATIONS: WALKWAYS SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF (1.5%) PERCENT AND THE RUNNING SLOPE (PARALLEL TO THE DIRECTION OF TRAVEL) BETWEEN 1% MIN. AND 4.5% MAX. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE PRIOR TO CONTINUING WORK.
6. ALL UTILITY GRATES, COVERS OR OTHER SURFACE ELEMENTS INTENDED TO BE EXPOSED AT GRADE SHALL BE FLUSH WITH THE ADJACENT FINISHED GRADE AND ADJUSTED TO PROVIDE A SMOOTH TRANSITION AT ALL EDGES.
7. THE CONTRACTOR SHALL CONFIRM AND/OR SET SUBGRADE ELEVATIONS TO ALLOW FOR POSITIVE DRAINAGE AND PROVIDE EROSION CONTROL DEVICES, STRUCTURES, MATERIALS AND CONSTRUCTION METHODS TO DIRECT SILT MIGRATION AWAY FROM DRAINAGE AND OTHER UTILITY SYSTEMS, PUBLIC/PRIVATE STREETS AND WORK AREAS. CLEAN BASINS REGULARLY AND AT THE END OF THE PROJECT.
8. EXCAVATION REQUIRED WITHIN PROXIMITY OF KNOWN EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.
9. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
10. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 5 FEET OF PROPOSED CONTOURS.
11. RESTORE ALL DISTURBED AREAS AND LIMITS OF ALL REMOVALS TO LOAM AND SEED (L&S) UNLESS OTHERWISE NOTED.
12. SEE EARTHWORK SECTION OF SPECIFICATIONS FOR EXCAVATION AND FILLING PROCEDURES.

PLANTING NOTES

1. THE DEPTH OF THE TOPSOIL LOAM FOR ALL PROPOSED LAWN AREAS SHALL BE 6" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED.
2. ALL REFERENCES TO LOAM AND SEED REFER TO HYDROMULCH SEEDED LAWN.
3. ANY DISCREPANCIES BETWEEN THE PLANS AND THE PLANTING SCHEDULE, CONTRACTOR SHALL OWN THE LARGER QUANTITY AND SIZE AT NO ADDITIONAL COST TO THE OWNER.

ABBREVIATIONS

GENERAL

PROP	PROPOSED
ADJ	ADJUST
BIT. CONC.	BITUMINOUS CONCRETE
CEM. CONC.	CEMENT CONCRETE
B	BASELINE
N.T.S.	NOT TO SCALE
B.M.	BENCH MARK
ABAN	ABANDON
GRAN. CURB	GRANITE CURB
EXIST. (OR EX.)	EXISTING
FDN	FOUNDATION
F.L. (OR F)	FLOW LINE
P	PROPERTY LINE
PVMT	PAVEMENT
RC	REINFORCED CONCRETE
REM	REMOVE
RET	RETAIN
R.O.W.	RIGHT-OF-WAY
R&R	REMOVE AND RELOCATE
R,R&R	REMOVE, RELOCATED AND RESET
R&S	REMOVE AND SALVAGE
R&D	REMOVE AND DISPOSE
P&P	PRESERVE AND PROTECT
SB	STONE BOUND
NIC	NOT IN CONTRACT
H.C.	HANDICAP
WCR	WHEELCHAIR RAMP
HMA	HOT MIX ASPHALT
G.C.	GENERAL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR

UTILITIES

GICI	GUTTER INLET W/ CURB INLET
CBCI	CATCH BASIN W/ CURB INLET
CB	CATCH BASIN
C.I.T.	CHANGE IN TYPE
F&G	FRAME AND GRATE
F&C	FRAME AND COVER
CI	CURB INLET
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON PIPE
GI	GUTTER INLET
HYD	HYDRANT
INV.	INVERT ELEVATION
UP	UTILITY POLE
SMH	SEWER MANHOLE
WG	WATER GATE
DS	DOWN SPOUT
HDPE	HIGH DENSITY POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
DMH	DRAIN MANHOLE
LB	LEACHING BASIN
CI	CAST IRON
OCS	OUTLET CONTROL STRUCTURE
OGT	OIL AND GRIT TRAP
VC	VITRIFIED CLAY PIPE
LP	LIGHT POLE
SWTU	STORM WATER TREATMENT UNIT
HH	HANDHOLE

ALIGNMENT/GRADING

BW	BOTTOM OF WALL
BC	BOTTOM OF CURB
PI	POINT OF INTERSECTION
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVATURE
PVT	POINT OF VERTICAL TANGENCY
ELEV	ELEVATION
CC	CENTER OF CURVE
H.P.	HIGH POINT
L.P.	LOW POINT
R	RADIUS OF CURVATURE
STA	STATION
S.S.D.	STOPPING SIGHT DISTANCE
TC	TOP OF CURB
TW	TOP OF WALL
CL.	CENTER LINE

Project:
BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

TOWN OF BOXFORD INCORPORATED 1685 MASSACHUSETTS

HARRY LEE COLE SCHOOL
26 AND 28 MIDDLETON ROAD
BOXFORD, MA 01921

Weston & Sampson

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55 Walkers Brook Drive, Suite 100
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978.532.1900 800.SAMPSON
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description
1	10/06/22	REV PER CLIENT
2	11/09/22	REV PER CON COM
3	11/22/22	REV PER CON COM

Seal:
COMMONWEALTH OF MASSACHUSETTS
JAMES I. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER
11/22/2022

Issued For:
FOR PERMITTING - NOT FOR CONSTRUCTION

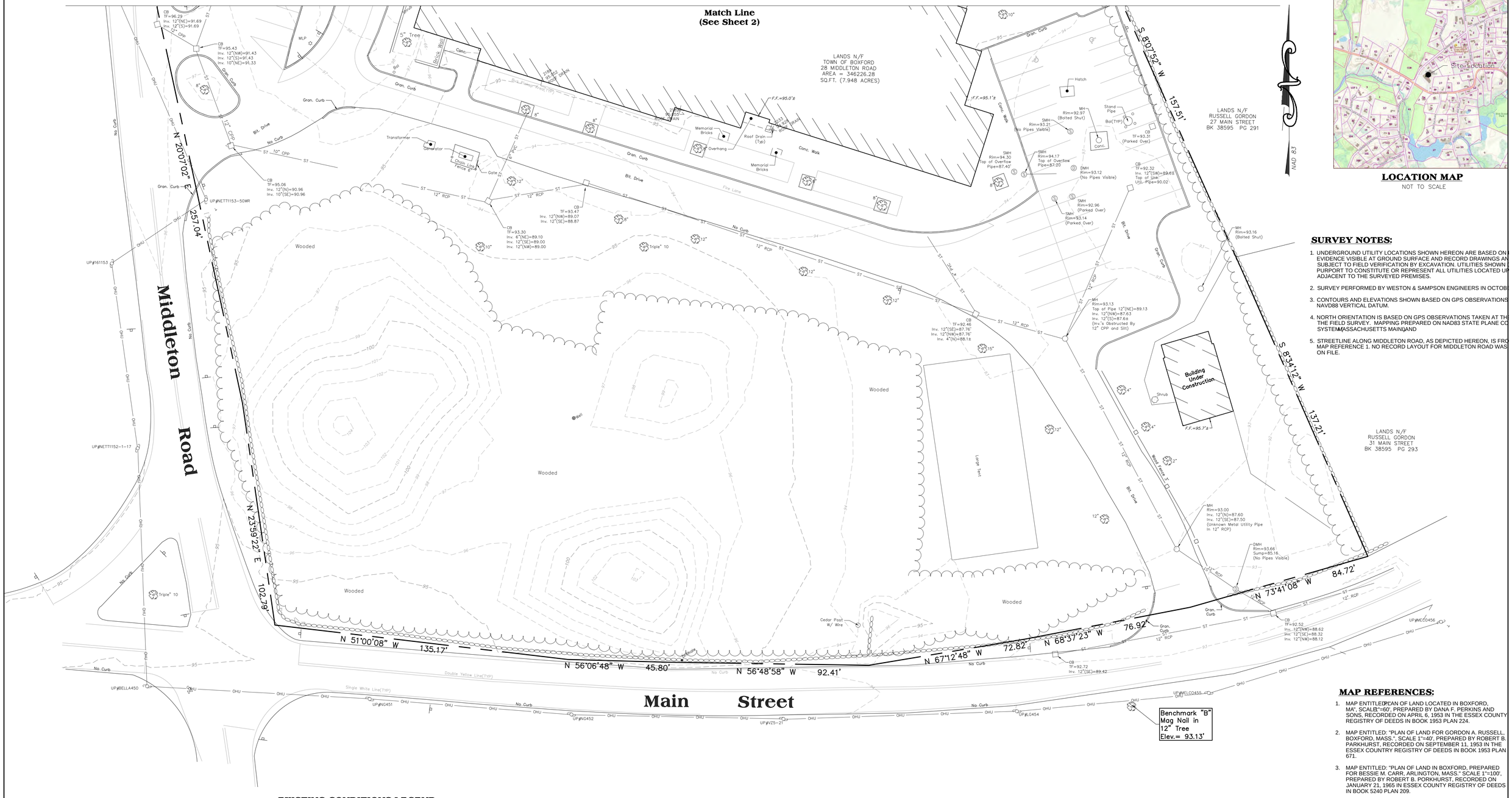
Scale: AS SHOWN
Date: MAY 6, 2022
Drawn By: EJA
Reviewed By: CB
Approved By: JIP

W&S Project No.: ENG20-0865
W&S File No.:

Drawing Title:
LEGEND, GENERAL NOTES & SYMBOLS

Sheet Number:
C001

Rev. 1.8 Date: 10/24/2019



LOCATION MAP

NOT TO SCALE

SURVEY NOTES:

1. UNDERGROUND UTILITY LOCATIONS SHOWN HEREON ARE BASED ON I EVIDENCE VISIBLE AT GROUND SURFACE AND RECORD DRAWINGS AN SUBJECT TO FIELD VERIFICATION BY EXCAVATION. UTILITIES SHOWN PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITIES LOCATED UP ADJACENT TO THE SURVEYED PREMISES.
2. SURVEY PERFORMED BY WESTON & SAMPSON ENGINEERS IN OCTOB
3. CONTOURS AND ELEVATIONS SHOWN BASED ON GPS OBSERVATIONS NAVD88 VERTICAL DATUM.
4. NORTH ORIENTATION IS BASED ON GPS OBSERVATIONS TAKEN AT TH THE FIELD SURVEY. MAPPING PREPARED ON NAD83 STATE PLANE CO SYSTEM(MASSACHUSETTS MAIN)AND
5. STREETLINE ALONG MIDDLETON ROAD, AS DEPICTED HEREON, IS FRO MAP REFERENCE 1. NO RECORD LAYOUT FOR MIDDLETON ROAD WAS ON FILE.

MAP REFERENCES:

1. MAP ENTITLED"PLAN OF LAND LOCATED IN BOXFORD, MA", SCALE"=60', PREPARED BY DANA F. PERKINS AND SONS, RECORDED ON APRIL 6, 1953 IN THE ESSEX COUNTY REGISTRY OF DEEDS IN BOOK 1953 PLAN 224.
2. MAP ENTITLED: "PLAN OF LAND FOR GORDON A. RUSSELL, BOXFORD, MASS.", SCALE 1"=40', PREPARED BY ROBERT B. PARKHURST, RECORDED ON SEPTEMBER 11, 1953 IN THE ESSEX COUNTRY REGISTRY OF DEEDS IN BOOK 1953 PLAN 671.
3. MAP ENTITLED: "PLAN OF LAND IN BOXFORD, PREPARED FOR BESSIE M. CARR, ARLINGTON, MASS." SCALE 1"=100', PREPARED BY ROBERT B. PORKHURST, RECORDED ON JANUARY 21, 1965 IN ESSEX COUNTY REGISTRY OF DEEDS IN BOOK 5240 PLAN 209.
4. MAP ENTITLED: "PLAN OF LAND IN BOXFORD PREPARED FOR WINTHROP P. HAYNES ET. AL., BOXFORD MASS", SCALE 1"=100', PREPARED BY ROBERT PORKHURST, RECORDED ON SEPTEMBER 18, 1974 IN THE ESSEX COUNTRY REGISTRY OF DEEDS IN BOOK 131 PLAN 91.
5. MAP ENTITLED: "DEFINITIVE SUBDIVISION PLAN OF LAND IN BOXFORD, MASS, PREPARED FOR MOTNERAK LIMITED PARTNERSHIP SHOWING CARR WAY AND LOT #1", PREPARED BY THOMAS E. NEVE ASSOCIATES, INC. RECORDED ON NOVEMBER 18, 1994 IN THE ESSEX COUNTY REGISTRY OF DEEDS IN BOOK 294 PLAN 67.

EXISTING CONDITIONS LEGEND

- EDGE OF WOODS
- DECIDUOUS TREE
- CONIFEROUS TREE
- SHRUB/BUSH
- SIGN
- UTILITY POLE
- LIGHT POLE
- HYDRANT
- WATER SHUTOFF
- GAS VALVE
- WATER VALVE
- MONUMENT
- IRON PIN / IRON ROD
- HANDICAP SPACE
- ST — STORM SEWER LINE
- S — SANITARY SEWER LINE
- W — WATER LINE
- G — GAS LINE
- SIG — SIGNAL WIRE LINE
- C — CABLE LINE
- FO — FIBER OPTIC LINE
- LPS — LOW PRESSURE SEWER LINE
- E — ELECTRIC LINE
- OHU — OVERHEAD UTILITIES
- T — TELEPHONE LINE
- SANITARY MANHOLE (SMH)
- DRAINAGE MANHOLE (DMH)
- CATCHBASIN (CB)
- METAL POST/BOLLARD (BOL)
- HAND HOLE
- ELEC. METER
- GAS METER
- PROPERTY LINE
- EASEMENT
- 10 — MAJOR CONTOUR LINE
- 9 — MINOR CONTOUR LINE
- W/F — WOOD FRAMED
- o — CHAIN LINK FENCE
- o — WOOD FENCE
- x — FENCE
- CO — CLEANOUT
- Mon.Well MW — MONITORING WELL
- STONEWALL
- ELECTRIC MANHOLE (MHE)
- UNKNOWN MANHOLE
- TELEPHONE MANHOLE (MHT)
- VENT PIPE
- CNO — COULD NOT OPEN
- FLOW DIRECTION
- MAG NAIL — MAGNETIC CONCRETE NAIL
- WLF #TOB1 — WETLAND FLAG (DELINEATED BY OTHERS)
- WET—TR — WETLAND LINE
- EDGE OF WATER (BY AERIAL IMAGE)
- ELECTRIC PEDESTAL
- GUY WIRE
- F.F.=317.7'± x — FINISHED FLOOR ELEVATION
- x 318.5' — SPOT ELEVATION
- MB — MAILBOX

20 10 0 20 40 60
GRAPHIC SCALE 1" = 20

I CERTIFY THAT THE PROPERTY LINES SHOWN ARE THE LINES DIVIDING EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

Michael G. Wilmes, L.S. 34322 — Date 11/11/20

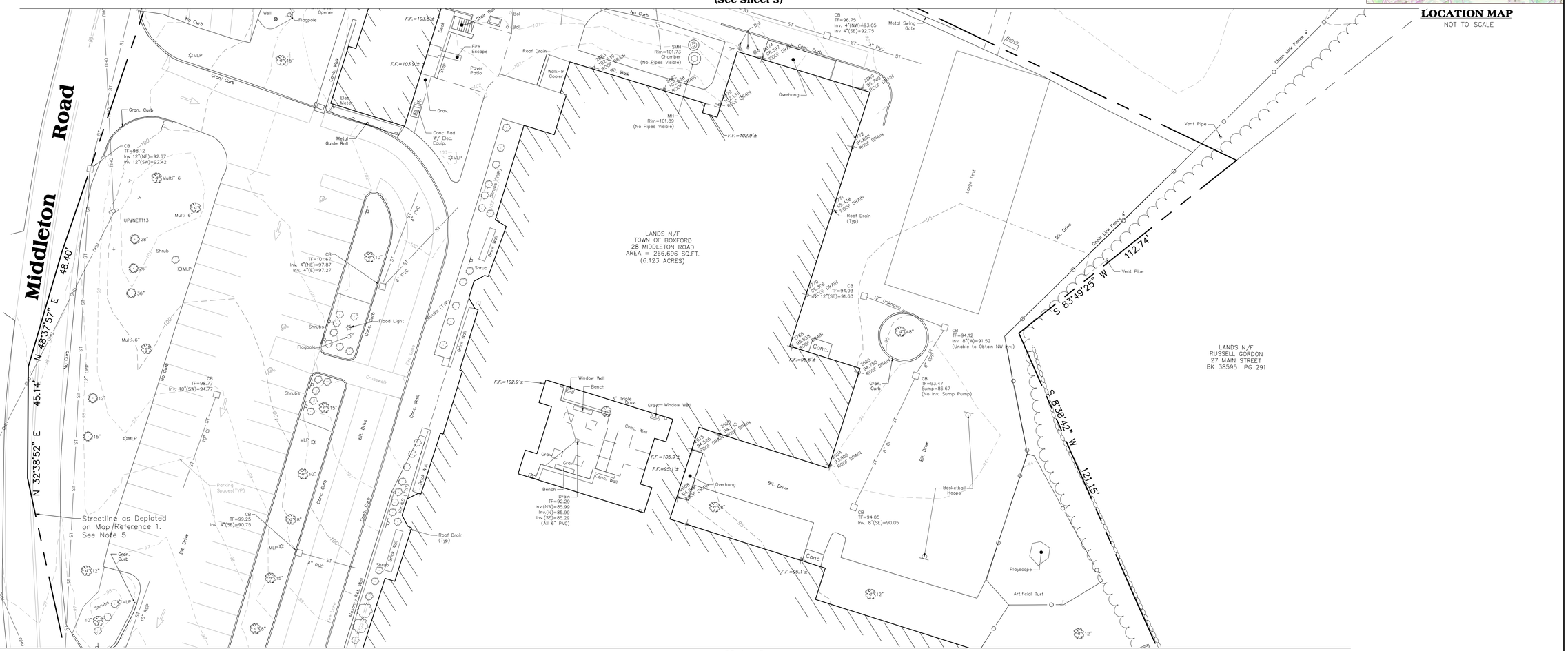
REVISIONS	
DATE	DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS
MICHAEL G. WILMES
34322
REGISTERED
PROFESSIONAL
LAND SURVEYOR

BOUNDARY AND TOPOGRAPHIC MAP OF
LANDS OF TOWN OF BOXFORD
HARRY LEE COLE SCHOOL
TOWN OF BOXFORD
COUNTY OF ESSEX — COMMONWEALTH OF MASSACHUSETTS

Weston & Sampson
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100,Reading, MA 01867

CAD FILE: ENG20-0870 Harry Lee Cole
DATE: NOV. 11, 2020 — SHEET 1 OF 3
SCALE: 1"=20' — DRAWING No. C 002



EXISTING CONDITIONS LEGEND

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- x — FENCE
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- MW — MONITORING WELL
- STONEWALL
- (E) ELECTRIC MANHOLE (MHE)
- (U) UNKNOWN MANHOLE
- (T) TELEPHONE MANHOLE (MHT)
- VENT PIPE
- CNO — COULD NOT OPEN
- FLOW DIRECTION
- MAG NAIL — MAGNETIC CONCRETE NAIL
- WLF #TOB1 — WETLAND FLAG (DELINEATED BY OTHERS)
- WET—TR — WETLAND LINE
- EDGE OF WATER (BY AERIAL IMAGE)
- P — ELECTRIC PEDESTAL
- GUY WIRE
- F.F.=317.7'± × — FINISHED FLOOR ELEVATION
- × 318.5' — SPOT ELEVATION
- MB — MAILBOX

I CERTIFY THAT THE PROPERTY LINES SHOWN ARE THE LINES DIVIDING EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

Michael G. Wilmes, L.S. 34322 — Date 11/11/20

REVISIONS	
DATE	DESCRIPTION

(SEE SHEET 1 FOR SURVEY NOTES)

BOUNDARY AND TOPOGRAPHIC MAP OF

LANDS OF TOWN OF BOXFORD
HARRY LEE COLE SCHOOL

TOWN OF BOXFORD

COUNTY OF ESSEX — COMMONWEALTH OF MASSACHUSETTS

Weston & Sampson

Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100,Reading, MA 01867

CAD FILE: ENG20-0870 Harry Lee Cole
DATE: NOV. 11, 2020 — SHEET 2 OF 3
SCALE: 1"=20' — DRAWING No. C003

EXISTING CONDITIONS LEGEND

- EDGE OF WOODS
- DECIDUOUS TREE
- CONIFEROUS TREE
- SHRUB/BUSH
- SIGN
- UTILITY POLE
- LIGHT POLE
- HYDRANT
- WATER SHUTOFF
- GAS VALVE
- WATER VALVE
- MONUMENT
- IRON PIN / IRON ROD
- HANDICAP SPACE
- HAND HOLE
- ELEC. METER
- GAS METER
- PROPERTY LINE
- EASEMENT
- 10 MAJOR CONTOUR LINE
- 9 MINOR CONTOUR LINE
- W/F WOOD FRAMED
- CHAIN LINK FENCE
- WOOD FENCE
- X FENCE
- CO CLEANOUT
- Mon.Well MW MONITORING WELL
- STONEWALL

- ST STORM SEWER LINE
- S SANITARY SEWER LINE
- W WATER LINE
- G GAS LINE
- SIG SIGNAL WIRE LINE
- C CABLE LINE
- FO FIBER OPTIC LINE
- LPS LOW PRESSURE SEWER LINE
- E ELECTRIC LINE
- OHU OVERHEAD UTILITIES
- T TELEPHONE LINE
- SANITARY MANHOLE (SMH)
- DRAINAGE MANHOLE (DMH)
- CATCHBASIN (CB)
- METAL POST/BOLLARD (BOL)
- ELECTRIC MANHOLE (MHE)
- UNKNOWN MANHOLE
- TELEPHONE MANHOLE (MHT)
- VENT PIPE
- CNO COULD NOT OPEN
- FLOW DIRECTION
- MAG NAIL MAGNETIC CONCRETE NAIL
- WLF #TOB1 WETLAND FLAG (DELINEATED BY OTHERS)
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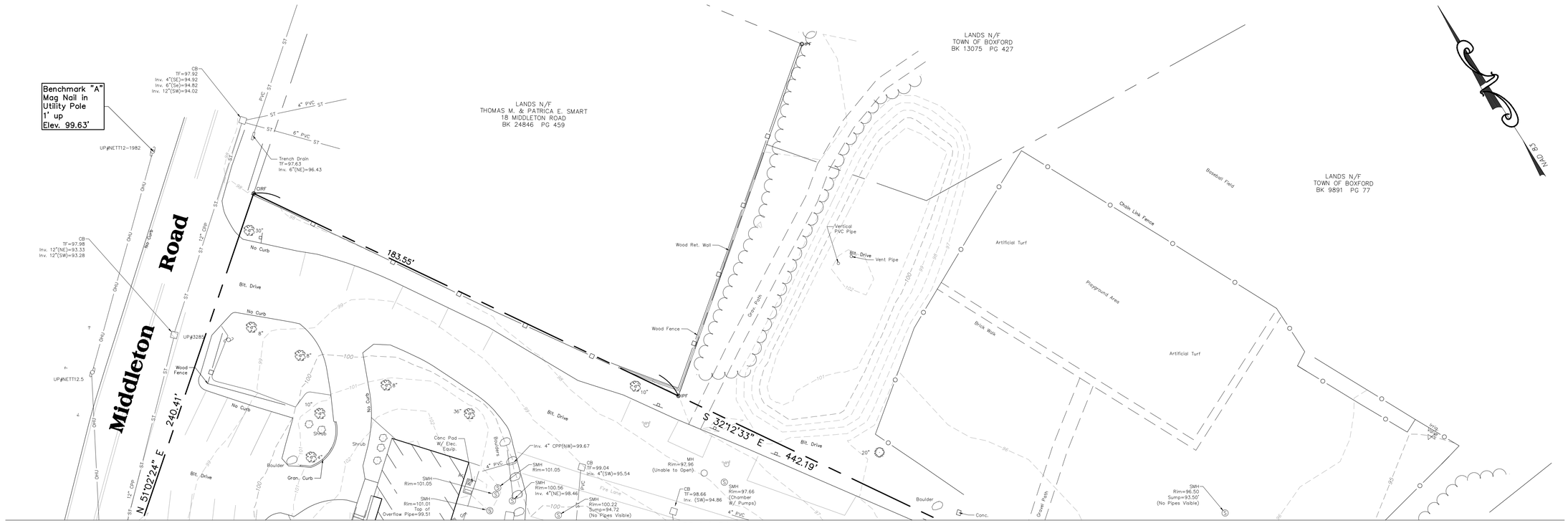
- GUY WIRE
- F.F.=317.7'± × FINISHED FLOOR ELEVATION
- × 318.5' SPOT ELEVATION
- MB MAILBOX

LOCATION MAP
NOT TO SCALE



20 10 0 20 40 60
GRAPHIC SCALE 1"= 20

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Michael G. Wilmes 11/11/20

Michael G. Wilmes, L.S. 34322 *Date*

(SEE SHEET 1 FOR SURVEY NOTES)

REVISIONS	
DATE	DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS
MICHAEL G. WILMES 34322
REGISTERED PROFESSIONAL LAND SURVEYOR

BOUNDARY AND TOPOGRAPHIC MAP OF
LANDS OF TOWN OF BOXFORD
HARRY LEE COLE SCHOOL
TOWN OF BOXFORD
COUNTY OF ESSEX COMMONWEALTH OF MASSACHUSETTS

Weston & Sampson
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100,Reading, MA 01867

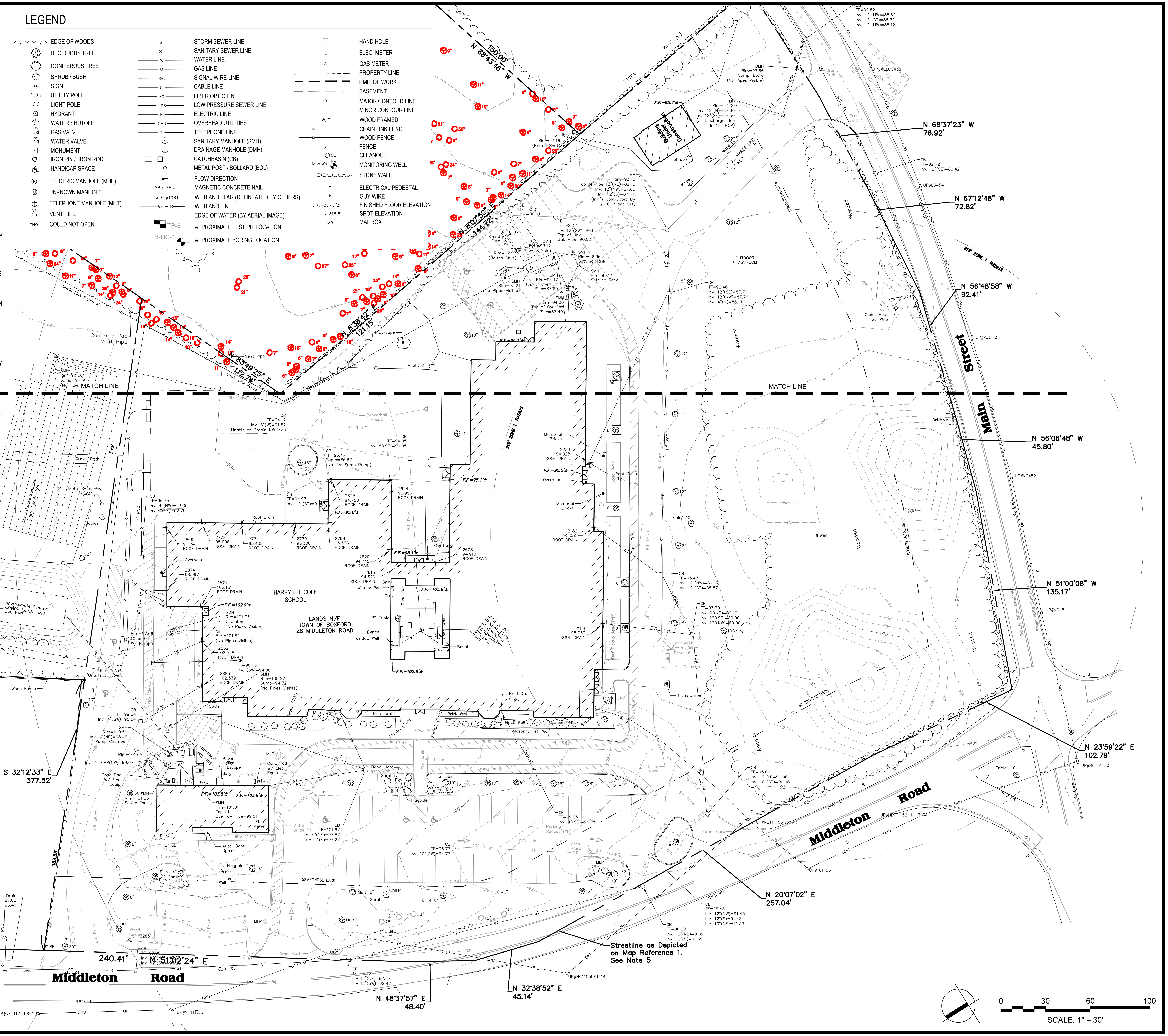
CAD FILE: ENG20-0870 Harry Lee Cole
DATE: NOV. 11, 2020
SHEET 3 OF 3
SCALE: 1"=20'
DRAWING No. C 004

SURVEY NOTES

1. UNDERGROUND UTILITY LOCATIONS SHOWN HEREON ARE BASED ON UTILITY EVIDENCE VISIBLE AT GROUND SURFACE AND RECORD DRAWINGS AND ARE SUBJECT TO FIELD VERIFICATION BY EXCAVATION. UTILITIES SHOWN DO NOT PURPORT TO CONSTITUTE OR REPRESENT ALL UTILITIES LOCATED UPON OR ADJACENT TO THE SURVEYED PREMISES.
2. SURVEY PERFORMED BY WESTON & SAMPSON ENGINEERS IN OCTOBER 2020.
3. CONTOURS AND ELEVATIONS SHOWN BASED ON GPS OBSERVATIONS ON NAVD88 VERTICAL DATUM.
4. NORTH ORIENTATION IS BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY. MAPPING PREPARED ON NAD83 STATE PLANE COORDINATE SYSTEM (MASSACHUSETTS MAINLAND).
5. STREETLINE ALONG MIDDLETON ROAD, AS DEPICTED HEREON, IS FROM THE MAP REFERENCE 1. NO RECORD LAYOUT FOR MIDDLETON ROAD WAS FOUND ON FILE.
6. EXISTING UTILITY INFORMATION PROVIDED BY TOWN RECORDS.
7. TREE SURVEY COMPLETED BY WESTON & SAMPSON ON 10/31/22 & 11/2/22.

MAP REFERENCES

1. MAP ENTITLED: "PLAN OF LAND LOCATED IN BOXFORD, MA", SCALE: 1"=60', PREPARED BY DANA F. PERKINS AND SONS, RECORDED ON APRIL 6, 1953 IN THE ESSEX COUNTY REGISTRY OF DEEDS IN BOOK 1953 PLAN 224.
2. MAP ENTITLED: "PLAN OF LAND FOR GORDON A. RUSSELL, BOXFORD, MASS.", SCALE 1"=40', PREPARED BY ROBERT B. PARKHURST, RECORDED ON SEPTEMBER 11, 1953 IN THE ESSEX COUNTRY REGISTRY OF DEEDS IN BOOK 1953 PLAN 671.
3. MAP ENTITLED: "PLAN OF LAND IN BOXFORD, PREPARED FOR BESSIE M. CARR, ARLINGTON, MASS." SCALE 1"=100', PREPARED BY ROBERT B. PORKHURST, RECORDED ON JANUARY 21, 1965 IN ESSEX COUNTY REGISTRY OF DEEDS IN BOOK 5240 PLAN 209.
4. MAP ENTITLED: "PLAN OF LAND IN BOXFORD PREPARED FOR WINTHROP P. HAYNES ET. AL., BOXFORD MASS", SCALE 1"=100', PREPARED BY ROBERT PORKHURST, RECORDED ON SEPTEMBER 18, 1974 IN THE ESSEX COUNTRY REGISTRY OF DEEDS IN BOOK 131 PLAN 91.
5. MAP ENTITLED: "DEFINITIVE SUBDIVISION PLAN OF LAND IN BOXFORD, MASS, PREPARED FOR MOTNERAK LIMITED PARTNERSHIP SHOWING CARR WAY AND LOT #1", PREPARED BY THOMAS E. NEVE ASSOCIATES, INC, RECORDED ON NOVEMBER 18, 1994 IN THE ESSEX COUNTY REGISTRY OF DEEDS IN BOOK 294 PLAN 67.



Project:
BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

TOWN OF BOXFORD INCORPORATED 1685 MASSACHUSETTS

HARRY LEE COLE SCHOOL
26 AND 28 MIDDLETON ROAD
BOXFORD, MA 01921

Weston & Sampson

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Consultants:

Revisions:

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2	11/09/22	REV PER CON COM
3	11/22/22	REV PER CON COM

Seal:

COMMONWEALTH OF MASSACHUSETTS JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
11/22/2022

Issued For:

FOR PERMITTING - NOT FOR CONSTRUCTION

Scale:	AS SHOWN
Date:	MAY 6, 2022
Drawn By:	EJA
Reviewed By:	CB
Approved By:	JIP
W&S Project No.:	ENG20-0865
W&S File No.:	

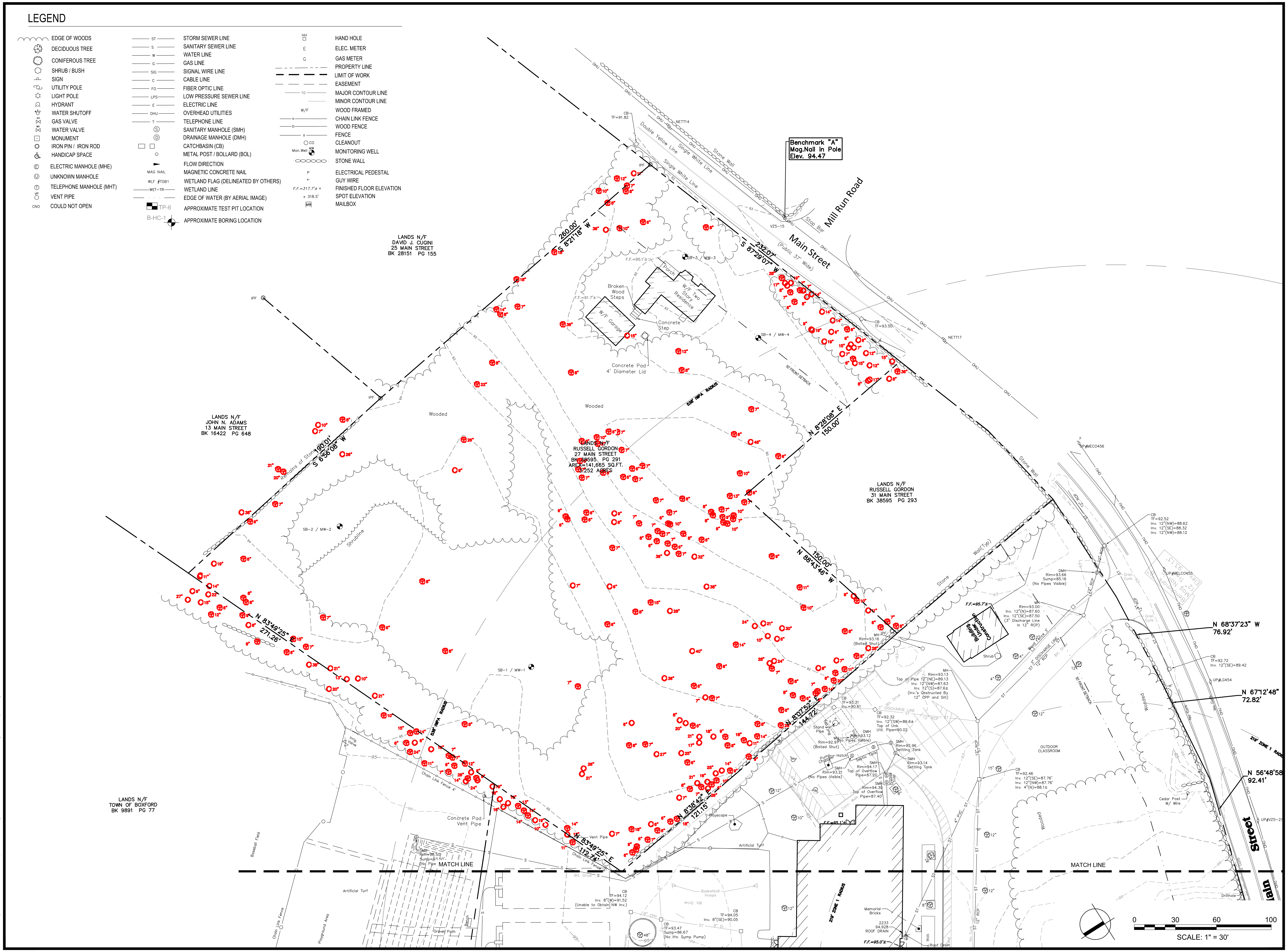
Drawing Title:

EXISTING CONDITIONS PLAN

Sheet Number:

C100

Rev. 1.8 Date: 10/24/2019



Project:
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COMMONWEALTH OF MASSACHUSETTS JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
11/22/2022

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Drawing Title:

EXISTING CONDITIONS PLAN

Sheet Number:

C101

Rev: 1.8 Date: 10/24/2019

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- R&D CEMENT CONCRETE PAVEMENT, FULL DEPTH, COMPLETE
- RECLAIM BITUMINOUS CONCRETE PAVEMENT, COMPLETE
- STRIP & STOCKPILE TOPSOIL, TYP.
- CLEAR AND GRUB, TYP.
- CONSTRUCTION ENTRANCE
- 6' HT. CONSTRUCTION FENCE, TYP.
- EROSION CONTROLS
- SAWCUT
- R&S EX. GRANITE CURBING, SEE NOTE #1.
- R&D ALL CONCRETE CURB, COMPLETE
- PROTECT SITE ELEMENT TO REMAIN
- PROTECT IN PLACE EX. SITE FEATURE
- R&D LIGHT POLE, COMPLETE
- R&D SITE ELEMENT, COMPLETE
- INLET SEDIMENT CONTROL

NOTES:

1. ALL GRANITE CURBING CALLED OUT AS R&S SHALL BE CAREFULLY STOCKPILED FOR REUSE ON SITE. PIECES WITH BREAKS, CHIPS, GASHES OR IN OTHERWISE POOR CONDITION SHALL NOT BE USED. ALL PIECES PROPOSED FOR REUSE SHALL BE MARKED BY THE CONTRACTOR AND APPROVED IN THE FIELD BY THE OWNER'S REPRESENTATIVE PRIOR TO REINSTALLATION. NEW VERTICAL GRANITE CURBING WILL BE NEEDED TO SUPPLEMENT THE EXISTING QUANTITIES. THE CONTRACTOR IS RESPONSIBLE FOR QUANTIFYING THE PIECES AVAILABLE FOR REUSE AND INCLUDING THE QUANTITY OF NEW VERTICAL GRANITE CURB THAT WILL SUPPLEMENT WHAT CAN BE SALVAGED.
2. PRIOR TO REMOVAL CONTRACTOR SHALL FIELD VERIFY ALL EX. UTILITIES SHOWN AS R&D. CONTRACTOR SHALL R&D ALL LINES SHOWN AND CUT, CAP AND ABANDON ONLY AS NECESSARY.
3. ALL CLEARING AND GRUBBING IS TO TAKE PLACE ONLY WITHIN THE LIMITS OF WORK. THE LIMITS OF WORK SHALL BE DELINEATED BY A LICENSED MASSACHUSETTS LAND SURVEYOR PRIOR TO THE COMMENCEMENT OF ANY TREE CLEARING AND GRUBBING.
4. THE STOCKPILE LIMITS AS SHOWN ON THIS PLAN WILL ALLOW THE STORAGE OF UP TO 375-CY± OF MATERIAL WHEN STAGED UP TO A HEIGHT OF 10-FT.

0 40 80 130

SCALE: 1" = 40'

Project:

BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

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Seal:

JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

11/22/2022

Issued For:

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Drawn By:	EJA
Reviewed By:	CB
Approved By:	JIP

W&S Project No.: ENG20-0865
W&S File No.:

Drawing Title:

SITE PREPARATION & EROSION & SEDIMENT CONTROL PLAN

Sheet Number:

C110

Rev. 1.8 Date: 10/24/2019

0 40 80 130

SCALE: 1" = 40'

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE PROTECTION (SEE DETAIL 4 ON C500)
- R&D EXISTING TREE OR SHRUB, GRIND STUMPS 24" BELOW GRADE, TYP.

NOTES:

1. ALL CLEARING AND GRUBBING IS TO TAKE PLACE ONLY WITHIN THE LIMITS OF WORK. ALL TREE REMOVAL SHALL BE COORDINATED WITH THE OWNER AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE LIMITS OF WORK SHALL BE DELINEATED BY A LICENSED MASSACHUSETTS LAND SURVEYOR PRIOR TO THE COMMENCEMENT OF ANY TREE CLEARING.
2. DECIDUOUS TREES ON SITE ARE PREDOMINANTLY A MIX OF OAK, MAPLE, BEECH, AND ASH, WHILE CONIFEROUS TREES ARE PREDOMINANTLY PINE.

Project:

BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

TOWN OF BOXFORD INCORPORATED 1685 MASSACHUSETTS

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Seal:

COMMONWEALTH OF MASSACHUSETTS
JAMES I. PEARSON
CIVIL
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W&S File No.:	

Drawing Title:

TREE REMOVAL & PROTECTION PLAN

Sheet Number:

C111

Rev: 1.8 Date: 10/24/2019

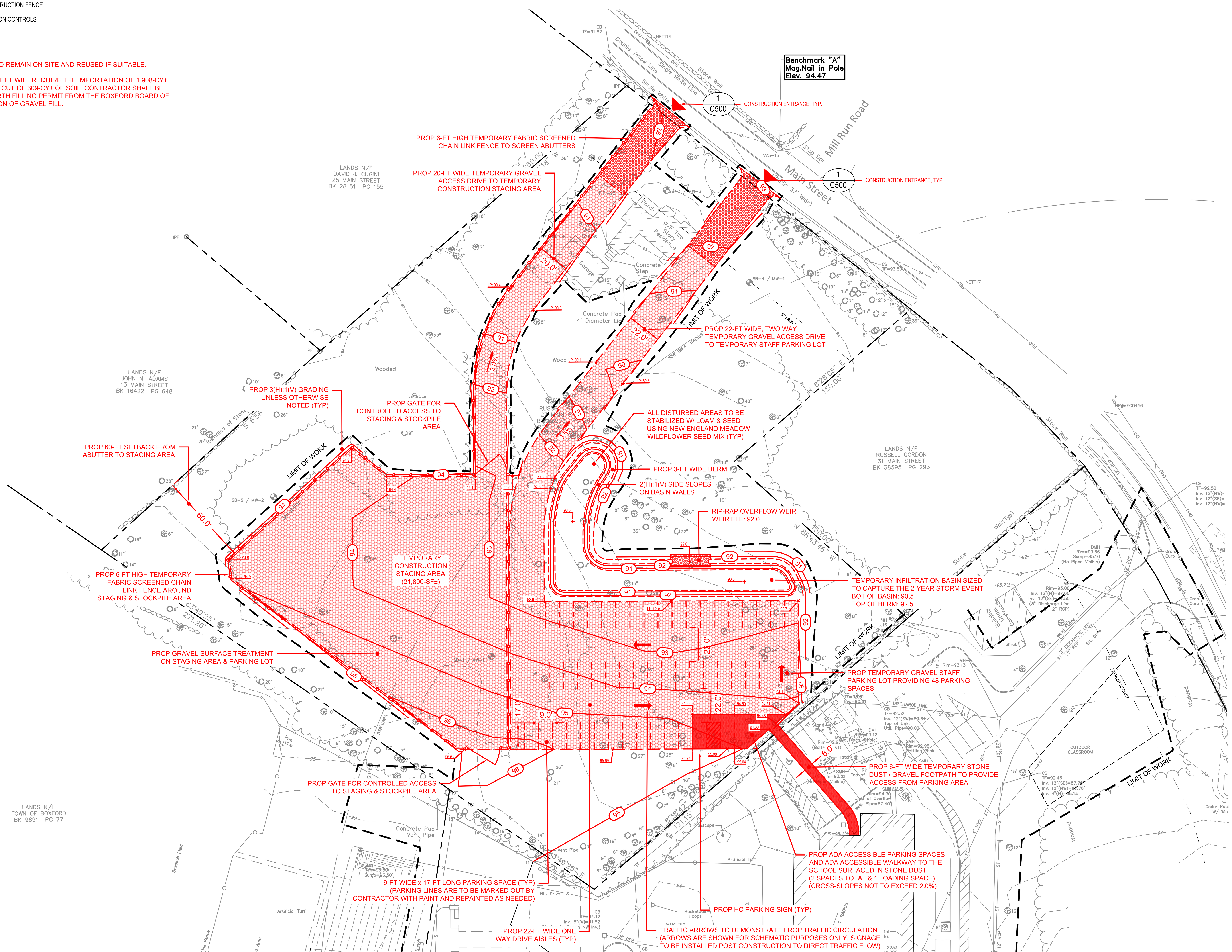
\\wse03.local\WSE\Projects\MA\Boxford MA\ENG20-0865 Cole and Spofford Schools Site\04 Design Services\03 Civil\01 CADD\04 Plan Set Sheets\C102- Site Preparation & Erosion Plan Harry Lee Cole.dwg

LEGEND

(line symbol)	PROPERTY LINE
(line symbol)	LIMIT OF WORK
(line symbol)	CONSTRUCTION FENCE
(line symbol)	EROSION CONTROLS

NOTES:

1. ALL MATERIAL STRIPPED IS TO REMAIN ON SITE AND REUSED IF SUITABLE.
2. EARTHWORK ON 27 MAIN STREET WILL REQUIRE THE IMPORTATION OF 1,908-CY± OF GRAVEL, AND PRODUCE A CUT OF 309-CY± OF SOIL. CONTRACTOR SHALL BE REQUIRED TO OBTAIN AN EARTH FILLING PERMIT FROM THE BOXFORD BOARD OF HEALTH FOR THE IMPORTATION OF GRAVEL FILL.



0 30 60 100

SCALE: 1" = 30'

Project:

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Seal:

COMMONWEALTH OF MASSACHUSETTS JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER 11/22/2022

Issued For:

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Drawn By:	EJA
Reviewed By:	CB
Approved By:	JIP

W&S Project No.: ENG20-0865
W&S File No.:

Drawing Title:

TEMPORARY CONSTRUCTION STAGING & PARKING PLAN

Sheet Number:

C112

Rev: 1.8 Date: 10/24/2019

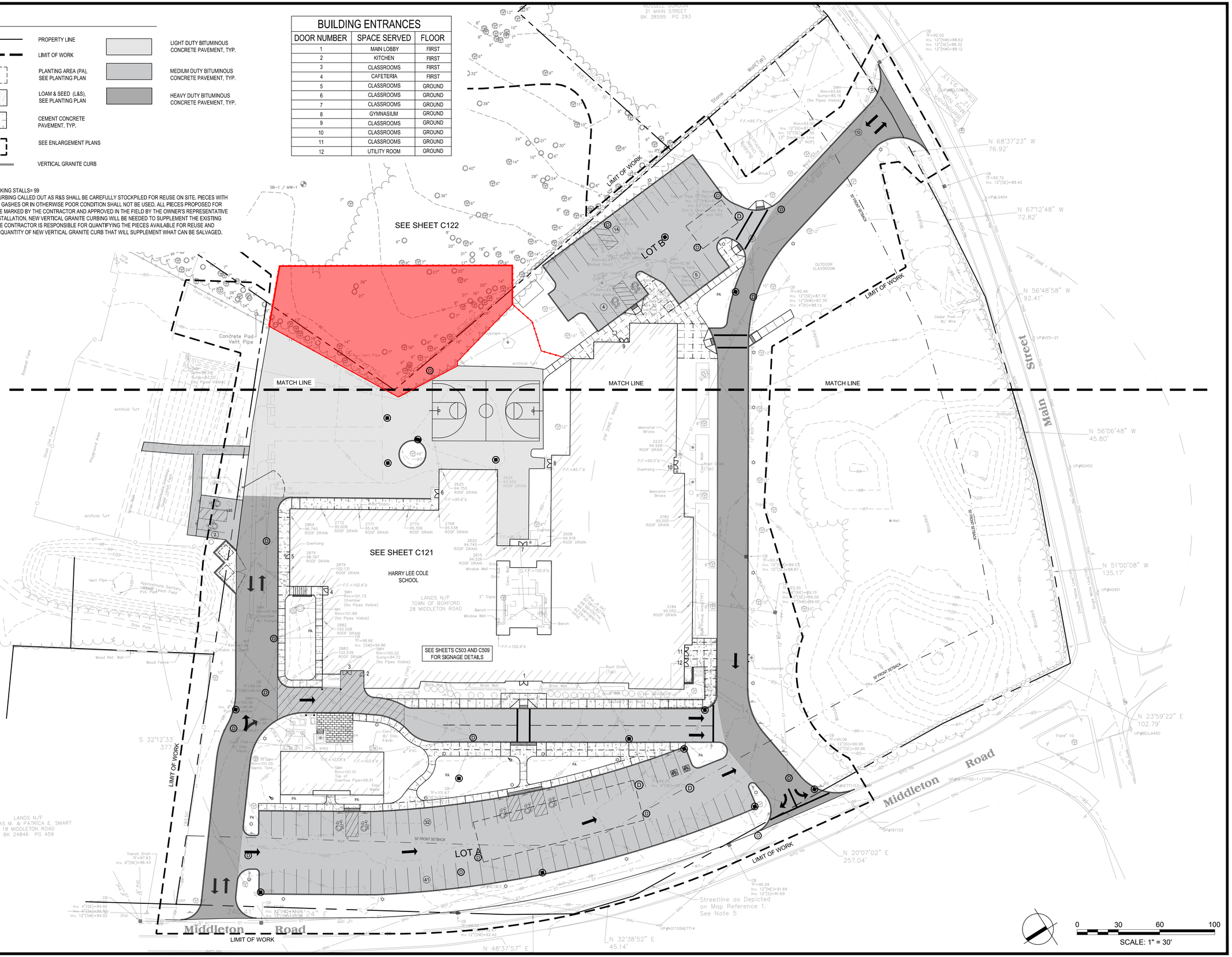
LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PA — PLANTING AREA (PA), SEE PLANTING PLAN
- L&S — LOAM & SEED (L&S), SEE PLANTING PLAN
- CEMENT CONCRETE PAVEMENT, TYP.
- SEE ENLARGEMENT PLANS
- VERTICAL GRANITE CURB
- LIGHT DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.
- MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.
- HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.

NOTES:
1. PROPOSED PARKING STALLS= 99
2. ALL GRANITE CURBING CALLED OUT AS R&S SHALL BE CAREFULLY STOCKPILED FOR REUSE ON SITE. PIECES WITH BREAKS, CHIPS, GASHES OR IN OTHERWISE POOR CONDITION SHALL NOT BE USED. ALL PIECES PROPOSED FOR REUSE SHALL BE MARKED BY THE CONTRACTOR AND APPROVED IN THE FIELD BY THE OWNER'S REPRESENTATIVE PRIOR TO REINSTALLATION. NEW VERTICAL GRANITE CURBING WILL BE NEEDED TO SUPPLEMENT THE EXISTING QUANTITIES. THE CONTRACTOR IS RESPONSIBLE FOR QUANTIFYING THE PIECES AVAILABLE FOR REUSE AND INCLUDING THE QUANTITY OF NEW VERTICAL GRANITE CURB THAT WILL SUPPLEMENT WHAT CAN BE SALVAGED.

BUILDING ENTRANCES

DOOR NUMBER	SPACE SERVED	FLOOR
1	MAIN LOBBY	FIRST
2	KITCHEN	FIRST
3	CLASSROOMS	FIRST
4	CAFETERIA	FIRST
5	CLASSROOMS	GROUND
6	CLASSROOMS	GROUND
7	CLASSROOMS	GROUND
8	GYMNASIUM	GROUND
9	CLASSROOMS	GROUND
10	CLASSROOMS	GROUND
11	CLASSROOMS	GROUND
12	UTILITY ROOM	GROUND



Project:

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Seal:

COMMONWEALTH OF MASSACHUSETTS
JAMES I. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER
11/22/2022

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Approved By:	JIP

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W&S File No.:

Drawing Title:

OVERALL MATERIALS & LAYOUT PLAN

Sheet Number:

C120

Rev. 1.8 Date: 10/24/2019

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PA — PLANTING AREA (PA), SEE PLANTING PLAN
- LIGHT DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.
- MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.
- HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.
- S.J. / E.J. — CEMENT CONCRETE PAVEMENT, TYP.
- RESET EX. FLAG POLE, TYP. OF (2)
- PEDESTRIAN LIGHT POLE, TYP.
- TREELINE
- TRAFFIC MARKINGS, TYP.
- (35) — PARKING SPACE COUNT
- VERTICAL GRANITE CURB
- VGC — VERTICAL GRANITE CURB
- FGC — FLUSH GRANITE CURB
- TC. — TRANSITION CURB
- BIT. CONC. — BITUMINOUS CONCRETE
- TYP. — TYPICAL

MATCH LINE

MATCH LINE

MATCH LINE

PROPOSED BASKETBALL COURT STRIPING — 2 / C509

PROVIDE REPLACEMENT BASKETBALL POST AND HOOP ASSEMBLY WITH ADJUSTABLE HEIGHT HOOP, (2) TOTAL — 7 / C505

VERTICAL GRANITE CURB, TYP. — 4 / C502

BIT. CONC. PAVEMENT, TYP. — 5 / C501

RESET EX. METAL SWING GATE, COMPLETE — 3 / C503

R 7-8 SIGN

VERTICAL GRANITE CURB, TYP. — 4 / C502

R 7-8P SIGN (VAN ACCESSIBLE)

VGC - TC - FGC

FGC

"EMERGENCY ACCESS ONLY. NO UNAUTHORIZED VEHICLES BEYOND THIS POINT" SIGNS

SET EX. DUMPSTER ON PROPOSED PAD. (DUMPSTER SHOWN AS REFERENCE ONLY)

BLACK VINYL COATED CHAIN LINK FENCE DUMPSTER ENCLOSURE — 1 / C504

CEMENT CONCRETE PAVEMENT, TYP. — 4 / C501

VERTICAL GRANITE CURB, TYP. — 4 / C502

TRAFFIC MARKINGS, TYP. SEE SPECIFICATIONS — 7 / C503

2 / C502 CAST-IN-PLACE CONCRETE WALL WITH HANDRAILS

Ξ SHEET C121

HARRY LEE COLE SCHOOL

3 / C509 CONCRETE STEPS

RELOCATED EXISTING BOLLARDS

6 / C501 BIT. CONC. PAVEMENT AT EX. UNIT PAVERS

1 / C503 ADA CURB CUT- TYPE A, SIM.

1 / C503 ADA CURB CUT- TYPE A, TYP.

2 / C503 ADA CURB CUT- TYPE B, TYP.

R6-1 "ONE WAY" SIGNS ABOVE R5-1 "DO NOT ENTER" SIGNS

CAST-IN-PLACE CONCRETE RETAINING WALL, TYP. WITH FIELD STONE CAP TO MATCH EX. ADJACENT RETAING WALL, CONTRACTOR SHALL REUSE EX. FIELDSTONE AND SUPPLEMENT WITH STONE TO MATCH AS NEEDED. — 3 / C502

VGC - TC - FGC

VGC - TC - FGC

FGC - TC - VGC

FGC - TC - VGC

1 / C502 SIDEWALK SCUPPER

3 / C504 RESET EX. FLAG POLE WITH NEW CONCRETE FOOTING, TYP OF 2.

RAMP AND HANDRAIL — 4 / C509

"EV CHARGING STATION " SIGNS — 8 / C505

1 / C503 ADA CURB CUT- TYPE A, TYP.

R1-1 "STOP" SIGN R5-1 "DO NOT ENTER" SIGN

RESET EX. FLAG POLE WITH NEW CONCRETE FOOTING, TYP OF 2. — 3 / C504

VERTICAL GRANITE CURB, TYP. — 4 / C502

PEDESTRIAN LIGHT, TYP. SEE ELECTRICAL PLANS — 4 / C504

BIT. CONC. PAVEMENT, TYP. — 6 / C501

TRAFFIC MARKINGS, TYP. SEE SPECIFICATIONS — 8 / C503

CAST IN PLACE CONCRETE STEPS

RESET EX. UNIT PAVERS, COMPLETE

R 7-8P SIGN (VAN ACCESSIBLE)

R 7-8 SIGN

6" DASHED WHITE LINE

ADA CURB CUT- TYPE A, TYP. — 1 / C503

5 / C503 ACCESSIBLE PARKING SPACE, TYP.

R 7-8 SIGN

R 7-8P SIGN (VAN ACCESSIBLE)

18', TYP.

9', TYP.

ACCESSIBLE PARKING SEE DETAIL 5 SHEET 503

CEMENT CONC. PAVEMENT, TYP. — 4 / C501

50' FRONT SETBACK

LOT A

VERTICAL GRANITE CURB, TYP. — 4 / C502

R1-1 "STOP" SIGN

R6-1 SIGN "ONE WAY" SIGN R5-1 "DO NOT ENTER" SIGN

LIMIT OF WORK

LIMIT OF WORK

PROTECT EX. GRANITE CURB AND CONC. PAVEMENT TO REMAIN.

5 / C501 BIT. CONC. PAVEMENT, TYP.

4 / C504 PEDESTRIAN LIGHT, TYP. SEE ELECTRICAL PLANS; CENTER OF POLE 4' MIN. FROM FACE OF CURB

4 / C502 VERTICAL GRANITE CURB, TYP.

4 / C501 CEMENT CONCRETE PAVEMENT, TYP.

8 / C503 STEEL BOLLARD, TYP.

6 / C502 MOUNTABLE GRANITE CURB, TYP. SEE LIMITS

R6-1 "ONE WAY" SIGNS

R1-1 "STOP" SIGN R5-1 "DO NOT ENTER" SIGN

6" LANE LINE (WHITE)

12" STOP LINE (WHITE)

R6-1 "ONE WAY" SIGNS, ABOVE R5-1 "DO NOT ENTER" SIGNS, WITH R1-1 "STOP" SIGNS MOUNTED ON THE BACK

R6-1 "ONE WAY" SIGNS, ABOVE R5-1 "DO NOT ENTER" SIGNS

DRAINAGE STRUCTURES, TYP. SEE GRADING & DRAINAGE PLANS

6 / C503 ELECTRIC CAR CHARGING SPACES, SEE SPECS

DRAINAGE STRUCTURES, TYP. SEE GRADING & DRAINAGE PLANS

5 / C504 PEDESTRIAN LIGHT WITH RAISED BASE, TYP. OF 4 ALONG MIDDLETON ROAD SEE ELECTRICAL PLANS

STORMWATER INFILTRATION SYSTEM, SEE GRADING & DRAINAGE PLANS

Middleton Road

LANDS N/F TOWN OF BOXFORD BK 13075 PG 427

LANDS N/F TOWN OF BOXFORD 28 MIDDLETON ROAD

0 20 50 100

SCALE: 1" = 20'

NOTES:

1.) SIGN LEGEND, LAYOUT AND SIZES SHALL COMPLY WITH MASSDOT STANDARDS AND THE 2009 MUTCD (AS AMENDED).

2.) SEE MUTCD 2009 EDITION, 2004 STD. HWY SIGNS (SHS), 2012 SHS SUPPLEMENT, AND SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION FOR TEXT DIMENSIONS.

3.) ALL PAVEMENT MARKINGS, LEGENDS, AND ARROWS SHALL COMPLY WITH MASSDOT STANDARDS AND THE 2009 MUTCD (AS AMENDED)

Project:

BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

HARRY LEE COLE SCHOOL
26 AND 28 MIDDLETON ROAD
BOXFORD, MA 01921

Weston & Sampson

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Drawing Title:

MATERIALS & LAYOUT ENLARGEMENT PLAN

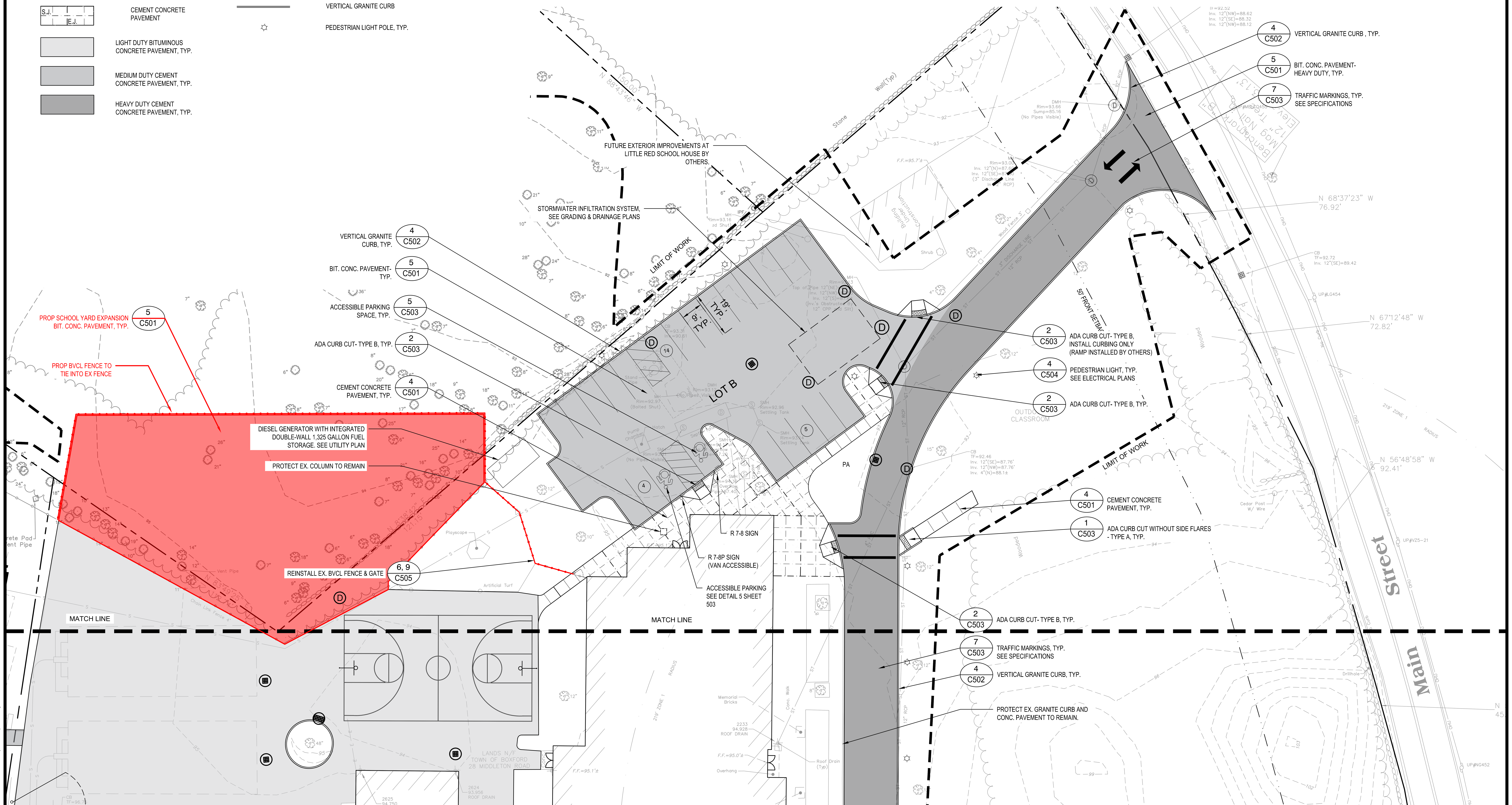
Sheet Number:

C121

Rev. 1.8 Date: 10/24/2019

LEGEND

PROPERTY LINE	
LIMIT OF WORK	
PA	PLANTING AREA (PA), SEE PLANTING PLAN
S.J. / E.J.	CEMENT CONCRETE PAVEMENT
	LIGHT DUTY BITUMINOUS CONCRETE PAVEMENT, TYP.
	MEDIUM DUTY CEMENT CONCRETE PAVEMENT, TYP.
	HEAVY DUTY CEMENT CONCRETE PAVEMENT, TYP.
	TRAFFIC MARKINGS
35	PARKING SPACE COUNT
	VERTICAL GRANITE CURB
	PEDESTRIAN LIGHT POLE, TYP.



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MATERIALS & LAYOUT ENLARGEMENT PLAN

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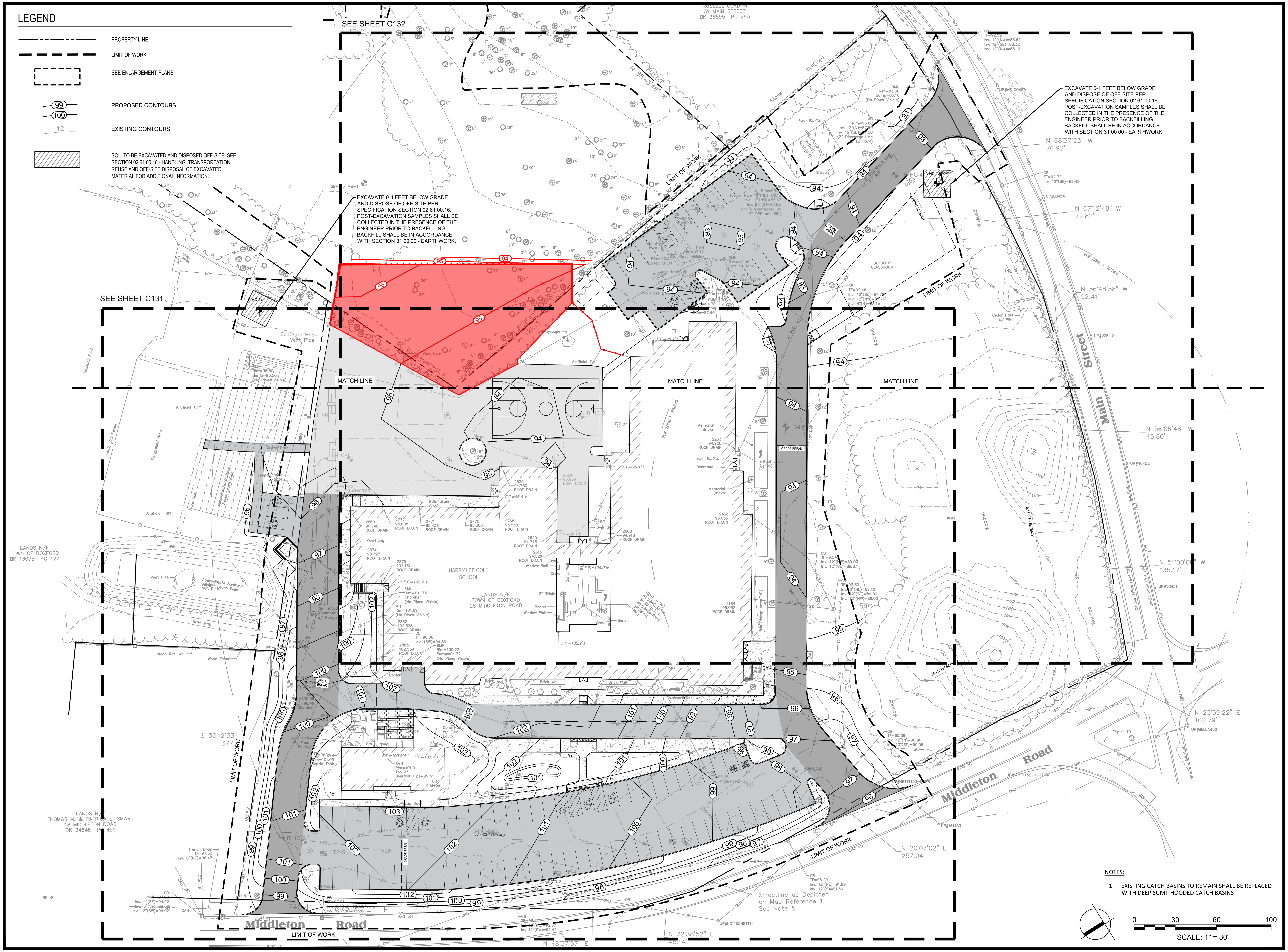
LEGEND
PROPERTY LINE
LIMIT OF WORK
SEE ENLARGEMENT PLANS
PROPOSED CONTOURS
EXISTING CONTOURS
SOIL TO BE EXCAVATED AND DISPOSED OFF-SITE. SEE SECTION 02 61 00.16 - HANDLING, TRANSPORTATION, REUSE AND OFF-SITE DISPOSAL OF EXCAVATED MATERIAL FOR ADDITIONAL INFORMATION.
SEE SHEET C132
SEE SHEET C131
MATCH LINE
EXCAVATE 0-4 FEET BELOW GRADE AND DISPOSE OF OFF-SITE PER SPECIFICATION SECTION 02 61 00.16. POST-EXCAVATION SAMPLES SHALL BE COLLECTED IN THE PRESENCE OF THE ENGINEER PRIOR TO BACKFILLING. BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 31 00 00 - EARTHWORK.
EXCAVATE 0-1 FEET BELOW GRADE AND DISPOSE OF OFF-SITE PER SPECIFICATION SECTION 02 61 00.16. POST-EXCAVATION SAMPLES SHALL BE COLLECTED IN THE PRESENCE OF THE ENGINEER PRIOR TO BACKFILLING. BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 31 00 00 - EARTHWORK.
RUSSELL GORDON
31 MAIN STREET
BK 38595 PG 293
LIMIT OF WORK
OUTDOOR CLASSROOM
HARRY LEE COLE SCHOOL
LANDS N/F
TOWN OF BOXFORD
28 MIDDLETON ROAD
LANDS N/F
TOWN OF BOXFORD
BK 13075 PG 427
LANDS N/F
THOMAS M. & PATRICIA E. SMART
18 MIDDLETON ROAD
BK 24846 PG 459
Main Street
Middleton Road
Streetline as Depicted on Map Reference 1. See Note 5
N 68°37'23" W 76.92'
N 67°12'48" W 72.82'
N 56°48'58" W 92.41'
N 56°06'48" W 45.80'
N 51°00'08" W 135.17'
N 23°59'22" E 102.79'
N 20°07'02" E 257.04'
N 32°38'52" E
N 48°37'57" E
S 32°12'33'
Artificial Turf
Playground Area
Concrete Pad
GRADE BREAK
0 30 60 100
SCALE: 1" = 30'

NOTES:

1. EXISTING CATCH BASINS TO REMAIN SHALL BE REPLACED WITH DEEP SUMP HOODED CATCH BASINS.

Project:

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Drawing Title:

OVERALL GRADING PLAN

Sheet Number:

C130

Rev. 1.8 Date: 10/24/2019

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- PROPOSED CONTOURS (99 / 100)
- EXISTING CONTOURS (12)
- EXISTING DRAINAGE STRUCTURE. SEE DRAINGE PLAN
- EXISTING SPOT ELEVATION (95.10)
- PROPOSED SLOPE (1.5%)
- PROPOSED SPOT ELEVATION (8.25)
- CATCH BASIN. SEE DRAINAGE PLAN
- DRAINAGE MAN HOLE. SEE DRAINAGE PLAN (D)
- SEWER MAN HOLE. SEE DRAINAGE PLAN (S)
- GRADE BREAK
- HP HIGH POINT
- LP LOW POINT
- TW TOP OF WALL
- BW BOTTOM OF WALL
- TS TOP OF STEP
- BS BOTTOM OF STEP
- TC TOP OF CURB
- BC BOTTOM OF CURB

MATCH LINE

MATCH LINE

MATCH LINE

HARRY LEE COLE SCHOOL

LANDS N/F TOWN OF BOXFORD 28 MIDDLETON ROAD

LANDS N/F THOMAS M. & PATRICA E. SMART 18 MIDDLETON ROAD BK 24846 PG 459

LIMIT OF WORK

50' FRONT SETBACK

Middleton Road

Streetline as Depicted on Map Reference 1. See Note 5

0 20 50 100

SCALE: 1" = 20'

Project:

BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

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GRADING ENLARGEMENT PLAN

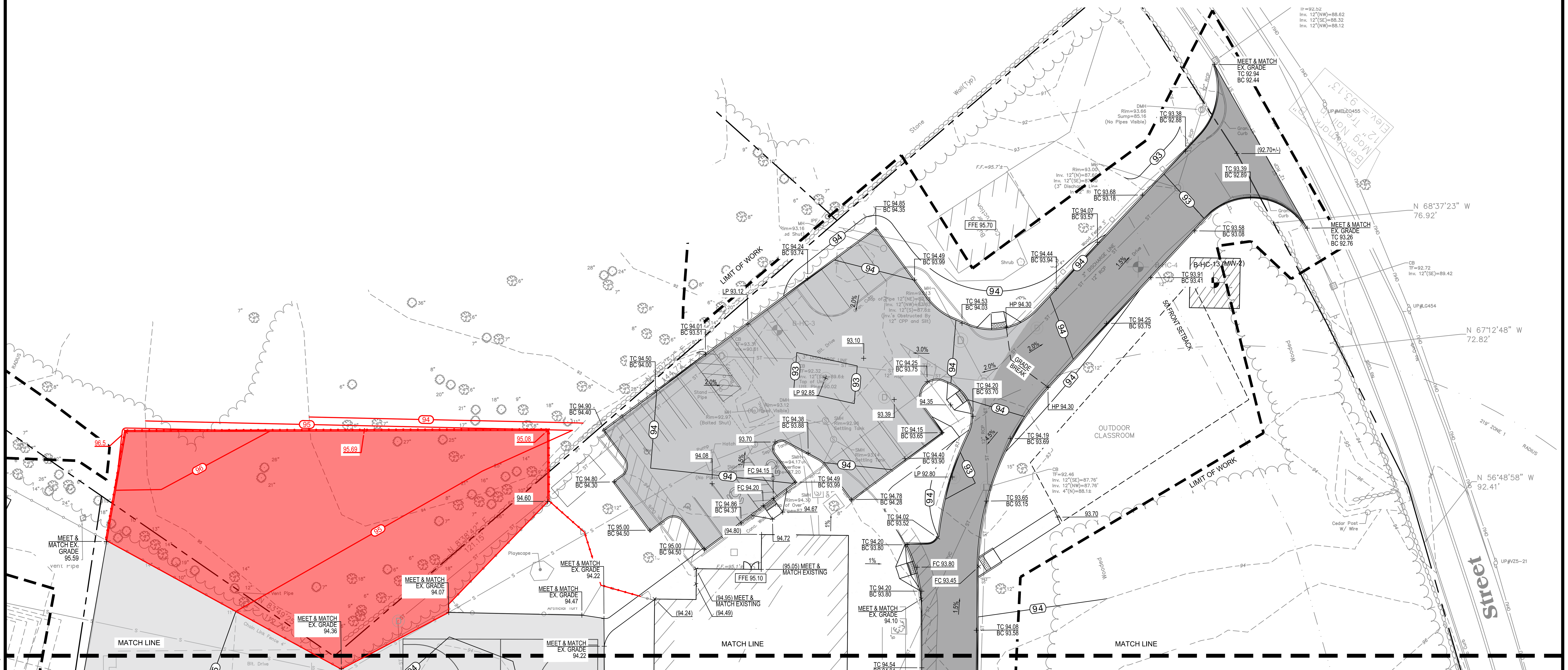
Sheet Number:

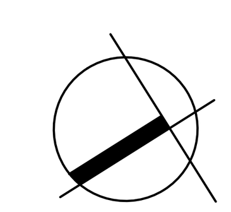
C131

Rev. 1.8 Date: 10/24/2019

LEGEND

(solid line)	PROPERTY LINE	(symbol)	EXISTING DRAINAGE STRUCTURE. SEE DRAINAGE PLAN	(dashed line)	GRADE BREAK
(heavy dashed line)	LIMIT OF WORK	95.10	EXISTING SPOT ELEVATION	HP	HIGH POINT
99 / 100	PROPOSED CONTOURS	1.5%	PROPOSED SLOPE	LP	LOW POINT
12	EXISTING CONTOURS	8.25	PROPOSED SPOT ELEVATION	TW	TOP OF WALL
		(symbol)	CATCH BASIN. SEE DRAINAGE PLAN	BW	BOTTOM OF WALL
		D	DRAINAGE MAN HOLE. SEE DRAINAGE PLAN	TS	TOP OF STEP
		S	SEWER MAN HOLE. SEE DRAINAGE PLAN	BS	BOTTOM OF STEP
				TC	TOP OF CURB
				BC	BOTTOM OF CURB





0 20 50 100

SCALE: 1" = 20'

Project:

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GRADING ENLARGEMENT PLAN

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NOTES:

1. EXISTING CATCH BASINS TO REMAIN SHALL BE REPLACED WITH DEEP SUMP HOODED CATCH BASINS.

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DRAINAGE PLAN

Sheet Number:

C133

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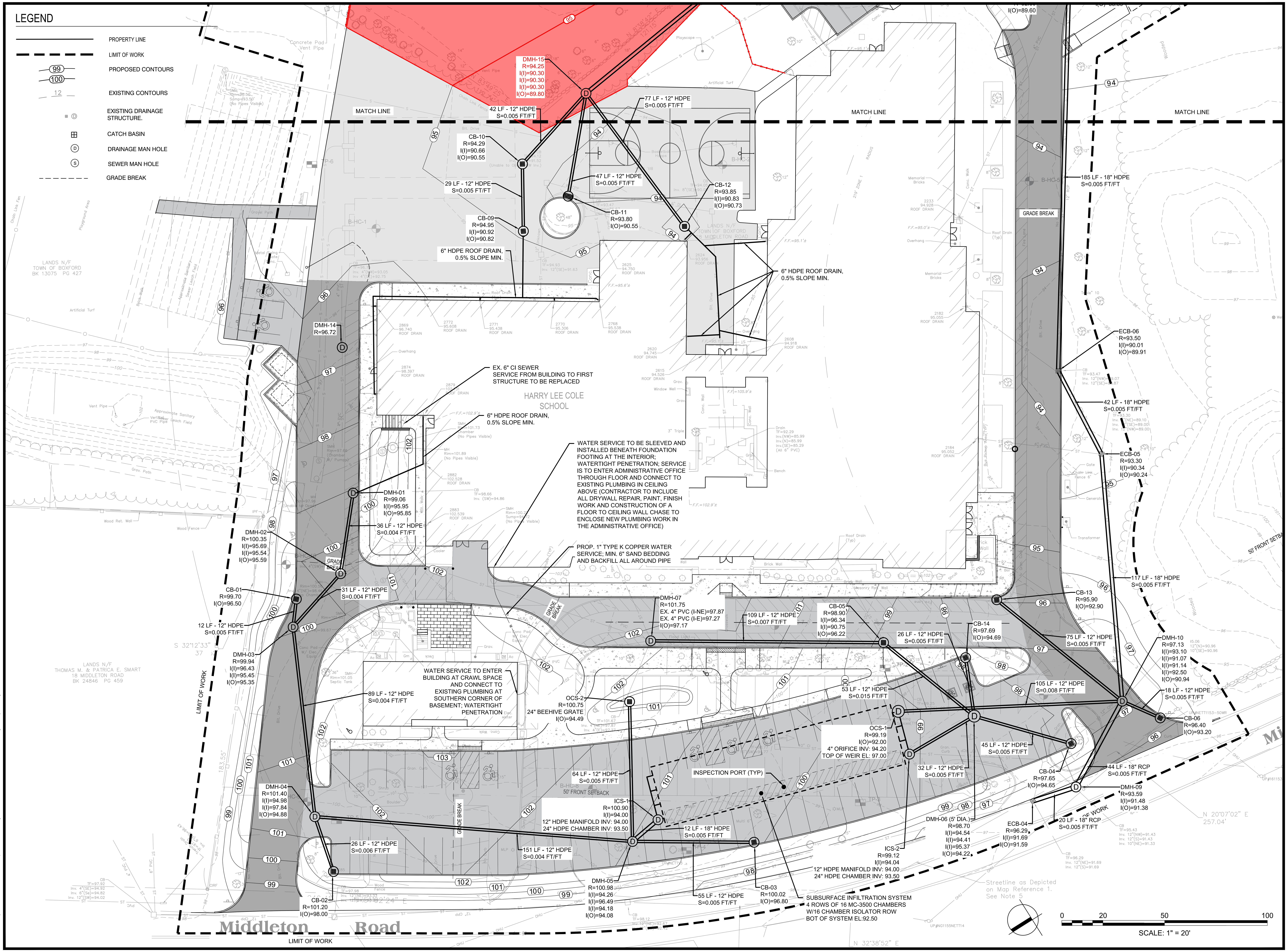

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DRAINAGE ENLARGEMENT PLAN

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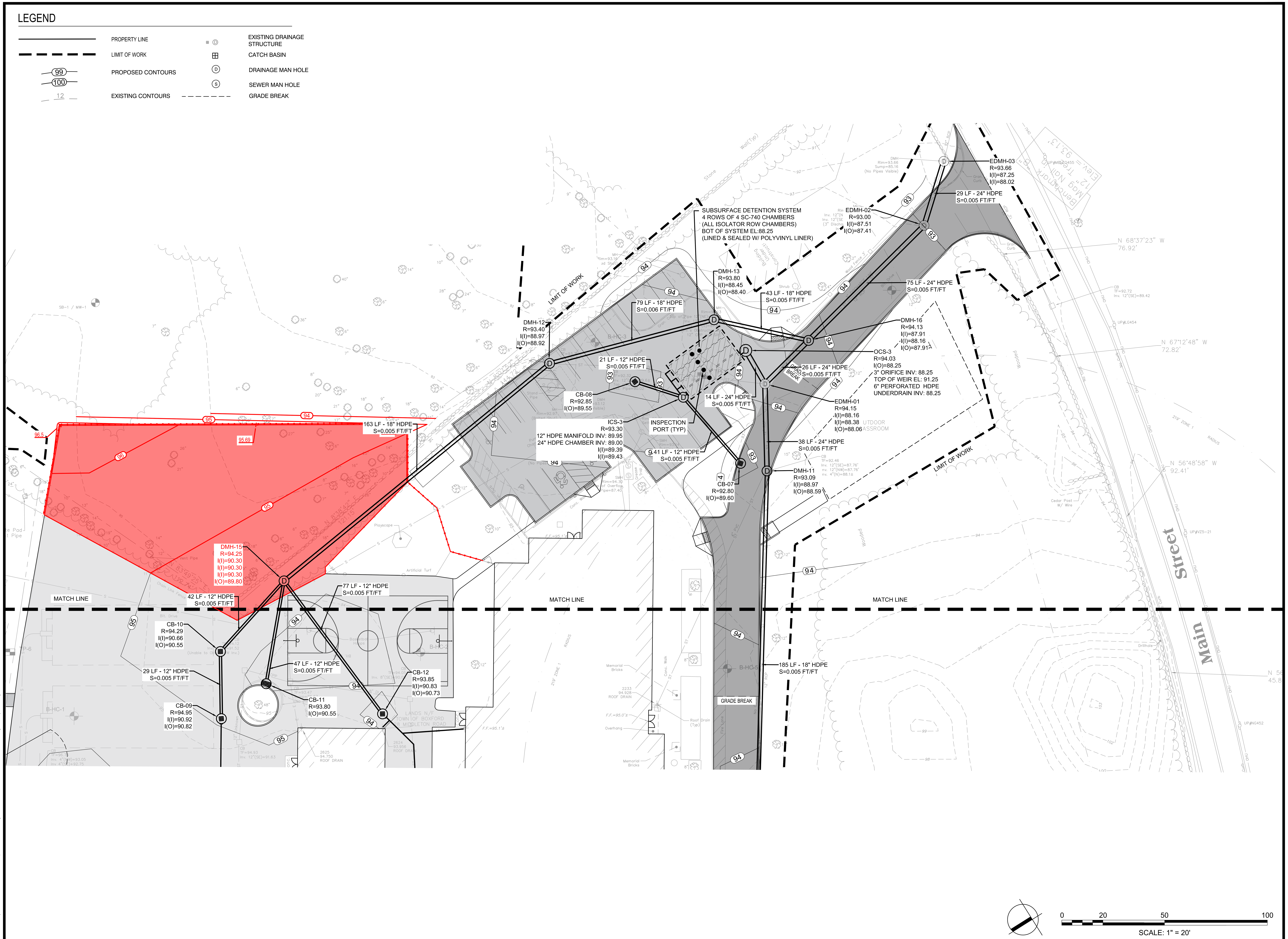

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DRAINAGE ENLARGEMENT PLAN

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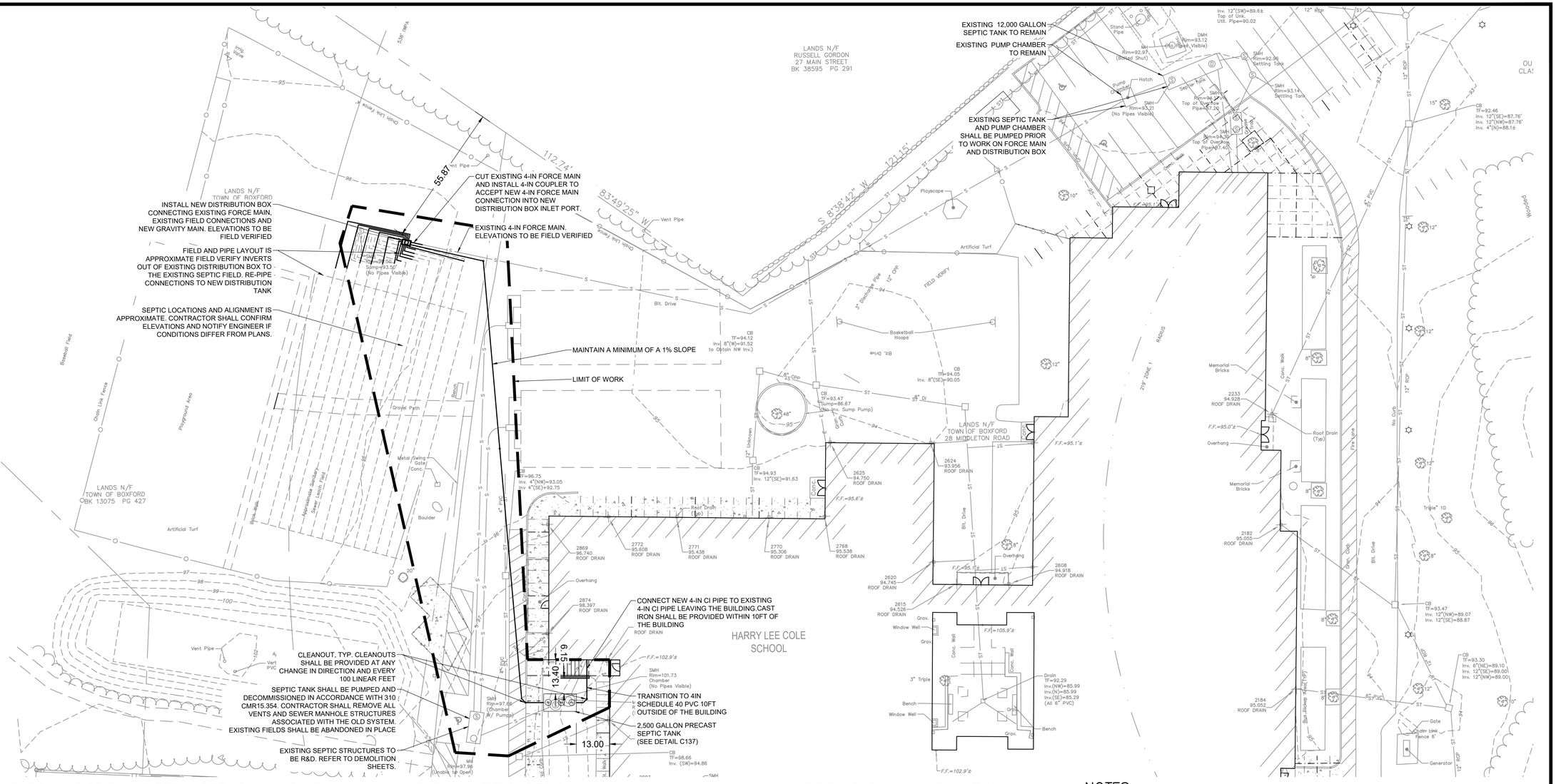

EXISTING DESIGN CRITERIA PER 310 CMR 15.000

SCHOOL SYSTEM W/ CAFETERIA
8 GPD PER PERSON

414 PERSONS (STUDENTS AND FACULTY)

EXISTING DESIGN FLOW

DESIGN FLOW
8 GPD/PERSON X 555 PERSONS = 4,440 GPD

EXISTING SYSTEM DESIGNED FOR 4,440 GPD

LOADING RATE 0.74 GALLONS/SF USED

EXISTING LEACHING AREA: 60FT X 100FT = 6,000SQFT

MAXIMUM TITLE V HYDRAULIC LOADING:
6,000SQF X 0.74GALLONS/SF = 4,440 GALLONS

CURRENT HYDRAULIC LOADING:
8 GPD/PERSON X 414 PERSONS = 3,312 GPD

SURPLUS OF 1,128 GPD

LEACHING FIELD DESIGN:

4,440 GPD DESIGN FLOW 0.74 GPD/SF = 6,000 SF OF FIELD REQUIRED

EFFECTIVE LEACHING AREA
ONE FIELD AT:= 6,000 SF OF FIELD PROVIDED
100' LONG X 60' WIDE X 1' DEEP

FIELD SUMMARY

	AREA (SF)	GPD
REQUIRED	6,000	3,312
PROVIDED	6,000	4,440

EXISTING SEPTIC TANK DESIGN

DESIGN FLOW: 4,400 GPD

TWO COMPARTMENT TANK (310 CMR 15.224)
1ST COMPARTMENT REQUIRES 48 HOUR DETENTION TIME
VOLUME = 2 DAYS X DESIGN FLOW = 2 DAYS X 4,440 GPD = 8,880 GAL

2ND COMPARTMENT REQUIRES 24 HOUR DETENTION TIME
VOLUME = 1 DAY X DESIGN FLOW = 1 DAY X 4,440 GPD = 4,440 GAL

TANK PROVIDED = 12,000 GALLONS
SECONDARY TANK VOLUME HAS CAPACITY TO HANDLE ADDITIONAL FLOW OF 1,320 GAL

PIPE LOADING CALCULATION

(REF: UNI-BELL HANDBOOK OF PVC PIPE)

FOR H20 LOADING AND 1' OF COVER:
TOTAL LIVE+DEAD LOAD = 1,600 PSF = 11.1 PSI
(FIG. 11, PG. 134)

FOR H20 LOADING, 1' COVER, HIGHWAY CONDITIONS:
IMPACT FACTOR = 1.5
(TABLE 21)

SAFETY FACTOR = 1.5
PIPE STRESS = (11.1 PSI)(1.5)(1.5) = 25.0 PSI

ALLOWABLE PIPE STRESS:
SDR 35 = 46 PSI > 25.0 PSI => OK
(TABLE 24)

NOTES

1. DOUBLE WASHED STONE SHALL BE FREE OF IRON, FINES, AND DUST IN ACCORDANCE WITH 310 CMR 15.247.
2. FILL PLACEMENT, IF REQUIRED BY THE ENGINEER, WILL BE IN ACCORDANCE WITH 310 CMR 15.255(6).
3. CONTRACTOR SHALL INSTALL TANKS IN A MANNER WHICH WILL PREVENT UNDERCUTTING OF NEW BUILDING FOUNDATIONS.
4. THE SEPTIC SYSTEM INSTALLER SHALL HAVE A CURRENT DISPOSAL WORKS INSTALLERS PERMIT WITH THE TOWN OF BOXFORD. INSTALLERS SHALL OBTAIN A DISPOSAL WORKS CONSTRUCTION PERMIT PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND BOARD OF HEALTH A MINIMUM OF 48 HOURS AHEAD OF EXCAVATION.
6. PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING SANITARY PIPE TO A LIMIT OF 10'-0" FROM THE BUILDING. GENERAL CONTRACTOR IS RESPONSIBLE FOR EXTENDING SERVICES FROM LIMIT OF THE PLUMBERS WORK TO THE SEPTIC TANK, DISTRIBUTION BOX, AND UP TO AND INCLUDING THE LEACHING TRENCHES AND VENTS ACCORDINGLY.
7. GENERAL CONTRACTOR SHALL EXCAVATE AND BACKFILL FOR ALL EXTERIOR PLUMBING WORK.
8. CONTRACTOR SHALL VERIFY ALL CONFLICTS WITH OTHER UTILITIES AND MAKE ADJUSTMENTS AS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
9. AN ENGINEERED AS-BUILT SHALL BE PREPARED AND SUBMITTED TO THE BOXFORD BOARD OF HEALTH.
10. CONTRACTOR IS REQUIRED TO OBTAIN A TOWN SEPTIC INSTALLERS LICENSE TO WORK ON A SEPTIC SYSTEM WITHIN THE TOWN OF BOXFORD.
11. SEPTIC SYSTEM UPGRADE DESIGN IS PENDING A PASSING TITLE V EVALUATION.

0 20 50 100
SCALE: 1" = 20'

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SEPTIC PLAN AND NOTES

Sheet Number:
C136

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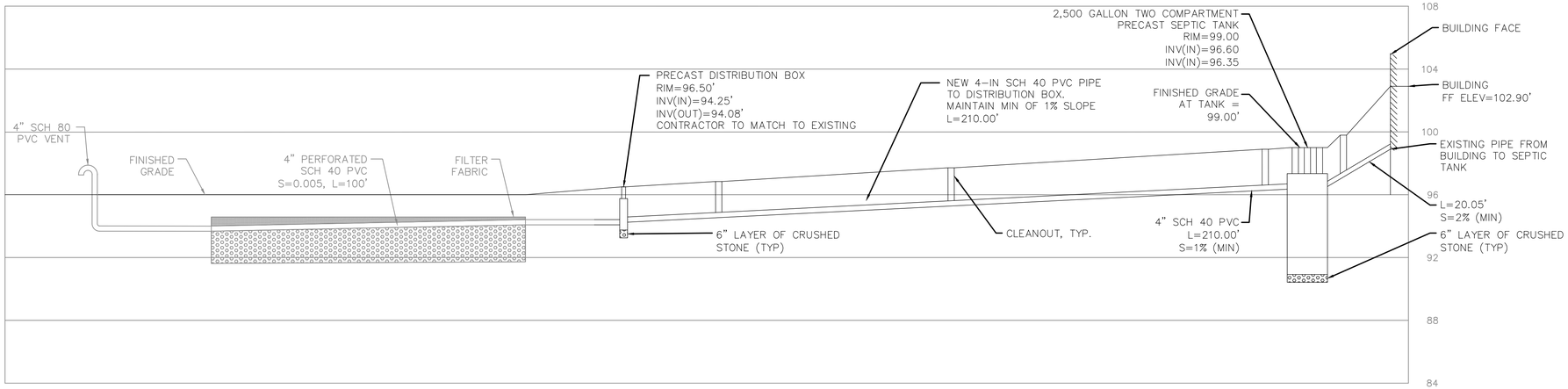
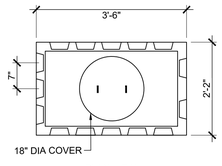
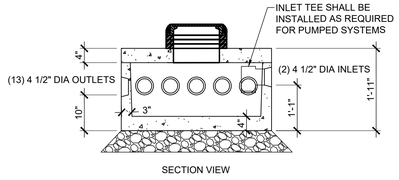


SEPTIC SYSTEM PROFILE

SCALE:
HORIZONTAL 1"=20'
VERTICAL 1"=4'



PLAN VIEW

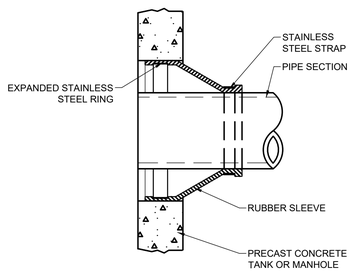


SECTION VIEW

NOTES:

1. DISTRIBUTION BOX SHALL BE PLACED ON A MINIMUM 6" CRUSHED STONE BASE.
2. UNUSED OUTLETS TO BE PLUGGED WITH GROUT.
3. OUTLET LINES FROM THE DISTRIBUTION BOX SHALL BE INSTALLED LEVEL FOR THE FIRST TWO FEET.
4. CONCRETE: 5000 PSI AFTER 28 DAYS.
5. DISTRIBUTION BOX TO MEET H-10 LOADING.
6. KEYED JOINT TO BE SEALED WITH BUTYL RUBBER.

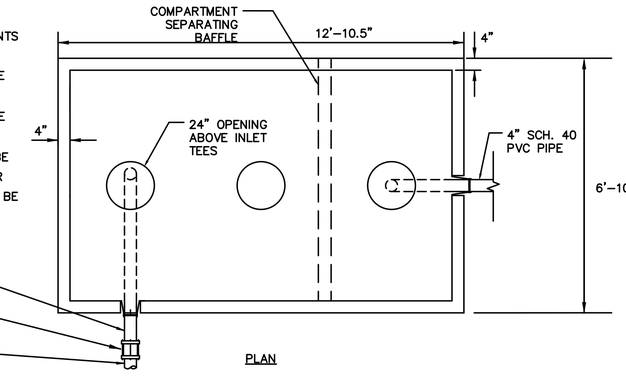
1 DISTRIBUTION BOX
SCALE: N.T.S.



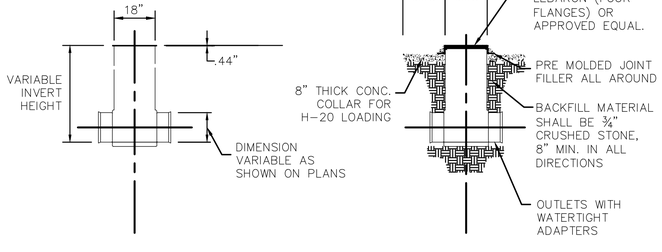
2 PIPE SEAL
SCALE: N.T.S.

SEPTIC TANK NOTES:

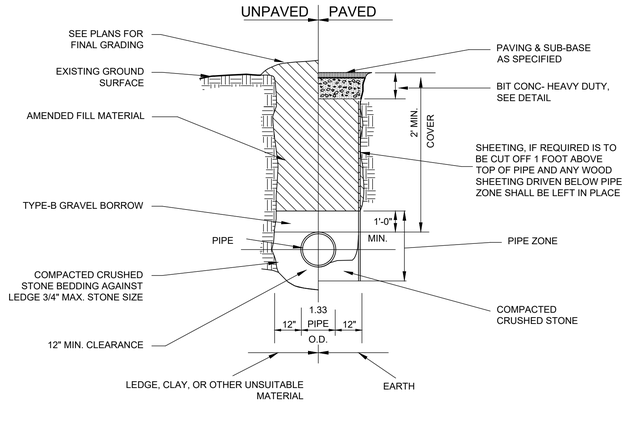
1. CONCRETE: 5,000 PSI AFTER 28 DAYS.
2. TANK AND COVERS TO MEET AASHTO H-20 LOADING.
3. KEYED JOINT TO BE SEALED WITH BUTYL RUBBER.
4. PRECAST CONCRETE SEPTIC TANK SHALL MEET REQUIREMENTS OF 310 CMR 15.223 THROUGH 15.228.
5. INLET TEE TO EXTEND BELOW LIQUID LEVEL IN ACCORDANCE WITH 310 CMR 15.227.
6. SEPTIC TANK TEES SHALL EXTEND A MINIMUM OF 6" ABOVE THE FLOW LINE.
7. ALL SEPTIC TANK MANHOLE FRAMES AND COVERS SHALL BE ADJUSTED TO FINISHED GRADE AS DETAILED ABOVE. FIBER REINFORCED PRECAST CONCRETE MANHOLE DONUTS SHALL BE USED TO ADJUST MANHOLE FRAMES TO GRADE WHEN THE USE OF BRICKS EXCEEDS ONE VERTICAL FOOT.



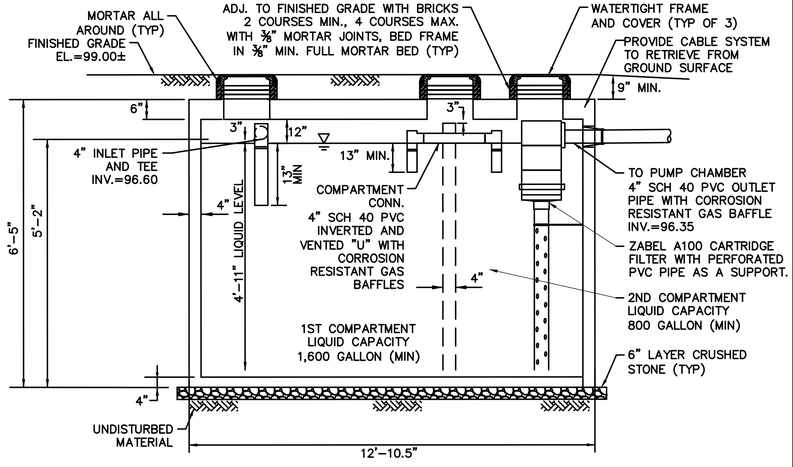
PLAN



3 SEWER AND DRAIN CLEANOUT
SCALE: N.T.S.



4 PIPE SEAL
SCALE: N.T.S.



SECTION

5 SEWER AND DRAIN CLEANOUT
SCALE: N.T.S.

Project:
BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

HARRY LEE COLE SCHOOL
26 AND 28 MIDDLETON ROAD
BOXFORD, MA 01921

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No.	Date	Description

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JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
11/22/2022

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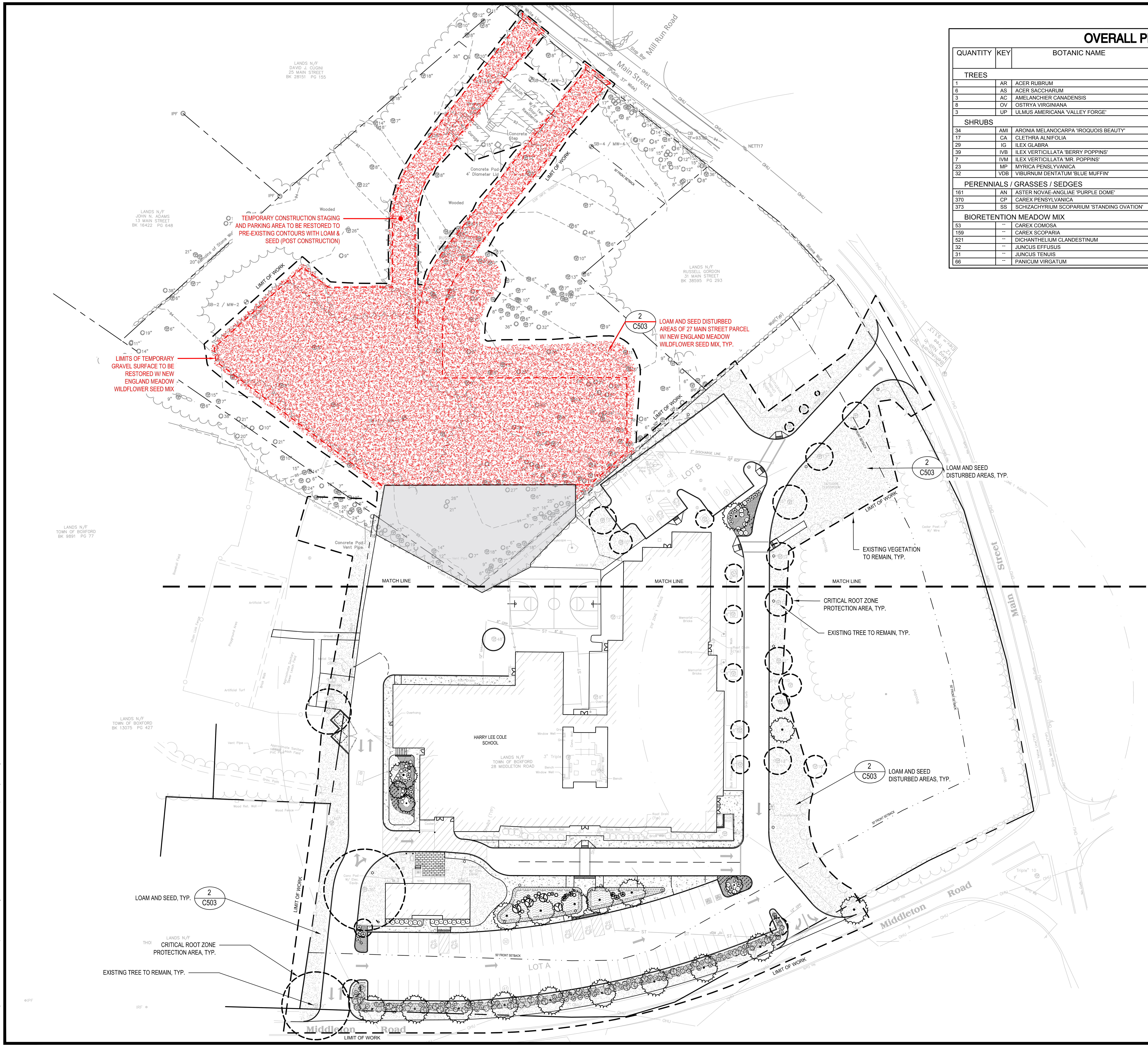
Sheet Number:
C137

Rev: 1.8 Date: 10/24/2019

P:\MA\Boxford MA\ENG20-0865 Cole and Spofford Schools Bid+Const Services\03 Civil\18 Septic System Analysis\CAD\C136 - Septic Plan and Profile.dwg

OVERALL PLANTING SCHEDULE

QUANTITY	KEY	BOTANIC NAME	COMMON NAME	SIZE	NOTES
TREES					
1	AR	ACER RUBRUM	RED MAPLE	2-2.5" CAL.	---
6	AS	ACER SACCHARUM	SUGAR MAPLE	2-2.5" CAL.	---
3	AC	AMELANCHIER CANADENSIS	SERVICEBERRY	10-12' HEIGHT	MULTI-STEM
8	OV	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2-2.5" CAL.	---
3	UP	ULMUS AMERICANA 'VALLEY FORGE'	AMERICAN ELM	2-2.5" CAL.	---
SHRUBS					
34	AMI	ARONIA MELANOCARPA 'IROQUOIS BEAUTY'	BLACK CHOKEBERRY	#3 CONTAINER	3-4' HEIGHT MIN.
17	CA	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	10 GALLON	3-4' HEIGHT MIN.
29	IG	ILEX GLABRA	INKBERRY	10 GALLON	3-4' HEIGHT MIN.
39	IVB	ILEX VERTICILLATA 'BERRY POPPINS'	WINTERBERRY HOLLY	B&B, 3-4' HT.	3-4' HEIGHT, FEMALE CULTIVAR
7	IVM	ILEX VERTICILLATA 'MR. POPPINS'	WINTERBERRY HOLLY	B&B, 3-4' HT.	3-4' HEIGHT, MALE CULTIVAR
23	MP	MYRICA PENSLYVANICA	BAYBERRY	B&B, 3-4' HT.	3-4' HEIGHT MIN.
32	VDB	VIBURNUM DENTATUM 'BLUE MUFFIN'	ARROWWOOD VIBURNUM	#3 CONTAINER	3-4' HEIGHT MIN.
PERENNIALS / GRASSES / SEDGES					
161	AN	ASTER NOVAE-ANGLIAE 'PURPLE DOME'	NEW ENGLAND ASTER	#1 CONTAINER	SPACE 18" O.C.
370	CP	CAREX PENSYLVANICA	OAK SEDGE	#1 CONTAINER	SPACE12" O.C.
373	SS	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION'	LITTLE BLUESTEM	#1 CONTAINER	SPACE 18" O.C.
BIORETENTION MEADOW MIX					
53	--	CAREX COMOSA	COSMOS SEDGE	--	PLUG; SPACE 12" OC.
159	--	CAREX SCOPARIA	BLUNT BROOM SEDGE	--	PLUG; SPACE 12" OC.
521	--	DICHANTHELIUM CLANDESTINUM	DEERTONGUE GRASS	--	PLUG; SPACE 12" OC.
32	--	JUNCUS EFFUSUS	SLENDER RUSH	--	PLUG; SPACE 12" OC.
31	--	JUNCUS TENUIS	SOFT RUSH	--	PLUG; SPACE 12" OC.
66	--	PANICUM VIRGATUM	SWITCHGRASS	--	PLUG; SPACE 24" OC.



LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- LOAM AND SEED
- BLACK MULCH PLANTING BED
- BIORETENTION MEADOW MIX
- HERBACEOUS PERENNIAL PLANTING
- PROPOSED SHRUB PLANTING
- PROPOSED TREE PLANTING

0 40 80 120
SCALE: 1" = 40'

Project:
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JAMES I. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER
11/22/2022

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OVERALL PLANTING PLAN

Sheet Number:
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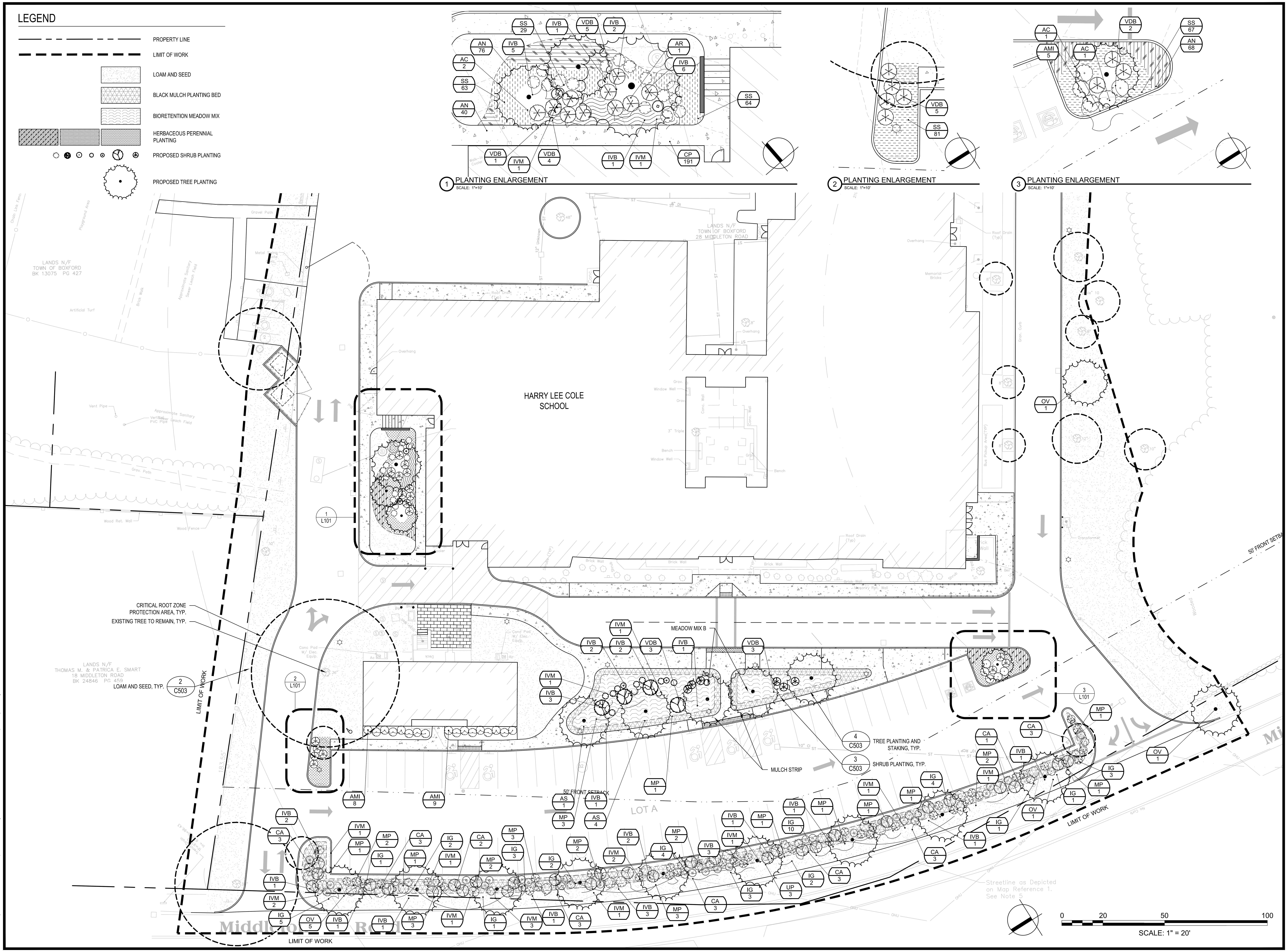

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PLANTING ENLARGEMENT PLAN

Sheet Number:

L101

Rev: 1.8 Date: 10/24/2019

TEMPORARY CONSTRUCTION STAGING AND PARKING AREA TO BE RESTORED TO PRE-EXISTING CONTOURS WITH NEW ENGLAND MEADOW WILDFLOWER SEED MIX (POST CONSTRUCTION)

LIMITS OF TEMPORARY GRAVEL SURFACE TO BE RESTORED WITH NEW ENGLAND MEADOW WILDFLOWER SEED MIX

LIMIT OF WORK

SHRUB PLANTING, TYP. 3/C503

TREE PLANTING AND STAKING, TYP. 4/C503

50' FRONT SETBACK

LIMIT OF WORK

EXISTING VEGETATION TO REMAIN, TYP.

CRITICAL ROOT ZONE PROTECTION AREA, TYP.

EXISTING TREE TO REMAIN, TYP.

2/C503 LOAM AND SEED DISTURBED AREAS, TYP.

1/L102

MATCH LINE

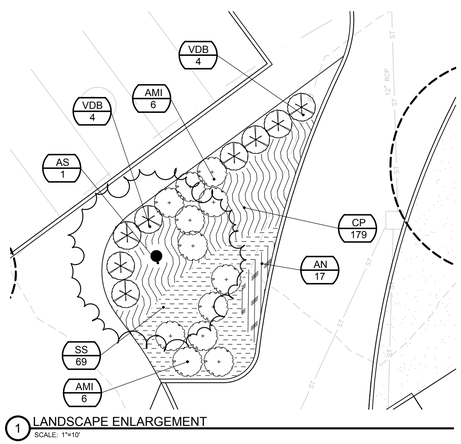
MATCH LINE

LANDS N/F TOWN OF BOXFORD 28 MIDDLETON ROAD

Main Street

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- LOAM AND SEED
- BIORETENTION MEADOW MIX
- HERBACEOUS PERENNIAL PLANTING
- PROPOSED SHRUB PLANTING
- PROPOSED TREE PLANTING



1 LANDSCAPE ENLARGEMENT
SCALE: 1"=10'

0 20 50 100
SCALE: 1" = 20'

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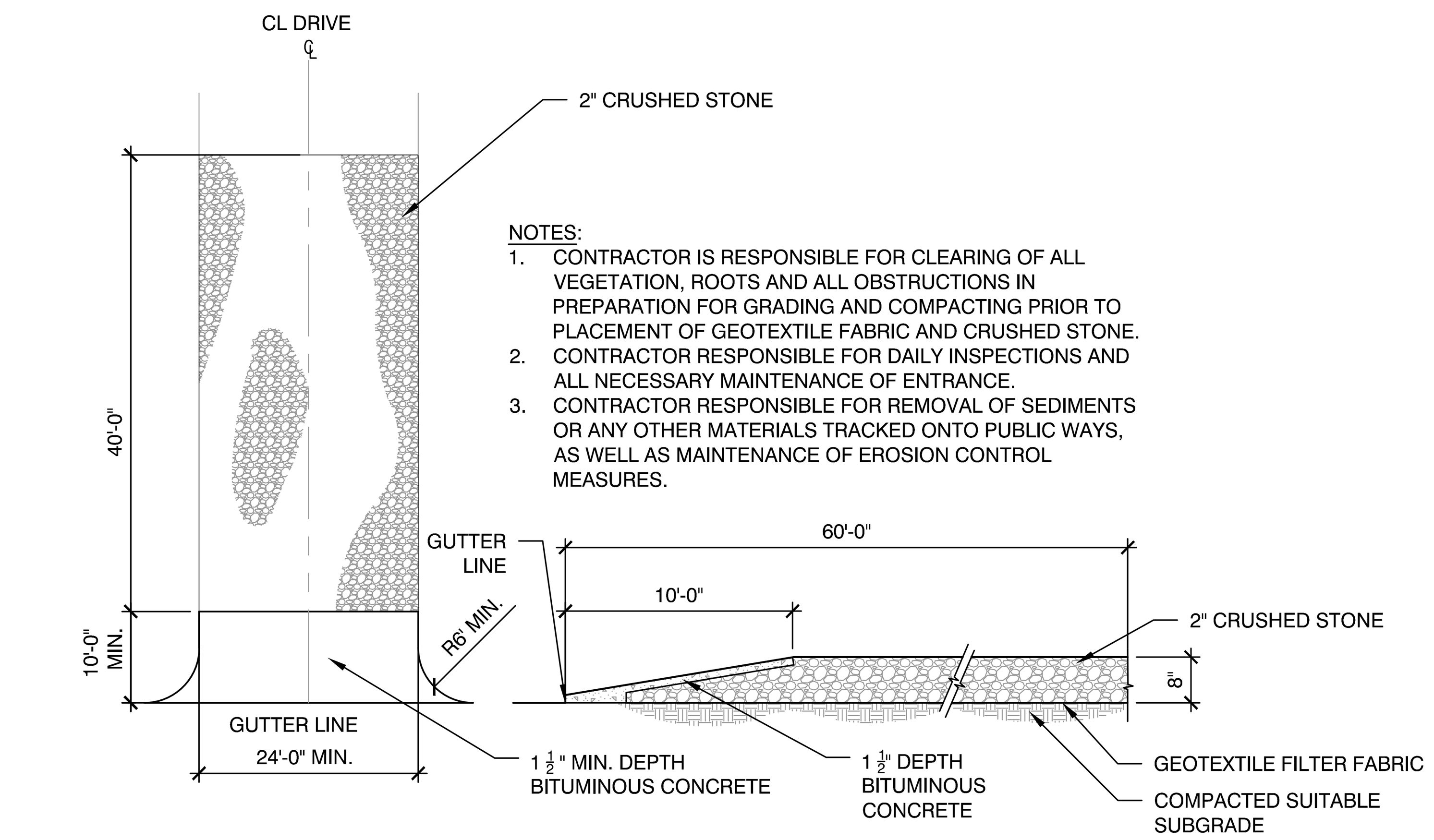
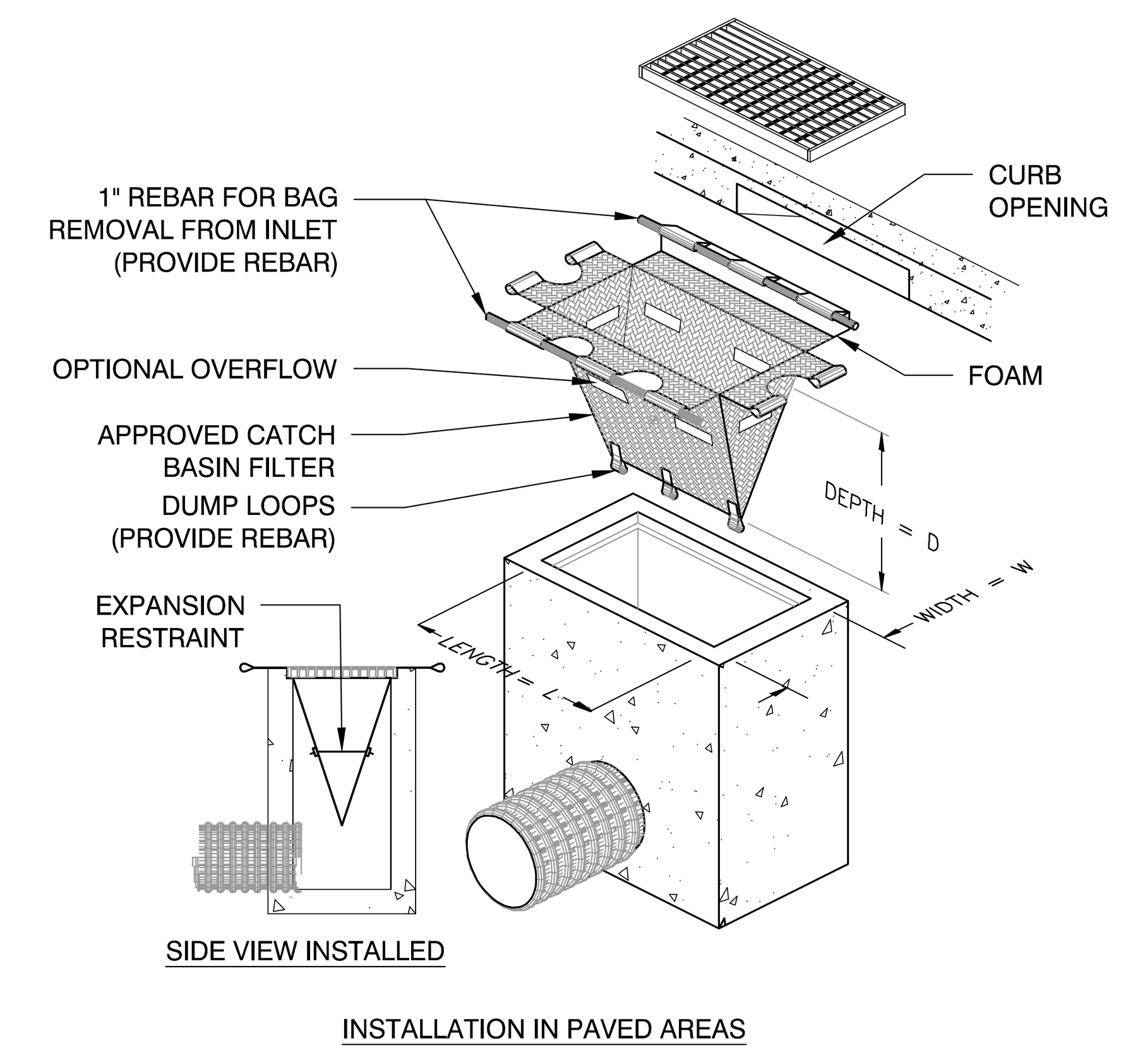


NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR CLEARING OF ALL VEGETATION, ROOTS AND ALL OBSTRUCTIONS IN PREPARATION FOR GRADING AND COMPACTING PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC AND CRUSHED STONE.
2. CONTRACTOR RESPONSIBLE FOR DAILY INSPECTIONS AND ALL NECESSARY MAINTENANCE OF ENTRANCE.
3. CONTRACTOR RESPONSIBLE FOR REMOVAL OF SEDIMENTS OR ANY OTHER MATERIALS TRACKED ONTO PUBLIC WAYS, AS WELL AS MAINTENANCE OF EROSION CONTROL MEASURES.

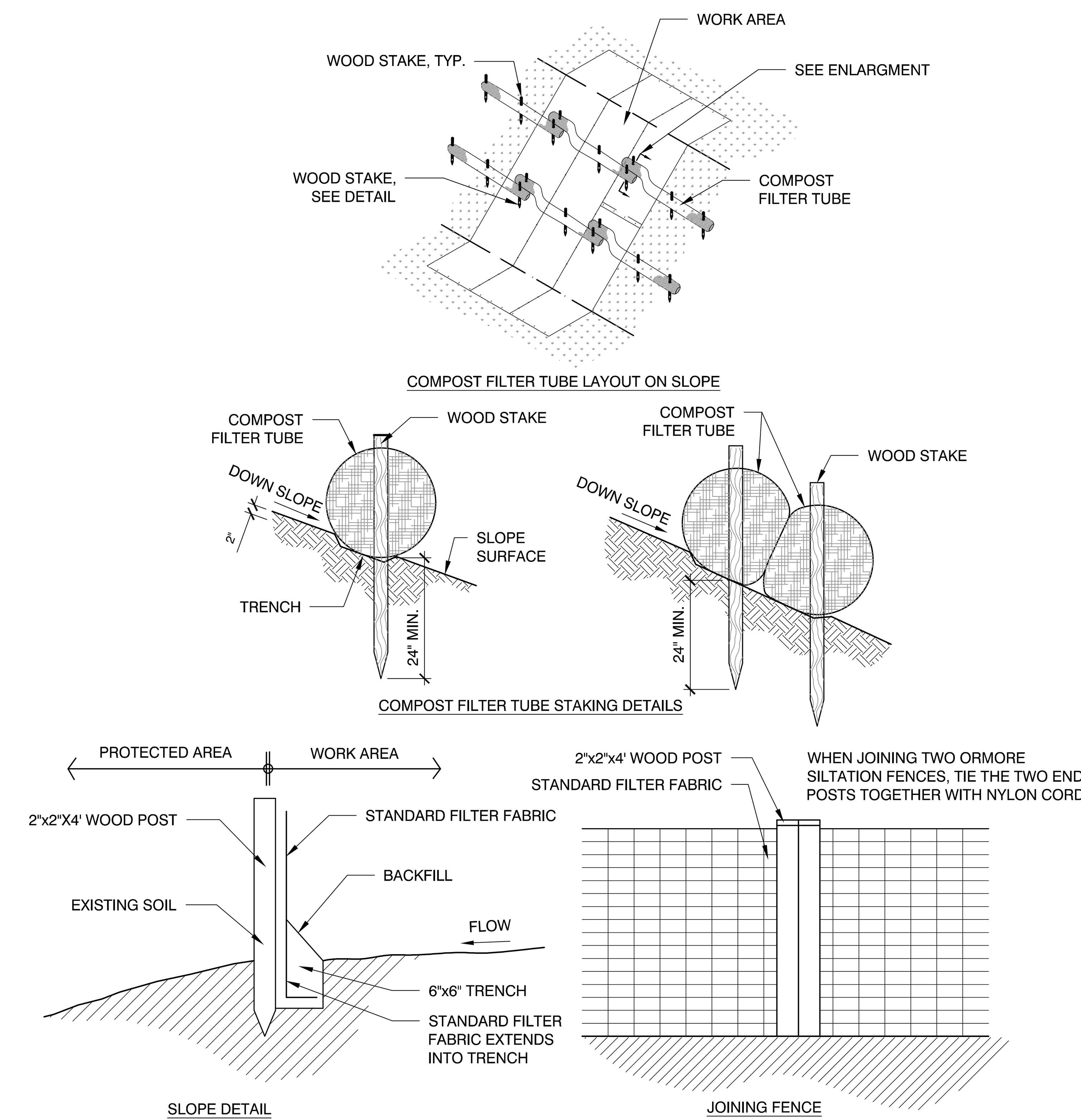
1 STABILIZED TEMPORARY CONSTRUCTION ENTRANCE
SCALE: N.T.S.



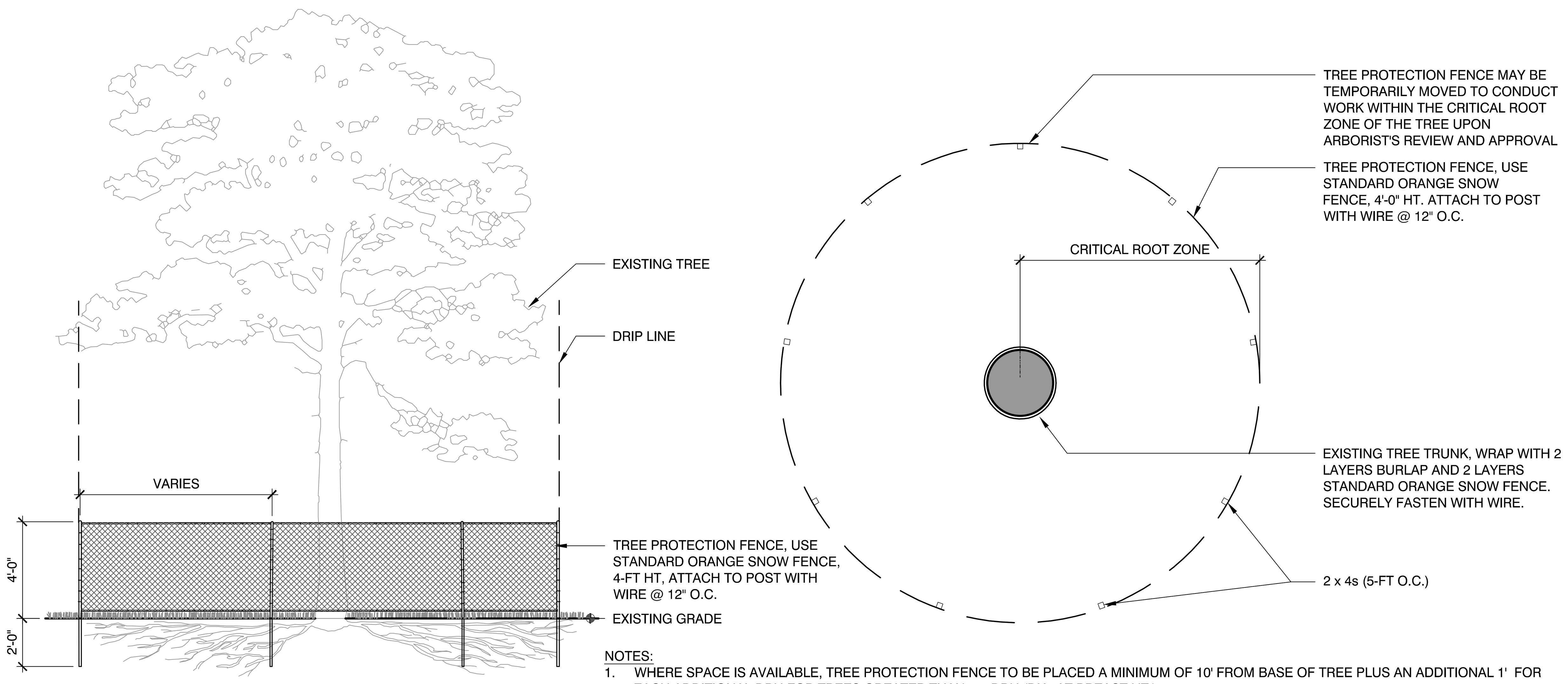
INSTALLATION IN PAVED AREAS

NOTES:
1. CATCH BASIN FILTER FOR PAVED AREAS SHALL BE PROVIDED FOR ALL DRAINAGE STRUCTURES WITHIN THE LIMIT OF WORK AND ANY STRUCTURES OUTSIDE THE PROJECT TERMINII THAT ARE AFFECTED BY CONSTRUCTION.

2 INLET SEDIMENT CONTROL
SCALE: N.T.S.



3 EROSION CONTROL BLANKET
SCALE: N.T.S.

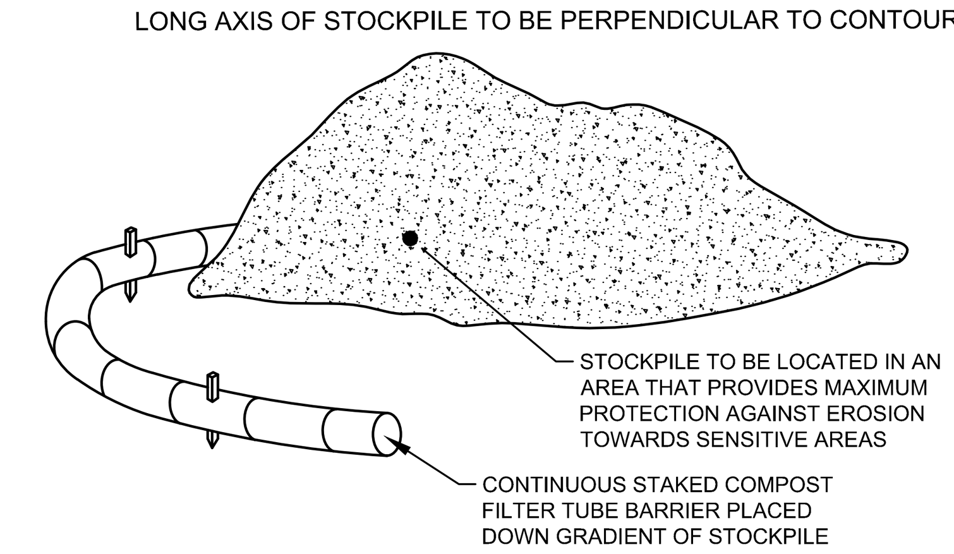


CRITICAL ROOT ZONE TO BE PROTECTED. ALL WORK NECESSARY WITHIN THE CRITICAL ROOT ZONE SHALL BE PERFORMED BY HAND.

NOTES:
1. WHERE SPACE IS AVAILABLE, TREE PROTECTION FENCE TO BE PLACED A MINIMUM OF 10' FROM BASE OF TREE PLUS AN ADDITIONAL 1' FOR EACH ADDITIONAL DBH FOR TREES GREATER THAN 10" DBH (DIA. AT BREAST HT.)
2. ALL WORK DONE WITHIN TREE PROTECTION FENCE IS TO BE DONE BY HAND AND LIGHT EQUIPMENT.
3. ROOTS EXPOSED DURING EXCAVATION SHALL BE NEATLY CUT AND COVERED WITH SOIL IMMEDIATELY.
4. FOR TREES THAT OCCUR IN GROUPS PROVIDE TREE PROTECTION FENCE AROUND ENTIRE AREA.
5. MAINTAIN FENCE PROTECTION IN SOUND CONDITION UNTIL FENCE COMPLETION
6. A CERTIFIED ARBORIST SHALL DELINEATE LIMIT OF TREE PROTECTION FENCE AS THEY RELATE TO THE LIMITS OF THE CRITICAL ROOT ZONE.

4 TREE PROTECTION FENCE
SCALE: N.T.S.

LONG AXIS OF STOCKPILE TO BE PERPENDICULAR TO CONTOUR



NOTE:
1. PROVIDE PLASTIC SHEETING, EROSION BLANKET, OR GRASS SEEDING OF THE STOCKPILE FOR STOCKPILES THAT ARE EXPECTED TO REMAIN UNDISTURBED IN PLACE FOR THE DURATION OF CONSTRUCTION ACTIVITY.

5 INLET SEDIMENT CONTROL
SCALE: N.T.S.

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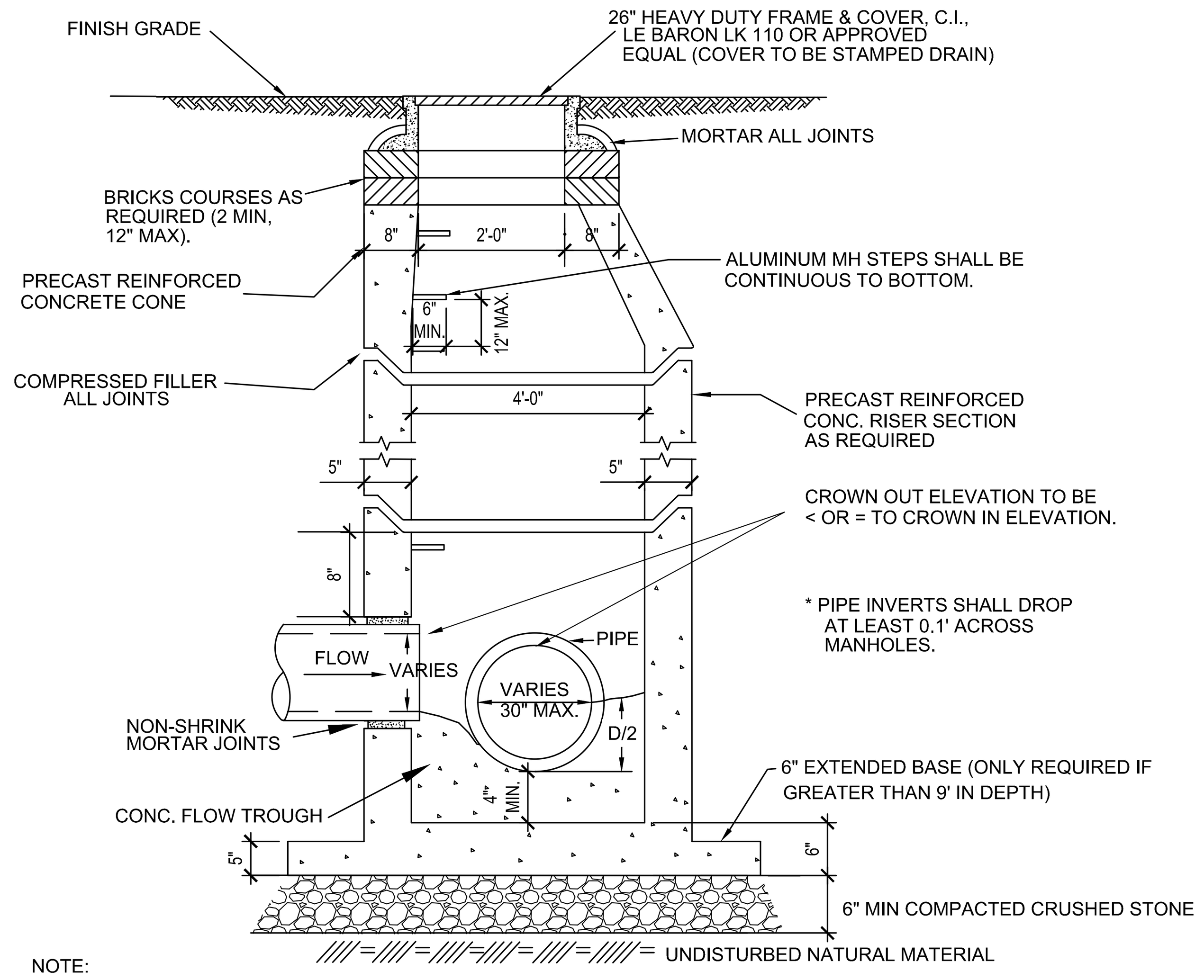
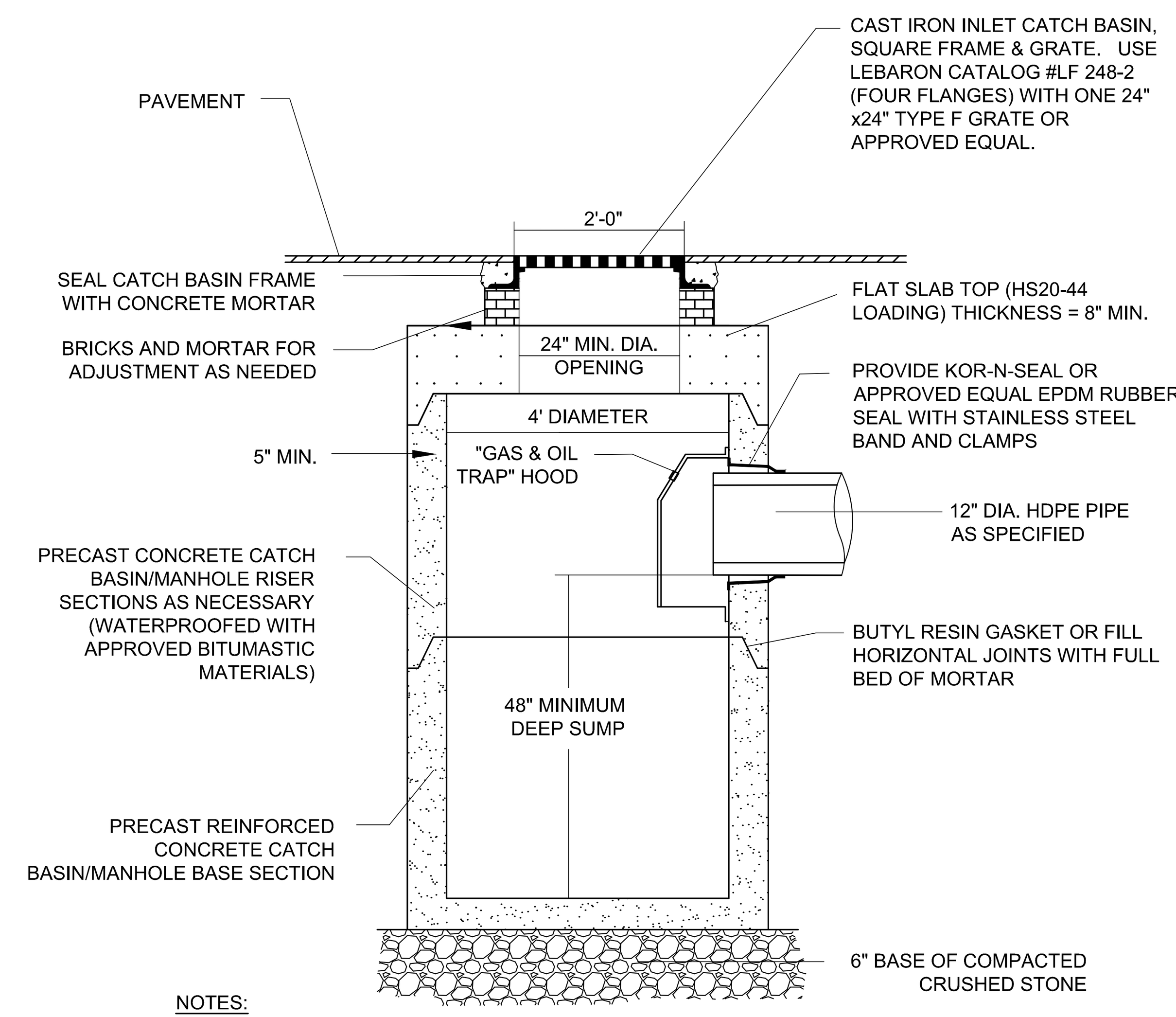


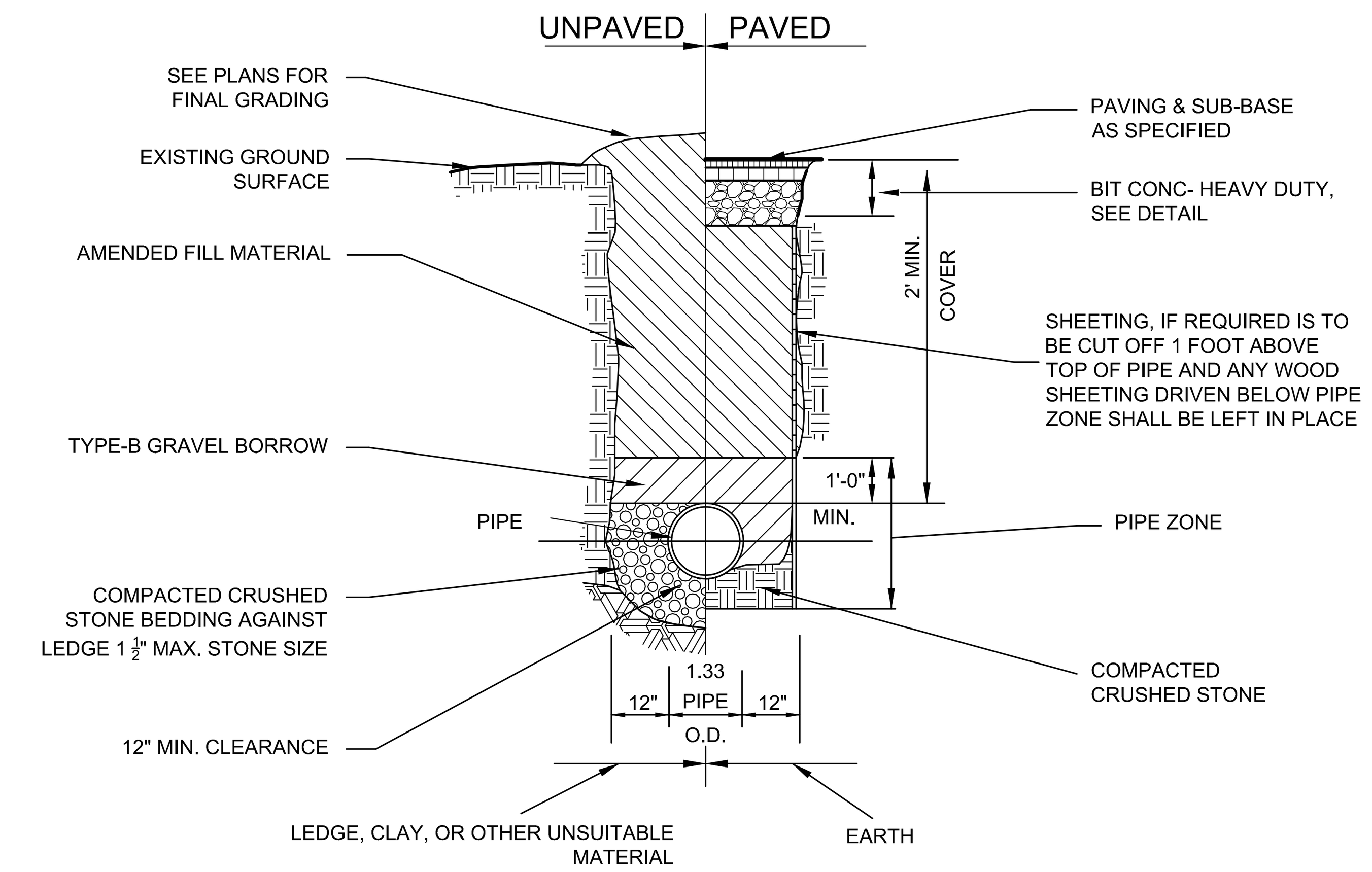
NOTE:
1. THE DRAIN MANHOLE SHALL BE DESIGNED TO RESIST BUOYANCY. ASSUMING GROUNDWATER IS AT GRADE, MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS, STAMPED BY A MASSACHUSETTS P.E.
2. MANHOLE FRAME AND COVER SHALL BE H-20 WHEEL LOAD RATED.

1 TYPICAL PRECAST CONCRETE MANHOLE
SCALE: N.T.S.

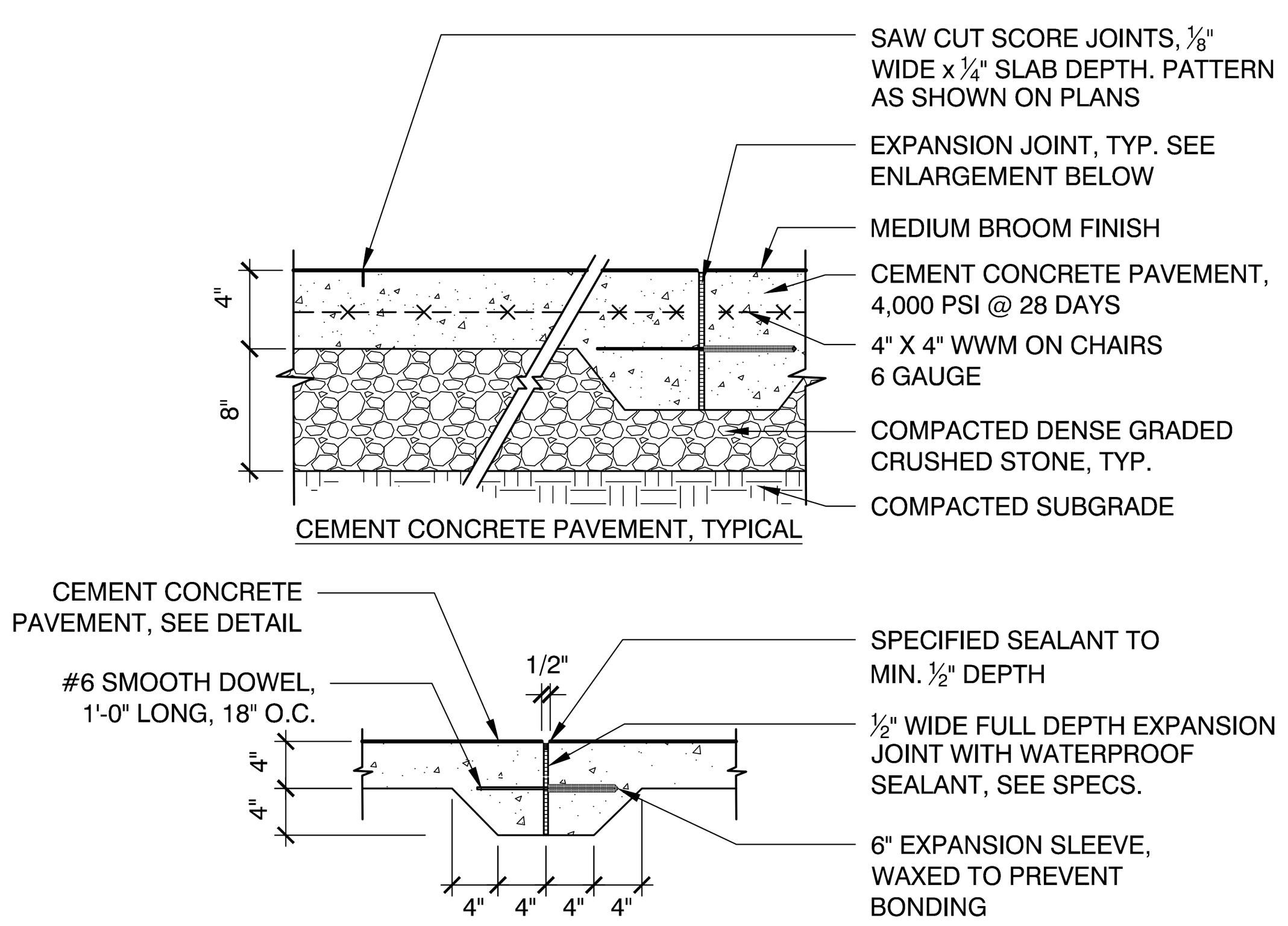


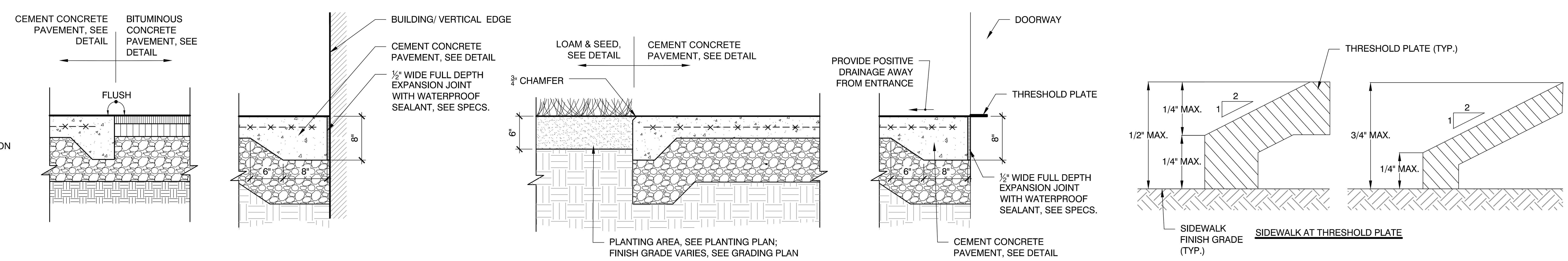
NOTES:
1. FOR DOUBLE CATCH BASINS, STRUCTURE SHALL BE 6' IN DIAMETER.
2. THE CATCH BASIN SHALL BE DESIGNED TO RESIST BUOYANCY. ASSUMING GROUNDWATER IS AT GRADE, MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS, STAMPED BY A MASSACHUSETTS P.E.
3. MANHOLE FRAME AND COVER SHALL BE H-20 WHEEL LOAD RATED.

2 STANDARD CATCH BASIN
SCALE: N.T.S.



3 TYPICAL STORM DRAIN & SEWER TRENCH DETAIL
SCALE: N.T.S.





EXPANSION JOINT INSTALLATION NOTES:
1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS (18" O.C.) WITHIN CONCRETE PAVING AND BETWEEN NEW CONCRETE PAVING AND EXISTING CONCRETE PAVING TO REMAIN.
1. DELETE EXPANSION SLEEVE AND DOWEL WHERE JOINT ABUTS WALL, CURBS, OR OTHER VERTICAL SURFACES, UNLESS OTHERWISE NOTED.
2. EXPANSION JOINTS MAX. 25'-0" O.C. UNLESS SHOWN OTHERWISE.
3. EXPANSIONS JOINTS SHALL BE PLACED WHERE NEW CEMENT CONCRETE PAVEMENT MEETS EXISTING PAVEMENT OR WALLS TO REMAIN.
4. NEW CONCRETE PAVEMENT SHALL MEET EX. CONCRETE PAVEMENT IN THE SA MANNER AS DETAILS ABOVE.

CONDITION A: CEMENT CONCRETE PAVEMENT AT BITUMINOUS CONCRETE PAVEMENT

CONDITION B: CEMENT CONCRETE PAVEMENT AT VERTICAL FACE

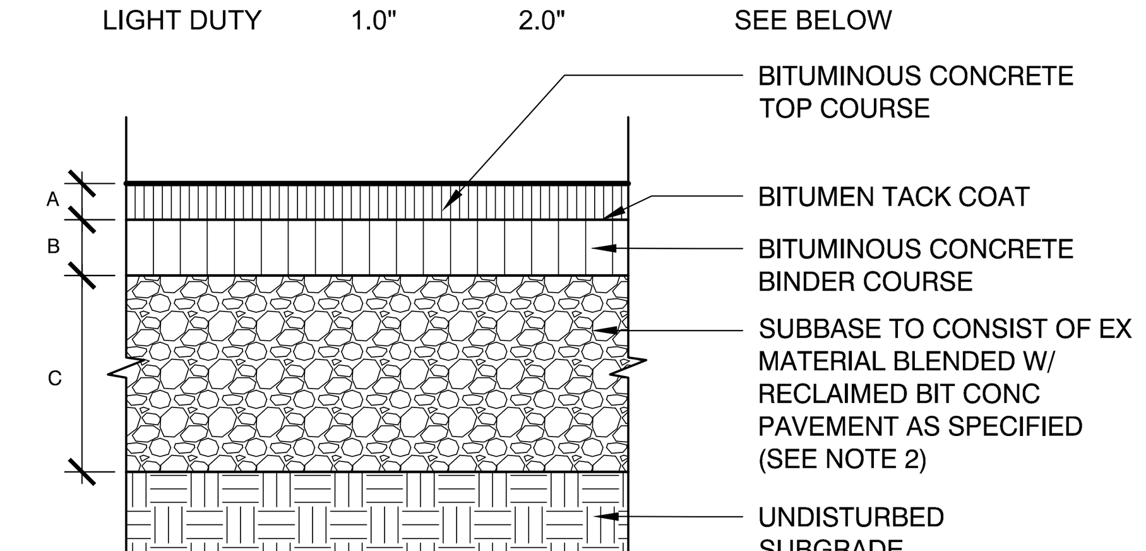
CONDITION C: CEMENT CONCRETE PAVEMENT AT LOAM & SEED

CONDITION D: CEMENT CONCRETE PAVEMENT AT EXISTING DOOR/THRESHOLD

4 CEMENT CONCRETE PAVEMENT
SCALE: N.T.S.

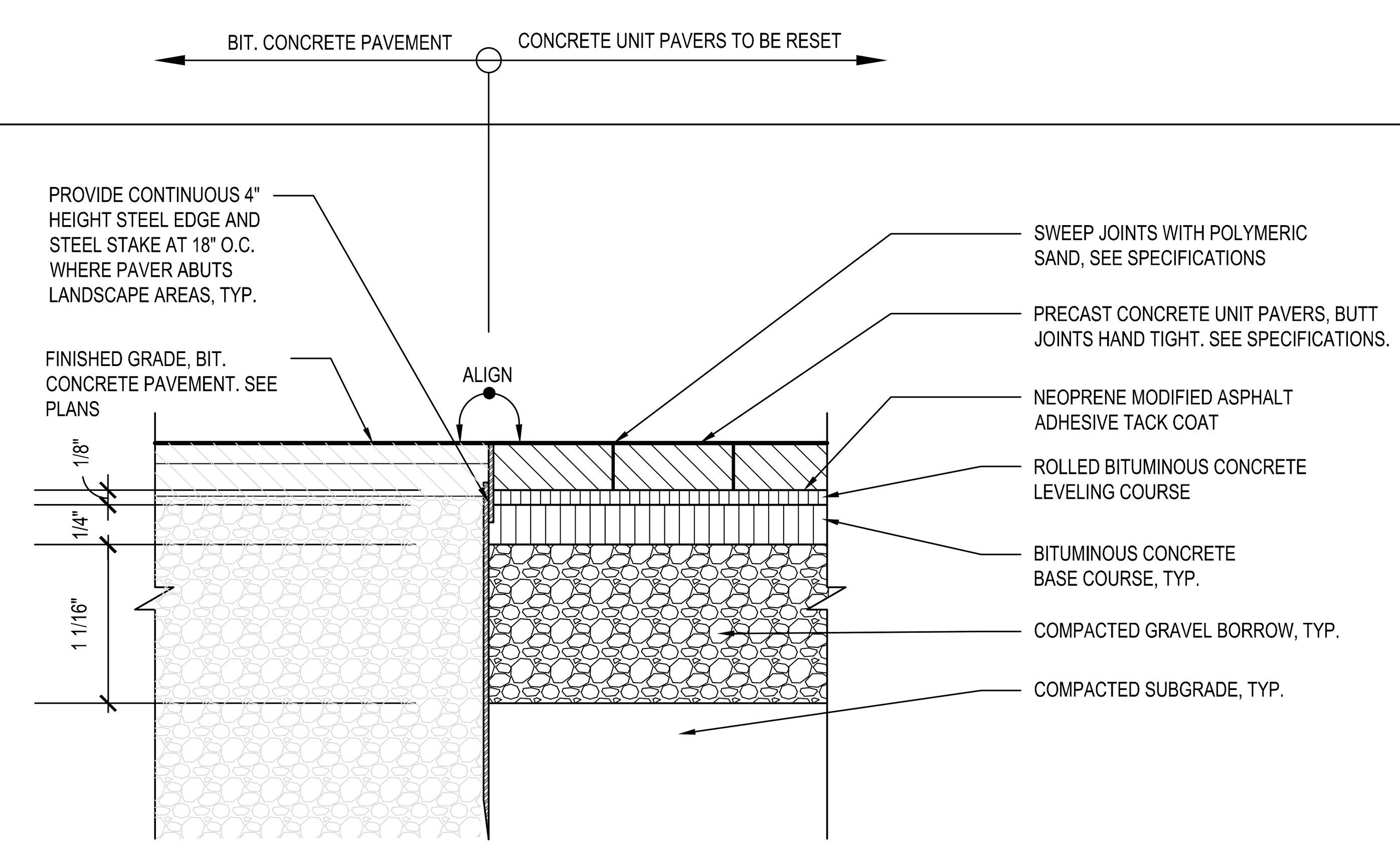
PAVEMENT DEPTH SCHEDULE

	TOP (A)	BINDER (B)	SUBBASE (C)
HEAVY DUTY	2.0"	3.0"	SEE BELOW
MEDIUM DUTY	1.5"	2.5"	SEE BELOW
LIGHT DUTY	1.0"	2.0"	SEE BELOW

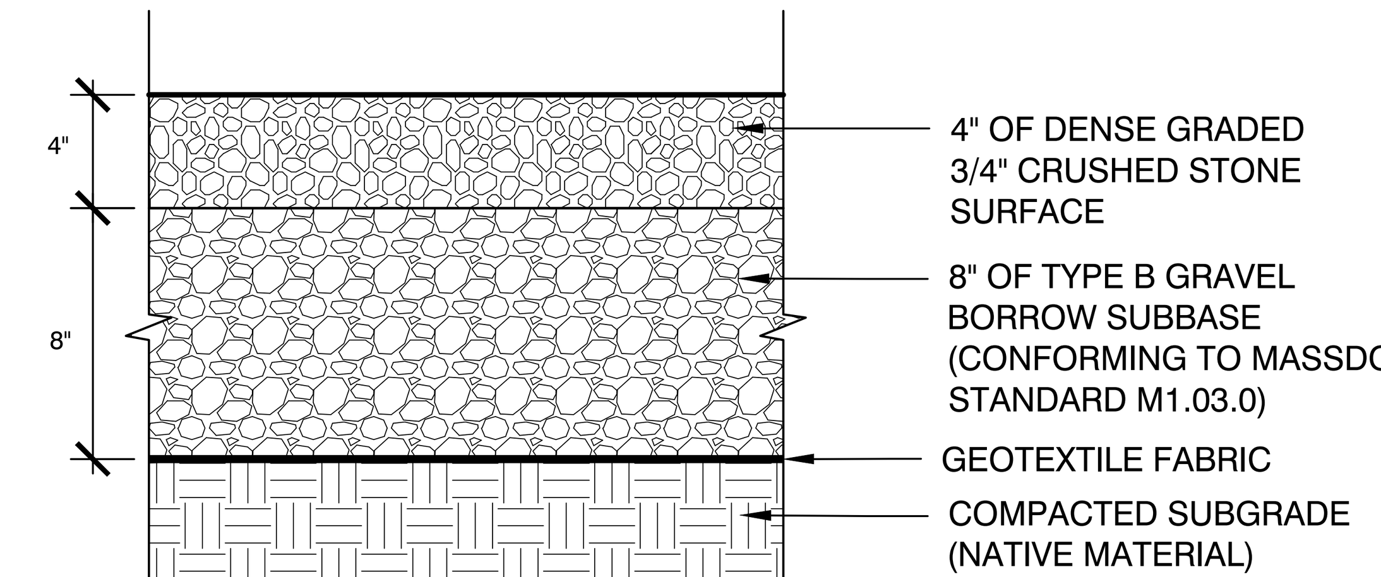


NOTES:
1. CONTRACTOR TO PROVIDE SMOOTH TRANSITION WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENT, TYP.
2. PROVIDE 10" (MIN) OF RECLAIMED/BLENDED MATERIAL AS SUBSTRATE OVER NEW TRENCHES.

5 BITUMINOUS CONCRETE PAVEMENT
SCALE: N.T.S.



6 PRECAST CONCRETE PAVERS ON BIT. CONCRETE BASE
SCALE: 1-1/2" = 1'-0"



7 TEMPORARY GRAVEL SURFACE CROSS-SECTION
SCALE: NTS

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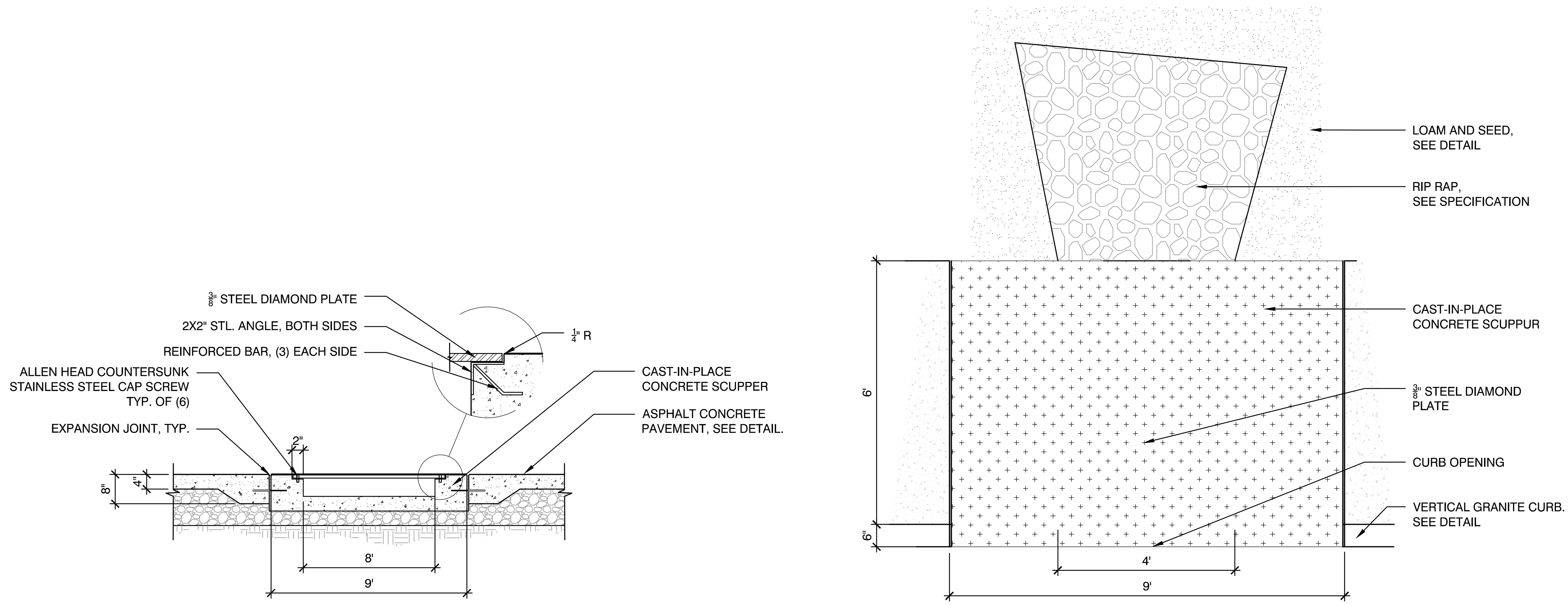
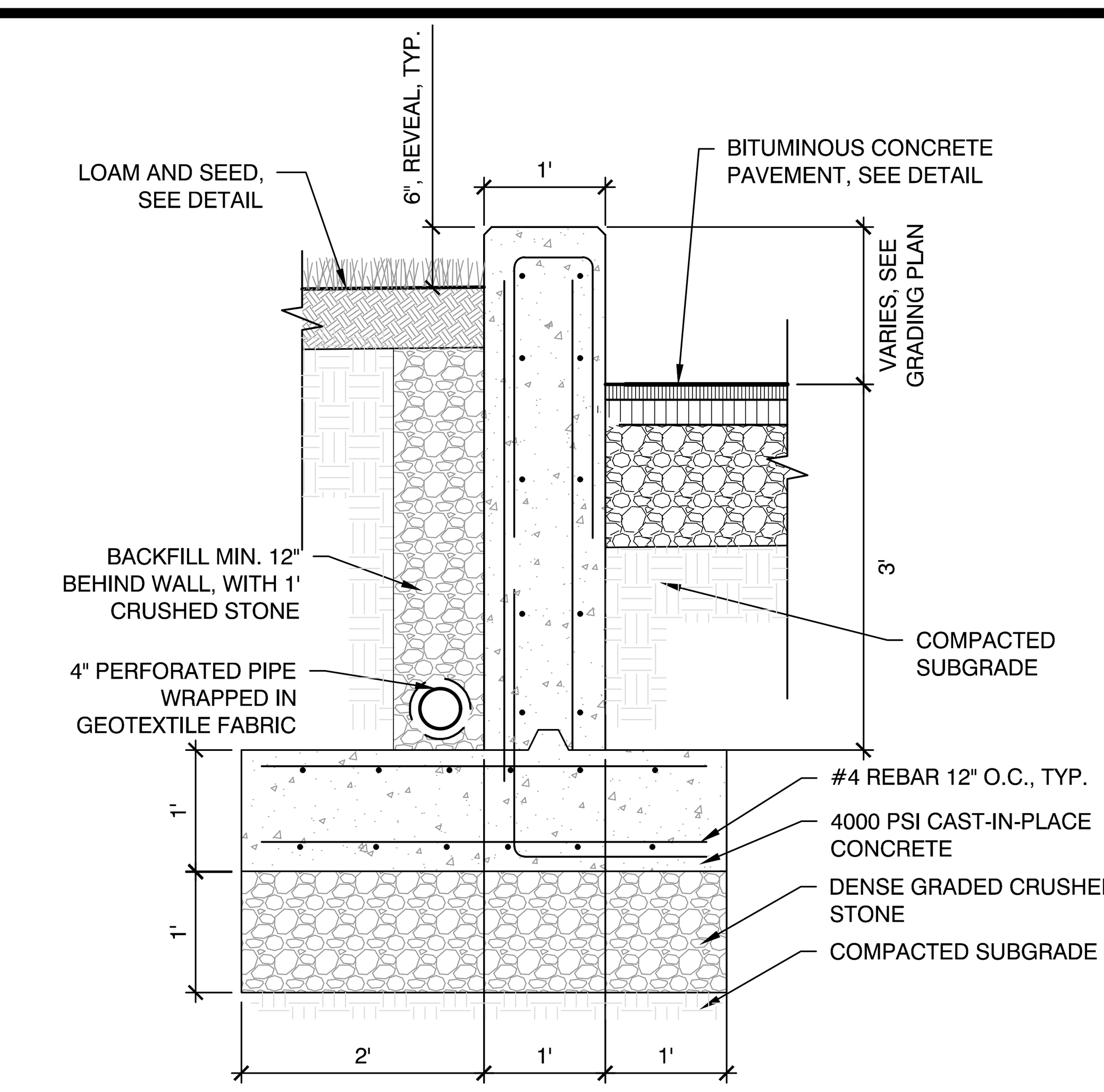
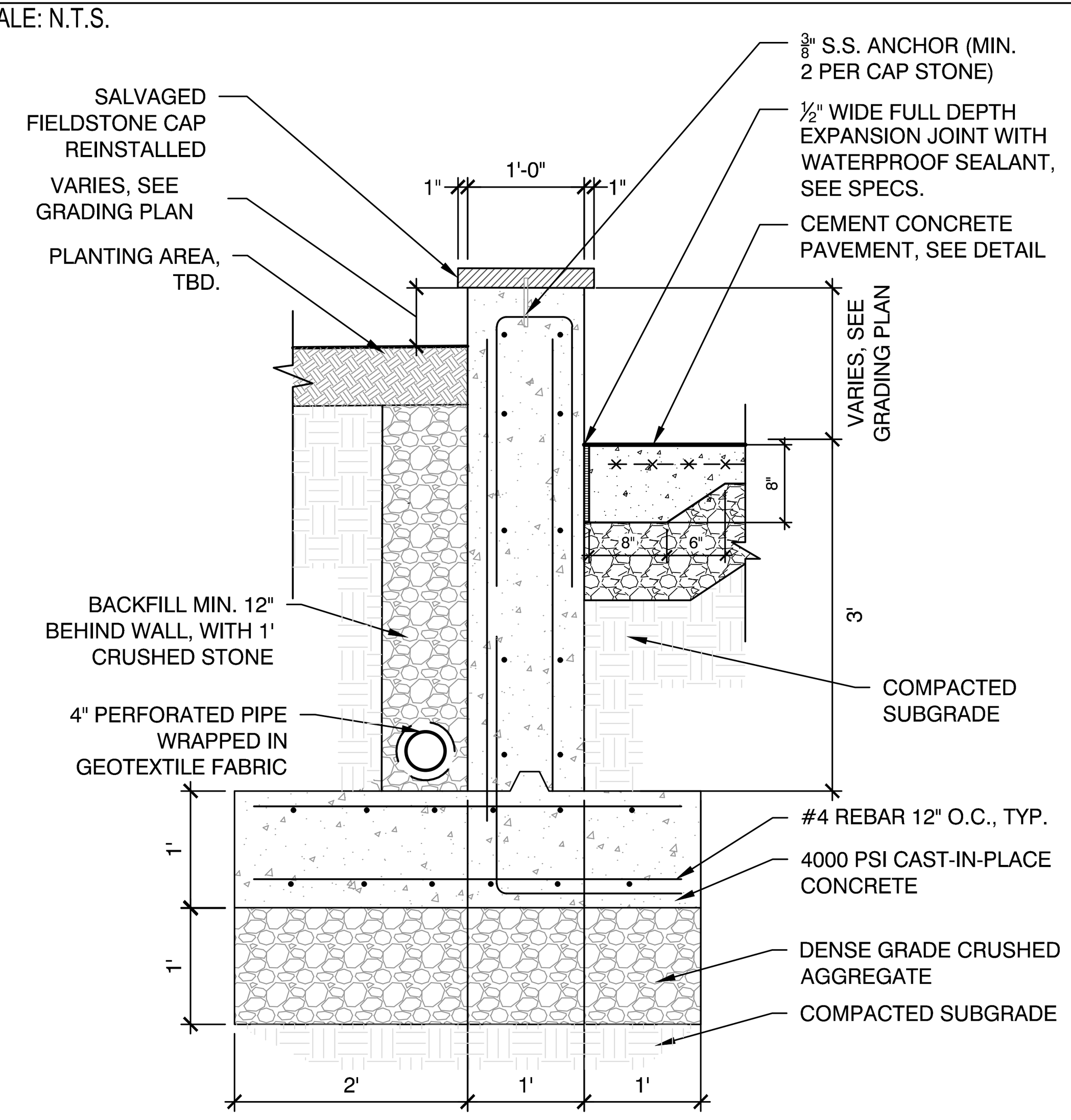


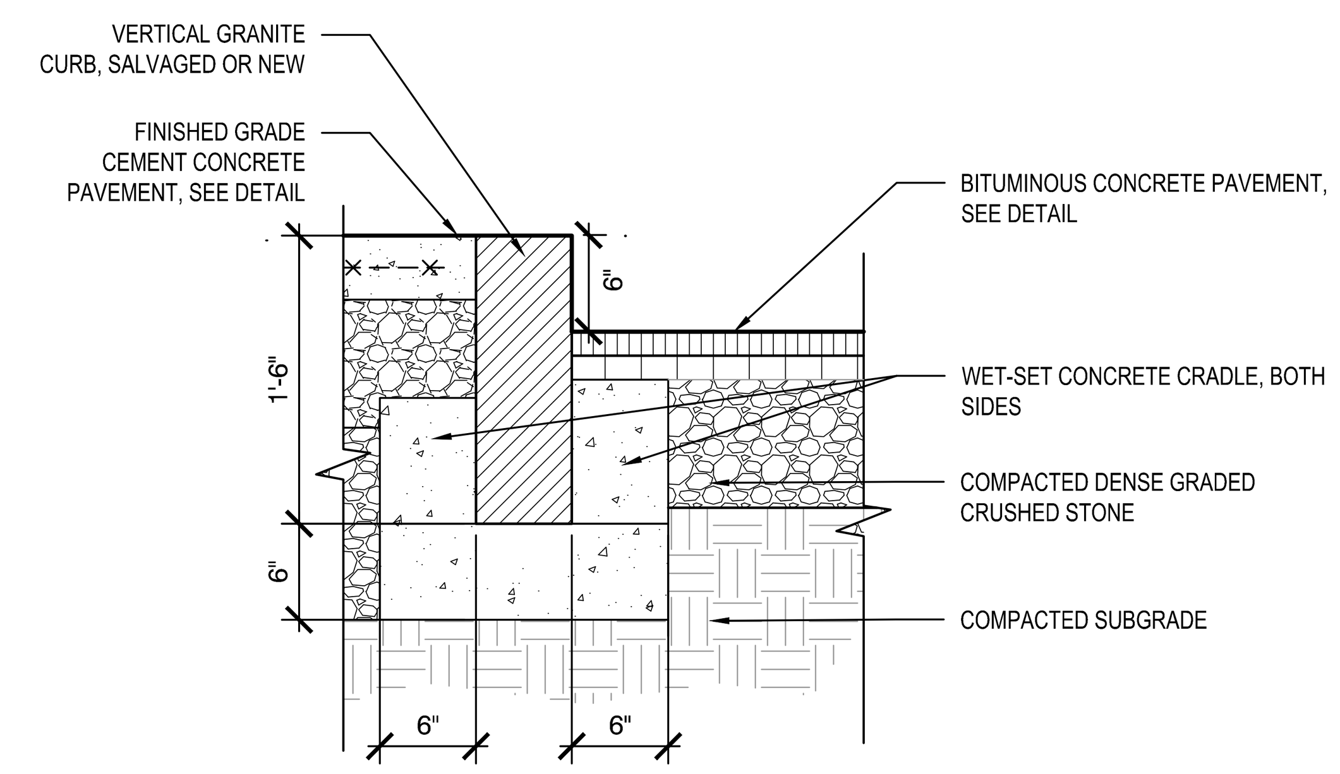
1 SIDEWALK SCUPPER
SCALE: N.T.S.



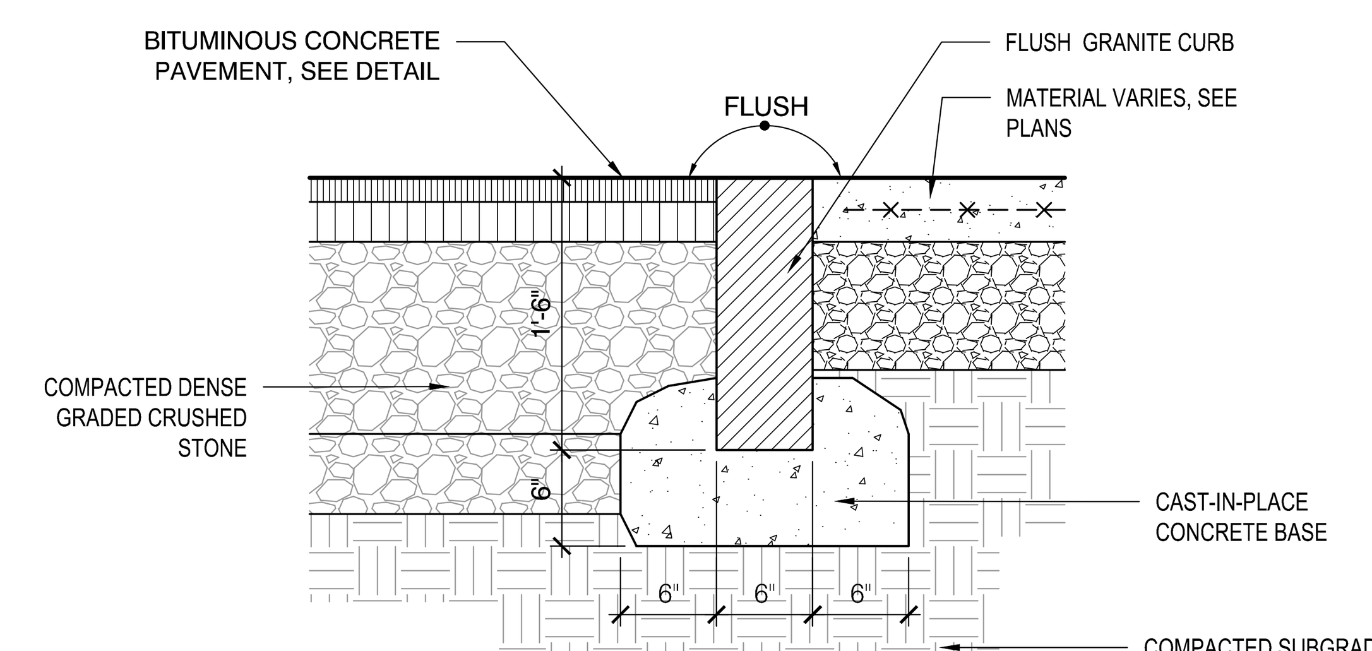
2 CONCRETE RETAINING WALL
SCALE: N.T.S.



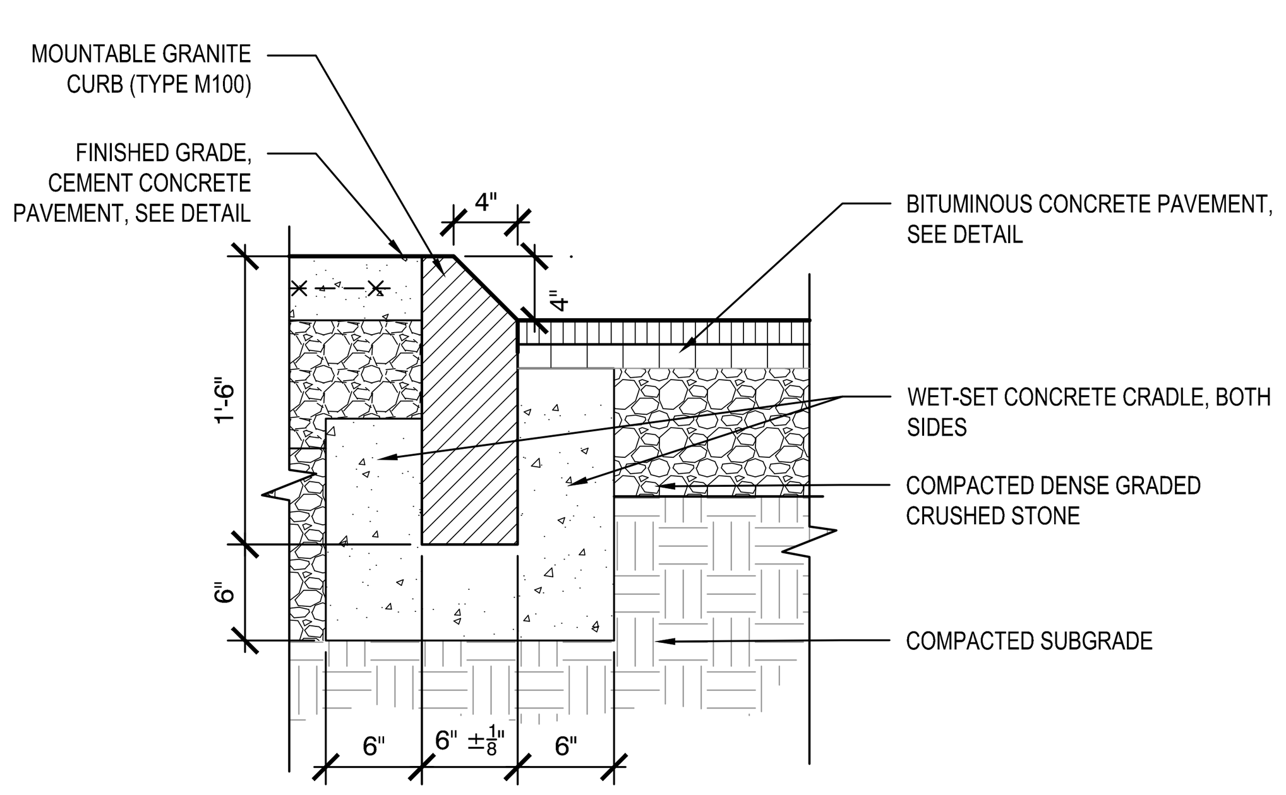
3 CAST-IN-PLACE CONCRETE RETAINING WALL WITH FIELDSTONE CAP
SCALE: N.T.S.



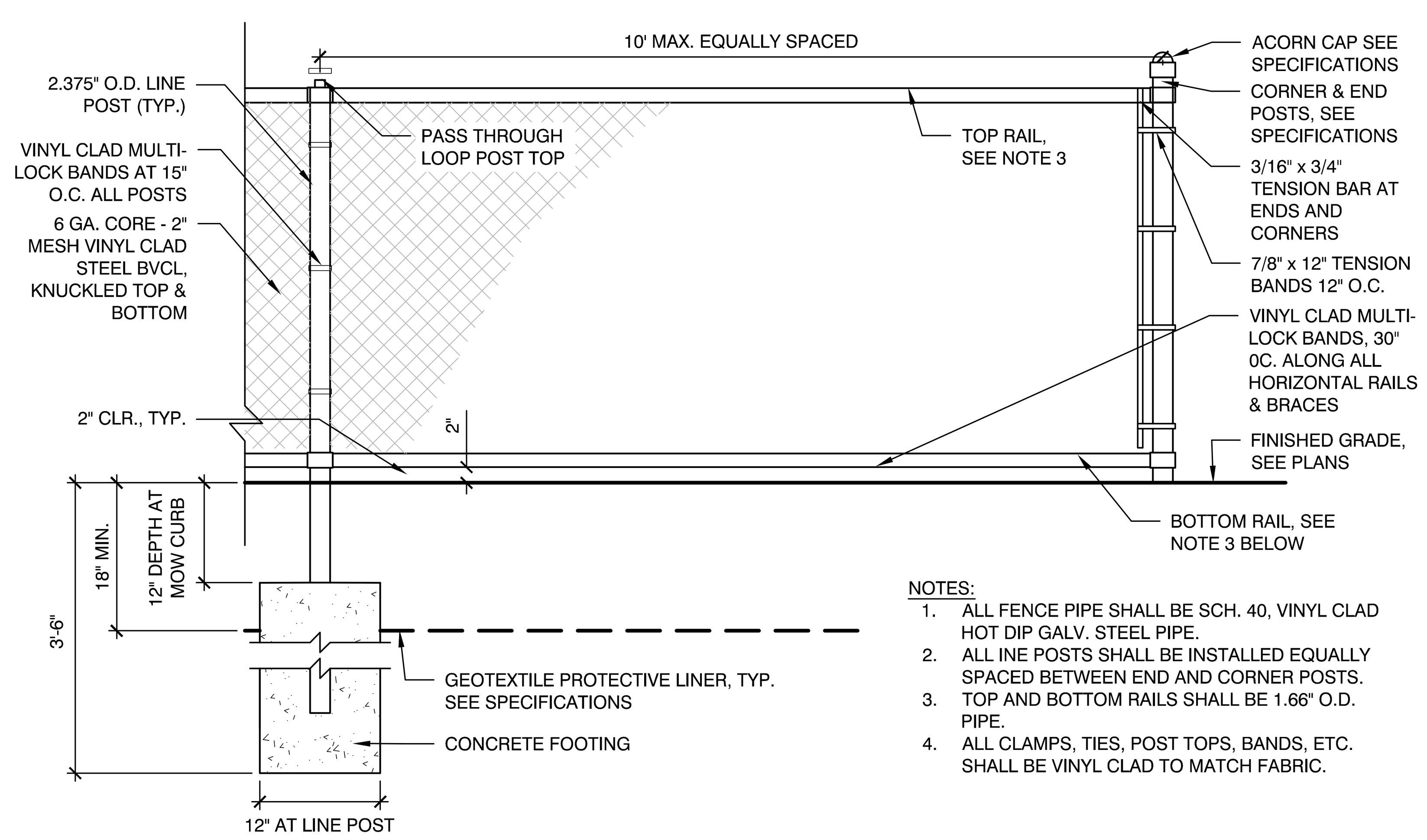
4 VERTICAL GRANITE CURB
SCALE: N.T.S.



5 FLUSH GRANITE CURB
SCALE: N.T.S.

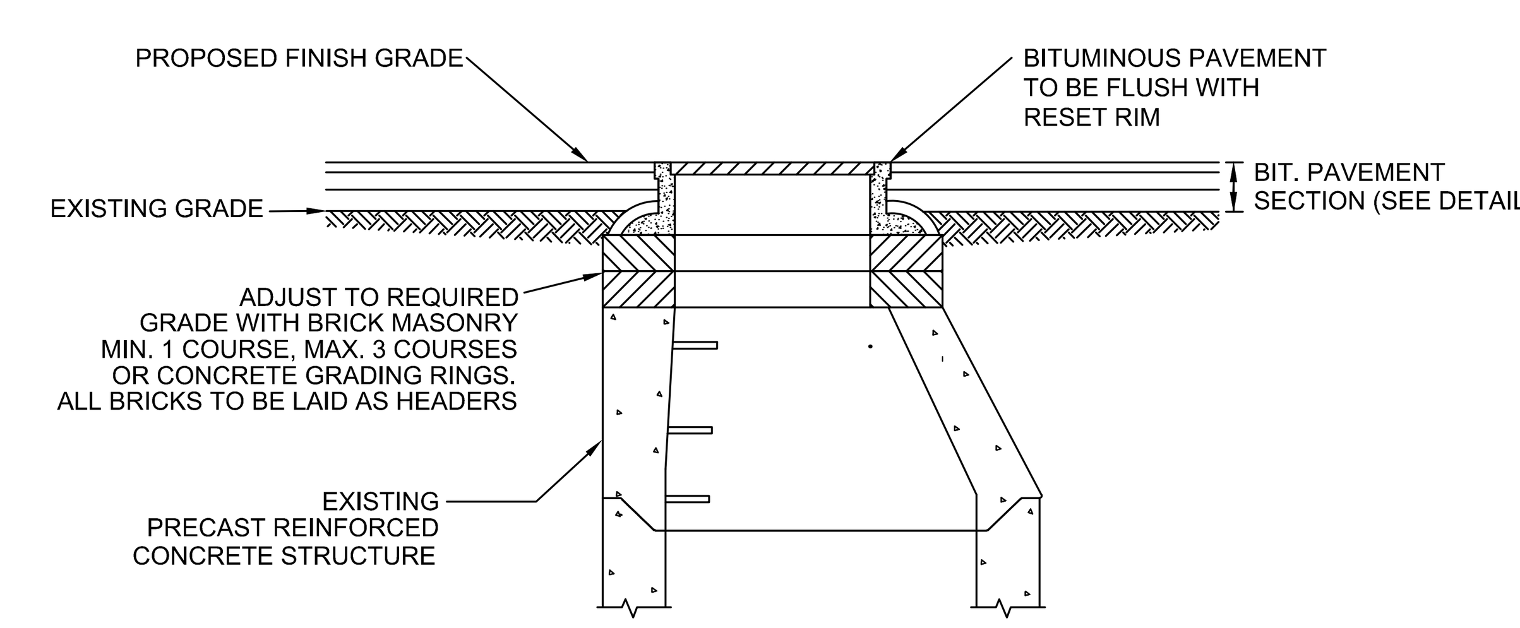


6 MOUNTABLE GRANITE CURB
SCALE: N.T.S.



NOTES:
1. ALL FENCE PIPE SHALL BE SCH. 40, VINYL CLAD HOT DIP GALV. STEEL PIPE.
2. ALL INE POSTS SHALL BE INSTALLED EQUALLY SPACED BETWEEN END AND CORNER POSTS.
3. TOP AND BOTTOM RAILS SHALL BE 1.66" O.D. PIPE.
4. ALL CLAMPS, TIES, POST TOPS, BANDS, ETC. SHALL BE VINYL CLAD TO MATCH FABRIC.

7 4' HT. BVCL FENCE
SCALE: N.T.S.



8 ADJUSTMENT OF MANHOLE COVER FOR GRADE CHANGES
SCALE: N.T.S.

Project:
BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

TOWN OF BOXFORD INCORPORATED 1685 MASSACHUSETTS

HARRY LEE COLE SCHOOL
26 AND 28 MIDDLETON ROAD
BOXFORD, MA 01921

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COMMONWEALTH OF MASSACHUSETTS JAMES I. PEARSON CIVIL No. 50675 REGISTERED PROFESSIONAL ENGINEER
11/22/2022

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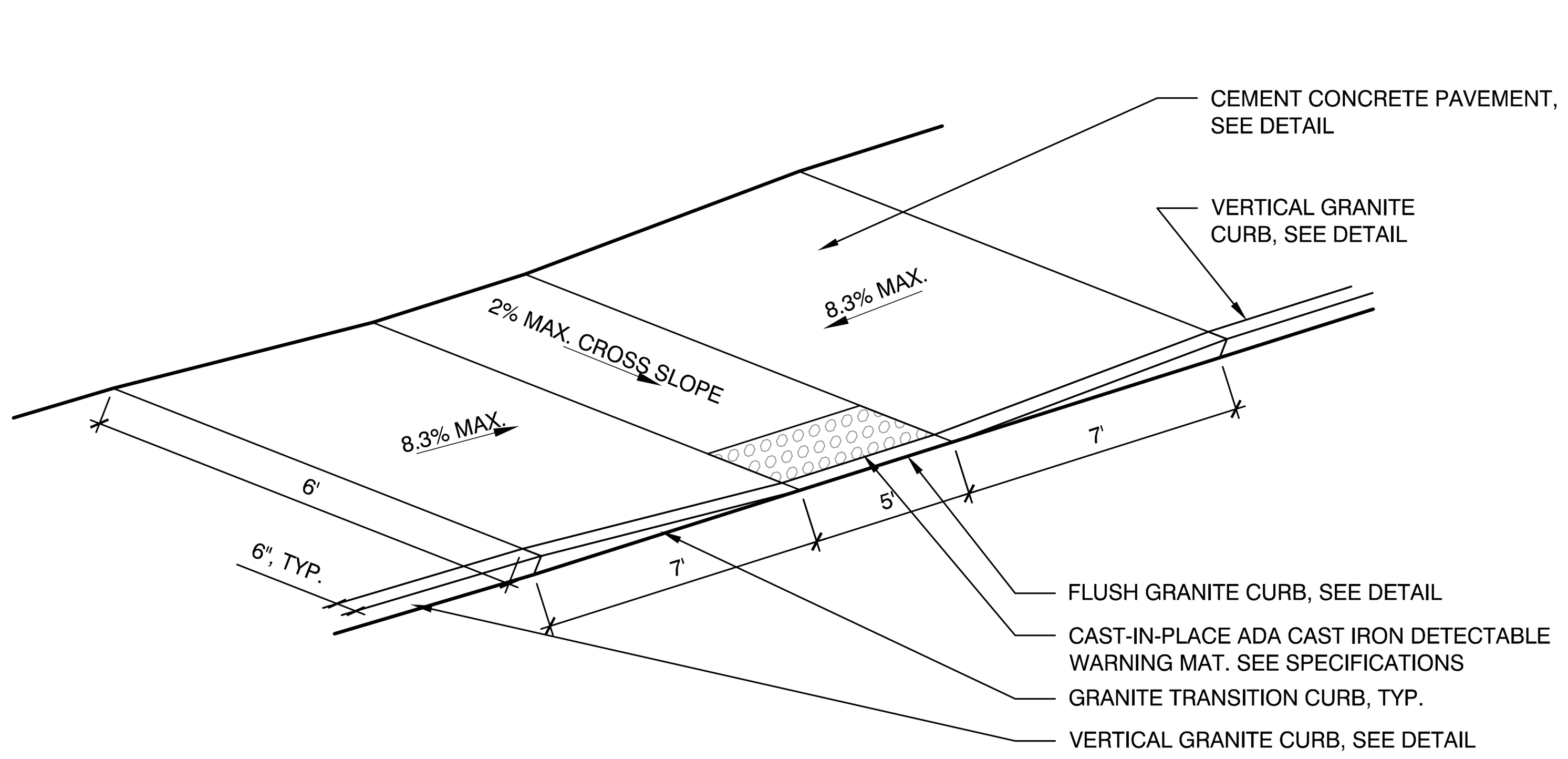
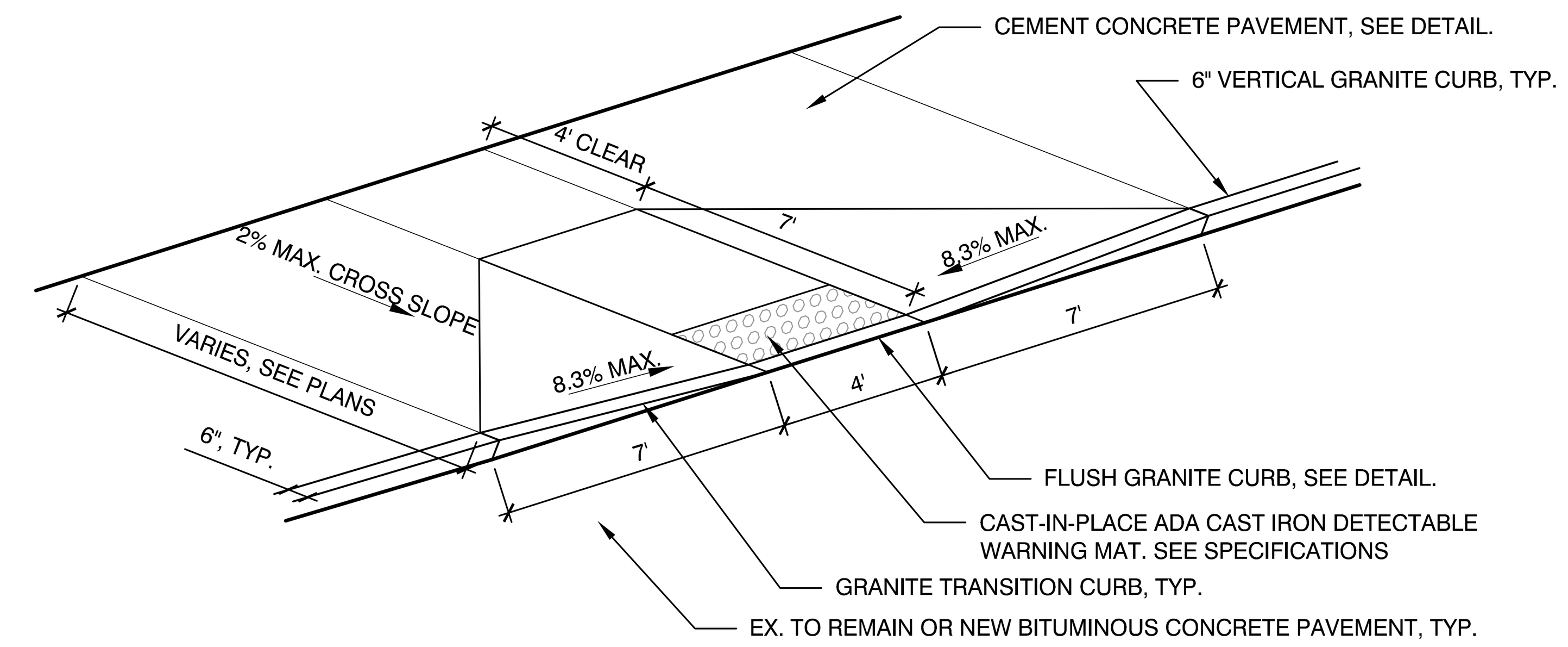
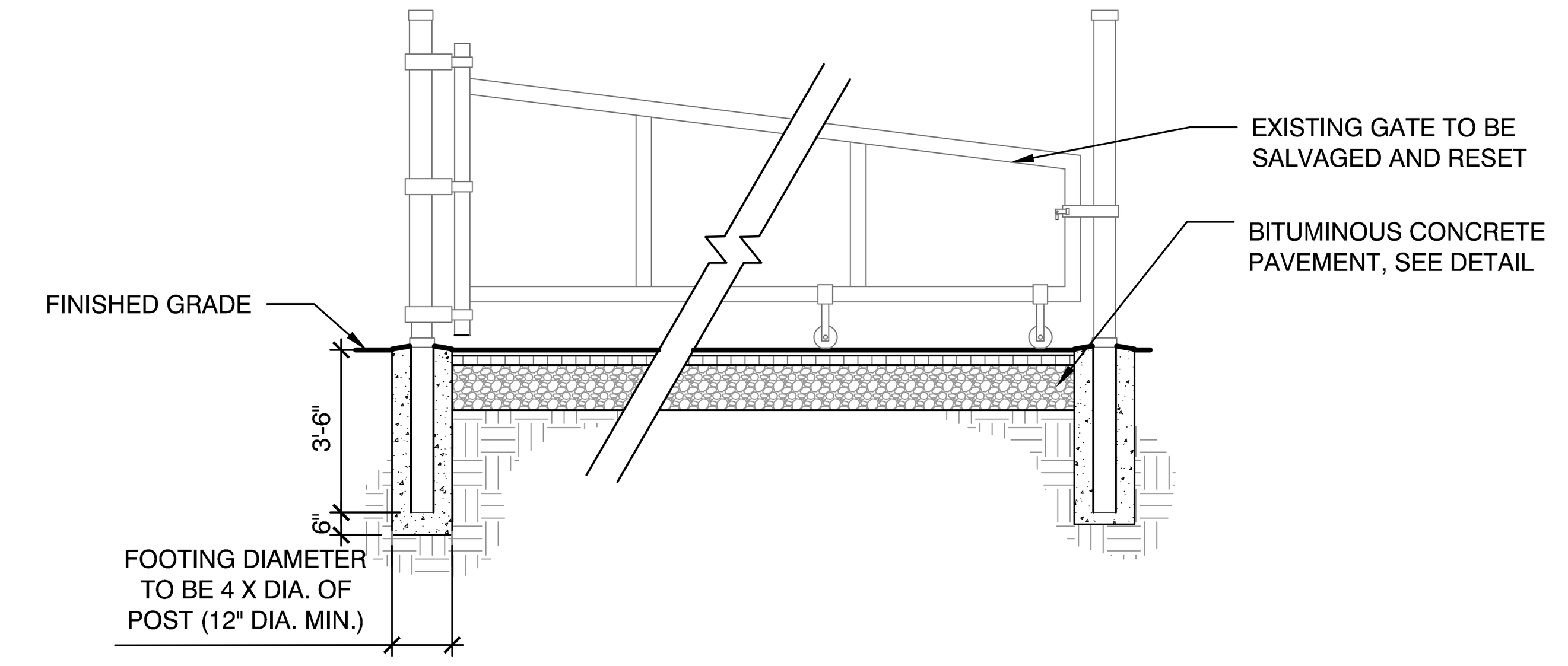


1 ADA CURB CUT- TYPE A
SCALE: N.T.S.



NOTES:
1. CONTRACTOR SHALL PROVIDE CLEAN AND STRAIGHT SAWCUT LINES AT LIMIT OF REMOVAL OF EXISTING ASPHALT PAVEMENT TO REMAIN. CONTRACTOR SHALL VERIFY LIMITS OF EXISTING ASPHALT PAVEMENT REMOVAL PRIOR TO COMMENCING DEMOLITION.
2. CONTRACTOR SHALL REMOVE AND REPLACE ASPHALT PAVEMENT, GRAVEL BORROW, AND SUBGRADE NECESSARY TO CONSTRUCT A CLEAN, SMOOTH TRANSITION AT ADA CURB CUT.

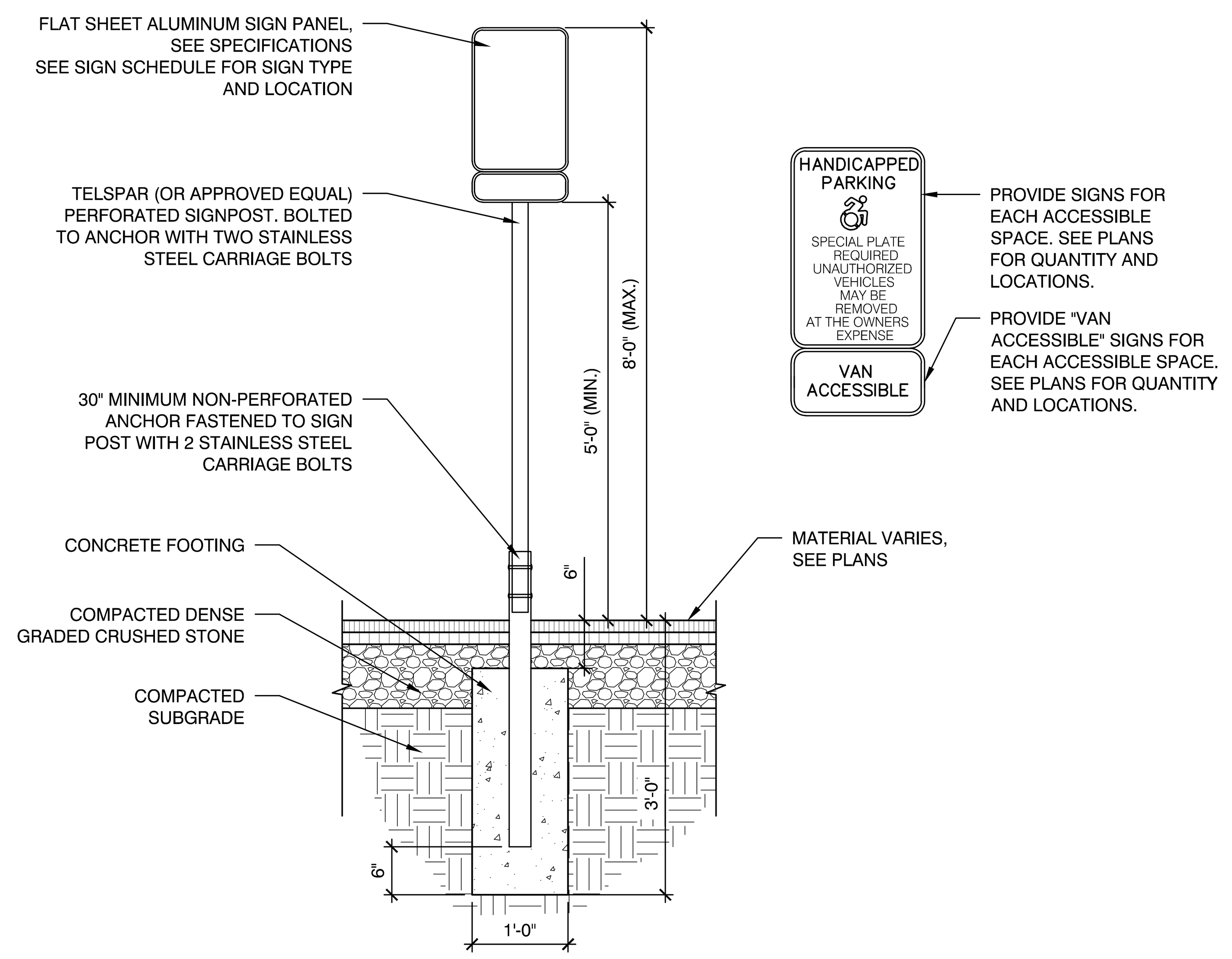
2 ADA CURB CUT- TYPE B
SCALE: N.T.S.



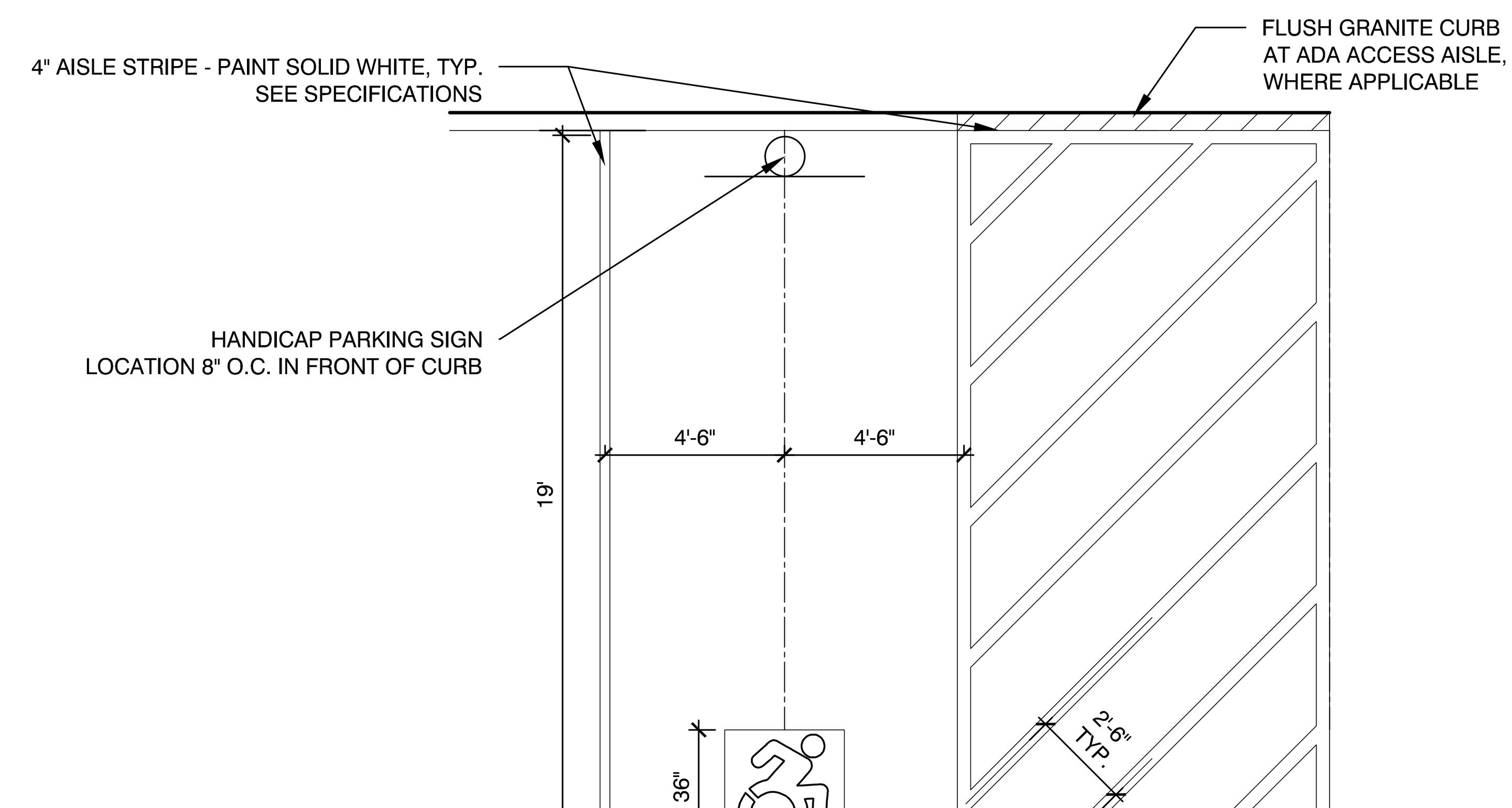
CONCRETE FOOTING:
NORMAL WEIGHT CONCRETE AIR ENTRAINED WITH NOT LESS THAN 4,500 PSI COMPRESSIVE STRENGTH (28 DAYS), 3 INCH SLUMP, AND 1-INCH MAXIMUM SIZE AGGREGATE.

NOTE:
A HITCH POST FOR THE GATE ALONG WITH A CONCRETE FOOTING FOR THE HITCH POST SHALL ALSO BE INSTALLED WITH THE METAL SWING GATE.

3 EX. METAL SWING GATE, RESET
SCALE: N.T.S.

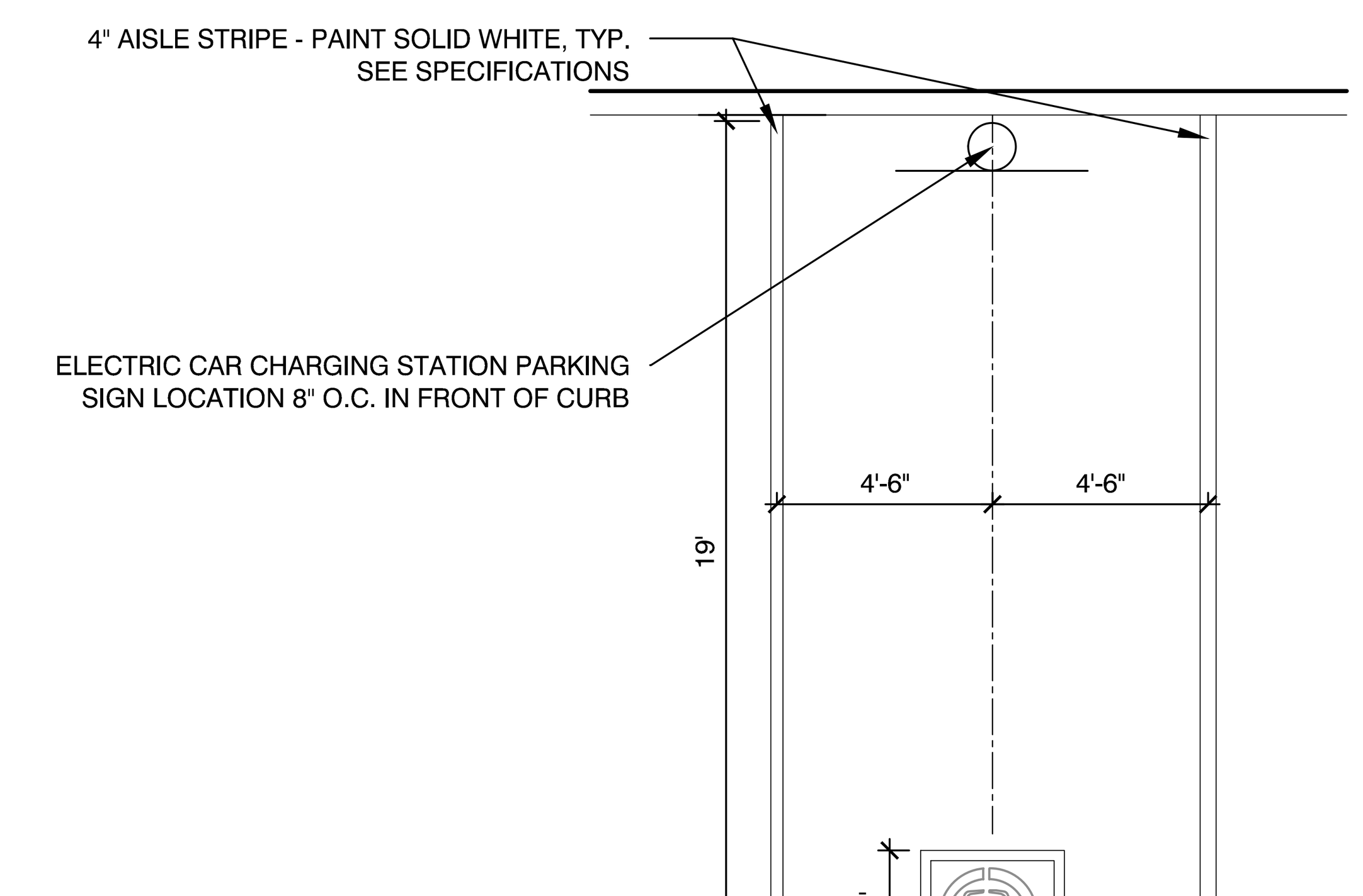


4 SIGN POST FOOTING
SCALE: N.T.S.



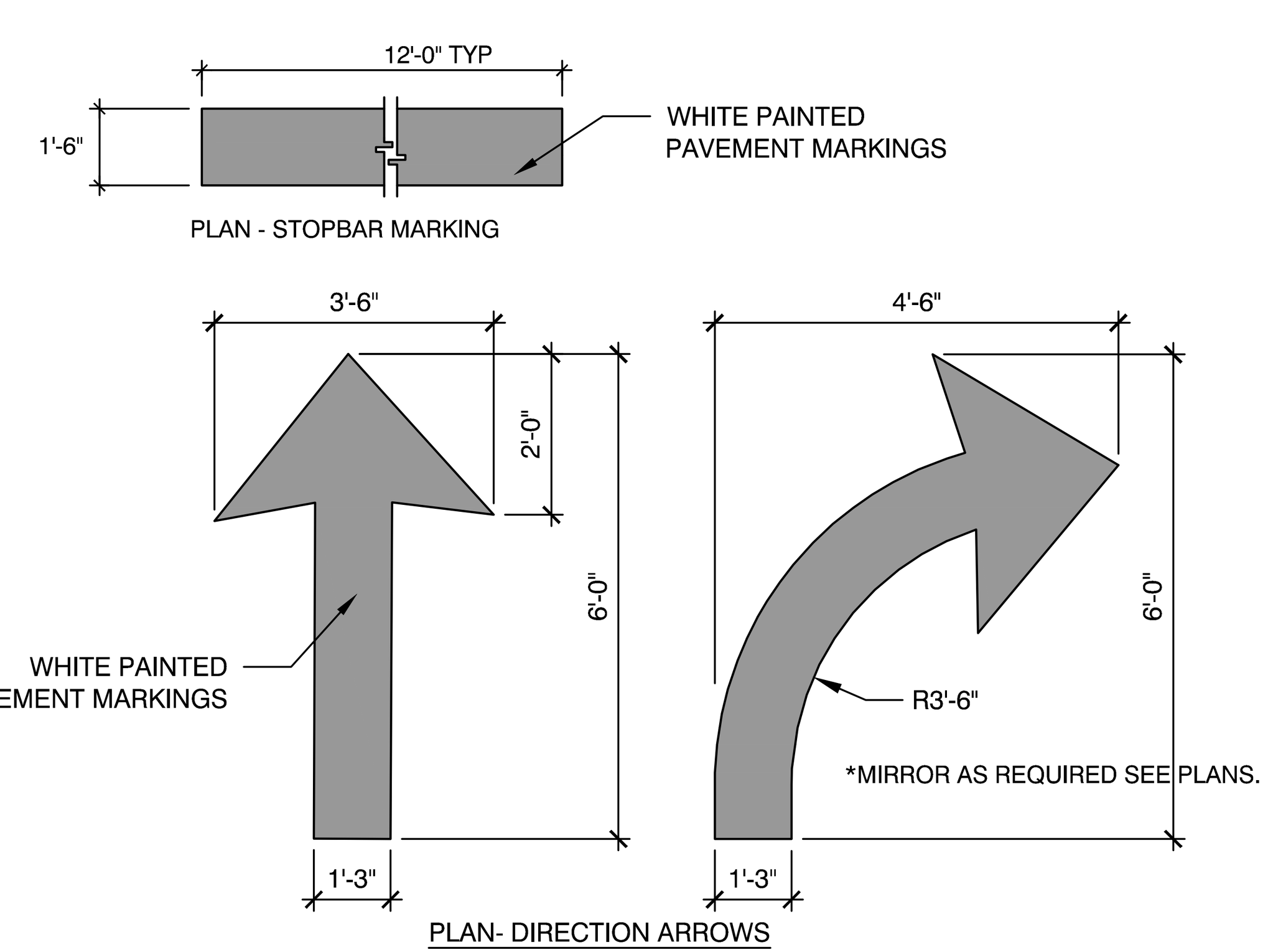
NOTES:
1. THIS IS A GENERAL DETAIL FOR REFERENCE ONLY. SEE PLAN FOR EXACT CONFIGURATIONS.
2. SEE SPECIFICATIONS FOR ALL PAVEMENT MARKINGS.
3. UNIVERSAL WHITE PAINTED ADA SYMBOL PLACED IN A BLUE PAINTED FIELD.

5 ACCESSIBLE PARKING SPACE LAYOUT
SCALE: N.T.S.



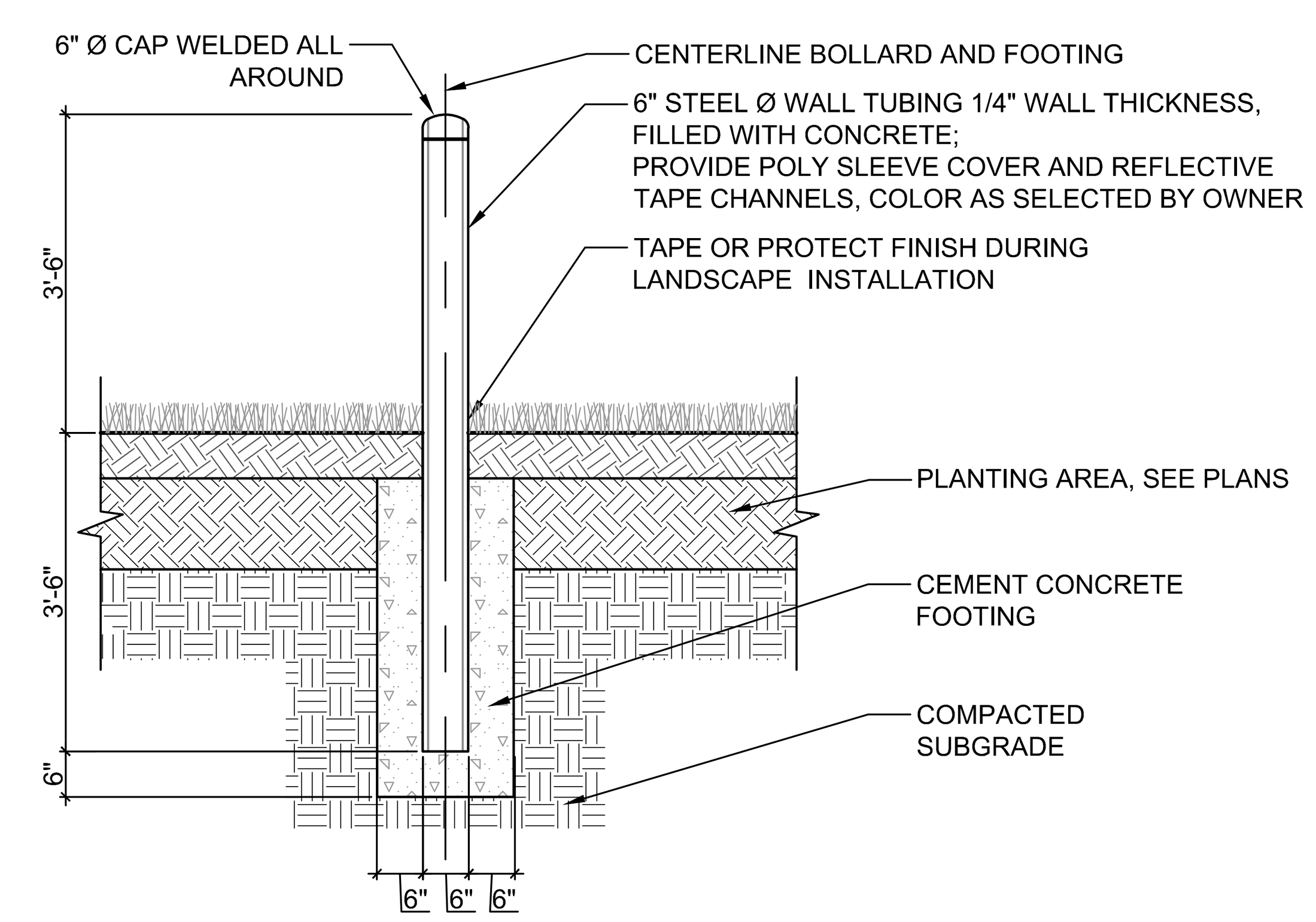
NOTES:
1. SEE SPECIFICATIONS FOR ALL PAVEMENT MARKINGS.
2. ELECTRIC VEHICLE CHARGING STATION LOCATION TO BE COORDINATED WITH LAYOUT, REFER TO ELECTRICAL PLANS.

6 ELECTRIC CAR CHARGING STATION PARKING SPACE LAYOUT
SCALE: N.T.S.



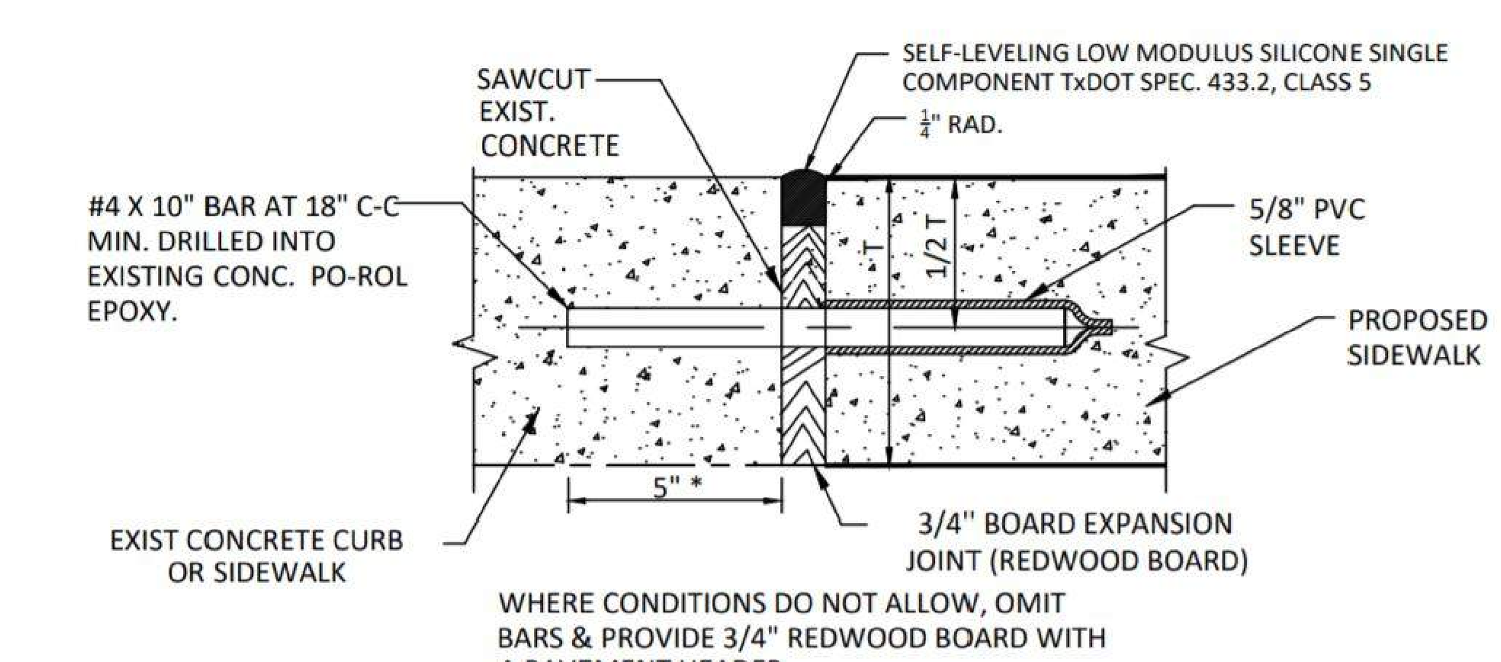
NOTES:
1. SEE PLANS FOR LOCATIONS OF EACH, AND COMBINATIONS THEREIN.

7 DIRECTIONAL ARROW AND STOP BAR TRAFFIC MARKINGS
SCALE: N.T.S.



NOTES:
1. SEE PLAN FOR BOLLARD LOCATIONS.
2. BOLLARD FOUNDATION CONRETE TO BE 4000 PSI MIN.
3. EXACT LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY TOWN BEFORE INSTALLATION.
4. 6" GALVANIZED PIPE PROVIDED BY MISC. METALS CONTRACTOR. INSTALLATION AND CONCRETE BY GENERAL CONTRACTOR.

8 EXTERIOR STEEL BOLLARD
SCALE: N.T.S.



9 PROPOSED SIDEWALK AT EXISTING CONCRETE
SCALE: N.T.S.

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JAMES I. PEARSON
CIVIL
No. 50675
REGISTERED PROFESSIONAL ENGINEER
11/22/2022

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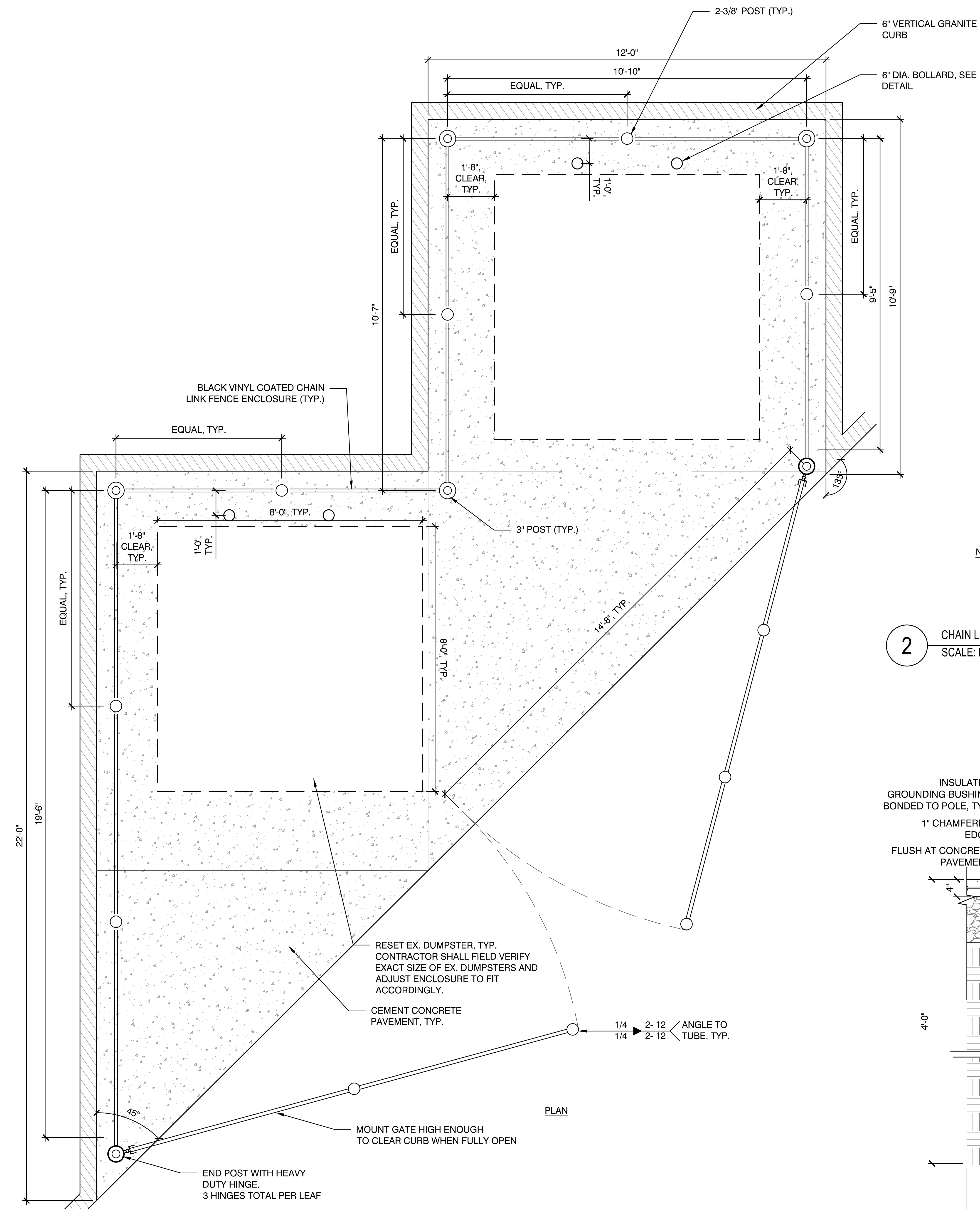
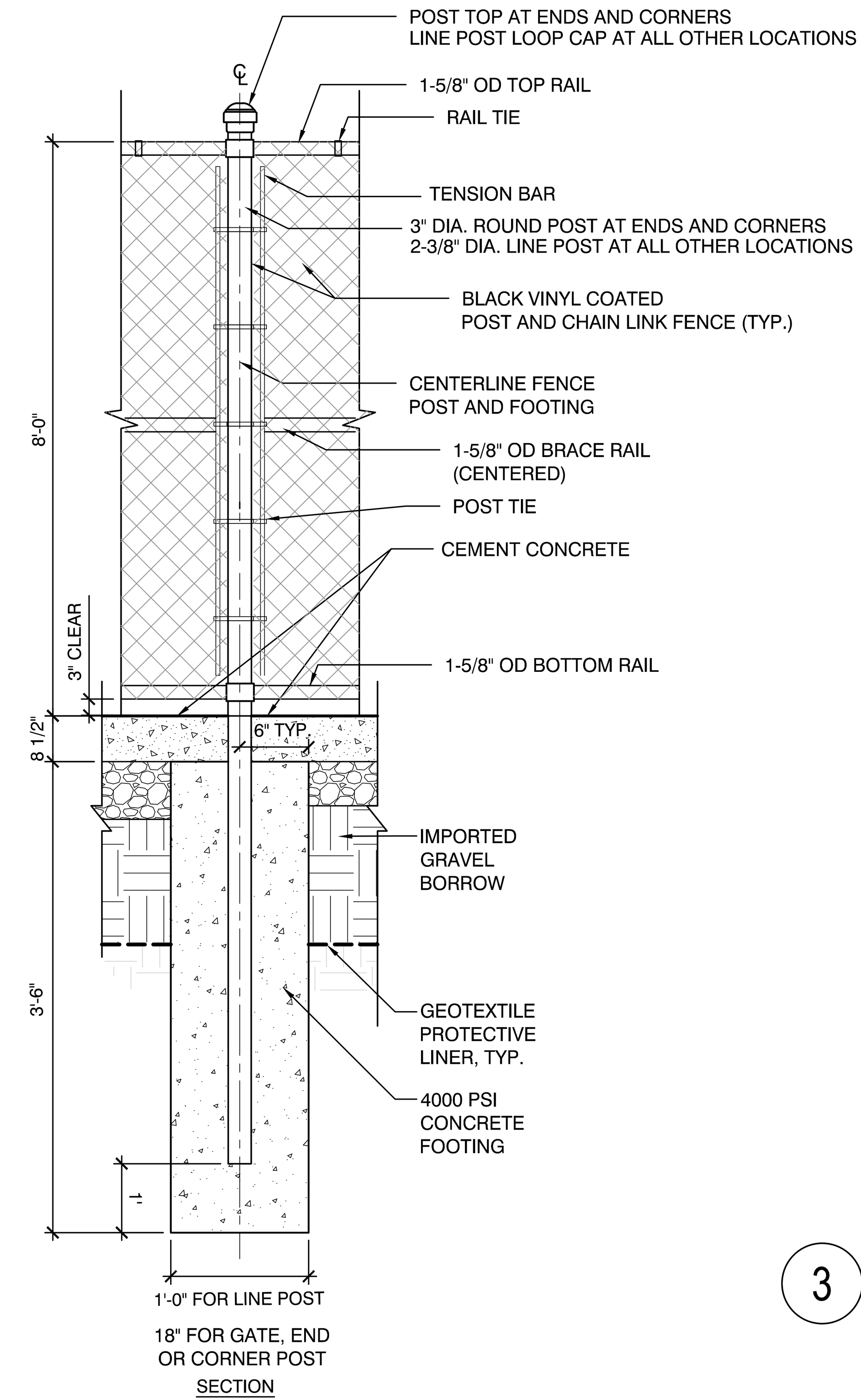
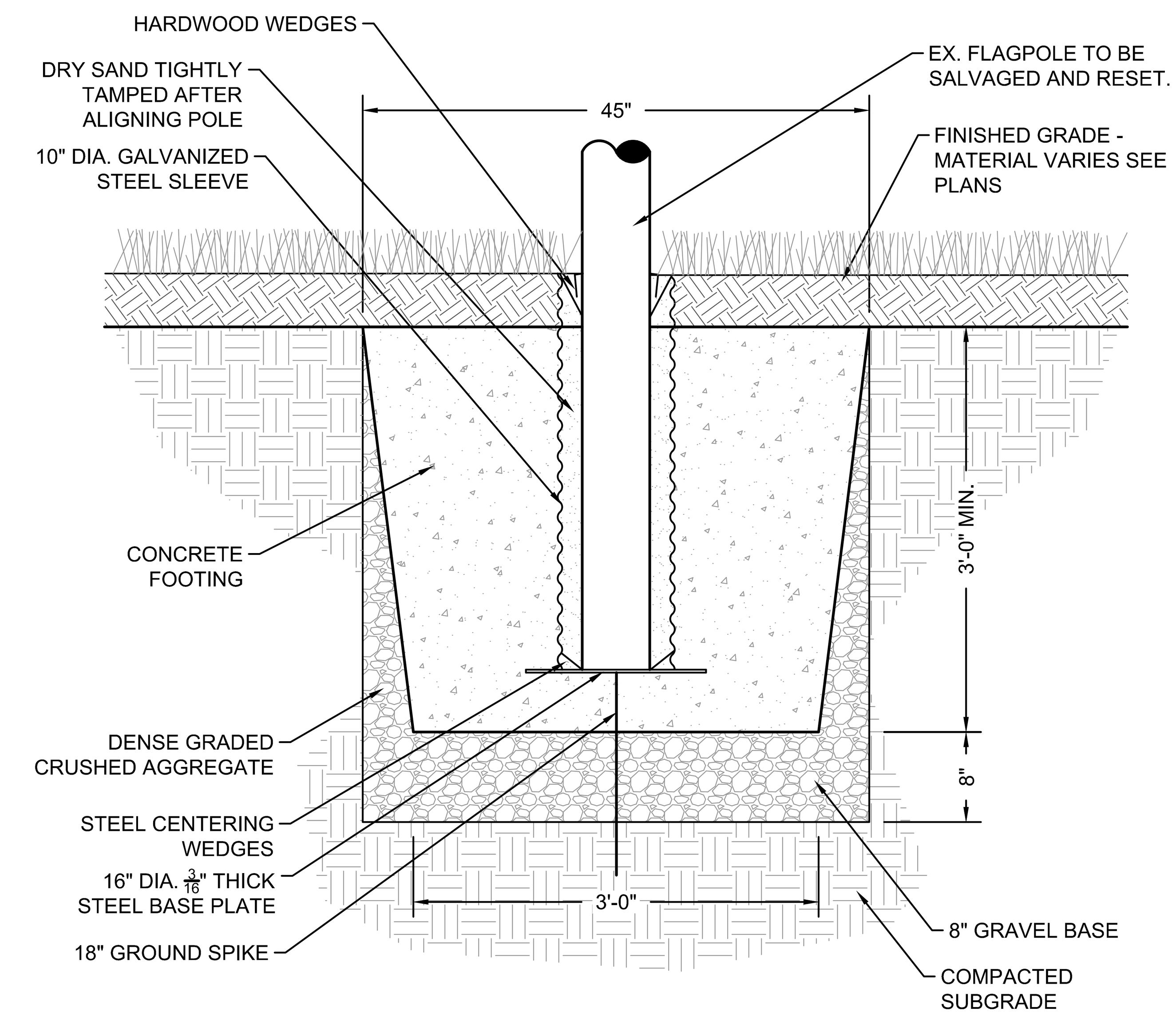


1 DUMPSTER ENCLOSURE
SCALE: N.T.S.

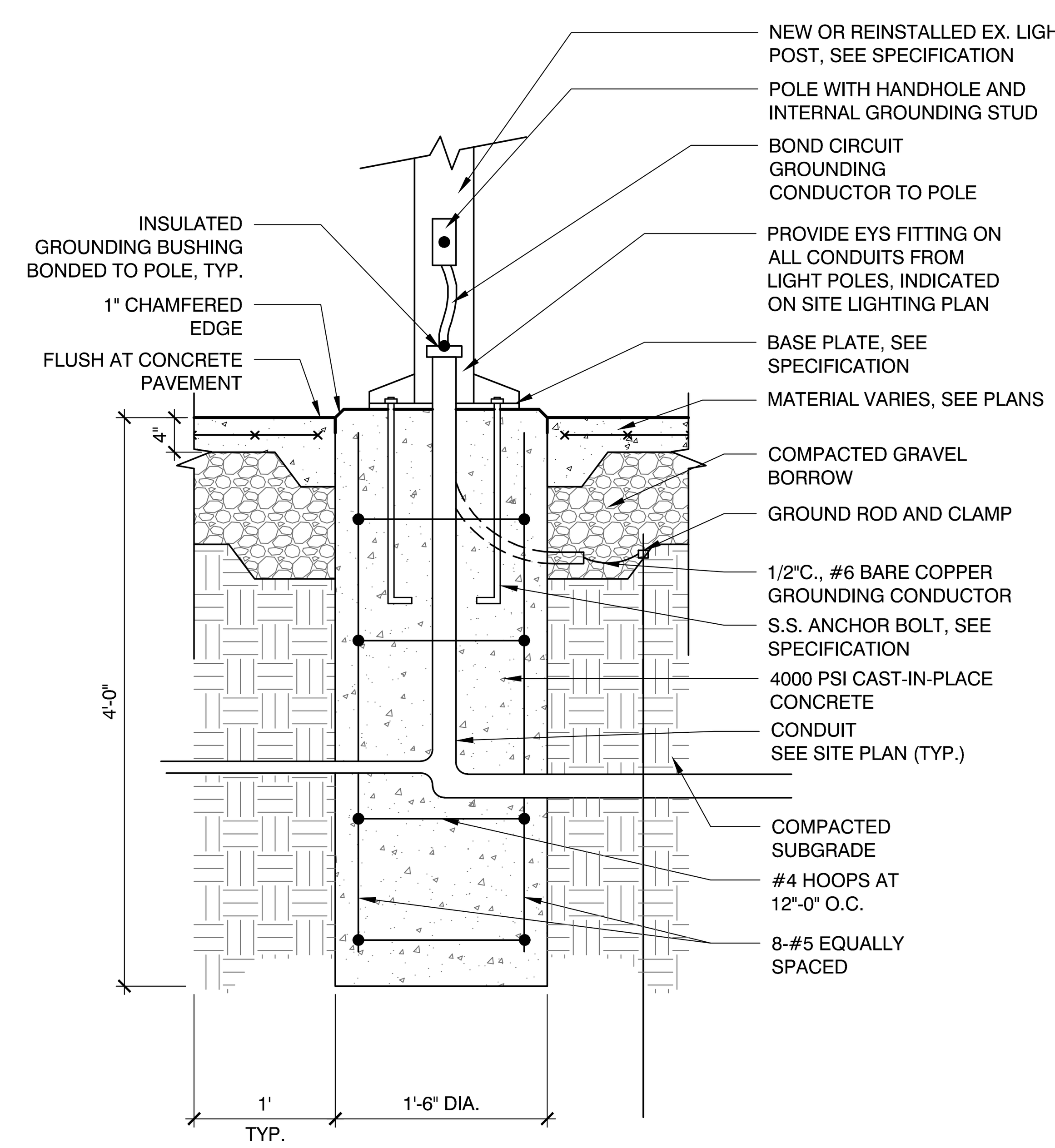


NOTES:
1. ALL MATERIALS USED FOR ENCLOSURE SHALL BE BLACK VINYL COATED.
2. INSTALL CANE BOLT DROP BAR ON EACH GATE. INSTALL LATCH AND GATE PULL.
3. PROVIDE DIAGONAL ANGLE BRACE FOR EACH LEAF, (COLOR: BLACK)
4. ENTIRETY OF ENCLOSURE TO HAVE BLACK PRIVACY SLATS.

2 CHAIN LINK FENCE DUMPSTER ENCLOSURE
SCALE: N.T.S.

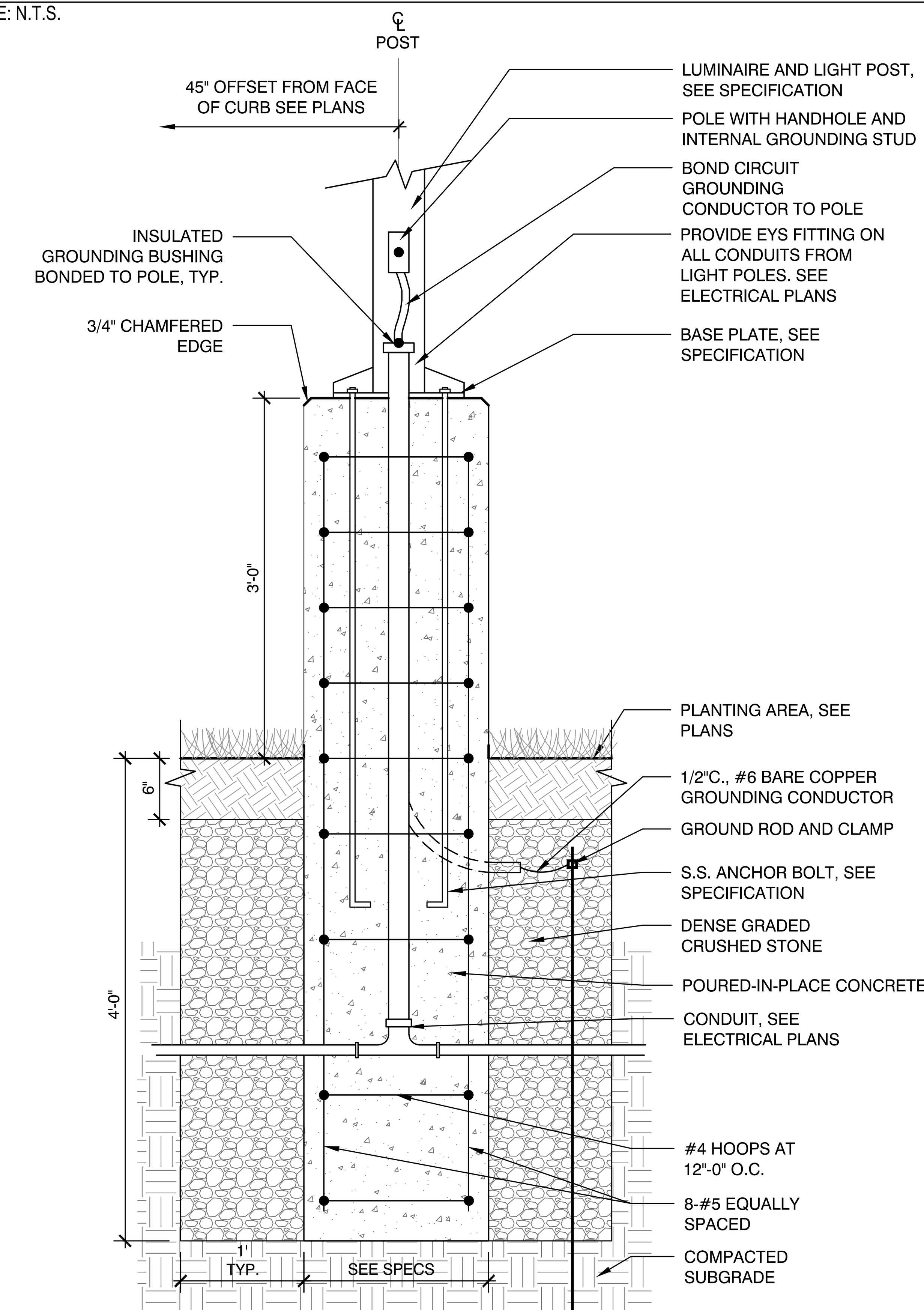


3 FLAGPOLE FOUNDATION
SCALE: N.T.S.



NOTE:
1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR. ALL EXCAVATION, BACKFILL, & CONCRETE SHALL BE BY GENERAL CONTRACTOR.
2. REFER TO SPECIFICATIONS FOR MATERIALS.

4 PEDESTRIAN LIGHT POLE FOUNDATION
SCALE: N.T.S.



NOTE:
1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR. ALL EXCAVATION, BACK & CONCRETE SHALL BE BY GENERAL CONTRACTOR.
2. REFER TO SPECIFICATIONS FOR MATERIALS.

5 PEDESTRIAN LIGHT POLE FOUNDATION (RAISED BASE)
SCALE: N.T.S.

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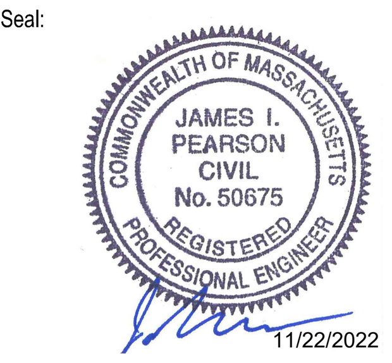

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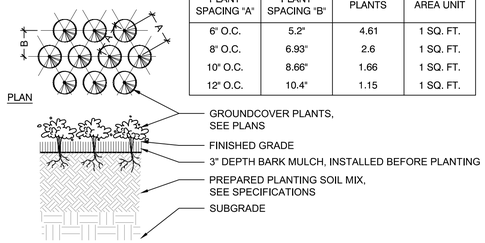
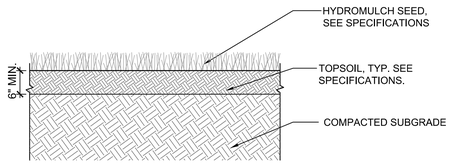
GROUNDCOVER SPACING TABLE

PLANT SPACING "A"	PLANT SPACING "B"	PLANTS	AREA UNIT
6" O.C.	5.2"	4.61	1 SQ. FT.
8" O.C.	6.93"	2.6	1 SQ. FT.
10" O.C.	8.66"	1.66	1 SQ. FT.
12" O.C.	10.4"	1.15	1 SQ. FT.

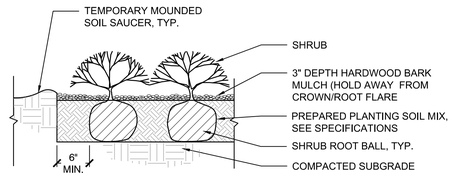


NOTES:
1. ALL GROUNDCOVERS TO BE PLANTED IN TRIANGULAR PATTERN. SEE PLANTING SCHEDULE FOR SPACING.
2. JUTE EROSION CONTROL MAT TO BE USED ON ALL SLOPES 3:1 OR GREATER. SEE SPECIFICATIONS

1 GROUNDCOVER PLANTING
SCALE: N.T.S.

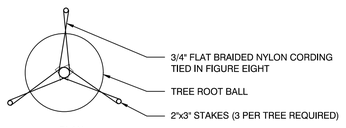


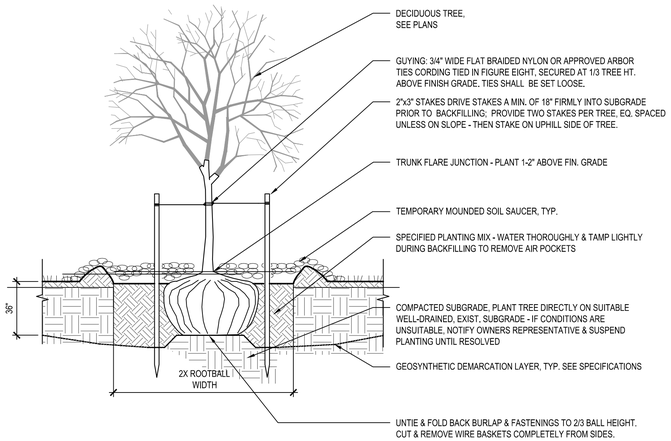
2 LOAM AND SEED
SCALE: N.T.S.



NOTE:
1. ALL MULCH MUST BE DARK IN COLOR. PROVIDE SAMPLE PRIOR TO INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.

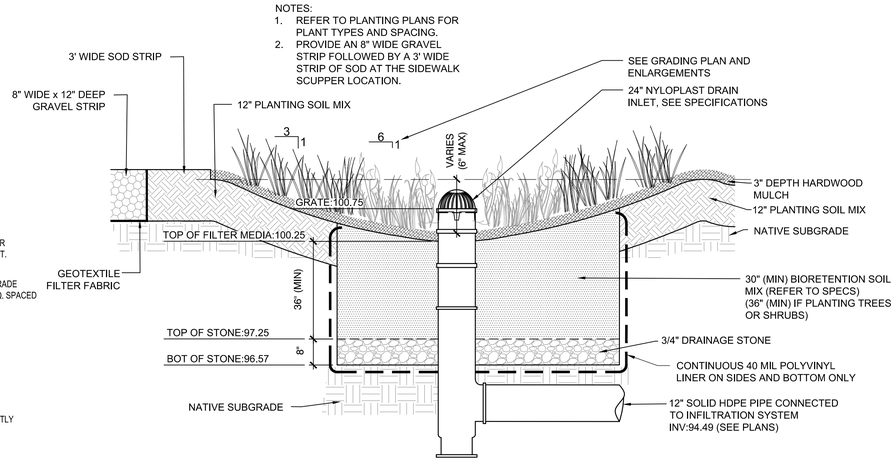
3 SHRUB PLANTING
SCALE: N.T.S.



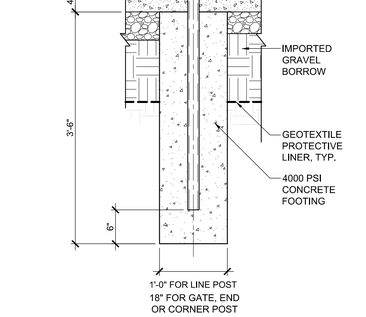


4 TREE PLANTING AND STAKING
SCALE: N.T.S.

NOTES:
1. REFER TO PLANTING PLANS FOR PLANT TYPES AND SPACING.
2. PROVIDE AN 8" WIDE GRAVEL STRIP FOLLOWED BY A 3' WIDE STRIP OF SOD AT THE SIDEWALK SCUPPER LOCATION.

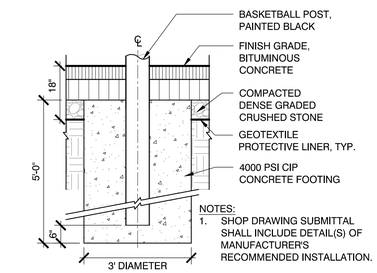


5 BIORETENTION AREA
SCALE: N.T.S.



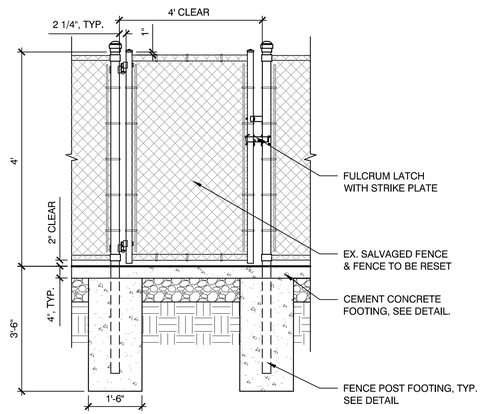
6 FENCE POST FOOTING
SCALE: N.T.S.

8 EV CHARGING STATION SIGN
SCALE: N.T.S.



NOTES:
1. SHOP DRAWING SUBMITTAL SHALL INCLUDE DETAIL(S) OF MANUFACTURER'S RECOMMENDED INSTALLATION.

7 BASKETBALL POST FOOTING
SCALE: N.T.S.



9 GATE POST AND FOOTING
SCALE: N.T.S.

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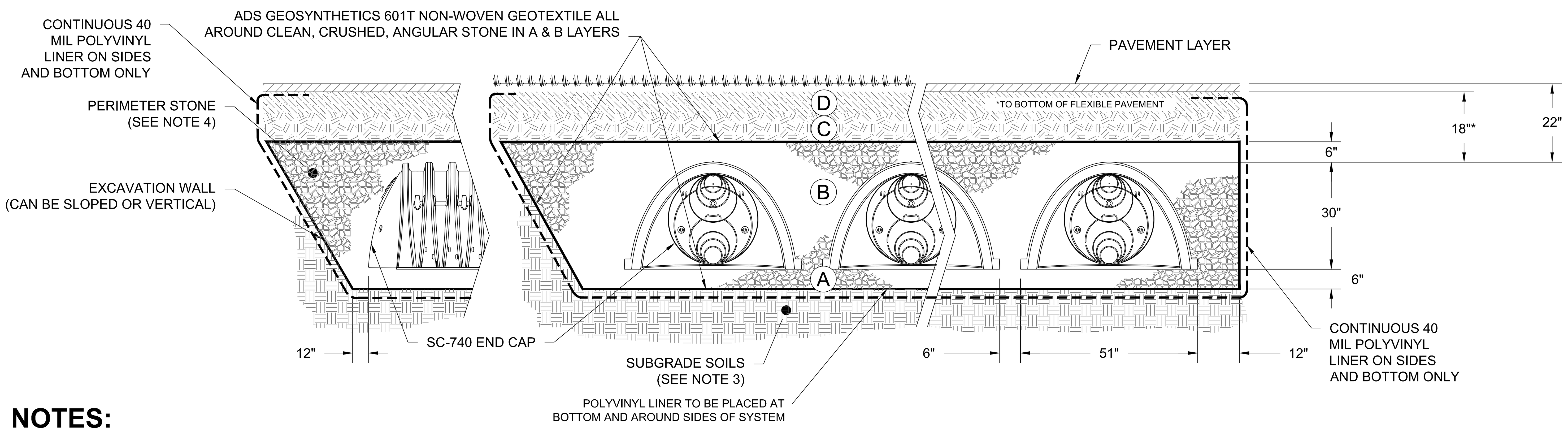
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

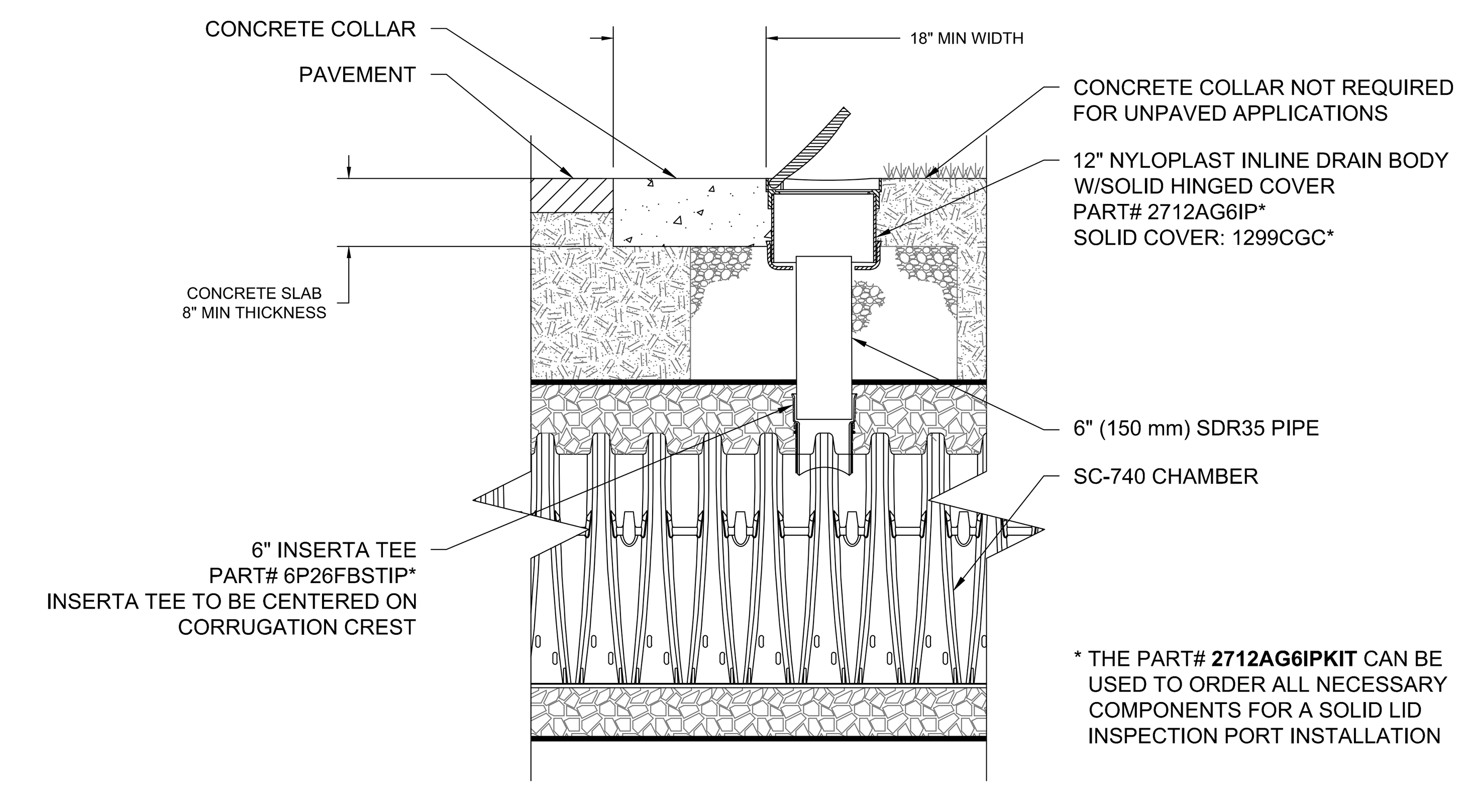
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



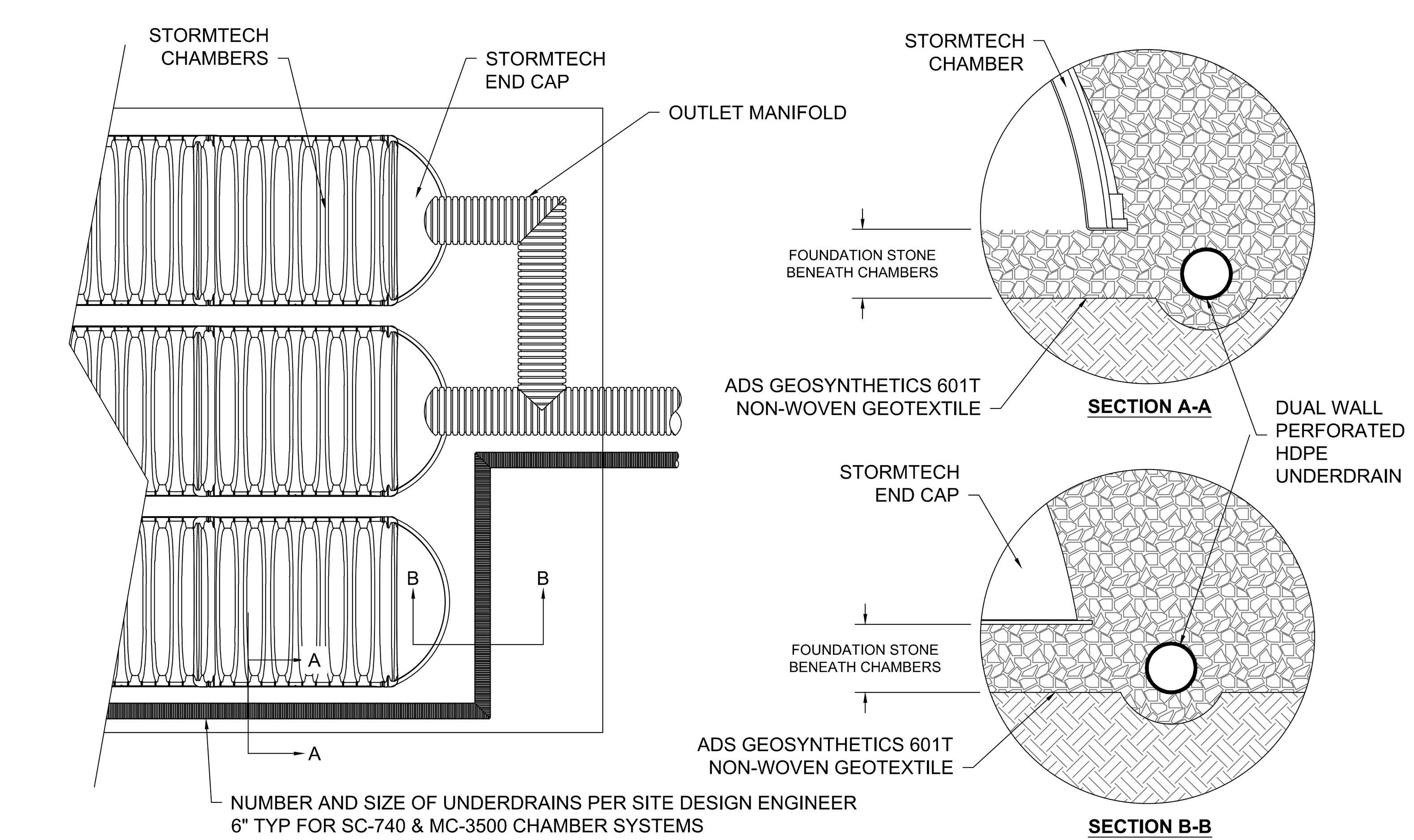
NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
6. DETENTION SYSTEM IS TO BE SEALED AND LINED WITH A POLYVINYL LINER ALONG THE SIDES AND THE BOTTOM OF THE SYSTEM.

1 DETENTION SYSTEM (DS-1) SUBSURFACE CHAMBER SYSTEM DETAILS
SCALE: NTS



2 STORMWATER CHAMBER INSPECTION PORT
SCALE: NTS



3 SC-740 UNDERDRAIN
SCALE: NTS

Project:
BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT

TOWN OF BOXFORD INCORPORATED 1685 MASSACHUSETTS

HARRY LEE COLE SCHOOL
26 AND 28 MIDDLETON ROAD
BOXFORD, MA 01921

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11/22/2022

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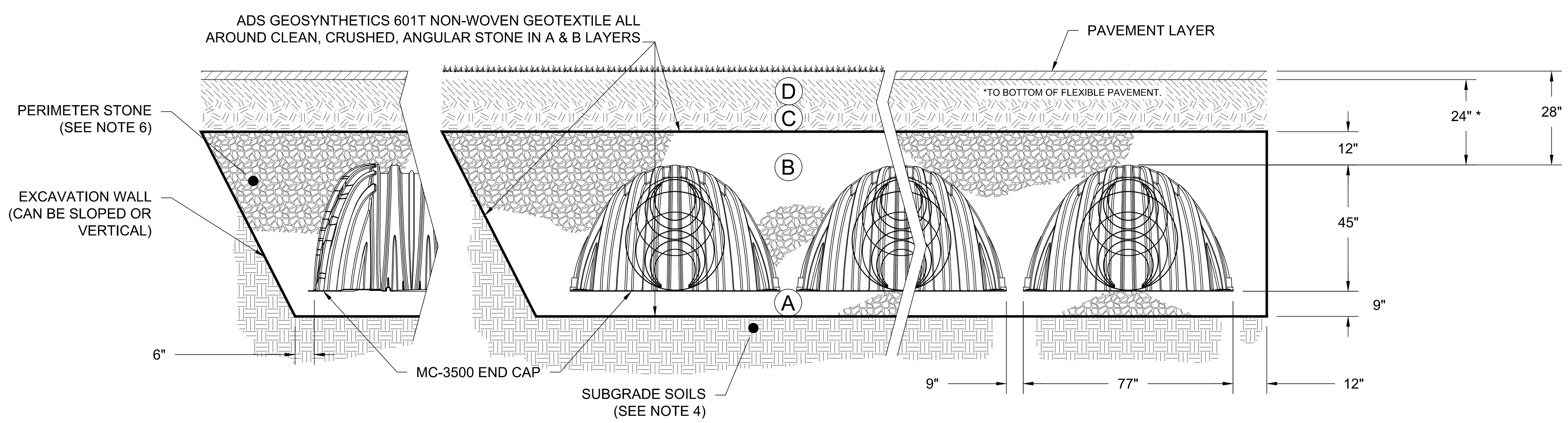
ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

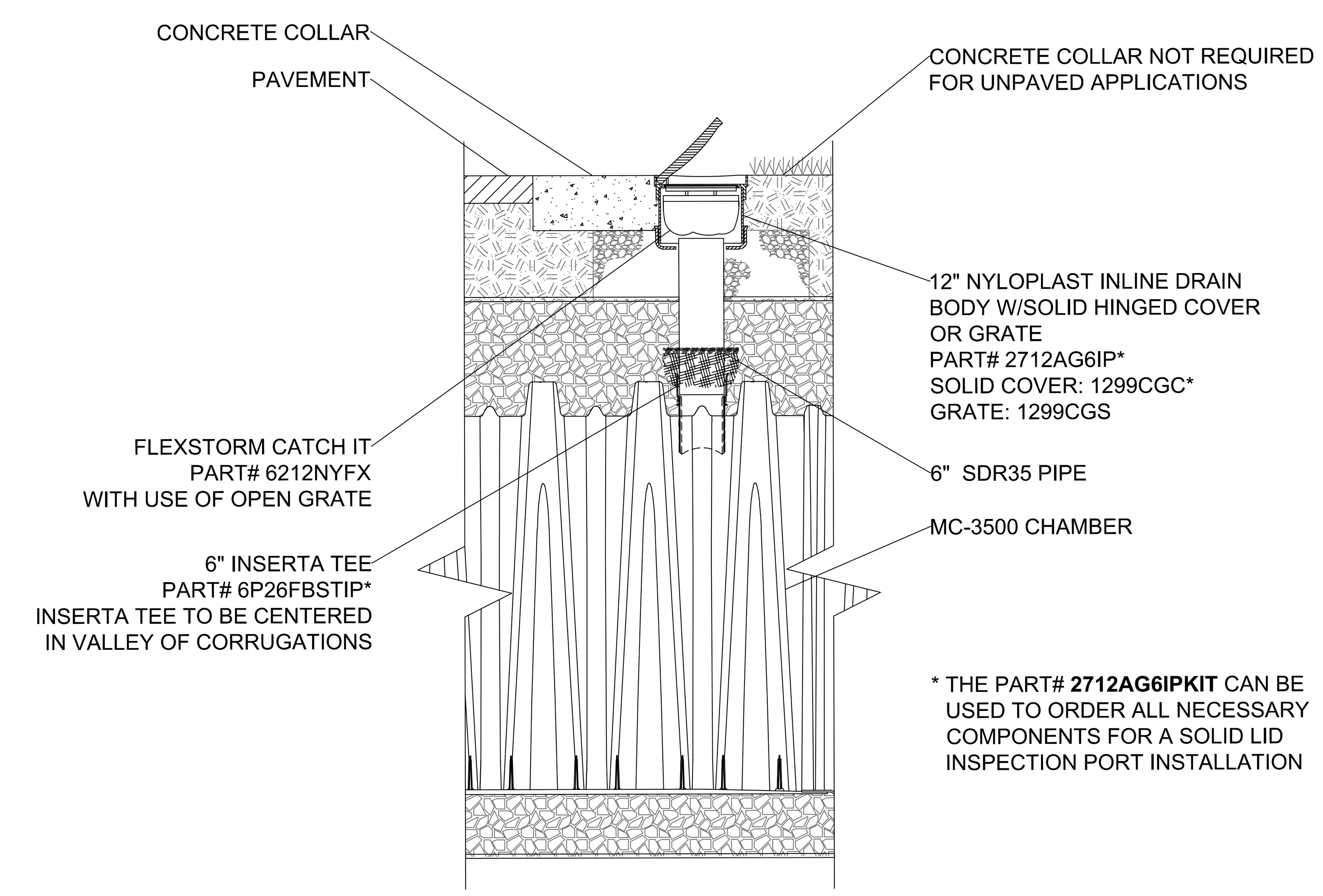
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. MC-3500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
6. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.

1 INFILTRATION SYSTEM (IS-1) SUBSURFACE CHAMBER SYSTEM DETAILS
SCALE: NTS



* THE PART# **2712AG6IPKIT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

2 STORMWATER CHAMBER INSPECTION PORT
SCALE: NTS

Project:
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JAMES I. PEARSON
CIVIL
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REGISTERED PROFESSIONAL ENGINEER
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INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

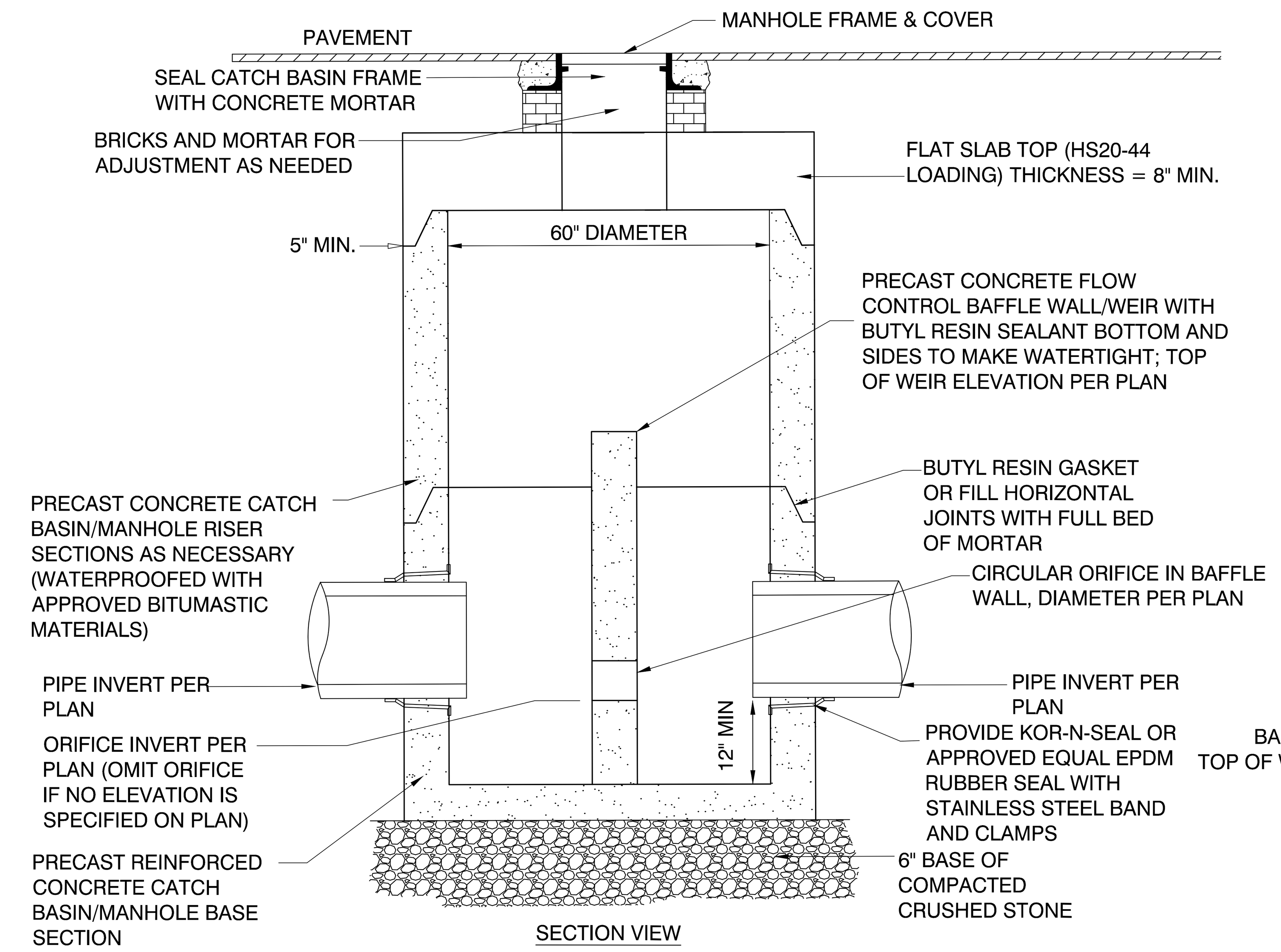
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

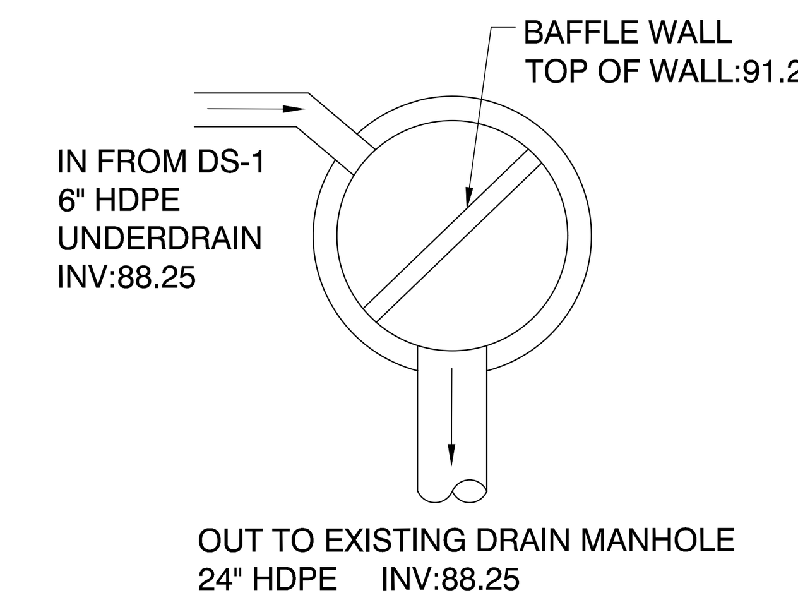
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

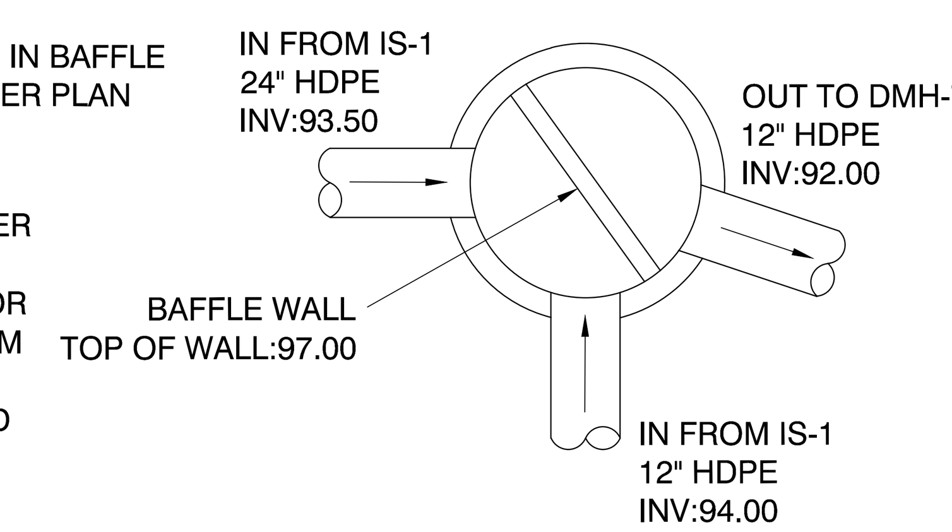
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE:
SEE SHEETS C134 & C135 FOR BAFFLE, ORIFICE, INVERT AND RIM ELEVATIONS

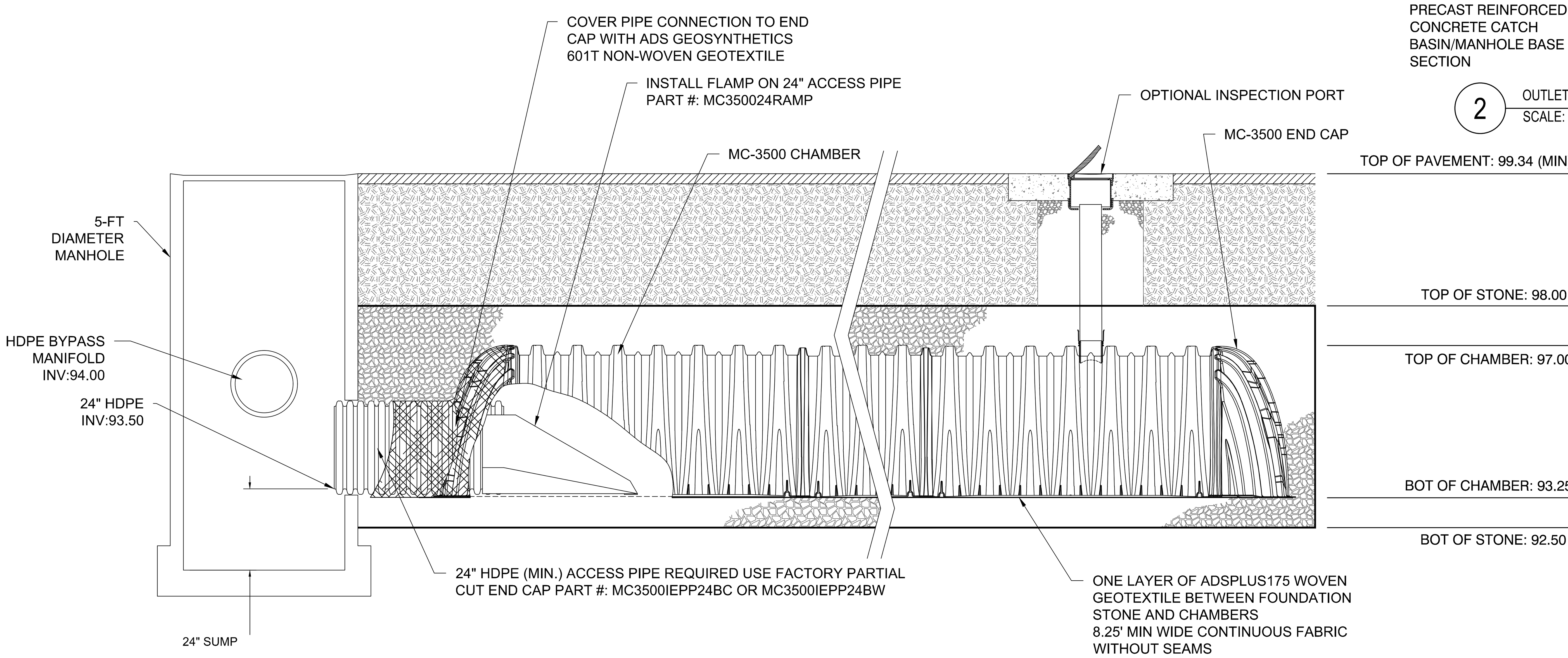


OCS-3 PLAN VIEW

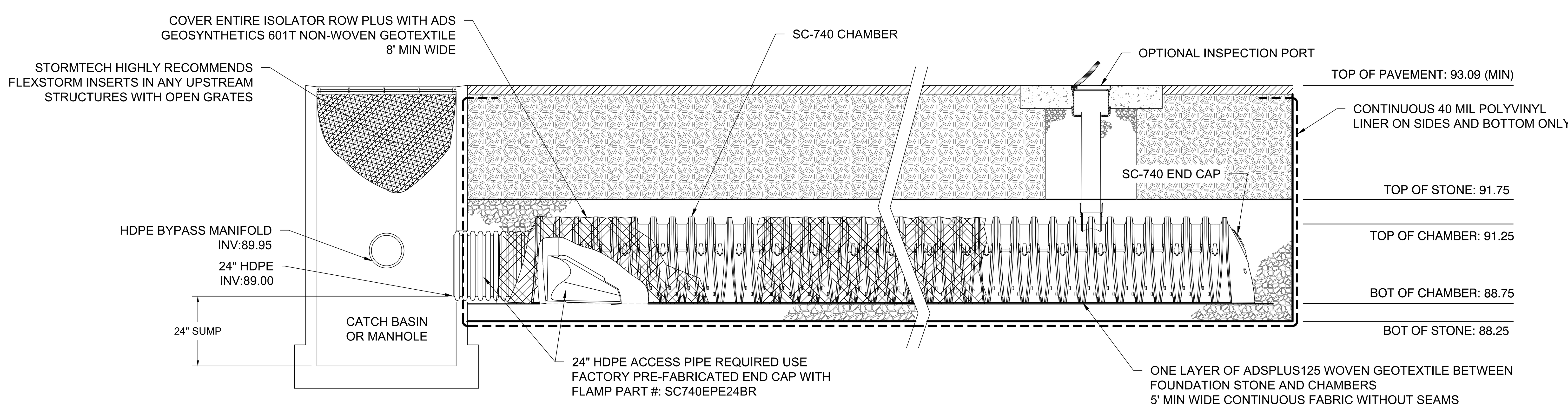


OCS-1 PLAN VIEW

2 OUTLET CONTROL STRUCTURE
SCALE: NTS

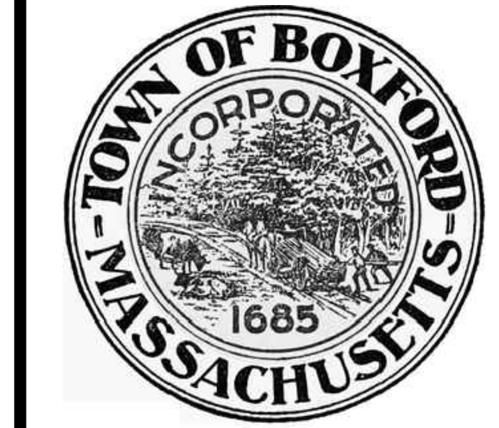


1 MC-3500 ISOLATOR ROW PLUS DETAIL (INFILTRATION SYSTEM IS-1)
SCALE: NTS



3 SC-740 ISOLATOR ROW PLUS DETAIL (DETENTION SYSTEM DS-1)
SCALE: NTS

Project:
BOXFORD PUBLIC SCHOOLS SITE RENOVATION PROJECT



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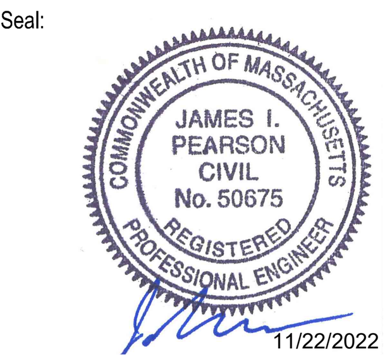

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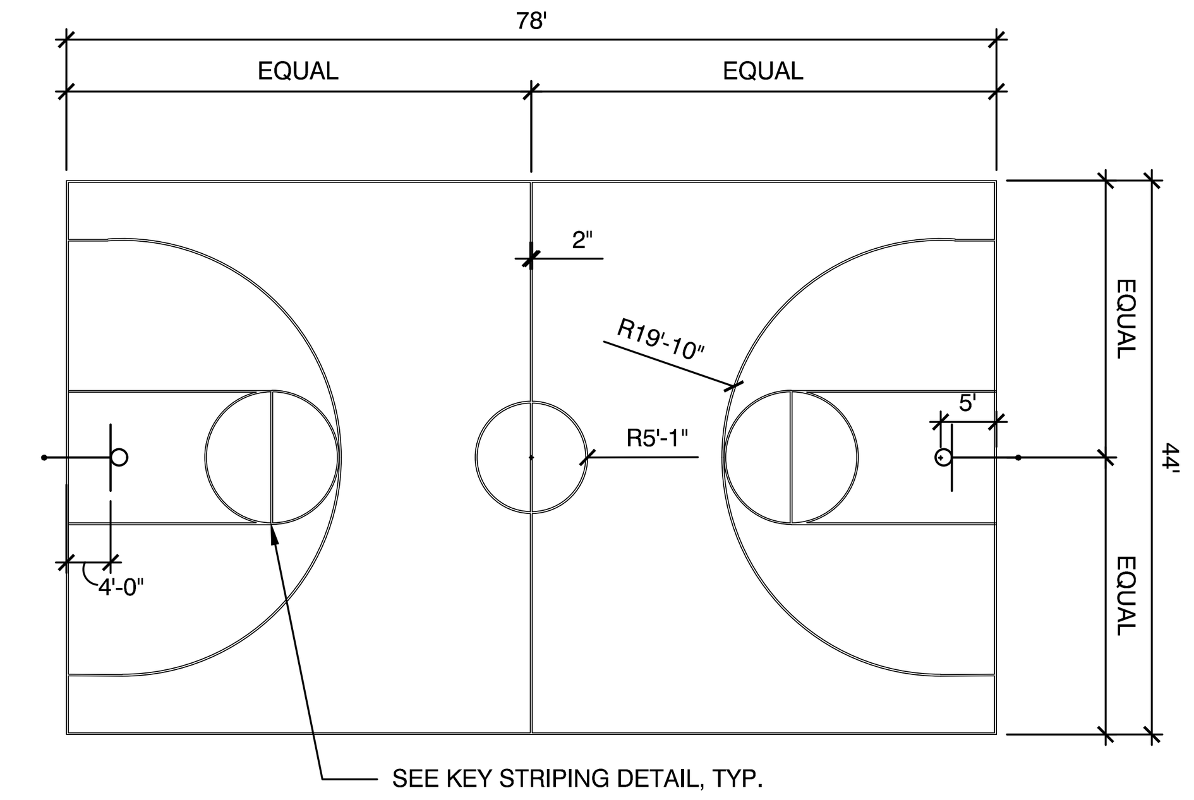
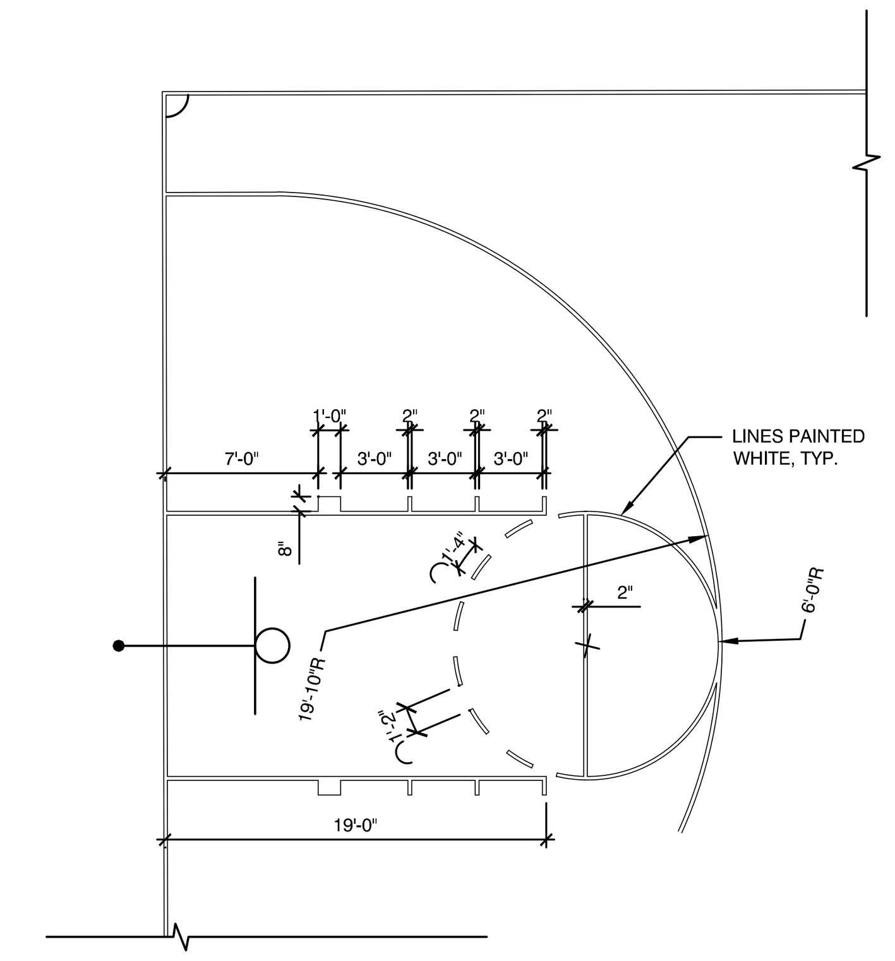
MUTCD IDENTIFI-CATION NUMBER	TEXT	PANEL SIZE					NUMERALS & LETTERS				COLOR COMB.	NUMBER OF SIGNS REQUIRED	TOTAL AREA SQ. FT.	POST SIZE AND NUMBER REQUIRED
		WIDTH	HEIGHT	CORNER RADII	BORDER WIDTH	MARGIN WIDTH	NUM. IN.	UPPER CASE	LOWER CASE	SERIES				
R1-1	STOP	30"	30"	SEE MUTCD, INCLUDING STANDARD HIGHWAY SIGNS, LATEST EDITION							WHITE ON RED	4	12.50	P5-1 1
R5-1	DO NOT ENTER	36"	36"								WHITE ON RED	5	18.00	P5-1 2
R6-1	ONE WAY	36"	12"								BLACK ON WHITE	9	5.00	P5-1 2
R7-8	RESERVED PARKING	12"	18"								WHITE ON BLUE	5	4.50	P5-1 1
R7-8P	RESERVED PARKING VAN ACCESSIBLE	12"	18"								WHITE ON BLUE	4	4.50	P5-1 2

1 PERMANENT TRAFFIC SIGN SUMMARY
SCALE: N.T.S.



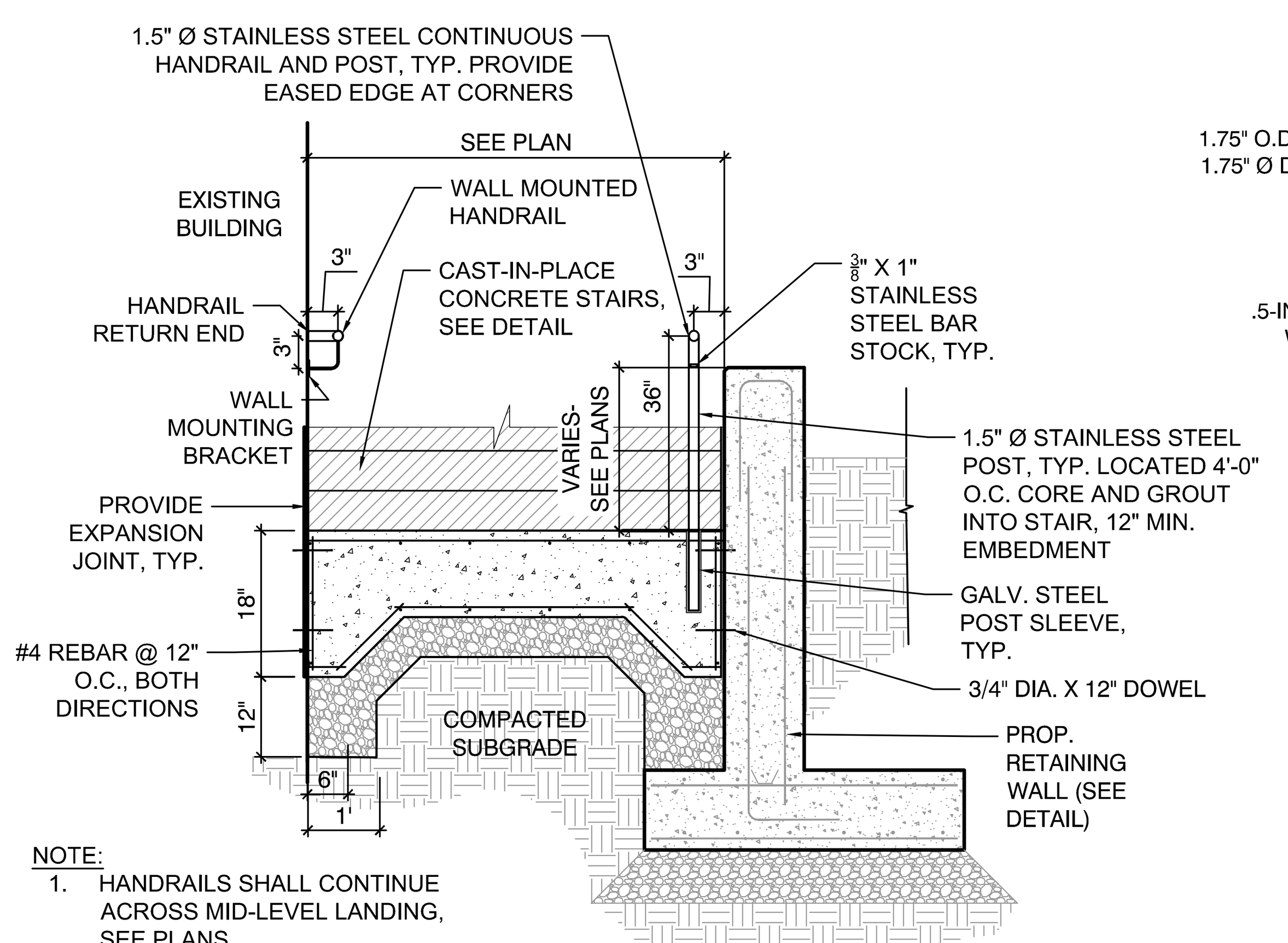
NOTES:
1. ALL DIMENSIONS ARE TO OUTSIDE EDGE OF LINES EXCEPT AS NOTED.
2. ALL LINES SHALL BE PAINTED WHITE.

BASKETBALL COURT STRIPING

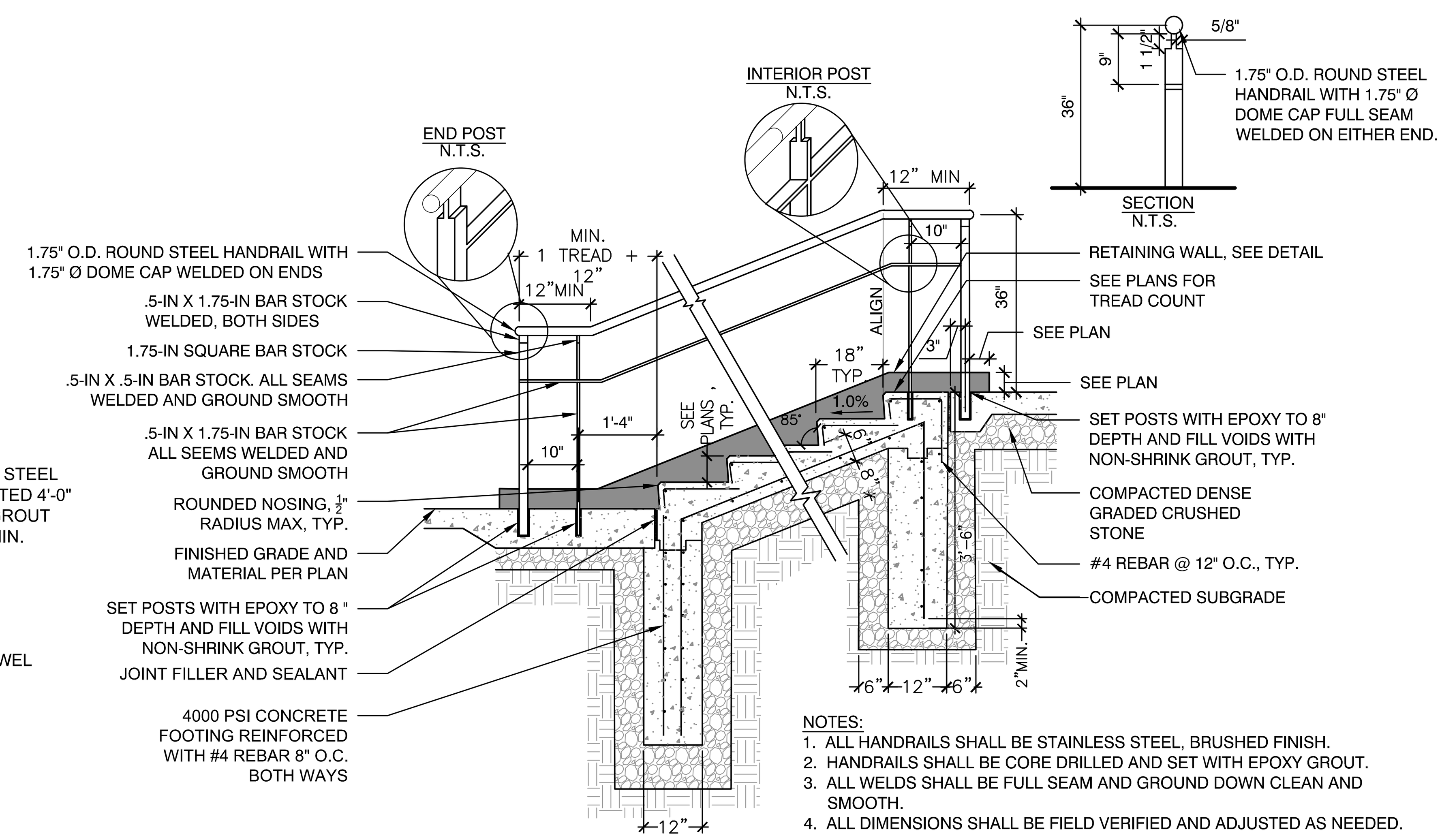


BASKETBALL KEY STRIPING

2 BASKETBALL COURT LAYOUT
SCALE: N.T.S.

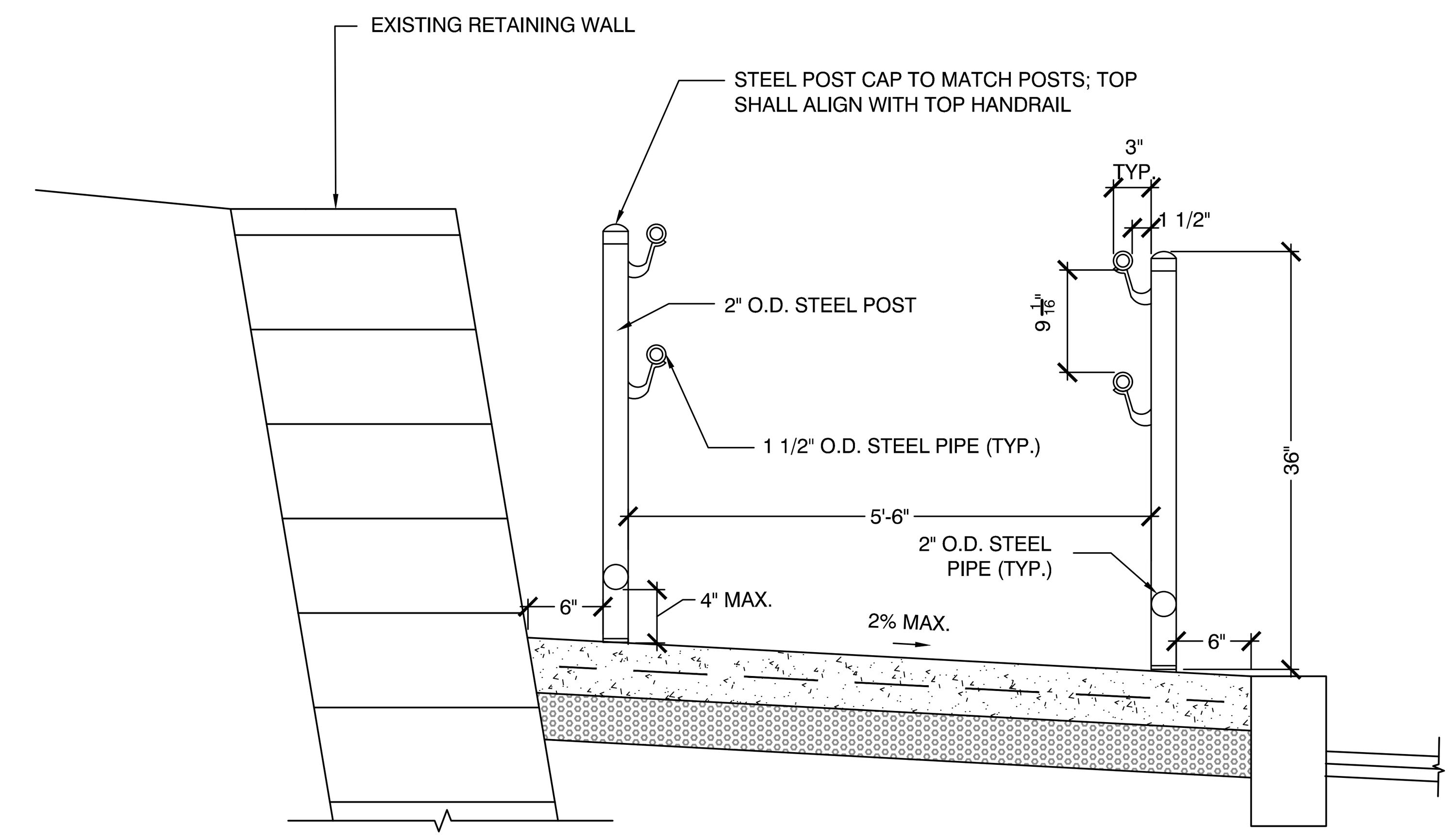


NOTE:
1. HANDRAILS SHALL CONTINUE ACROSS MID-LEVEL LANDING, SEE PLANS.
2. NO HEAVY EQUIPMENT SHALL BE USED OVER PIPES TO REMAIN IN THIS AREA.



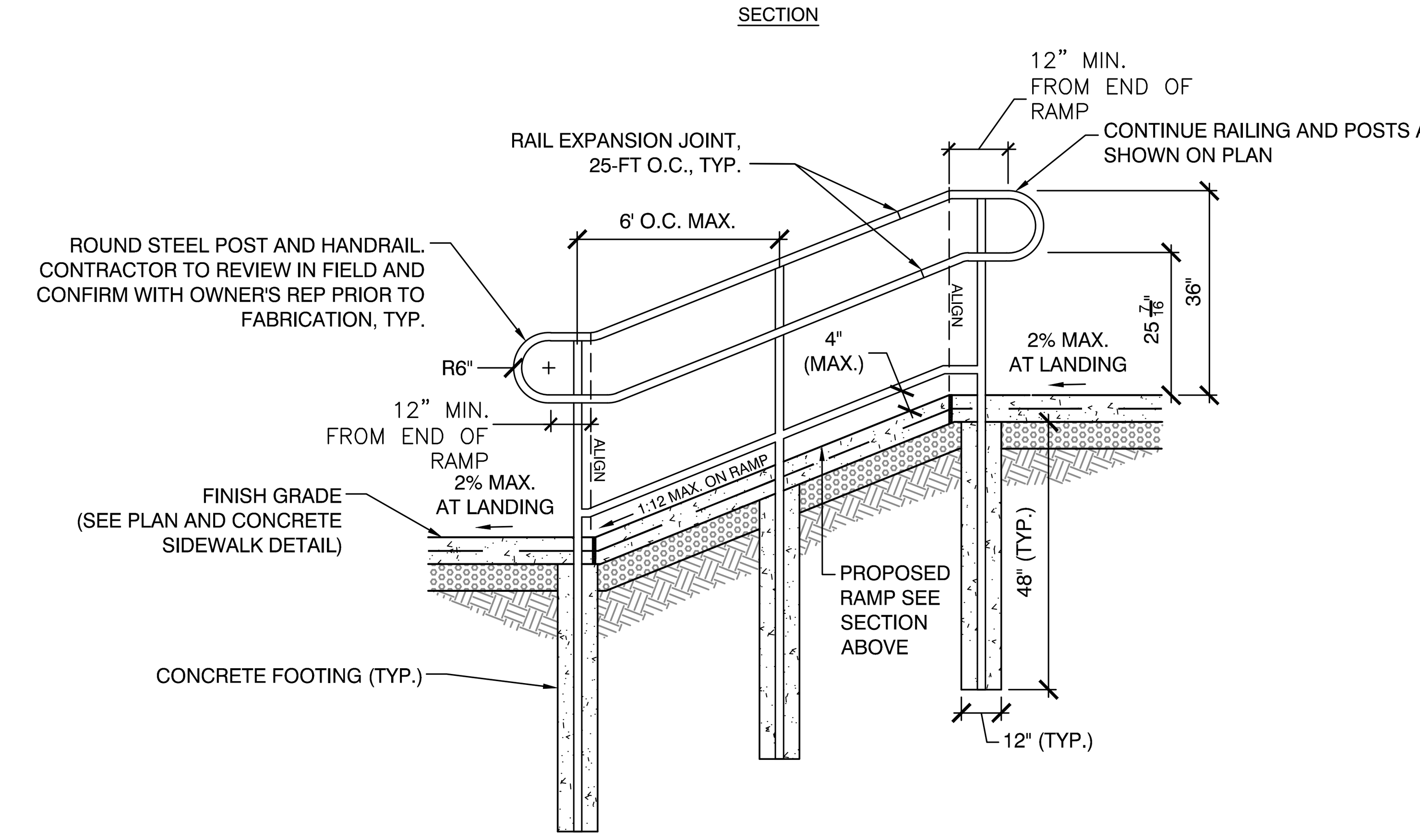
NOTES:
1. ALL HANDRAILS SHALL BE STAINLESS STEEL, BRUSHED FINISH.
2. HANDRAILS SHALL BE CORE DRILLED AND SET WITH EPOXY GROUT.
3. ALL WELDS SHALL BE FULL SEAM AND GROUND DOWN CLEAN AND SMOOTH.
4. ALL DIMENSIONS SHALL BE FIELD VERIFIED AND ADJUSTED AS NEEDED.

3 CONCRETE STEP DETAIL
SCALE: N.T.S.



NOTES:
1. VERTICAL POSTS SHALL BE SET @ 6' MAXIMUM, EVENLY SPACED ALONG THE HORIZONTAL RAIL, UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS.
2. CONTRACTOR SHALL SUBMIT LARGE SCALE SHOP DRAWINGS OF HANDRAILS AND ALL NECESSARY HARDWARE PER SPECIFICATIONS

SECTION



NOTES:
1. ALL HANDRAILS SHALL BE STAINLESS STEEL, BRUSHED FINISH.
2. ALL WELDS SHALL BE GROUND DOWN CLEAN AND SMOOTH.
3. ALL DIMENSIONS SHALL BE FIELD VERIFIED AND ADJUSTED AS NEEDED.

4 RAMP AND HANDRAIL
SCALE: N.T.S.

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ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AC	ALTERNATING CURRENT
A	AMPERE
ATC	AUTOMATIC TEMPERATURE CONTROLS
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
C	CONDUIT
CKT	CIRCUIT
CB	CIRCUIT BREAKER
EC	ELECTRICAL CONTRACTOR
FL	FLOOR
FLA	FULL LOAD AMPERE
GC	GENERAL CONTRACTOR
GND	GROUND
HP	HORSEPOWER
JB	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATT
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
NTS	NOT TO SCALE
PNL	PANELBOARD
PH	PHASE
PVC	POLYVINYL CHLORIDE CONDUIT
RSC	RIGID GALVANIZED STEEL CONDUIT
XFMR	TRANSFORMER
V	VOLTS
W	WATTS OR WIRE
WP	WEATHERPROOF

RECEPTACLE ABBREVIATIONS

GFI	GROUND FAULT CIRCUIT INTERUPTER, PERSONAL PROTECTION
WP	WEATHERPROOF RECEPTACLE WITH COVERPLATE LISTED FOR WET LOCATION WITH AN ATTACHMENT PLUG INSERTED.

ELECTRICAL LEGEND

RACEWAY AND WIRING

1,3 LP1B	HOMERUN TO PANELBOARD, NUMBER OF TICKS INDICATES NUMBER OF #12 AWG CONDUCTORS CONTAINED IN RACEWAY. TWO (2) #12 AWG SHALL NOT BE INDICATED BY TICKS, NUMERALS 1 AND 3 INDICATE CIRCUITS IN PANELBOARD. RACEWAYS LARGER THAN 1/2" AND CONDUCTORS LARGER THAN #12 AWG SHALL BE INDICATED ON THE DRAWINGS. PROVIDE AN INSULATED GREEN GROUND WIRE IN ALL RACEWAYS MINIMUM SIZE TO BE #12AWG.
— — —	RACEWAY RUN BELOW GRADE
—OH—	CONDUIT/WIRE RUN OVERHEAD

LIGHTING FIXTURES

	PARKING LOT LIGHTING FIXTURE
	WALL MOUNTED FIXTURE

MISCELLANEOUS POWER

30A / 20A	FUSIBLE SAFETY SWITCH - RATING AND TYPE AS NOTED ON THE DRAWING. (30 AMP, 20 AMP FUSE, 3 POLE)
	PANELBOARD-SURFACE MOUNTED
S MS	THERMAL MOTOR SWITCH
S	SINGLE POLE TOGGLE SWITCH
	MOTOR, NUMBER INDICATES HORSE POWER
	DUPLEX CONVENIENCE OUTLET RATED 20A, 125V, U-SLOT GROUNDED TYPE MOUNTED 48" ABOVE FINISHED FLOOR TO CENTER LINE WITHIN CONCRETE CHAMBER. ALL OTHER MOUNTING HEIGHTS SHALL BE AS NOTED ADJACENT TO THE SYMBOL. REFER TO RECEPTACLE ABBREVIATIONS FOR SPECIAL PURPOSE RECEPTACLES.
J	JUNCTION BOX WITH BLANK COVERPLATE, SIZE AS REQUIRED BY N.E.C.
LH	LIGHTING POWER HANDHOLE (COVER SHALL BE LABELED "LIGHTING")
PH	POWER HANDHOLE (COVER SHALL BE LABELED "POWER")
TVSS	SURGE SUPPRESSION UNIT

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHTS, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
2. ALL STRAIGHT FEEDER, BRANCH CIRCUIT AND AUXILIARY SYSTEM CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 150 FEET. EXACT SIZES OF PULL BOXES AND LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ELECTRICAL CONTRACTOR.
3. FURNISH ALL REQUIRED ACCESS PANELS AS REQUIRED TO SUIT FIELD CONDITIONS FOR THE PROPER OPERATION AND MAINTENANCE OF THE ELECTRICAL SYSTEM. THE EXACT SIZES AND PHYSICAL LOCATIONS SHALL BE TO SUIT ACCESSIBILITY AND CONSTRUCTION CONDITIONS. ALL ACCESS PANELS PROVIDED BY THE ELECTRICAL CONTRACTOR SHALL MATCH EXACTLY THE ACCESS PANELS FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. THE ACCESS PANELS WILL BE INSTALLED BY THE TRADE CONTRACTOR UNDER THE APPROPRIATE SECTION OF THE SPECIFICATIONS FOR THE SURFACE IN WHICH THE PANELS ARE LOCATED.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR AS APPLICABLE AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT; THE POWER WIRING, CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS AND CONDUIT TURN-UPS SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTORS BEFORE THE START OF CONSTRUCTION IN THE FIELD.
5. SLEEVES ARE TO BE UTILIZED FOR PASSAGE OF CONDUITS THROUGH FLOORS OR WALLS. CONDUITS AND BOXES ARE TO BE SUPPORTED BY THE USE OF PRESET FASTENERS INSTALLED IN FLOORS, WALLS OR COLUMNS. CONDUITS AND BOXES ARE TO BE INSTALLED CONCEALED IN MASONRY WALLS AND ABOVE HUNG CEILINGS. ALL SLEEVES ARE TO BE SEALED WITH APPROVED FIRE STOPPING SEALANT.
6. COMBINED HOMERUNS OF TWO (2) OR THREE (3) CIRCUITS MAY BE UTILIZED. HOWEVER, THE NEUTRAL CONDUCTOR IS TO BE INCREASED TO #10AWG. COMBINED HOMERUNS ARE TO BE LIMITED TO 20A, LIGHTING AND POWER CIRCUITS.
7. INSTALLATION OF BACK TO BACK DEVICES ARE TO BE AVOIDED. ALLOW ONE WALL FRAMING MEMBER BETWEEN EACH BACK TO BACK DEVICE AS A MINIMUM.
8. WORK SHALL CONFORM TO THE MASSACHUSETTS ELECTRICAL CODE, MASSACHUSETTS BUILDING CODE, NFPA AND REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
9. THE WORD "CONTRACTOR" AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE ELECTRICAL SUBCONTRACTOR.
10. CONTRACTOR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL PROVIDE LABOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN.
11. EXCEPT AS OTHERWISE NOTED, THE ELECTRICAL WORK SHALL INCLUDE DEMOLITION, PANELBOARDS, CIRCUIT BREAKERS, FEEDERS, WIRING, RACEWAYS, LIGHTING FIXTURES, DEVICES, SAFETY SWITCHES, TRANSFORMERS AND CONNECTION NECESSARY TO OPERATE MOTORS AND OTHER EQUIPMENT.
12. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND POWER AND THE GENERAL CONTRACTOR SHALL PAY ALL ENERGY CHARGES FOR TEMPORARY POWER AND LIGHTING.
13. DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL KEEP HIS PORTION OF THE WORK NEAT, CLEAN AND ORDERLY.
14. ALL SYSTEMS SHALL BE TESTED FOR SHORT CIRCUIT AND GROUNDS PRIOR TO ENERGIZING AND ANY DEFECTS SHALL BE CORRECTED.
15. ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL WORK SHALL BE INCLUDED AS PART OF THIS SECTION.
16. COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ELECTRICAL EQUIPMENT. WHERE SPECIFIED ELECTRICAL EQUIPMENT IS SUBSTITUTED, THE ELECTRICAL CONTRACTOR SHALL SUBMIT COMPLETE SPECIFICATIONS ON THE SUBSTITUTE AS WELL AS THE ITEM ORIGINALLY SPECIFIED.
17. MATERIALS SHALL BE SPECIFICATION GRADE AND UL LISTED.
18. WHERE MATERIAL IS CALLED OUT IN THE LEGEND BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OR DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.
19. WORK SHALL BE COORDINATED WITH THAT OF OTHER TRADES TO ELIMINATE INTERFERENCES.
20. ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL C0MPLETION.
21. WORK SHALL BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE EQUIPMENT (INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED.
22. WIRE SHALL BE TYPE "THHN-THWN" INSULATED FOR 600 VOLTS, MINIMUM SIZE #12 AWG COPPER UNLESS SPECIFICALLY NOTED OTHERWISE.
23. WIRING METHODS:
    a. EXTERIOR UNDERGROUND FEEDERS SHALL BE PVC SCHEDULE 80 FOR DIRECT BURIED AND PVC SCHEDULE 40 FOR CONCRETE ENCASED.
    b. EXTERIOR ABOVE GRADE FEEDERS SHALL BE RGS CONDUIT.
    c. INTERIOR FEEDERS EXPOSED OR BURIED IN CONCRETE WALLS/SLABS SHALL BE RGS CONDUIT.
    d. EQUIPMENT CONNECTIONS SHALL BE LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT

27. NO CONDUIT OR WIRE SHALL BE RUN IN OR BELOW SLAB WITHOUT ENGINEER APPROVAL OR NOTED OTHERWISE ON THE PLANS.
28. CONNECTORS FOR RIGID CONDUIT SHALL BE MADE WITH THREADED COUPLINGS.
29. CONNECTORS FOR FLEXIBLE LIQUID TIGHT CONDUIT SHALL BE STEEL COMPRESSION TYPE WITH INSULATED THROATS OR STEEL SET SCREW TYPE.
30. CONDUIT AND TUBING SHALL BE SUPPORTED ON GALVANIZED WALL BRACKETS. TRAPEZE HANGERS OR PIPE STRAPS SECURED BY MEANS OF TOGGLE BOLTS OR INSERTS IN WOOD CONSTRUCTION.
31. BOXES SHALL BE GALVANIZED STEEL AND SHALL BE SIZED TO ACCOMMODATE THE EQUIPMENT OR APPARATUS TO BE INSTALLED. WHERE BOXES OF A STANDARD MAKE ARE NOT AVAILABLE, SPECIAL BOXES SHALL BE MANUFACTURED.
32. PANELBOARDS SHALL BE DEAD FRONT, THERMAL MAGNETIC BOLT-ON CIRCUIT BREAKER TYPE, DESIGNED FOR SURFACE OR FLUSH MOUNTING AS INDICATED ON PLAN, AND HAVING CONNECTIONS TO 120/208 OR 277/480 VOLT, 3 PHASE, 4 WIRE SERVICE. ALL BUS BARS SHALL BE COPPER. CABINETS SHALL BE MADE OF CODE GAUGE GALVANIZED SHEET STEEL, WITH A MINIMUM OF 4 INCH GUTTERS, DOOR IN DOOR CONSTRUCTION, LOCKED DOOR, AND FLUSH HINGES. TYPEWRITTEN INDEX SHALL BE MOUNTED ON DOOR INSIDE TRANSPARENT COVER INDICATING LOAD SERVED. PANELS SHALL INCLUDE SEPARATE EQUIPMENT GROUND BUS.
33. PANELBOARDS, DISCONNECT SWITCHES, AND CONTROLLERS SHALL HAVE NAMEPLATES OF BLACK LAMINATED PLASTIC WITH ENGRAVED WHITE LETTERS, SECURED WITH SELF-TAPPING SCREWS.
34. CONTRACTOR SHALL PHASE BALANCE PANELBOARDS IN THE FIELD. LOAD ON EACH PHASE SHALL BE BALANCED WITHIN 10% OF EACH OTHER.
35. WALL PLATES SHALL BE PROVIDED FOR EACH SWITCH AND RECEPTACLE. PROVIDE WALL PLATES WITH STAINLESS STEEL FINISH FOR ALL DEVICES IN FINISHED AREAS. FOR DEVICES IN UNFINISHED AREAS, PROVIDE CAST IRON OR ALLOY OF SUITABLE TYPE TO MATCH OUTLET BOXES SPECIFIED.
36. TOGGLE SWITCHES SHALL BE OF THE SINGLE POLE A.C. QUIET TOGGLE TYPE FOR MOUNTING IN A SINGLE-GANG SPACING. TOGGLE SWITCHES SHALL BE FULLY RATED 20 AMPERES AT 120/277 VOLT.
37. DUPLEX WALL RECEPTACLES SHALL BE 2 POLE, 3 WIRE, GROUNDING TYPE 20 AMPERE, 125 VOLT WITH METAL PLASTER EARS. RECEPTACLES SHALL BE NEMA STANDARD CONFIGURATION 5-20R.
38. FUSED OR UNFUSED SAFETY SWITCHES SHALL BE TOTALLY ENCLOSED, HEAVY DUTY TYPE. SWITCHES SHALL HAVE VOLTAGE, HORSEPOWER AND AMPERE RATING SUITABLE FOR THE APPLICATION. PROVIDE NUMBER OF POLES AS REQUIRED. SWITCHES LOCATED EXTERIOR TO THE BUILDING OR IN DAMP/WET LOCATIONS SHALL BE IN A NEMA 3R ENCLOSURE.
39. FUSES SHALL BE DUAL ELEMENT, TIME DELAY TYPE, AS MANUFACURED BY BUSSMAN, RELIANCE OR APPROVED EQUAL.
40. FURNISH AND INSTALL SLEEVES IN FLOORS, BEAMS, WALLS, ETC. REQUIRED FOR INSTALLING THIS WORK.
41. CONDUIT PASSING THROUGH FIRE RATED WALLS AND FLOORS SHALL BE PROVIDED WITH ALL NECESSARY MATERIALS TO ENSURE THAT THE FIRE RATED INTEGRITY IS MAINTAINED.
42. FEEDER TAPS WILL NOT BE ALLOWED IN PANELBOARD GUTTERS.
43. CONDUIT RUNS AS SHOWN ON THE PLANS ARE DIAGRAMMATIC ONLY; EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD.
44. CONTRACTOR SHALL CHECK EXISTING CONDITIONS TO DETERMINE EXACT EXTENT OF WORK TO BE PERFORMED PRIOR TO BIDDING. DIMENSIONS RELEVANT TO EXISTING WORK SHALL BE VERIFIED IN THE FIELD.
45. IN AREAS NOT AFFECTED BY THIS RENOVATION, THIS SUBCONTRACTOR SHALL MAINTAIN CONTINUITY OF ELECTRIC SERVICE.
46. WHERE CONNECTIONS ARE MADE IN EXISTING PANELS, THE PANEL INDEX SHALL BE REVISED TO INDICATE THE NEW LOADS SERVED. NEW CIRCUIT BREAKERS ADDED TO EXISTING PANELS SHALL BE THE SAME FRAME SIZE, VOLTAGE RATING AND INTERRUPTING CAPACITY AS EXISTING PANEL AND CIRCUIT BREAKERS.
47. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED POWER SUPPLIES, APPURTENANCES, FINAL CONNECTIONS, TESTING AND WORK REQUIRED FOR ADDITIONS TO THE EXISTING FIRE ALARM SYSTEM. PAY ALL COSTS ARISING THERE FROM, FOR A COMPLETE AND OPERATIONAL SYSTEM.
48. ELECTRICAL SHUTDOWN SHALL BE AT A TIME AND DATE APPROVED BY THE OWNER.
49. PROVIDE AS-BUILT "CADD" DRAWINGS AT THE COMPLETION OF THE PROJECT.
50. ELECTRICAL CONTRACTOR SHALL LABEL ALL ELECTRICAL DEVICES INCLUDING BUT NOT LIMITED TO RECEPTACLES, DISCONNECT SWITCHES, PANELBOARDS, THERMAL MOTOR SWITCHES, CONTROL PANELS, JUNCTION BOXES, ETC.
    a. RECEPTACLES - PANEL NAME AND CIRCUIT DESIGNATION
    b. DISCONNECTS - PANEL NAME, CIRCUIT DESIGNATION AND EQUIPMENT SERVING.
    c. THERMAL MOTOR SWITCHES - PANEL NAME, CIRCUIT DESIGNATION AND EQUIPMENT SERVING.
    d. ENCLOSED CIRCUIT BREAKERS - PANEL NAME, CIRCUIT DESIGNATION AND EQUIPMENT SERVING.
    e. PANELBOARDS - PANEL NAME, VOLTAGE, AMPERAGE, PHASE AS WELL AS PANEL AND CIRCUIT IT IS FED FROM.
    f. CONTROL PANEL - PANEL NAME AND CIRCUIT DESIGNATION
    g. JUNCTION BOXES - PANEL NAME AND CIRCUIT DESIGNATION

52. ADDRESS QUESTIONS TO THE ENGINEER IN WRITING BEFORE AWARD OF CONTRACT, OTHERWISE ENGINEER INTERPERTATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.

DEMOLITION NOTES

1. THE ELECTRICAL CONTRACTOR WILL WORK IN CONJUNCTION WITH THE GENERAL CONTRACTOR TO DEMOLISH THE EXISTING ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR IS TO DEACTIVATE, DISCONNECT AND REMOVE THOSE SYSTEMS WHICH WILL BE DEMOLISHED. THE ELECTRICAL CONTRACTOR WILL REMOVE AND DISPOSE OF ALL ELECTRICAL SYSTEM MATERIALS INCLUDING DEVICES, FIXTURES, RACEWAYS, CABLE, MOTOR CONTROLS AND APPURTENANCES. SYSTEMS REQUIRING TOTAL AND/OR PARTIAL DEMOLITION SHALL CONSIST OF BUT NOT BE LIMITED TO THE FOLLOWING:
    A. NORMAL AND EMERGENCY POWER BRANCH CIRCUIT SYSTEM
    B. NORMAL LIGHTING SYSTEM
    C. COMMUNICATIONS SYSTEM
2. EXISTING SYSTEMS THAT ARE TO REMAIN AND BE PROTECTED DURING DEMOLITION/CONSTRUCTION INCLUDE:
    A. POWER DISTRIBUTION SYSTEM
    B. EXTERIOR LIGHTING SYSTEM
    C. HVAC SYSTEM AND POWER WIRING
3. SYSTEMS WHICH PASS THROUGH THE AREA BEING DEMOLISHED BUT CONTINUE TO AREAS NOT WITHIN THE DEMOLITION SCOPE ARE TO REMAIN. THE ELECTRICAL CONTRACTOR IS TO IDENTIFY (SPRAY PAINT OR EQUIVALENT) AND PROTECT THOSE SYSTEMS WHICH ARE ACTIVE AND ARE TO REMAIN.
4. ALL EXISTING CAST IN PLACE RECEPTACLE, PULL, JUNCTION AND OTHER DEVICE BOXES WHICH CANNOT BE REMOVED OR EFFECTIVELY COVERED ARE TO BE PROVIDED WITH FINISHED PLATES AS APPROVED BY THE ARCHITECT.
5. ALL CONDUIT AND WIRE WHICH IS NO LONGER IN USE IS TO BE REMOVED. CONDUIT AND WIRE IS TO BE REMOVED BACK TO ITS SOURCE OR NEAREST DEVICE WHICH IS SCHEDULED TO REMAIN. COORDINATE THE REMOVAL OF ALL COMMUNICATIONS CONDUIT AND WIRE WITH THE COMMUNICATIONS CONTRACTOR. FIRE ALARM CABLING IS TO BE RETURNED TO THE NEAREST DEVICE SCHEDULED TO REMAIN, CONTROL PANEL, TERMINAL CABINET, ETC. UNDER NO CIRCUMSTANCES ARE ABANDONED CONDUIT AND WIRE OR SYSTEM COMPONENTS TO REMAIN.
6. MAKE ANY NECESSARY RE-CIRCUITING, EXTENSIONS OF EXISTING CIRCUITS AND RELOCATIONS REQUIRED TO PROPERLY RE-ENERGIZE REMAINING EXISTING SERVICES OR EQUIPMENT THAT MAY BE INTERFERED WITH BY NEW CONSTRUCTION, REMOVALS OR RELOCATIONS. ALL SHUTDOWNS TO RELOCATE ACTIVE FEEDERS OR BRANCH CIRCUITS WILL BE PERFORMED ON OFF HOURS AS MUTUALLY AGREED TO WITH THE OWNER.
7. PRIOR TO REMOVAL OF EQUIPMENT, CONFIRM THAT FEEDER AND BRANCH CIRCUITS ARE NO LONGER ACTIVE. SHOULD IT BE DISCOVERED THE FEEDER OR BRANCH CIRCUITS ARE ACTIVE, NOTIFY THE ARCHITECT IMMEDIATELY FOR DIRECTION.
8. ELECTRICAL CONTRACTOR IS TO REMOVE ALL LAMPS, BALLASTS AND OTHER ELECTRICAL COMPONENTS CLASSIFIED AS HAZARDOUS MATERIALS. ELECTRICAL CONTRACTOR IS TO OBTAIN THE SERVICES OF A LICENSED HAZARDOUS MATERIALS CONTRACTOR TO DISPOSE OF THE MATERIALS. PROVIDE WRITTEN DOCUMENTATION TO THE OWNER'S REPRESENTATIVE FROM THE HAZARDOUS MATERIALS CONTRACTOR.
9. ELECTRICAL DEMOLITION ABBREVIATIONS:

   "EX" DENOTES EXISTING EQUIPMENT TO REMAIN

   "RL" DENOTES EXISTING EQUIPMENT TO BE DISCONNECTED AND RELOCATED. ALL EXISTING CONDUIT AND WIRE SHALL BE REMOVED BACK TO ITS SOURCE AND ALL DEVICES ASSOCIATED WITH THE EQUIPMENT SHALL BE REMOVED OR ALL CONDUIT AND WIRE SHALL BE INTERCEPTED AND EXTENDED AS REQUIRED. ALL NEW CONDUIT AND WIRE SHALL MATCH EXISTING IN STYLE AND SIZE. ALL EXISTING ELECTRICAL DEVICES ASSOCIATED WITH THE EXISTING EQUIPMENT SHALL BE REMOVED AND NEW DEVICES AS SHOWN SHALL BE PROVIDED.

   "NL" DENOTES NEW LOCATION OF RELOCATED EXISTING EQUIPMENT.

   "RE" DENOTES EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED ALL EXISTING CONDUIT AND WIRE SHALL BE REMOVED BACK TO ITS SOURCE AND ALL DEVICES ASSOCIATED WITH THE EQUIPMENT SHALL BE REMOVED.

LIGHTING FIXTURE SCHEDULE

TYPE	TYPE	MANUFACTURER	CATALOG NUMBER	LAMP NO.	LAMP TYPE	MOUNTING	VOLTAGE	LOAD	REMARKS
S1	LED SINGLE FIXTURE POLE MOUNTED SITE LIGHTING	CREE LIGHTING	ARE-EDG-3ME-DA-08-E-UL-BZ-525	-	LED 9994 LUMENS 4000K 70CRI	POLE	208	90W	NOTE 1
S2	LED DUAL FIXTURE POLE MOUNTED SITE LIGHTING	CREE LIGHTING	ARE-EDG-3ME-DA-08-E-UL-BZ-525	-	LED 9994 LUMENS 4000K 70CRI	POLE	208	180W	NOTE 1

NOTE:

1. PROVIDE 20' POLE ALUMINUM TAPPERED POLE

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TOWN OF BOXFORD INCORPORATED 1685 MASSACHUSETTS

HARRY LEE COLE SCHOOL
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ELECTRICAL LEGEND, GENERAL NOTES AND ABBREVIATIONS

Sheet Number:
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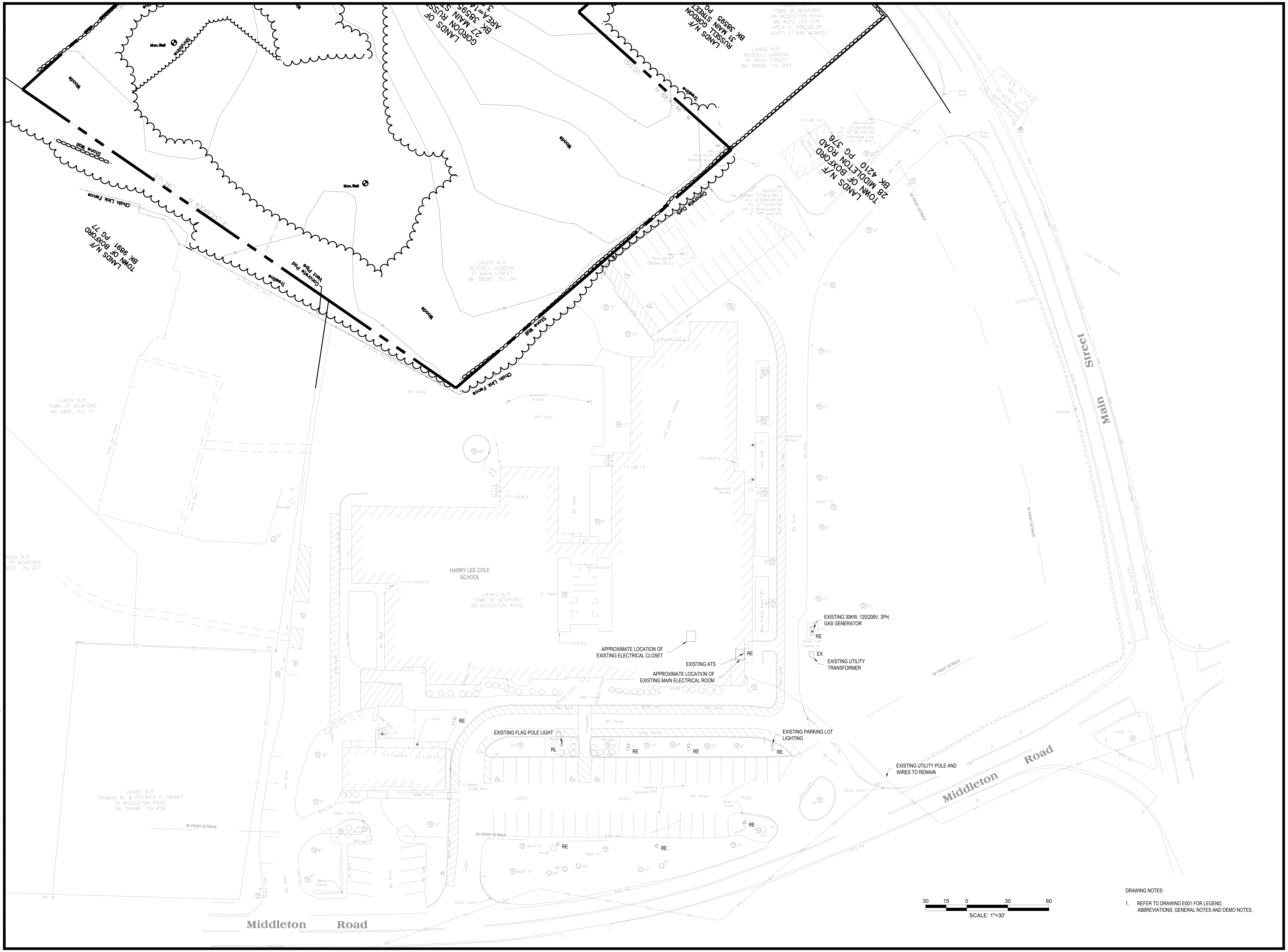

DRAWING NOTES:

1. REFER TO DRAWING E001 FOR LEGEND, ABBREVIATIONS, GENERAL NOTES AND DEMO NOTES.

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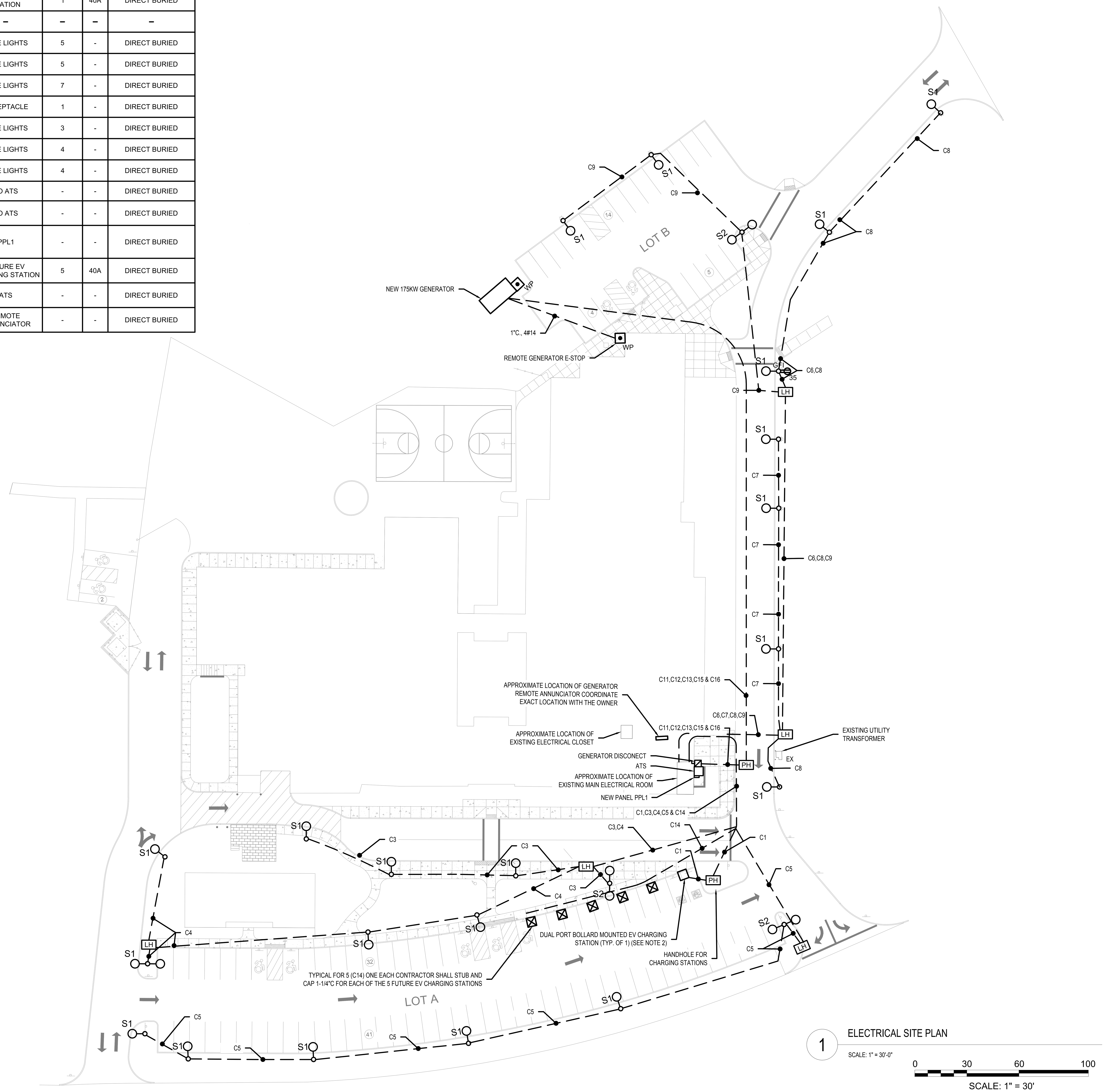
CONDUIT AND WIRE SCHEDULE

CONDUIT TAG	FEEDER	FROM	TO	NO. OF FIXTURES	LOAD	REMARKS
C1	1-1/4"C, 2#4 & #6GND	PPL1	EV. CHARGING STATION	1	40A	DIRECT BURIED
C2	NOT USED	–	–	–	–	–
C3	1"C, 2#10 & #10GND	PPL1	POLE LIGHTS	5	-	DIRECT BURIED
C4	1"C, 2#10 & #10GND	PPL1	POLE LIGHTS	5	-	DIRECT BURIED
C5	1"C, 2#10 & #10GND	PPL1	POLE LIGHTS	7	-	DIRECT BURIED
C6	1-1/4"C, 2#6 & #8GND	PPL1	RECEPTACLE	1	-	DIRECT BURIED
C7	1"C, 2#10 & #10GND	PPL1	POLE LIGHTS	3	-	DIRECT BURIED
C8	1"C, 2#10 & #10GND	PPL1	POLE LIGHTS	4	-	DIRECT BURIED
C9	1"C, 2#10 & #10GND	PPL1	POLE LIGHTS	4	-	DIRECT BURIED
C11	(3)-4"C WITH 4-350KCMIL & 1#2/0GND	GENERATOR	TO ATS	-	-	DIRECT BURIED
C12	4"EMPTY CONDUIT WITH PULL STRINGS	GENERATOR	TO ATS	-	-	DIRECT BURIED
C13	1"C, 2#6 & #6GND 1"C, 2#6 & #6GND	GENERATOR JACKET WATER HEATER & BATT CHRG.	PPL1	-	-	DIRECT BURIED
C14	(5)-1-1/4"C EMPTY WITH PULLSTRING	PPL1	FUTURE EV CHARGING STATION	5	40A	DIRECT BURIED
C15	1"C, 2#10	GENERATOR CONTROL PANEL	ATS	-	-	DIRECT BURIED
C16	1"C, COMM CABLE	GENERATOR CONTROL PANEL	REMOTE ANNUNCIATOR	-	-	DIRECT BURIED



1 ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"

0 30 60 100

SCALE: 1" = 30'

DRAWING NOTES:

1. REFER TO DRAWING E001 FOR LEGEND, ABBREVIATIONS, GENERAL NOTES AND DEMO NOTES.
2. EV CHARGERS SHALL BE EQUAL TO CHARGEPOINT M/N CT 4021 DUAL STATION.

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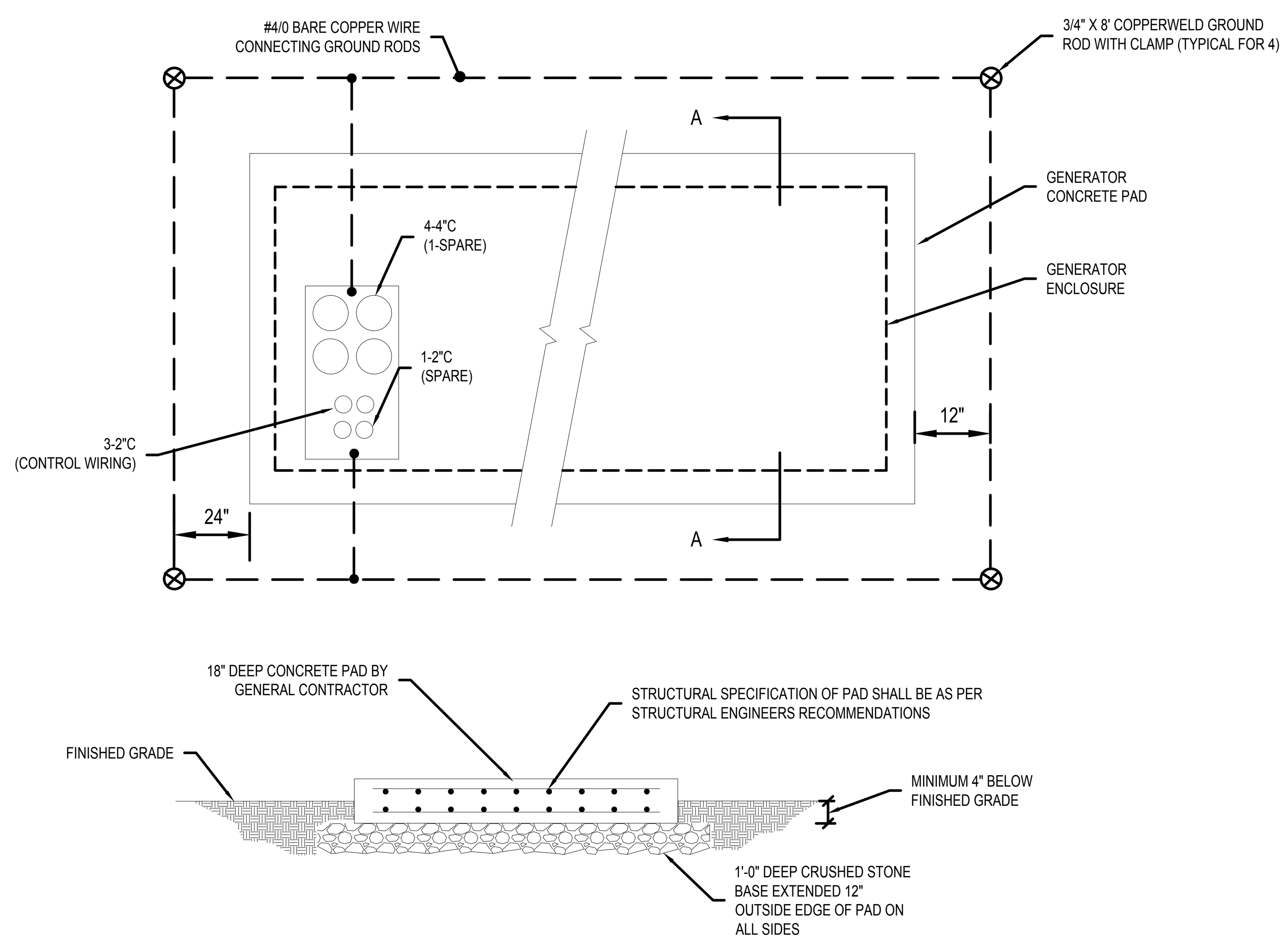
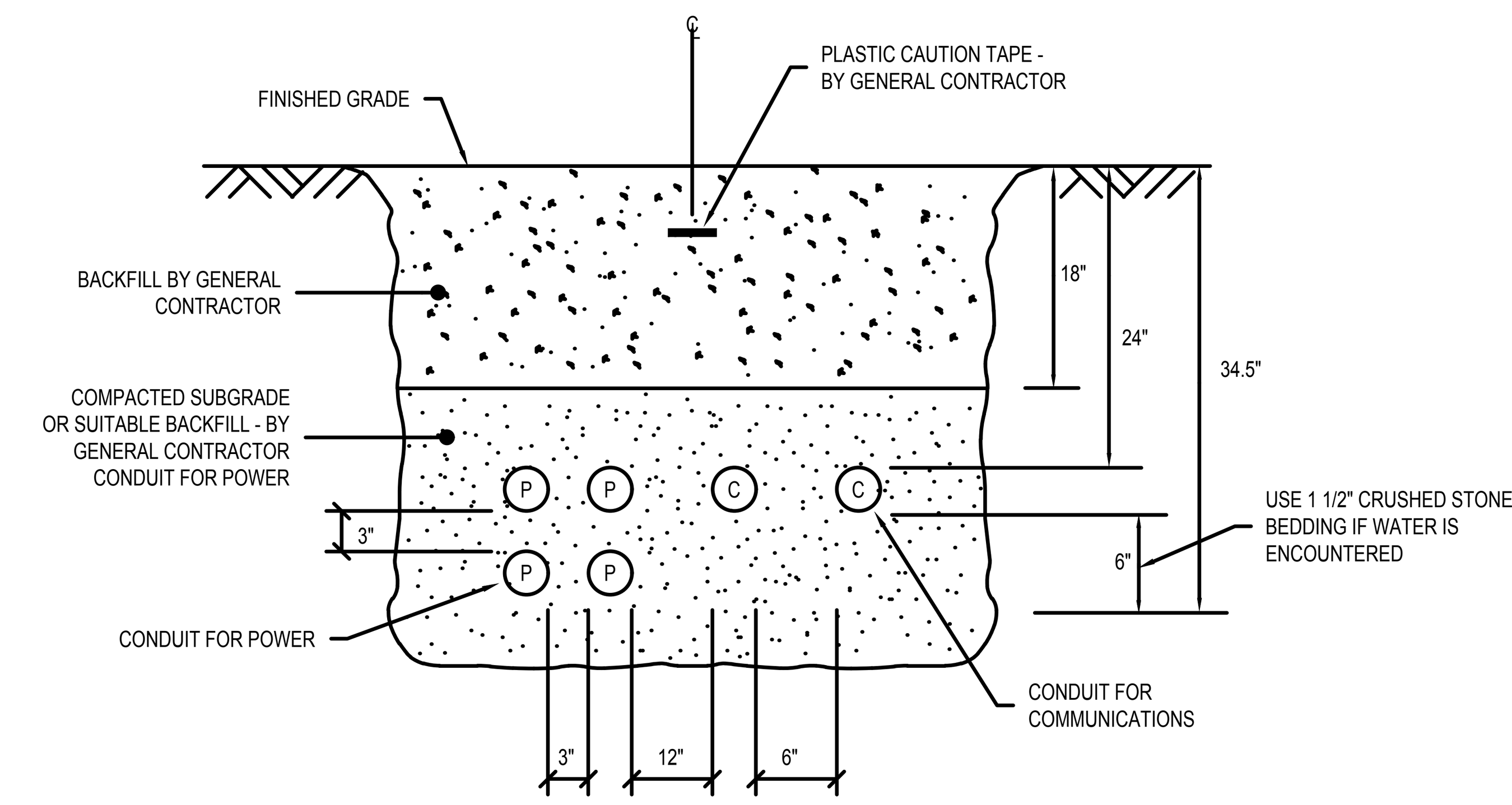


NOTE:

1. PAD DIMENSIONS SHALL BE PER GENERATOR MANUFACTURER RECOMMENDATIONS.
2. REFER TO ONE-LINE FOR EXACT NUMBER OF CONDUITS

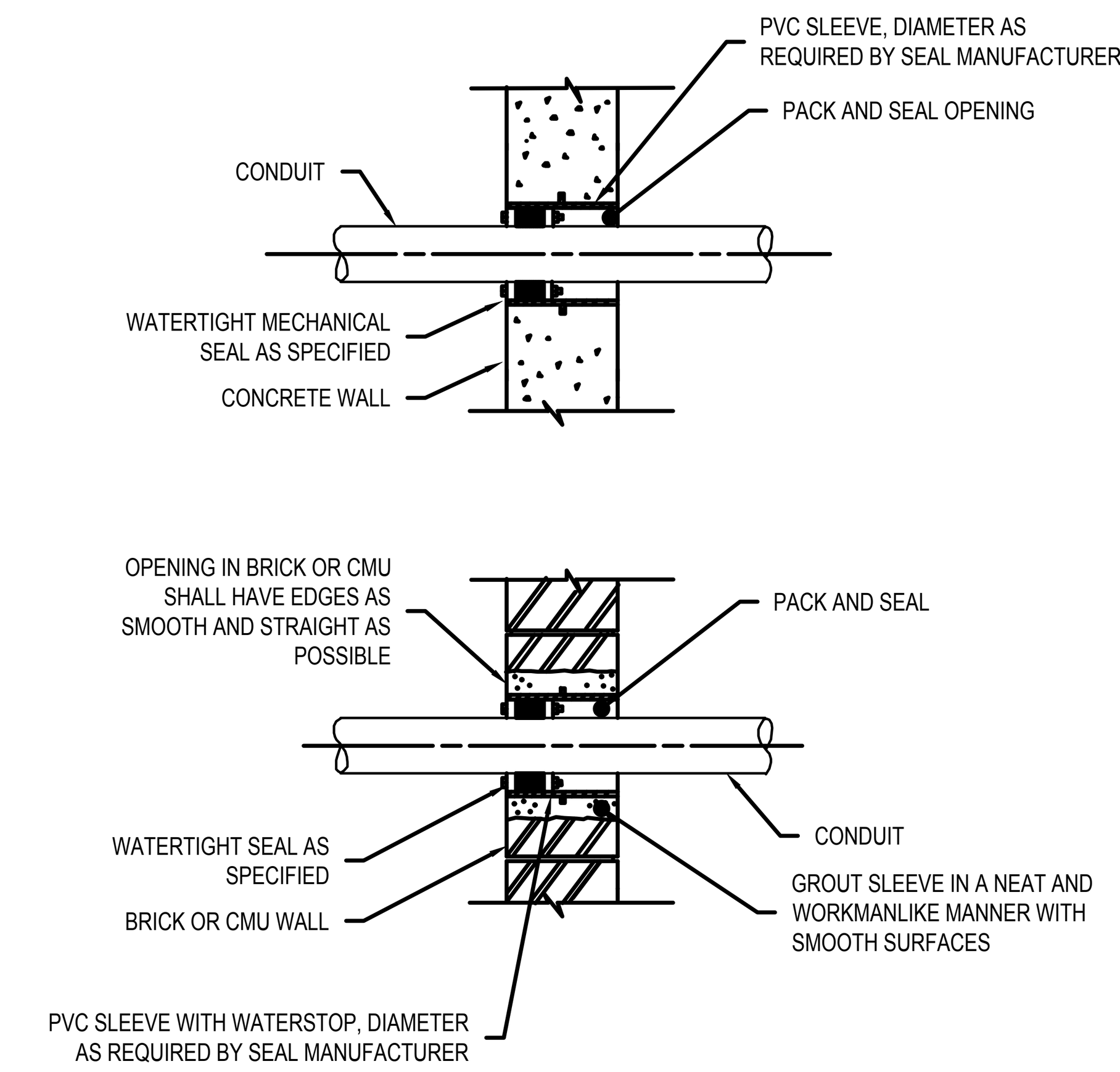
3 GENERATOR/ENCLOSURE PAD DETAIL

NTS



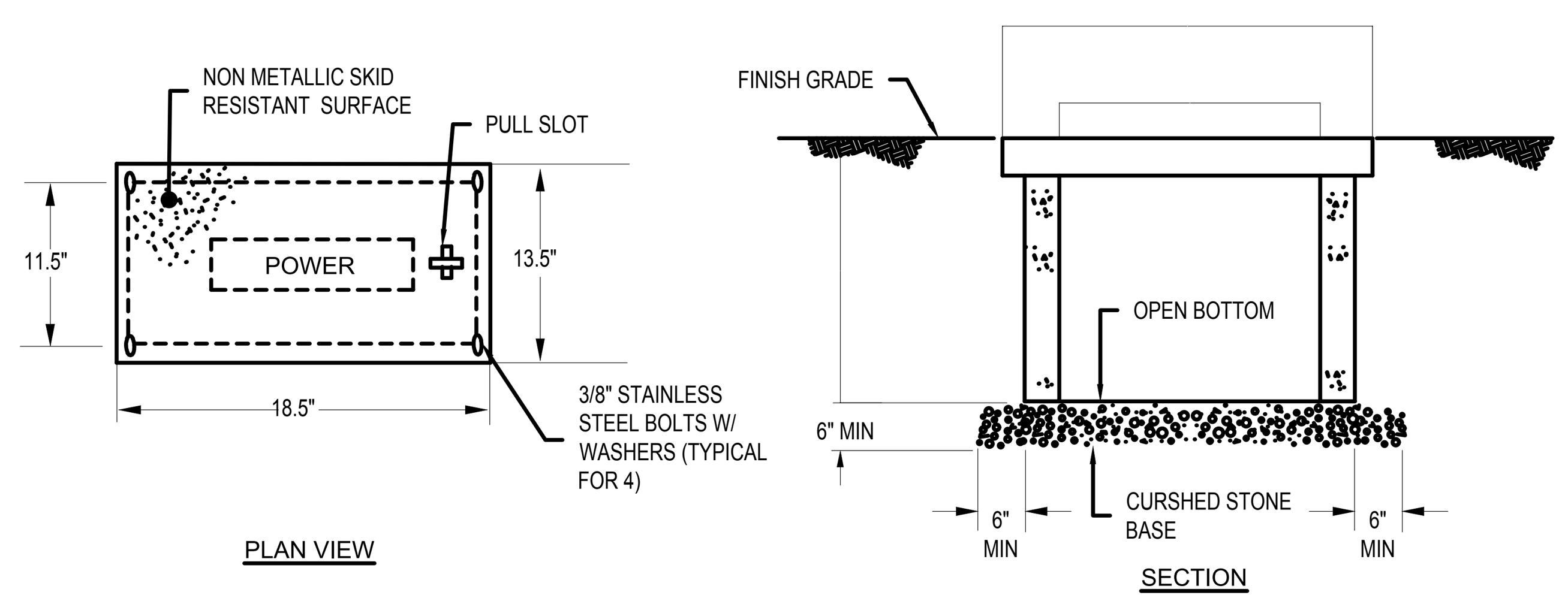
2 TYPICAL DIRECT BURIED CONDUIT DETAIL

NTS



1 WATERTIGHT CONDUIT PENETRATIONS

NTS

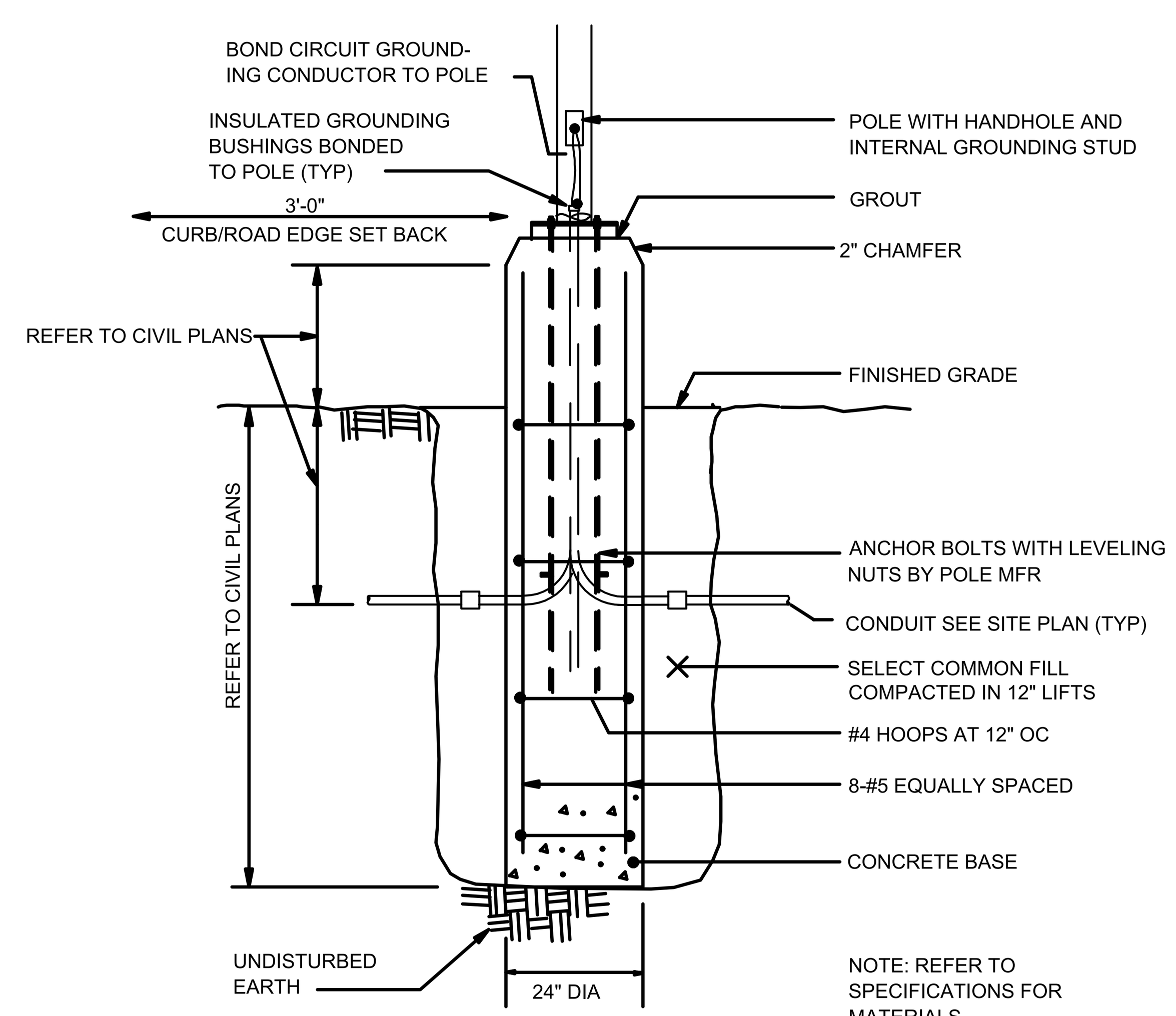


NOTES:

1. THIS HANDHOLE IS INTENDED FOR NON-DELIBERATE VEHICULAR TRAFFIC ONLY.
2. HANDHOLE SHALL BE PREFABRICATED POLYMER CONCRETE AGGREGATE EQUAL TO QUAZITE OR EQUAL PRE CAST CONCRETE CONSTRUCTION.

4 PREFABRICATED HANDHOLE "PH" & "LH" DETAIL

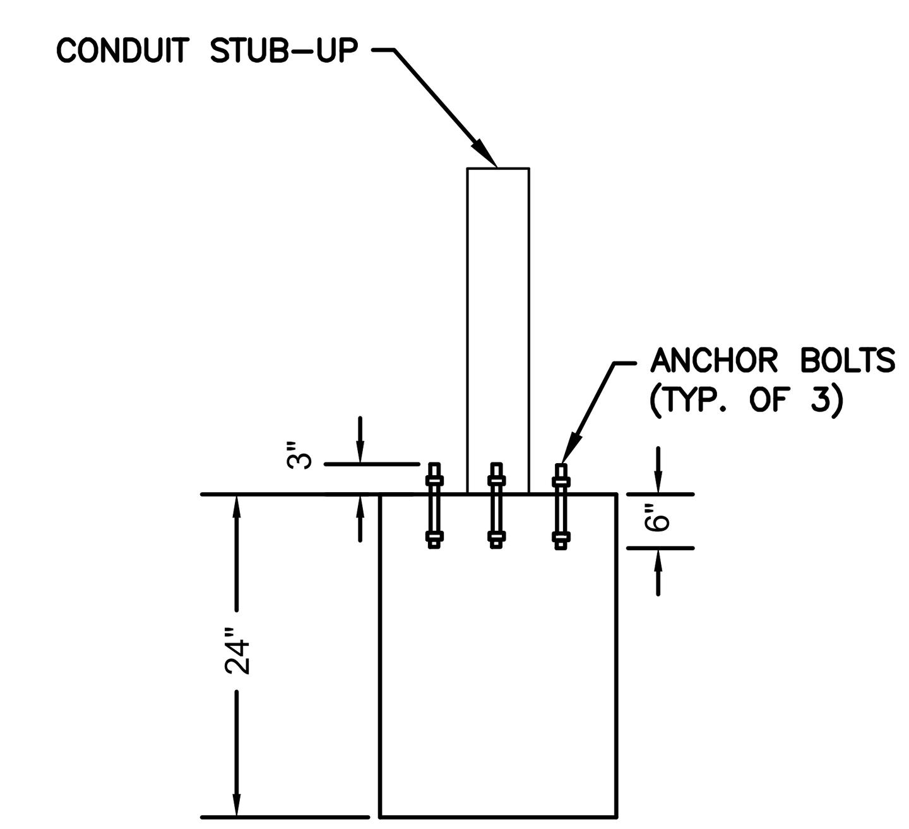
NTS



NOTE: REFER TO SPECIFICATIONS FOR MATERIALS

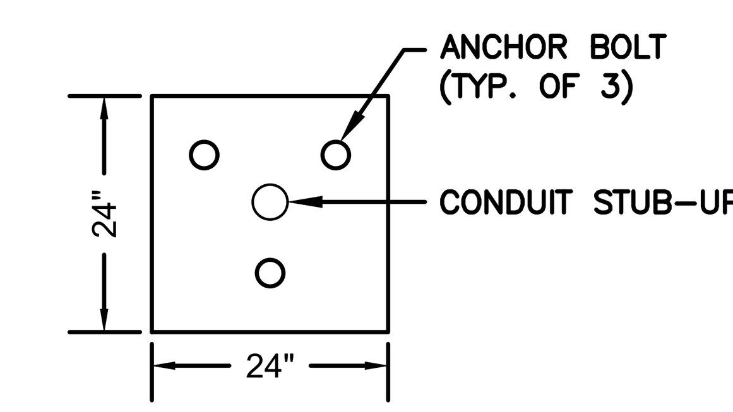
5 TYPICAL LIGHT POLE BASE DETAIL

NTS



EV CHARGING STATION BOLLARD MOUNT

NTS



CONCRETE PAD WITH ANCHOR BOLTS AND CONDUIT STUB-UP

NTS

NOTE:

1. THE CONCRETE BLOCK MUST MEASURE AT LEAST 24" ON ALL SIDES.
2. THE BOLT THREADS MUST EXTEND 3" ABOVE THE CONCRETE.
3. THE CONDUIT MUST BE AT LEAST 1-1/2" IN DIAMETER AND EXTEND 12" TO 24" ABOVE THE CONCRETE.

5 EV-CHARGING STATION BOLLARD DETAIL

NTS

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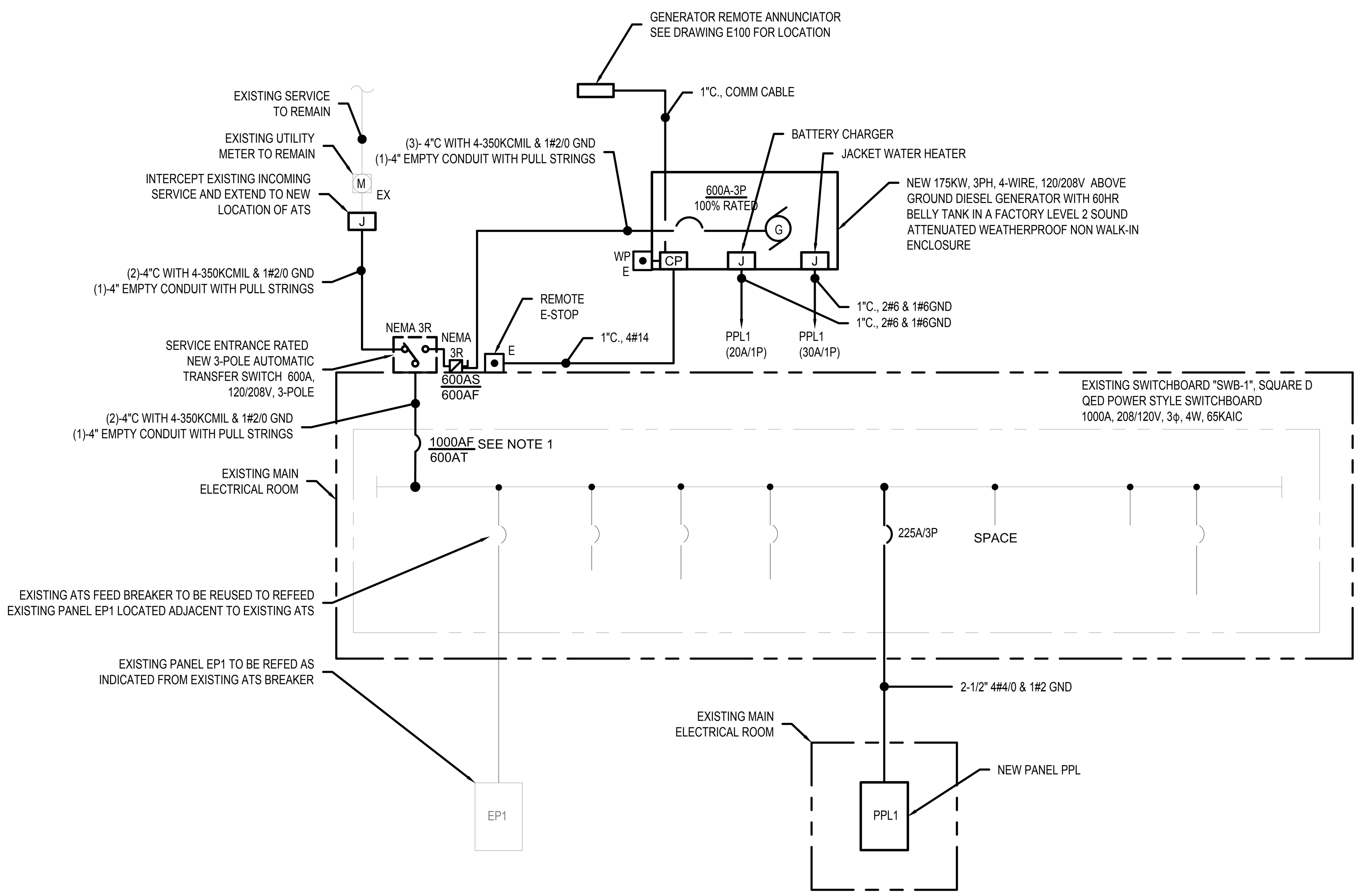

1 HARRY LEE SCHOOL ONE-LINE

NTS

NOTES:

1. CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING PE121000RP 1000A TRIP PLUG IN EXISTING SQUARE D 1200A MICROLOGIC BREAKER WITH A NEW 600A TRIP PLUG.

PANELBOARD SCHEDULE

DESIGNATION: PPL1
S.C. RATING: 22,000 A RMS SYSTEM
REMARKS: PANEL TO BE SQUARE D NQOB SERIES BOLT ON NQOB BREAKERS
LOCATION: EXISTING ELECTRICAL CLOSET
SERVICE: 120/208V,3Ø,4W
RATING: 225 AMPS
MOUNTING: SURFACE
MAIN: 225 AMP MCB

CKT. NO.	LOAD DESIGNATION	BREAKER		PHASE			BREAKER		LOAD DESIGNATION	CKT. NO.
		TRIP	POLE	A	B	C	POLE	TRIP		
1	EV CHARGING STATION	40		●				40	FUTURE EV-CHARGING STATION	2
3	-	-			●			-	-	4
5	GENERATOR JACKET WATER HEATER	30				●		20	BATTERY CHARGER	6
7	SITE LIGHTS	20		●				20	SITE LIGHTS	8
9	-	-			●			-	-	10
11	SITE LIGHTS	20				●		20	SITE LIGHTS	12
13	-	-		●				-	-	14
15	SITE LIGHTS	20			●			20	SITE LIGHTS	16
17	-	-				●		-	-	18
19	FUTURE EV CHARGING STATION	40		●				40	FUTURE EV CHARGING STATION	20
21	-	-			●			-	-	22
23	FUTURE EV CHARGING STATION	40				●		40	FUTURE EV CHARGING STATION	24
25	-	-		●				-	-	26
27	SPARE	20			●			20	SPARE	28
29	SPARE	20				●		20	SPARE	30
31	SPARE	20		●				20	SPARE	32
33	SPARE	20			●			20	SPARE	34
35	SOUTH TENT RECEPTACLE	20				●		20	SPARE	36
37	SPARE	20		●				20	SPARE	38
39	SPARE	20			●			20	SPARE	40
41	SPARE	20				●		20	SPARE	42

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ELECTRICAL ONE-LINE

Sheet Number:
E601

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