LAND DEVELOPMENT PLANS

FOR

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD CARE FACILITY

MAP 28, LOT 113

885 MAIN STREET

TOWN OF READING, MIDDLESEX COUNTY, MASSACHUSETTS

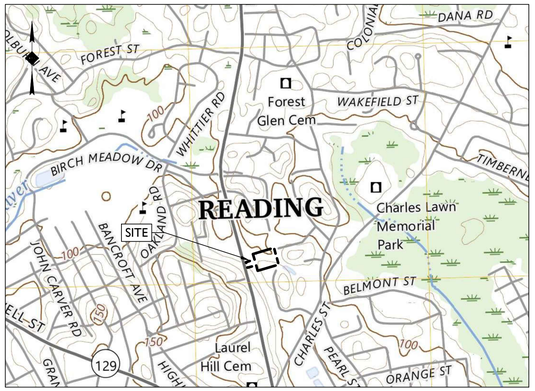
APPLICANT

PRIMROSE SCHOOLS FRANCHISING COMPANY
3200 WINDY HILL ROAD SE
SUITE 1200E,
ATLANTA, GA 30339
MTAYLOR@PRIMROSESCHOOLS.COM

OWNER

JOSEPH P NORDEN
885 MAIN STREET
READING, MA 01867

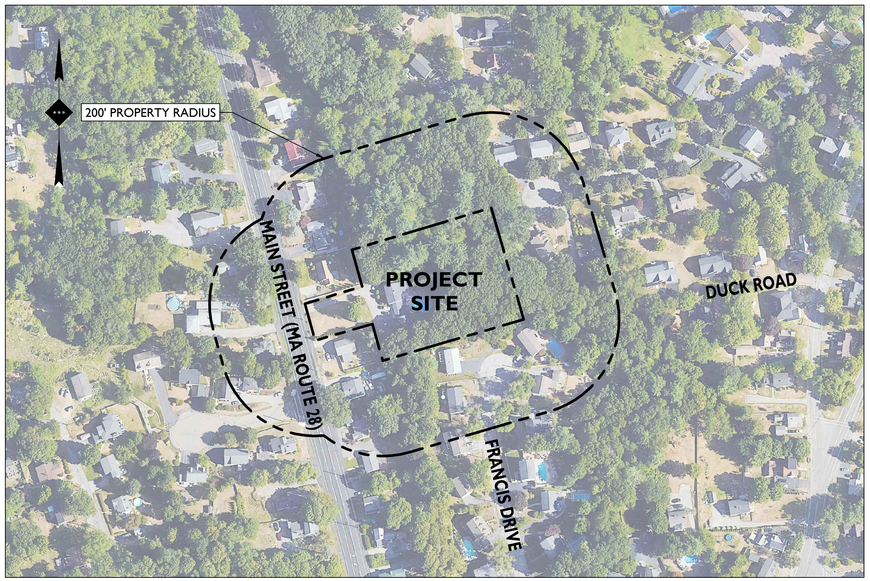
811 Know what's **below** **Call** before you dig.



SOURCE: READING, MA QUADRANGLE MAP, 7.5 MINUTE SERIES, DATED: 2024

USGS TOPO MAP

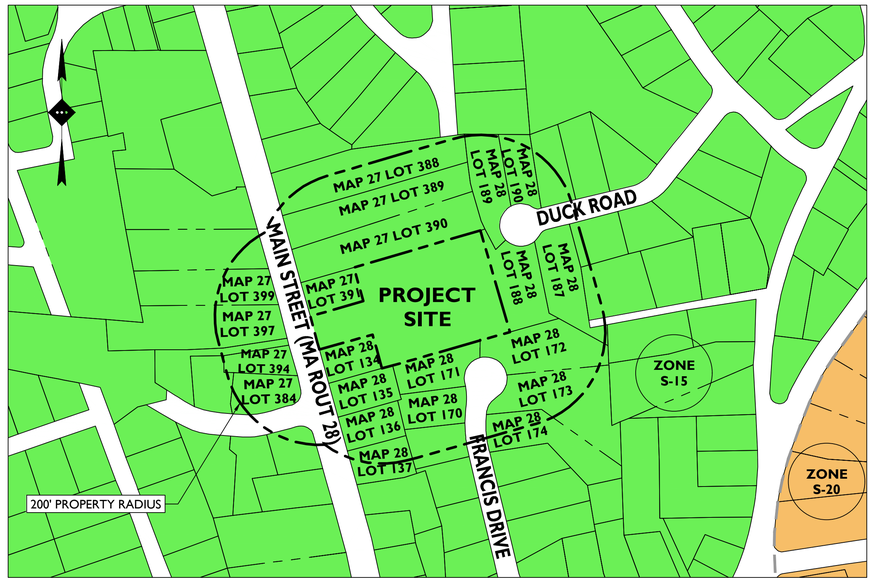
SCALE: 1" = 1,000'



SOURCE: GOOGLE EARTH IMAGE, DATED: 06/13/2022

AERIAL MAP

SCALE: 1" = 150'



SOURCE: TOWN OF READING ONLINE GIS MAPPING

TAX / ZONING / OTHER MAP

SCALE: 1" = 150'±

ZONING LEGEND:

(S-15) - SINGLE FAMILY 15 DISTRICT

(S-20) - SINGLE FAMILY 20 DISTRICT

TOWN OF READING 200' PROPERTY OWNERS LIST

PROPERTY ID:	OWNER	OWNER'S ADDRESS
27-386	KOUTOUVIDES DAKIS	17 BETHESDA LANE
28-166	MADAN SIMRAN	17 BUNKER LANE
28-286	WALSH DENIS	24 DUCK ROAD
28-191	GENT PETER	27 DUCK ROAD
28-187	SWEENEY MICHAEL	30 DUCK ROAD
28-190	MARRIONE PETER	31 DUCK ROAD
28-188	GORSKI JONATHAN	34 DUCK ROAD
28-189	DONAHUE ANDREW	35 DUCK ROAD
28-174	WHALEN RICHARD	49 FRANCIS DRIVE
28-169	COUGHLIN SAMANTHA	50 FRANCIS DRIVE
28-170	REID GARNET	54 FRANCIS DRIVE
28-173	CURTIN ANDREW	55 FRANCIS DRIVE
28-171	CULLEN MARK	58 FRANCIS DRIVE
28-172	MAYES LISA	59 FRANCIS DRIVE
28-137	TASCO KATRINA	869 MAIN STREET
27-382	872 874 MAIN STREET LLC	872 MAIN STREET
28-136	GNANARATNAM JOHN	873 MAIN STREET
28-135	MATTHEWS CRYSTAL	877 MAIN STREET
28-134	WILLIFORD JONATHAN	881 MAIN STREET
27-384	MOREIRA GREGORY	882 MAIN STREET
27-394	GEORGE JENNIFER	884 MAIN STREET
27-397	JOYCE MARY ELIZABETH	890 MAIN STREET
27-391	DENTREMONT ARTHUR	891 MAIN STREET
27-390	LEETE KAVIN R ETAL TRUSTEES	895 MAIN STREET
27-399	SANDBERG ELLEN	896 MAIN STREET
27-389	LOGIUDICE KAREN R TRUSTEES	899 MAIN STREET
27-401	READING KOREAN CHURCH OF THE NAZARENE	900 MAIN STREET
27-388	PATEL HASMUKH	905 MAIN STREET

PLANS PREPARED BY:

STONEFIELD engineering & design

Rutherford, NJ · New York, NY · Salem, MA
Princeton, NJ · Tampa, FL · Birmingham, MI · Providence, RI
www.stonefieldeng.com

56 Pine Street, Providence, RI 02903
Phone 617.203.2076

PLAN REFERENCE MATERIALS:

1. THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
   - EXISTING CONDITIONS SURVEY, PREPARED BY NORTHEAST GEOSPATIOAL, DATED FEBRUARY 24, 2025
   - WETLAND BORDER REPORT, PREPARED BY GODDARD CONSULTING, DATED DECEMBER 02, 2024
   - AERIAL MAP OBTAINED FROM GOOGLE EARTH PRO, DATED JUNE 13, 2022
   - TAX AND ZONING MAP OBTAINED FROM THE TOWN OF READING ONLINE GIS MAPPING
   - ARCHITECTURAL PLANS, PREPARED BY ADA ARCHITECTS, DATED MARCH 5, 2025
2. ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.

SHEET INDEX

ISSUE	DATE	BY	DESCRIPTION
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS

NOT APPROVED FOR CONSTRUCTION

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LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28-113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. IKENE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

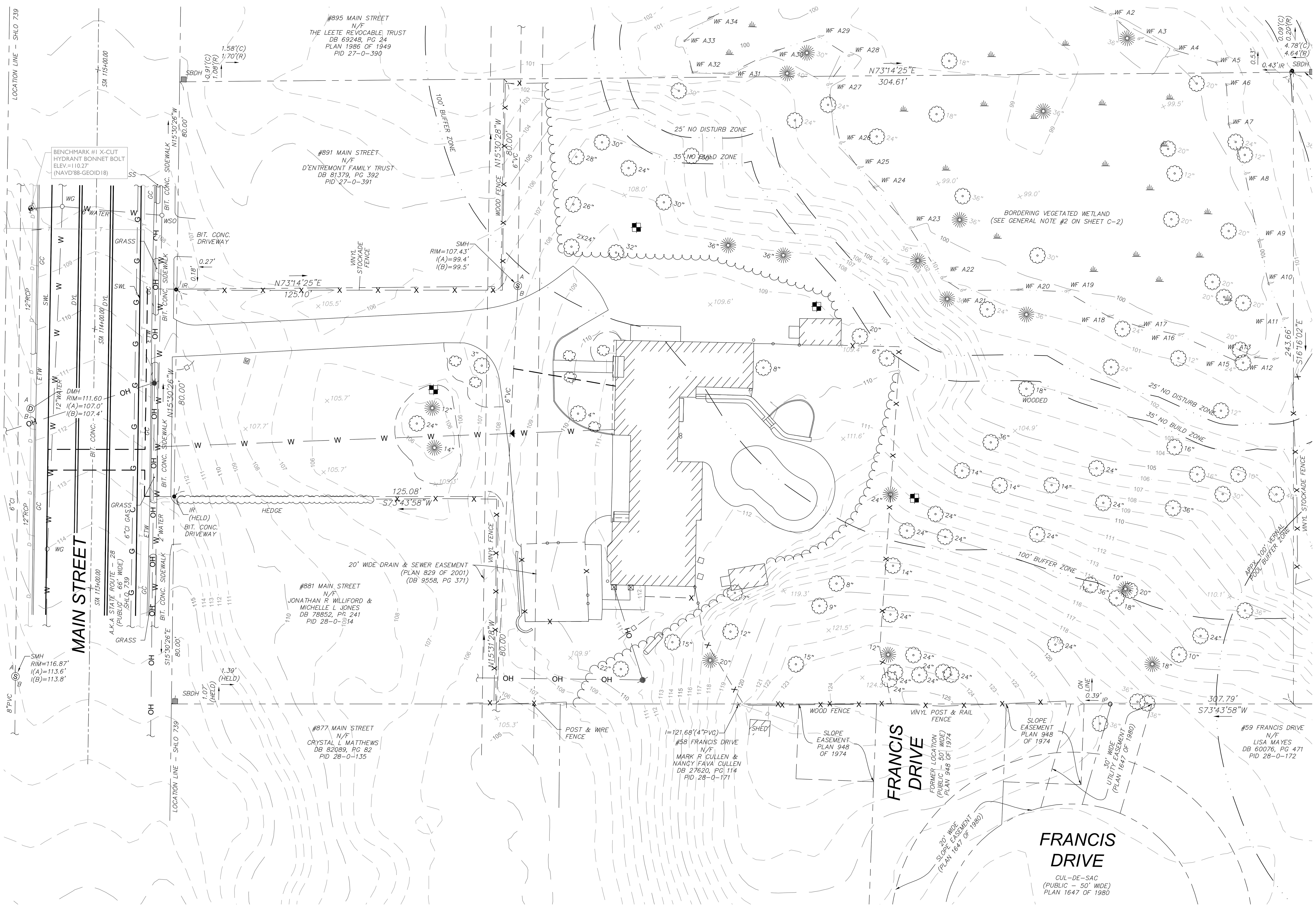
STONEFIELD engineering & design

SCALE: AS SHOWN | PROJECT ID: BOS-240115

TITLE: COVER SHEET

DRAWING: C-1

Z:\BOS\PROJECTS\2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOT FOLDER\C-01 COVER.DWG



SYMBOL	DESCRIPTION
	BIKE RACK
	BOUND
	CATCH BASIN
	DOWNSPOUT
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	GAS GATE
	HANDHOLE
	HYDRANT
	IRON ROD
	LIGHT POLE
	PARKING METER
	SEWER MANHOLE
	TELEPHONE MANHOLE
	WALL LAMP
	SIGN (SINGLE POST)
	WATER GATE
	WATER SHUT OFF
×10.00'	SPOT ELEVATION
(C)	CALCULATED
(R)	RECORD
BIT.	BITUMINOUS
CONC.	CONCRETE
DH	DRILL HOLE
DWP	DETECTABLE WARNING PAD
SB	STONE BOUND
SWL	SOLID WHITE LINE
THRESH.	THRESHOLD
D	DRAIN PIPE
G	GAS PIPE
E	ELECTRIC LINE
S	SEWER PIPE
W	WATER PIPE
	GUIDE RAIL
X	CHAINLINK FENCE
	ASPHALT / CONCRETE CURB
	PROPERTY LINE
	VACATED / INTERIOR LOT LINE
	ADJACENT PROPERTY LINE

SURVEY NOTES:

1. THE SURVEY LISTED WITHIN THE PLAN REFERENCES ON THE COVER SHEET SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THE SURVEY AND ASSOCIATED DOCUMENTS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF THE SURVEY AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.
2. WETLAND RESOURCE AREAS SHOWN HEREON WERE DELINEATED BY GODDARD CONSULTING, LLC ON NOVEMBER 25, 2024, AND ARE DETAILED IN THEIR ACCOMPANYING REPORT DATED DECEMBER 2, 2024.

GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
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JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' PROJECT ID: BOS-240115

TITLE:

EXISTING CONDITIONS PLAN

DRAWING:

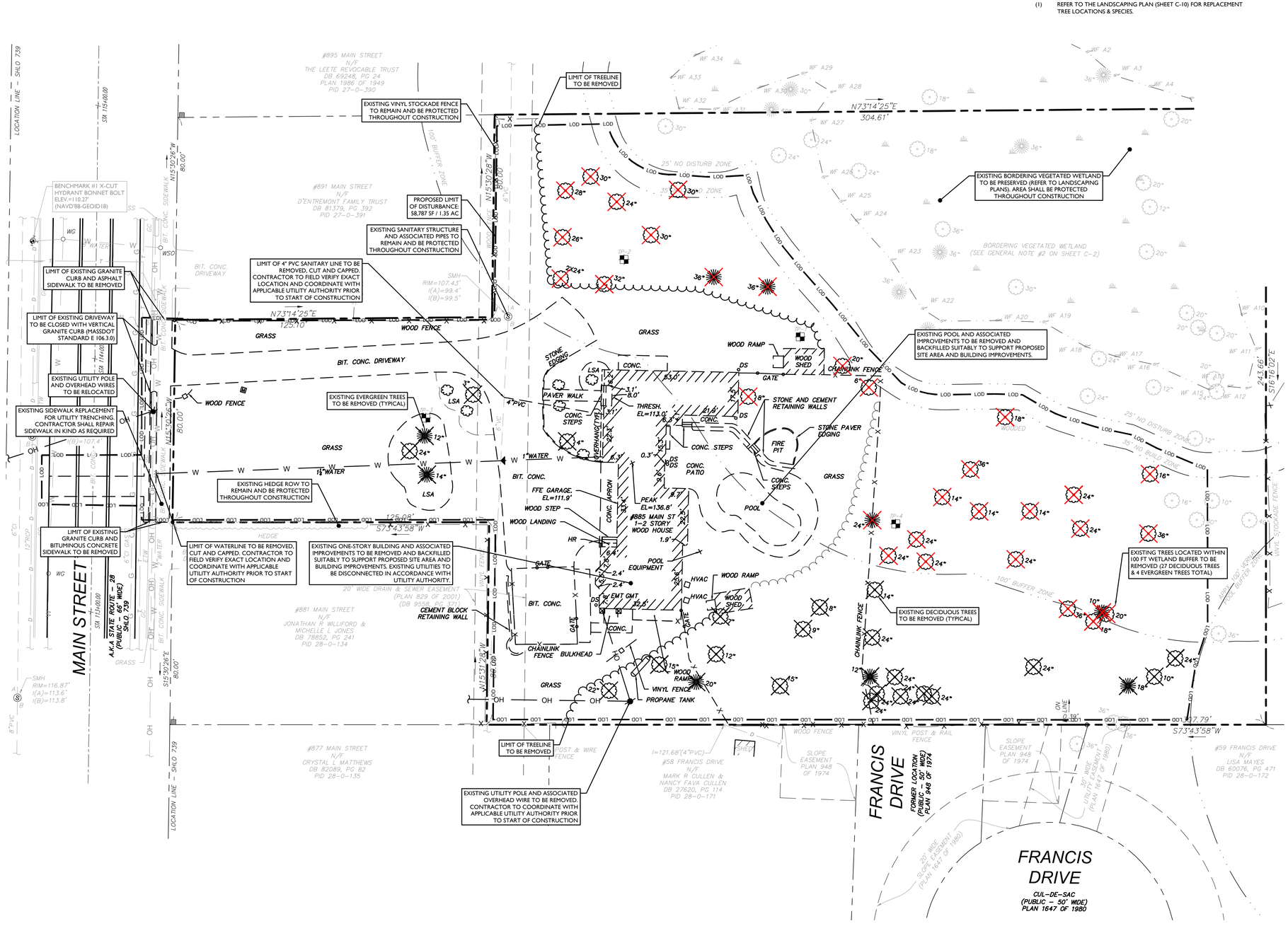
C-2

ALL SITE FEATURES WITHIN THE LIMIT OF DISTURBANCE INDICATED ON THIS PLAN ARE TO BE REMOVED / DEMOLISHED UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS

TREE REPLACEMENT REQUIREMENTS

REQUIRED	PROPOSED
REPLACEMENT REQUIRED FOR TREES REMOVED WITHIN 100 FT OF A WETLAND	COMPLIES
PLANTING WITHIN THE BUFFER ZONE MUST BE A NATIVE SPECIES OR CULTIVAR OF A NATIVE SPECIES	COMPLIES
REPLACEMENT TREES MINIMUM SIZE: 4-10 FT HT OR 3" CALIPER	COMPLIES
DECIDUOUS SHADE TREES 6" DBH OR MORE:	
1 REPLACEMENT TREE REQUIRED FOR EVERY 1 TREE REMOVED	
(27 TREES TO BE REMOVED) * (1) = 27 REPLACEMENT TREES	27 TREES[1]
EVERGREEN TREES 5-6 FT HT OR MORE:	
1 REPLACEMENT TREE REQUIRED FOR EVERY 1 TREE REMOVED	
(4 TREES TO BE REMOVED) * (1) = 4 REPLACEMENT TREES	4 TREES[1]
TOTAL REPLACEMENT TREES REQUIRED = 31 TREES	**31 TREES[1]**

(1) REFER TO THE LANDSCAPING PLAN (SHEET C-10) FOR REPLACEMENT TREE LOCATIONS & SPECIES.



SYMBOL	DESCRIPTION
	FEATURE TO BE REMOVED / DEMOLISHED
WF AXX	WETLAND LIMITS
	WETLAND BUFFER
LOD	LIMIT OF DISTURBANCE
	EXISTING TREES TO REMAIN
	EXISTING TREES TO BE REMOVED
	EXISTING TREES WITHIN 100 FT WETLAND BUFFER TO BE REMOVED

811 Know what's **below** **Call** before you dig.

DEMOLITION NOTES

1. THE WORK REFLECTED ON THE DEMOLITION PLAN IS TO PROVIDE GENERAL INFORMATION TOWARDS THE EXISTING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE ENTIRE PLAN SET AND ASSOCIATED REPORTS/REFERENCE DOCUMENTS INCLUDING ALL DEMOLITION ACTIVITIES AND INCIDENTAL TASKS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS.
2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF DEMOLITION ACTIVITIES.
3. EXPLOSIVES SHALL NOT BE USED UNLESS WRITTEN CONSENT FROM BOTH THE OWNER AND ANY APPLICABLE GOVERNING AGENCY IS OBTAINED. BEFORE THE START OF ANY EXPLOSIVE PROGRAM, THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL LOCAL, STATE, AND FEDERAL PERMITS. ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SEISMIC TESTING AS REQUIRED AND ANY DAMAGES AS THE RESULT OF SAID DEMOLITION PRACTICES.
4. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL UTILITIES ARE DISCONNECTED IN ACCORDANCE WITH THE UTILITY AUTHORITY'S REQUIREMENTS PRIOR TO STARTING THE DEMOLITION OF ANY STRUCTURE. ALL EXCAVATIONS ASSOCIATED WITH DEMOLISHED STRUCTURES OR REMOVED TANKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO SUPPORT SITE AND BUILDING IMPROVEMENTS. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING BACKFILLING ACTIVITIES TO OBSERVE AND CERTIFY THAT BACKFILL MATERIAL WAS COMPACTED TO A SUITABLE CONDITION.
5. DEMOLISHED DEBRIS SHALL NOT BE BURIED ON SITE. ALL WASTE/DEBRIS GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL RECORDS OF THE DISPOSAL TO DEMONSTRATE COMPLIANCE WITH THE ABOVE REGULATIONS.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

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MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

TITLE: **DEMOLITION & TREE REMOVAL PLAN**

DRAWING: **C-3**

Z:\BOS\PROJECTS\2024\240115\PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOT\XXX_DEMO.DWG

LAND USE AND ZONING

PARCEL ID: 028.0-0000-0133.0

SINGLE FAMILY 15 DISTRICT (S-15)

PROPOSED USE

CHILD CARE FACILITY — PERMITTED USE

ZONING REQUIREMENT	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	15,000 SF (0.34 AC)	84,280 SF (1.94 AC)	NO CHANGE
MINIMUM LOT AREA OUTSIDE OF WETLAND RESOURCE AREA	12,000 SF	71,063 SF	NO CHANGE
MINIMUM LOT FRONTAGE	100 FT	80 FT (EN)	NO CHANGE
MINIMUM FRONT YARD	20 FT	169.5 FT	150.1 FT
MINIMUM SIDE YARD	15 FT	42.2 FT	25.0 FT
MINIMUM REAR YARD	20 FT	208.2 FT	171.0 FT
MAXIMUM LOT COVERAGE	25% (21,070 SF)	3.9% (3,320 SF)	8.4% (7,064 SF)
MAXIMUM BUILDING HEIGHT	35 FT	<35 FT	<35 FT

(EN) EXISTING NON-CONFORMITY

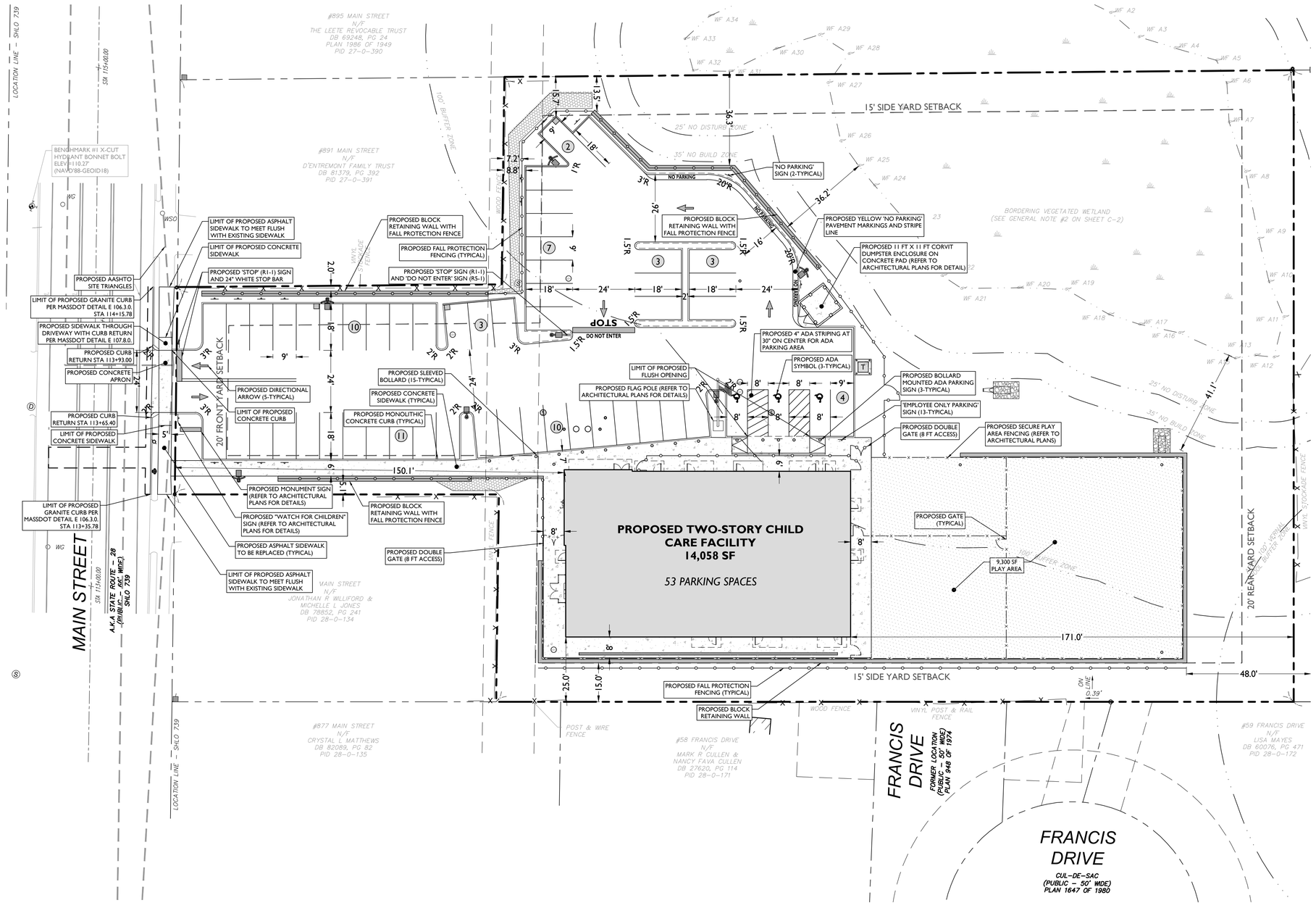
OFF-STREET PARKING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 9.1.1.7	REQUIRED PARKING FOR NURSERY/ KINDERGARTEN / ELEMENTARY: 1 SPACE / EMPLOYEE + 1 SPACE / 7 STUDENTS EMPLOYEE = 28 EMPLOYEES = 28 SPACES STUDENTS = 177 STUDENTS = 25 SPACES **REQUIRED = 53 SPACES**	53 SPACES
§ 9.1.2.2	PARKING SPACE DIMENSIONS: 9 FT X 18 FT	9 FT X 18 FT

SIGNAGE REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 8.5.6	WALL MOUNTED SIGN REQUIREMENTS: MAXIMUM AREA: 2 SF PER LF OF FACADE 2 SF X 110 LF = 220 SF	24 SF
§ 8.5.6	FREESTANDING SIGN REQUIREMENTS: MAXIMUM NUMBER OF SIGNS: 1/LOT	1 SIGN (*)
	MAXIMUM AREA: 35 SF	25 FT
	MAXIMUM HEIGHT: 10.5 FT	8 FT
	MINIMUM SIDE SETBACK: 20 FT	24.3 FT

(*) ONE (1) FREESTANDING SIGN ALLOWED BY SPECIAL PERMIT



SYMBOL / DESCRIPTION

- PROPERTY LINE
- SETBACK LINE
- SAWCUT LINE
- PROPOSED CURB
- PROPOSED MOUNTABLE CURB
- PROPOSED EXTENDED CURB
- PROPOSED SIGNS / BOLLARDS
- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED TURF
- PROPOSED STABILIZED SLOPE
- PROPOSED GRAVEL
- PROPOSED AREA LIGHT
- PROPOSED RETAINING WALL
- PROPOSED FALL PROTECTION FENCE
- PROPOSED PLAY AREA FENCING
- PROPOSED SCREENED FENCE
- PROPOSED BUILDING DOORS
- WF AXY — WETLAND LIMITS
- WETLAND BUFFER

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY AND FAMILIARIZE THEMSELVES WITH THE EXISTING SITE CONDITIONS AND THE PROPOSED SCOPE OF WORK (INCLUDING DIMENSIONS, LAYOUT, ETC.) PRIOR TO INITIATING THE IMPROVEMENTS IDENTIFIED WITHIN THESE DOCUMENTS. SHOULD ANY DISCREPANCY BE FOUND BETWEEN THE EXISTING SITE CONDITIONS AND THE PROPOSED WORK THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND ENSURE THAT ALL REQUIRED APPROVALS HAVE BEEN OBTAINED PRIOR TO THE START OF CONSTRUCTION. COPIES OF ALL REQUIRED PERMITS AND APPROVALS SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
3. ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW, INDEMNIFY AND HOLD HARMLESS STONEFIELD ENGINEERING & DESIGN, LLC. AND IT'S SUB-CONSULTANTS FROM AND AGAINST ANY DAMAGES AND LIABILITIES INCLUDING ATTORNEY'S FEES ARISING OUT OF CLAIMS BY EMPLOYEES OF THE CONTRACTOR IN ADDITION TO CLAIMS CONNECTED TO THE PROJECT AS A RESULT OF NOT CARRYING THE PROPER INSURANCE FOR WORKERS COMPENSATION, LIABILITY INSURANCE, AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE.
4. THE CONTRACTOR SHALL NOT DEVIATE FROM THE PROPOSED IMPROVEMENTS IDENTIFIED WITHIN THIS PLAN SET UNLESS APPROVAL IS PROVIDED IN WRITING BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF CONSTRUCTION.
6. THE CONTRACTOR SHALL NOT PERFORM ANY WORK OR CAUSE DISTURBANCE ON A PRIVATE PROPERTY NOT CONTROLLED BY THE PERSON OR ENTITY WHO HAS AUTHORIZED THE WORK WITHOUT PRIOR WRITTEN CONSENT FROM THE OWNER OF THE PRIVATE PROPERTY.
7. THE CONTRACTOR IS RESPONSIBLE TO RESTORE ANY DAMAGED OR UNDERMINED STRUCTURE OR SITE FEATURE THAT IS IDENTIFIED TO REMAIN ON THE PLAN SET. ALL REPAIRS SHALL USE NEW MATERIALS TO RESTORE THE FEATURE TO ITS EXISTING CONDITION AT THE CONTRACTORS EXPENSE.
8. CONTRACTOR IS RESPONSIBLE TO PROVIDE THE APPROPRIATE SHOP DRAWINGS, PRODUCT DATA, AND OTHER REQUIRED SUBMITTALS FOR REVIEW. STONEFIELD ENGINEERING & DESIGN, LLC. WILL REVIEW THE SUBMITTALS IN ACCORDANCE WITH THE DESIGN INTENT AS REFLECTED WITHIN THE PLAN SET.
9. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC CONTROL IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
10. THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE APPROPRIATE GOVERNING AUTHORITY AND SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF STREET OPENING PERMITS.
11. THE CONTRACTOR IS REQUIRED TO RETAIN AN OSHA CERTIFIED SAFETY INSPECTOR TO BE PRESENT ON SITE AT ALL TIMES DURING CONSTRUCTION & DEMOLITION ACTIVITIES.
12. SHOULD AN EMPLOYEE OF STONEFIELD ENGINEERING & DESIGN, LLC. BE PRESENT ON SITE AT ANY TIME DURING CONSTRUCTION, IT DOES NOT RELIEVE THE CONTRACTOR OF ANY OF THE RESPONSIBILITIES AND REQUIREMENTS LISTED IN THE NOTES WITHIN THIS PLAN SET.

20' 0' 20' 40'

GRAPHIC SCALE IN FEET
1" = 20'

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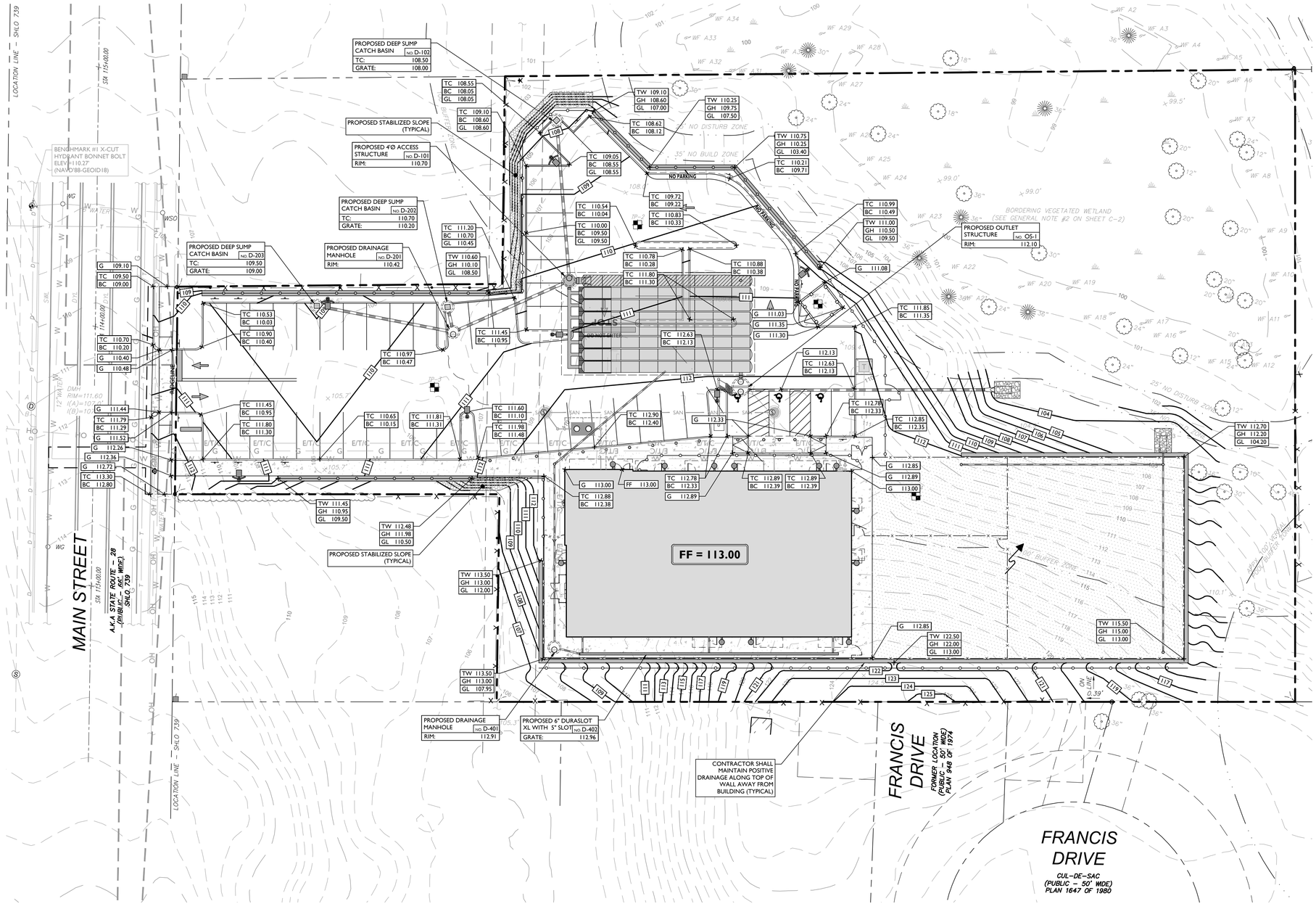
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

TITLE: SITE PLAN

DRAWING: C-4

Z:\BOSTON\BOS\2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOT\XXX-MASTER.DWG



SYMBOL / DESCRIPTION

SYMBOL	DESCRIPTION
	PROPERTY LINE
100	PROPOSED GRADING CONTOUR
RIDGELINE	PROPOSED GRADING RIDGELINE
	PROPOSED DIRECTION OF DRAINAGE FLOW
G 100.00	PROPOSED GRADE SPOT SHOT
TC 100.50 BC 100.00	PROPOSED TOP OF CURB / BOTTOM OF CURB SPOT SHOT
TC 100.50 BC 100.00 GL 99.00	PROPOSED EXPOSED CURB SPOT SHOT
DC 100.12 BC 100.00	PROPOSED DEPRESSED CURB / BOTTOM OF CURB SPOT SHOT
TW 100.50 GH 100.00 GL 95.00	PROPOSED TOP OF WALL / BOTTOM OF WALL SPOT SHOT

GRADING NOTES

1. ALL SOIL AND MATERIAL REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. ANY GROUNDWATER DE-WATERING PRACTICES SHALL BE PERFORMED UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FOR THE DISCHARGE OF DE-WATERED GROUNDWATER. ALL SOIL IMPORTED TO THE SITE SHALL BE CERTIFIED CLEAN FILL. CONTRACTOR SHALL MAINTAIN RECORDS OF ALL FILL MATERIALS BROUGHT TO THE SITE.
2. THE CONTRACTOR IS REQUIRED TO PROVIDE TEMPORARY AND/OR PERMANENT SHORING WHERE REQUIRED DURING EXCAVATION ACTIVITIES, INCLUDING BUT NOT LIMITED TO UTILITY TRENCHES, TO ENSURE THE STRUCTURAL INTEGRITY OF NEARBY STRUCTURES AND STABILITY OF THE SURROUNDING SOILS.
3. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 4 INCHES TO 7 INCHES ABOVE EXISTING GRADES UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL SUPPLY ALL STAKEOUT CURB GRADE SHEETS TO STONEFIELD ENGINEERING & DESIGN, LLC FOR REVIEW AND APPROVAL PRIOR TO POURING CURBS.
4. THE CONTRACTOR IS RESPONSIBLE TO SET ALL PROPOSED UTILITY COVERS AND RESET ALL EXISTING UTILITY COVERS WITHIN THE PROJECT LIMITS TO PROPOSED GRADE IN ACCORDANCE WITH ANY APPLICABLE MUNICIPAL, COUNTY, STATE AND/OR UTILITY AUTHORITY REGULATIONS.
5. MINIMUM SLOPE REQUIREMENTS TO PREVENT PONDING SHALL BE AS FOLLOWS:
   - CURB GUTTER: 0.50%
   - CONCRETE SURFACES: 1.00%
   - ASPHALT SURFACES: 1.00%
6. A MINIMUM SLOPE OF 1.00% SHALL BE PROVIDED AWAY FROM ALL BUILDINGS. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE BUILDING IS ACHIEVED AND SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC, IF THIS CONDITION CANNOT BE MET.
7. FOR PROJECTS WHERE BASEMENTS ARE PROPOSED, THE DEVELOPER IS RESPONSIBLE TO DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED STRUCTURE. IF GROUNDWATER IS ENCOUNTERED WITHIN THE BASEMENT AREA, SPECIAL CONSTRUCTION METHODS SHALL BE UTILIZED AND REVIEWAPPROVED BY THE CONSTRUCTION CODE OFFICIAL. IF SUMP PUMPS ARE UTILIZED, ALL DISCHARGES SHALL BE CONNECTED DIRECTLY TO THE PUBLIC STORM SEWER SYSTEM WITH APPROVAL FROM THE GOVERNING STORM SEWER SYSTEM AUTHORITY.

ADA NOTES

1. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION WITHIN THE ADA PARKING SPACES AND ACCESS AISLES.
2. THE CONTRACTOR SHALL PROVIDE COMPLIANT SIGNAGE AT ALL ADA PARKING AREAS IN ACCORDANCE WITH STATE GUIDELINES.
3. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 5.00% RUNNING SLOPE AND A MAXIMUM OF 2.00% CROSS SLOPE ALONG WALKWAYS WITHIN THE ACCESSIBLE PATH OF TRAVEL (SEE THE SITE PLAN FOR THE LOCATION OF THE ACCESSIBLE PATH). THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ACCESSIBLE PATH OF TRAVEL IS 36 INCHES WIDE OR GREATER UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
4. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 2.00% SLOPE IN ANY DIRECTION AT ALL LANDINGS. LANDINGS INCLUDE, BUT ARE NOT LIMITED TO, THE TOP AND BOTTOM OF AN ACCESSIBLE RAMP, AT ACCESSIBLE BUILDING ENTRANCES, AT AN AREA IN FRONT OF A WALK-UP ATM, AND AT TURNING SPACES ALONG THE ACCESSIBLE PATH OF TRAVEL. THE LANDING AREA SHALL HAVE A MINIMUM CLEAR AREA OF 60 INCHES BY 60 INCHES UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR SHALL MAINTAIN A MAXIMUM 8.33% RUNNING SLOPE AND A MAXIMUM 2.00% CROSS SLOPE ON ANY CURB RAMPS ALONG THE ACCESSIBLE PATH OF TRAVEL. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 10.00% IF A LANDING AREA IS PROVIDED AT THE TOP OF THE RAMP. FOR ALTERATIONS, A CURB RAMP FLARES SHALL NOT HAVE A SLOPE GREATER THAN 8.33% IF A LANDING AREA IS NOT PROVIDED AT THE TOP OF THE RAMP. CURBS RAMPS SHALL NOT RISE MORE THAN 6 INCHES IN ELEVATION WITHOUT A HANDRAIL. THE CLEAR WIDTH OF A CURB RAMP SHALL BE NO LESS THAN 36 INCHES WIDE.
6. ACCESSIBLE RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL CONTAIN COMPLIANT HANDRAILS ON BOTH SIDES OF THE RAMP AND SHALL NOT RISE MORE THAN 30" IN ELEVATION WITHOUT A LANDING AREA IN BETWEEN RAMP RUNS. LANDING AREAS SHALL ALSO BE PROVIDED AT THE TOP AND BOTTOM OF THE RAMP.
7. A SLIP RESISTANT SURFACE SHALL BE CONSTRUCTED ALONG THE ACCESSIBLE PATH AND WITHIN ADA PARKING AREAS.
8. THE CONTRACTOR SHALL ENSURE A MAXIMUM OF ¼ INCHES VERTICAL CHANGE IN LEVEL ALONG THE ACCESSIBLE PATH. WHERE A CHANGE IN LEVEL BETWEEN ¼ INCHES AND ½ INCHES EXISTS, CONTRACTOR SHALL ENSURE THAT THE TOP ¼ INCH CHANGE IN LEVEL IS BEVELED WITH A SLOPE NOT STEEPER THAN 1 UNIT VERTICAL AND 2 UNITS HORIZONTAL (2:1 SLOPE).
9. THE CONTRACTOR SHALL ENSURE THAT ANY OPENINGS (GAPS OR HORIZONTAL SEPARATION) ALONG THE ACCESSIBLE PATH SHALL NOT ALLOW PASSAGE OF A SPHERE GREATER THAN ½ INCH.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
02	04/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION

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LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28-113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

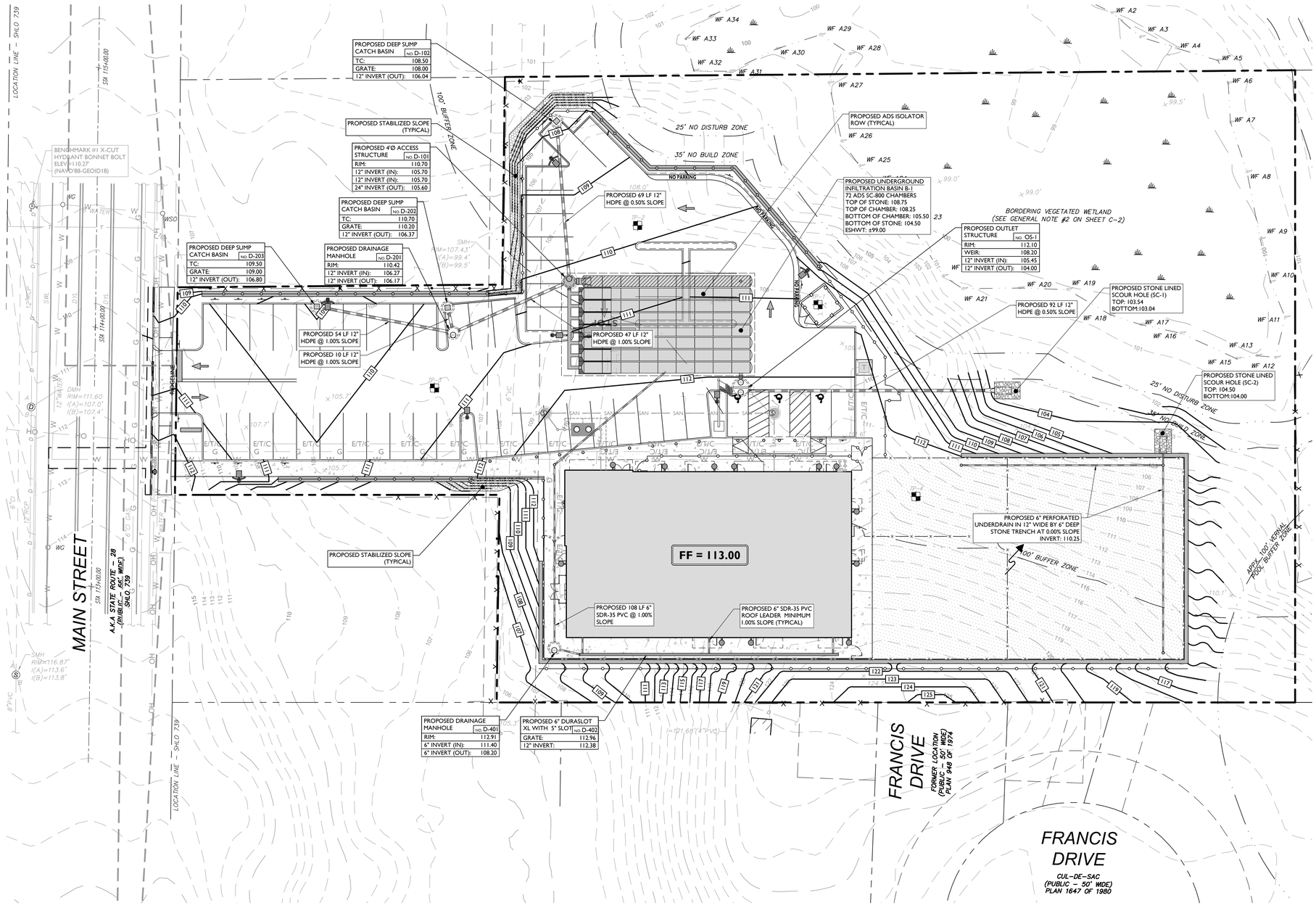
STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

TITLE: GRADING PLAN

DRAWING: C-5

Z:\BOS\PROJ\BOS240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOT\XXX-XS.DWG



SYMBOL / DESCRIPTION

- PROPERTY LINE
- PROPOSED GRADING CONTOUR
- PROPOSED GRADING RIDGELINE
- PROPOSED STORMWATER STRUCTURES
- PROPOSED TRENCH DRAIN
- PROPOSED STORMWATER PIPING
- PROPOSED UNDERGROUND OUTLET STRUCTURE

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR STORMWATER IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
2. CONTRACTOR SHALL START CONSTRUCTION OF STORM LINES AT THE LOWEST INVERT AND WORK UP-GRADIENT.
3. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
4. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

EXCAVATION, SOIL PREPARATION, AND DEWATERING NOTES

1. THE CONTRACTOR IS REQUIRED TO REVIEW THE REFERENCED GEOTECHNICAL DOCUMENTS PRIOR TO CONSTRUCTION. THESE DOCUMENTS SHALL BE CONSIDERED A PART OF THE PLAN SET.
2. THE CONTRACTOR IS REQUIRED TO PREPARE SUBGRADE SOILS BENEATH ALL PROPOSED IMPROVEMENTS AND BACKFILL ALL EXCAVATIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING FOR ALL EXCAVATIONS AS REQUIRED. CONTRACTOR SHALL HAVE THE SHORING DESIGN PREPARED BY A QUALIFIED PROFESSIONAL. SHORING DESIGNS SHALL BE SUBMITTED TO STONEFIELD ENGINEERING & DESIGN, LLC. AND THE OWNER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL OPEN EXCAVATIONS ARE PERFORMED AND PROTECTED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING DESIGN AND OPERATIONS, AS REQUIRED, TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEWATERING OPERATIONS AND GROUNDWATER DISPOSAL.

STORMWATER INFILTRATION BMP CONSTRUCTION NOTES

1. PRIOR TO THE START OF CONSTRUCTION, ANY AREA DESIGNATED TO BE USED FOR AN INFILTRATION BMP (E.G. BASIN, BIORETENTION AREA, ETC.) SHALL BE FENCED OFF AND SHALL NOT BE UTILIZED AS STORAGE FOR CONSTRUCTION EQUIPMENT OR AS A STOCKPILE AREA FOR CONSTRUCTION MATERIALS. NO ACTIVITY SHALL BE PERMITTED WITHIN THE INFILTRATION BASIN AREA UNLESS RELATED TO THE CONSTRUCTION OF THE INFILTRATION BASIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL SUBCONTRACTORS OF BASIN AREA RESTRICTIONS.
2. THE CONTRACTOR SHALL MAKE EVERY EFFORT, WHERE PRACTICAL, TO AVOID SUBGRADE SOIL COMPACTION IN THE AREAS DESIGNATED TO BE USED FOR AN INFILTRATION BMP.
3. ALL EXCAVATION WITHIN THE LIMITS OF ANY INFILTRATION BMP SHALL BE PERFORMED WITH THE LIGHTEST PRACTICAL EXCAVATION EQUIPMENT. ALL EXCAVATION EQUIPMENT SHALL BE PLACED OUTSIDE THE LIMITS OF THE BASIN WHERE FEASIBLE. THE USE OF LIGHT-WEIGHT, RUBBER-TIRED EQUIPMENT (LESS THAN 8 PSI APPLIED TO THE GROUND SURFACE) IS RECOMMENDED WITHIN THE BASIN LIMITS.
4. THE SEQUENCE OF SITE CONSTRUCTION SHALL BE COORDINATED WITH BASIN CONSTRUCTION TO ADHERE TO SEQUENCING LIMITATIONS.
5. DURING THE FINAL GRADING OF AN INFILTRATION BASIN, THE BOTTOM OF THE BASIN SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND THEN SMOOTHED OUT WITH A LEVELING DRAW OR EQUIVALENT GRADING EQUIPMENT. ALL GRADING EQUIPMENT SHALL BE LOCATED OUTSIDE OF THE BASIN BOTTOM WHERE FEASIBLE.
6. THE CONTRACTOR SHALL NOTIFY THE MUNICIPALITY TO DETERMINE IF WITNESS TESTING IS REQUIRED DURING INFILTRATION BASIN EXCAVATION AND/OR SOIL INFILTRATION TESTING.

STORMWATER UNDERGROUND BMP CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL INSTALL AND BACKFILL THE UNDERGROUND BMP IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
2. THE CONTRACTOR SHALL REMOVE ANY FILL, TOPSOIL, AND SUBSOIL ENCOUNTERED UP TO 4 FEET BENEATH THE PROPOSED UNDERGROUND BMP AND REPLACE WITH CLEAN FILL THAT HAS A MINIMUM INFILTRATION RATE OF 3.15 INCHES PER HOUR.
3. UNDERGROUND BASINS SHALL UTILIZE A STONE BACKFILL WITH A MINIMUM VOID RATIO OF 40%.
4. NO CONSTRUCTION LOADING OVER UNDERGROUND BASINS IS PERMITTED UNTIL BACKFILL IS COMPLETE PER THE MANUFACTURER'S SPECIFICATIONS. NO VEHICLES SHALL BE STAGED OR OPERATE FROM A FIXED POSITION OVER THE BASIN.

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LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

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TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

TITLE: STORMWATER MANAGEMENT PLAN

DRAWING: C-6

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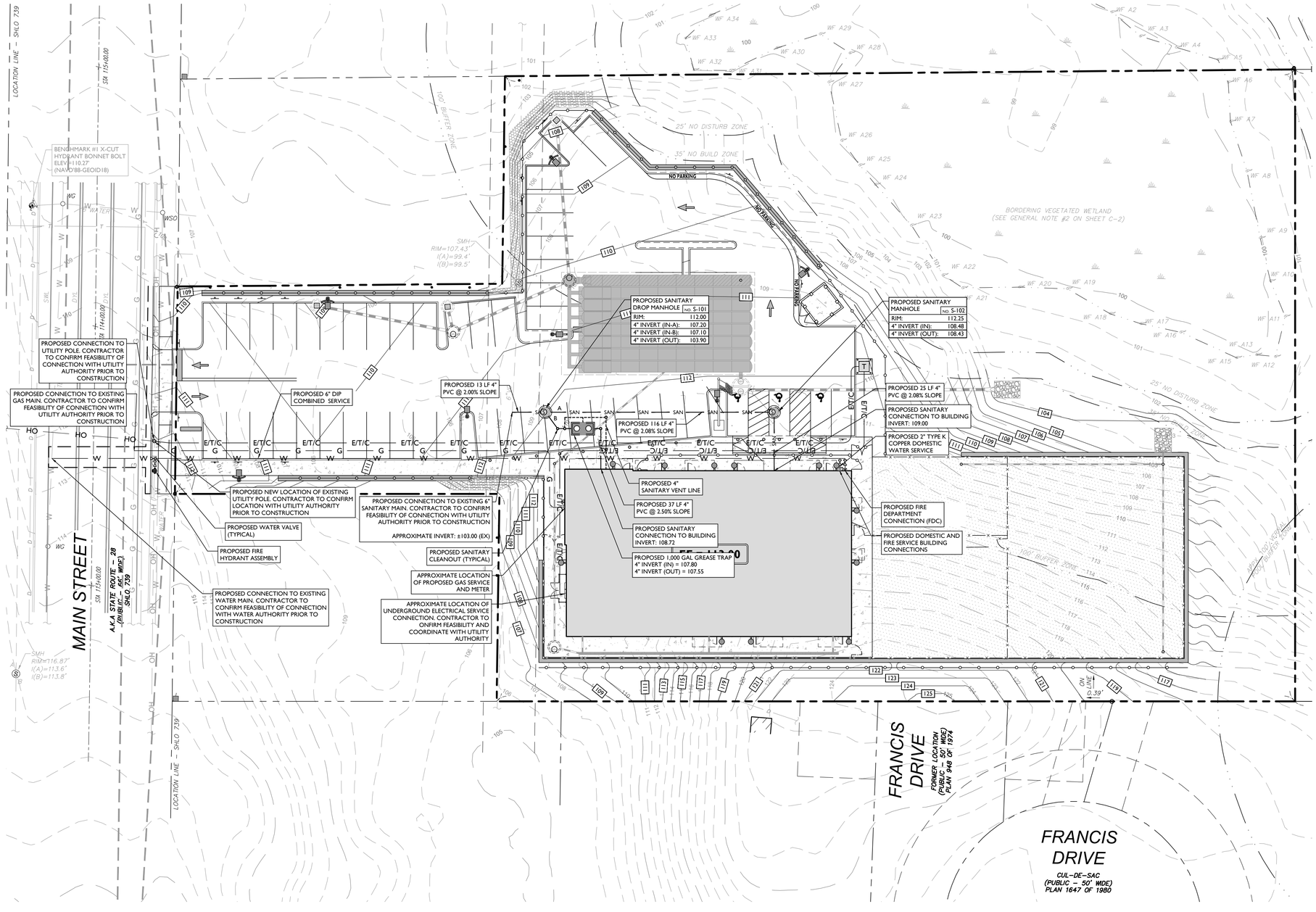

SYMBOL	DESCRIPTION
	PROPERTY LINE
SAN	PROPOSED SANITARY LATERAL
W	PROPOSED DOMESTIC WATER SERVICE
E/T/C	PROPOSED ELECTRICAL/DATA CONDUITS
T/C	PROPOSED DATA CONDUITS
E	PROPOSED ELECTRIC CONDUITS
OH	PROPOSED OVERHEAD WIRES
G	PROPOSED GAS LINE
	PROPOSED VALVE
	PROPOSED WATER TEE / BEND
	PROPOSED FIRE HYDRANT
	PROPOSED FIRE DIRECT CONNECTION (FDC)
S	PROPOSED SANITARY MANHOLE / CLEANOUT
	PROPOSED UTILITY POLE
T	PROPOSED TRANSFORMER ON CONCRETE PAD WITH BOLLARDS

DRAINAGE AND UTILITY NOTES

1. THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
2. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN IN OPERATION ALL UTILITIES NOT DESIGNATED TO BE REMOVED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO ANY EXISTING UTILITY IDENTIFIED TO REMAIN WITHIN THE LIMITS OF THE PROPOSED WORK DURING CONSTRUCTION.
4. A MINIMUM HORIZONTAL SEPARATION OF 10 FEET IS REQUIRED BETWEEN ANY SANITARY SEWER SERVICE AND ANY WATER LINES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
5. ALL WATER LINES SHALL BE VERTICALLY SEPARATED ABOVE SANITARY SEWER LINES BY A MINIMUM DISTANCE OF 18 INCHES. IF THIS SEPARATION CANNOT BE PROVIDED, A CONCRETE ENCASEMENT SHALL BE UTILIZED FOR THE SANITARY SEWER SERVICE AS APPROVED BY STONEFIELD ENGINEERING & DESIGN, LLC.
6. THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR WATER AND SANITARY SEWER CONNECTION IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING GAS, ELECTRIC AND TELECOMMUNICATION CONNECTIONS WITH THE APPROPRIATE GOVERNING AUTHORITY.
8. CONTRACTOR SHALL START CONSTRUCTION OF ANY GRAVITY SEWER AT THE LOWEST INVERT AND WORK UP-GRADIENT.
9. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD SET OF PLANS REFLECTING THE LOCATION OF EXISTING UTILITIES THAT HAVE BEEN CAPPED, ABANDONED, OR RELOCATED BASED ON THE DEMOLITION/REMOVAL ACTIVITIES REQUIRED IN THIS PLAN SET. THIS DOCUMENT SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.
10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

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LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

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TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' PROJECT ID: BOS-240115

TITLE: UTILITY PLAN

DRAWING: C-7

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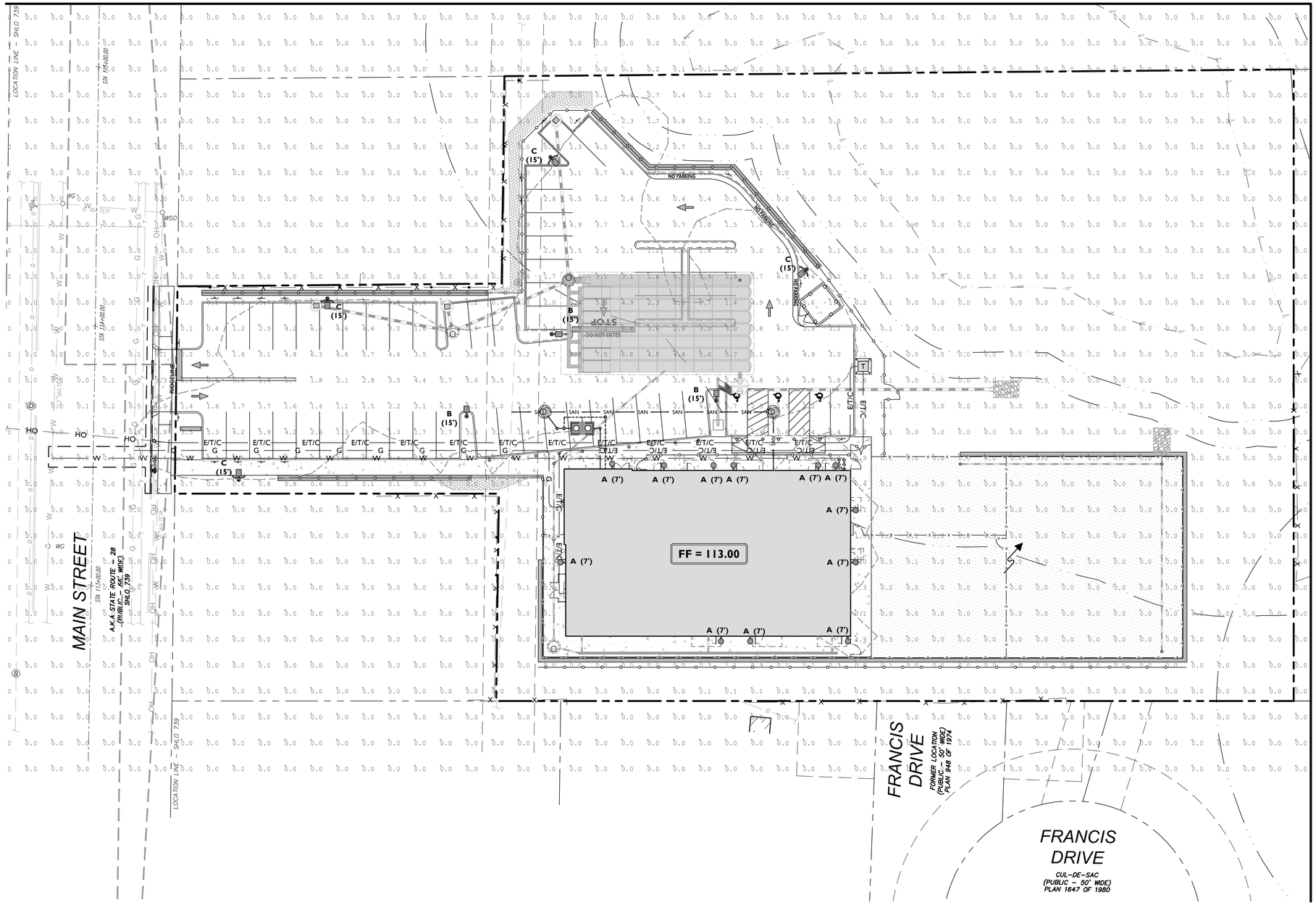
PROPOSED LUMINAIRE SCHEDULE

SYMBOL	LABEL	QUANTITY	SECURITY LIGHTING	DISTRIBUTION	LLF	MANUFACTURER	IES FILE
	A	11	HI-LITE WALL MOUNT LIGHT - LED - 30K - 12 WATT	TYPE V	0.9	HI-LITE MFG	NEWH-CGU-1B LED3.IES
	B	3	MIRADA (MRM) AREA LIGHT - 12LED - 30K	TYPE III	0.9	LSI	MRM-LED-12L-SIL-3-30-70CRI.IES
	C	4	MIRADA (MRM) AREA LIGHT - 12LED - 30K - W/ INTEGRATED LOUVER	TYPE III	0.9	LSI	MRM-LED-12L-SIL-3-30-70CRI-IL.IES

LIGHTING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 4.6.5 - A	MINIMIZE GLARE BEYOND PROPERTY LINE	0.0 FC



20' 0' 20' 40'

GRAPHIC SCALE IN FEET
1" = 20'

SYMBOL / DESCRIPTION

SYMBOL	DESCRIPTION
	PROPOSED ISOMETRIC LINE
A (XX')	PROPOSED LIGHTING FIXTURE (MOUNTING HEIGHT)
+X.X	PROPOSED LIGHTING INTENSITY (FOOTCANDLES)
	PROPOSED AREA LIGHT
	PROPOSED BUILDING MOUNTED LIGHT

GENERAL LIGHTING NOTES

1. THE LIGHTING LEVELS DEPICTED WITHIN THE PLAN SET ARE CALCULATED UTILIZING DATA OBTAINED FROM THE LISTED MANUFACTURER. ACTUAL ILLUMINATION LEVELS AND PERFORMANCE OF ANY PROPOSED LIGHTING FIXTURE MAY VARY DUE TO UNCONTROLLABLE VARIABLES SUCH ARE WEATHER, VOLTAGE SUPPLY, LAMP TOLERANCE, EQUIPMENT SERVICE LIFE AND OTHER VARIABLE FIELD CONDITIONS.
2. WHERE APPLICABLE, THE EXISTING LIGHT LEVELS DEPICTED WITHIN THE PLAN SET SHALL BE CONSIDERED APPROXIMATE. THE EXISTING LIGHT LEVELS ARE BASED ON FIELD OBSERVATIONS AND THE MANUFACTURER'S DATA OF THE ASSUMED OR MOST SIMILAR LIGHTING FIXTURE MODEL.
3. UNLESS NOTED ELSEWHERE WITHIN THIS PLAN SET, THE LIGHT LOSS FACTORS USED IN THE LIGHTING ANALYSIS ARE AS FOLLOWS:
   - LIGHT EMITTING DIODES (LED): 0.90
   - HIGH PRESSURE SODIUM: 0.72
   - METAL HALIDE: 0.72
4. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY PROPOSED LIGHTING LOCATIONS THAT CONFLICT WITH EXISTING PROPOSED DRAINAGE, UTILITY, OR OTHER IMPROVEMENTS.
5. THE CONTRACTOR IS RESPONSIBLE TO PREPARE A WIRING PLAN AND PROVIDE ELECTRIC SERVICE TO ALL PROPOSED LIGHTING FIXTURES. THE CONTRACTOR IS REQUIRED TO PREPARE AN AS-BUILT PLAN OF WIRING AND PROVIDE COPIES TO THE OWNER AND STONEFIELD ENGINEERING & DESIGN, LLC.

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JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

TITLE: LIGHTING PLAN

DRAWING: C-8

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STABILIZATION SPECIFICATIONS:

I.A. TEMPORARY SEEDING AND MULCHING:
GROUND LIMESTONE - APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS.
FERTILIZER - APPLY 11LBS./1,000 SF OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE) WORKED INTO THE SOIL A MINIMUM OF 4".
SEED - PERENNIAL RYEGRASS 100 LBS/ACRE (2.3 LBS./1,000 SF) OR OTHER APPROVED SEEDS; PLANT BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND OCTOBER 1.
MULCH - UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS./1,000 SF APPLIED TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).

I.B. PERMANENT SEEDING AND MULCHING:
TOPSOIL - UNIFORM APPLICATION TO A DEPTH OF 5" (UNSETTLED).
GROUND LIMESTONE - APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS.
FERTILIZER - APPLY 11 LBS./1,000 SF OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE) WORKED INTO THE SOIL A MINIMUM OF 4".
SEED - TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS) 350 LBS./ACRE (8 LBS./1,000 SF) OR OTHER APPROVED SEEDS; PLANT BETWEEN MARCH 1 AND OCTOBER 1 (SUMMER SEEDINGS REQUIRE IRRIGATION)
MULCH - UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS./1,000 SF APPLIED TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).

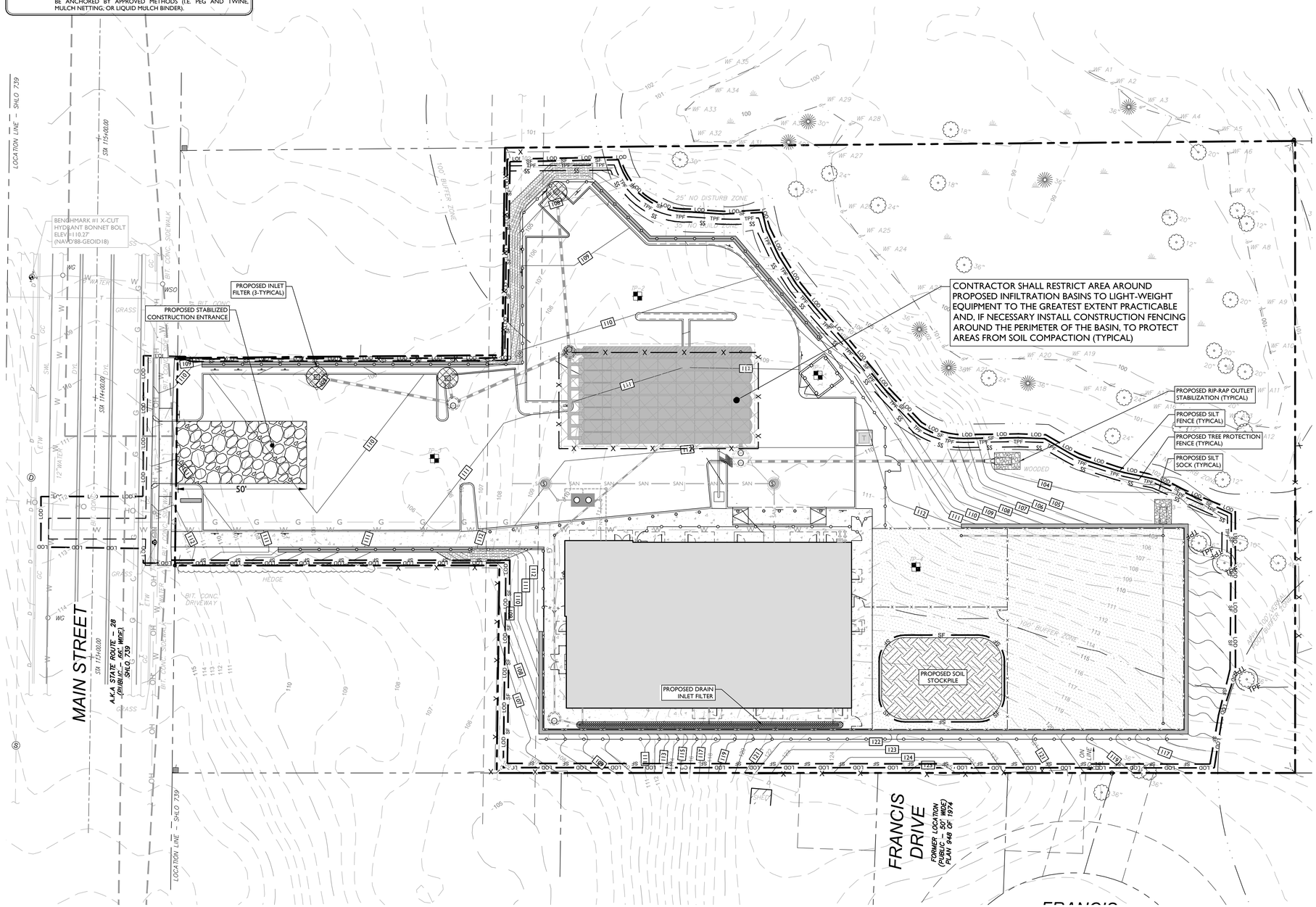
DUST CONTROL NOTES

1. MULCHES - SEE STANDARD OF STABILIZATION WITH MULCHES ONLY, PG. 5-1
2. VEGETATIVE COVER - SEE STANDARD FOR: TEMPORARY VEGETATIVE COVER, PG. 7-1, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION PG. 4-1 AND PERMANENT STABILIZATION WITH SOD, PG. 6-1
3. SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.
4. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
5. SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.
6. BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.
7. CALCIUM CHLORIDE - SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS.
8. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

NRCS WEB SOIL SURVEY SOIL CHARACTERISTICS CHART

TYPE OF SOIL	WHITMAN FINE SANDY LOAM (73B)	CHARLTON-URBAN LAND-HOLLIS COMPLEX (631C)	UDORTHENTS (655)	PAXTON FINE SANDY LOAM (305C)	CANTON-CHARLTON-URBAN LAND COMPLEX (629C)
PERCENT OF SITE COVERAGE	61.3%	28.5%	5.9%	3.8%	0.5%
HYDROLOGIC SOIL GROUP	D	A	D*	C	A
DEPTH TO RESTRICTIVE LAYER	7 TO 38 INCHES	> 80 INCHES	> 80 INCHES	20 TO 39 INCHES	18 TO 30 INCHES
SOIL PERMEABILITY	0.00 TO 0.14 IN / HR	0.60 TO 6.00 IN / HR	*	0.00 TO 0.14 IN / HR	2.00 TO 6.00 IN / HR
DEPTH TO WATER TABLE	0 TO 6 INCHES	> 80 INCHES	> 80 INCHES	18 TO 37 INCHES	> 80 INCHES

* NOT SPECIFIED IN NRCS SOIL REPORT



SYMBOL	DESCRIPTION
	PROPERTY BOUNDARY
	ADJACENT PROPERTY BOUNDARY
LOD	PROPOSED LIMIT OF DISTURBANCE
SF	PROPOSED SILT FENCE
SS	PROPOSED SILT SOCK
TPF	PROPOSED TREE PROTECTION FENCE
	PROPOSED STOCKPILE & EQUIPMENT STORAGE
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED INLET PROTECTION FILTER

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL STATE, AND FEDERAL REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL AIR QUALITY STANDARDS.
3. THE CONTRACTOR IS RESPONSIBLE TO INSPECT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER A PRECIPITATION EVENT GREATER THAN 1 INCH. THE CONTRACTOR SHALL MAINTAIN AN INSPECTION LOG ON SITE AND DOCUMENT CORRECTIVE ACTION TAKEN THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED.

SEQUENCE OF CONSTRUCTION

1. INSTALL CONSTRUCTION ENTRANCE (2 DAYS)
2. STRIPPING AND CLEARING OF SITE (2 WEEKS)
8. INSTALL CURBSIDE SEDIMENT BARRIERS. (1 DAY)
9. DEMOLISH EXISTING PAVEMENT WHERE APPLICABLE (7 DAYS)
10. ROUGH GRADING AND TEMPORARY SEEDING (21 DAYS)
11. BASIN CONSTRUCTION INCLUDING STABILIZATION (14 DAYS)
12. UTILITY CONSTRUCTION (10 DAYS)
13. BUILDING CONSTRUCTION AND SITE IMPROVEMENTS (100 DAYS)
14. FINAL GRADING (3 DAYS)
15. SOIL RESTORATION MEASURES (3 DAYS)
16. LANDSCAPING IMPROVEMENTS AND FINAL SEEDING & TOP SOILING (7 DAYS)
17. REMOVE SOIL EROSION MEASURES (1 DAY)

NOTE: TIME DURATIONS ARE APPROXIMATE AND ARE INTENDED TO ACT AS A GENERAL GUIDE TO THE CONSTRUCTION TIMELINE. ALL DURATIONS ARE SUBJECT TO CHANGE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT CONSTRUCTION SCHEDULE TO TOWNSHIP AND ENGINEER. CONTRACTOR SHALL PHASE CONSTRUCTION ACCORDINGLY.

811 Know what's **below** **Call** before you dig.

20' 0' 20' 40'
GRAPHIC SCALE IN FEET
1" = 20'

ISSUE	DATE	BY	DESCRIPTION
02	04/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION

NOT APPROVED FOR CONSTRUCTION

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120 Washington Street, Suite 201, Salem, MA 01970
Phone 617.203.2076

LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28-113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

TITLE: **SOIL EROSION & SEDIMENT CONTROL PLAN**

DRAWING: **C-9**

Z:\BOSTON\BOS2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOT\XXX-PLYESC.DWG

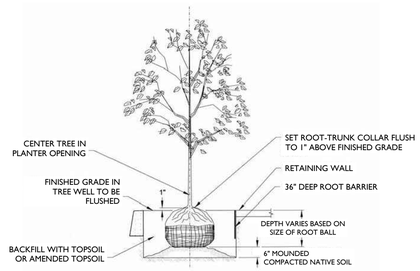
PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	REMARKS
DECIDUOUS TREES							
	LIQ	2	LIQUIDAMBAR STYRACIFLUA	SWEET GUM	3" - 3.5" CAL	B&B	RECOMMENDED NATIVE PLANT
	MAG	2	MAGNOLIA VIRGINANA	SWEETBAY MAGNOLIA	3" - 3.5" CAL	B&B	RECOMMENDED NATIVE PLANT
	NYS	3	NYSSA SYLVATICA	TUPELO	3" - 3.5" CAL	B&B	RECOMMENDED NATIVE PLANT
	PAL	3	QUERCUS PALUSTRIS	PIN OAK	3" - 3.5" CAL	B&B	RECOMMENDED NATIVE PLANT
	TIL	1	TILIA AMERICANA	AMERICAN LINDEN	3" - 3.5" CAL	B&B	RECOMMENDED NATIVE PLANT
EVERGREEN TREES							
	VIR	41	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	6' - 8' HT	B&B	RECOMMENDED NATIVE PLANT
	JUN	4	JUNIPERUS VIRGINIANA 'J.N. SELECT GREEN'	EMERALD FEATHER EASTERN REDCEDAR	6' - 8' HT	B&B	RECOMMENDED NATIVE PLANT
	PIC	8	PICEA GLAUCA	WHITE SPRUCE	6' - 8' HT	B&B	RECOMMENDED NATIVE PLANT
SHRUBS							
	VIB	8	VIBURNUM DENTATUM	VIBURNUM	18" - 24"	POT	RECOMMENDED NATIVE PLANT
EVERGREEN SHRUBS							
	GLA	28	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	18" - 24"	POT	RECOMMENDED NATIVE PLANT
GROUND COVERS							
	CAR	79	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	1 GAL.	POT, 24" O.C.	RECOMMENDED NATIVE PLANT
	RHU	32	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	1 GAL.	POT, 36" O.C.	RECOMMENDED NATIVE PLANT
PERENNIALS AND GRASSES							
	ROS	45	COREOPSIS ROSEA	ROSE COREOPSIS	1 GAL.	POT, 24" O.C.	RECOMMENDED NATIVE PLANT
	PAN	6	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	1 GAL.	POT, 24" O.C.	RECOMMENDED NATIVE PLANT

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.

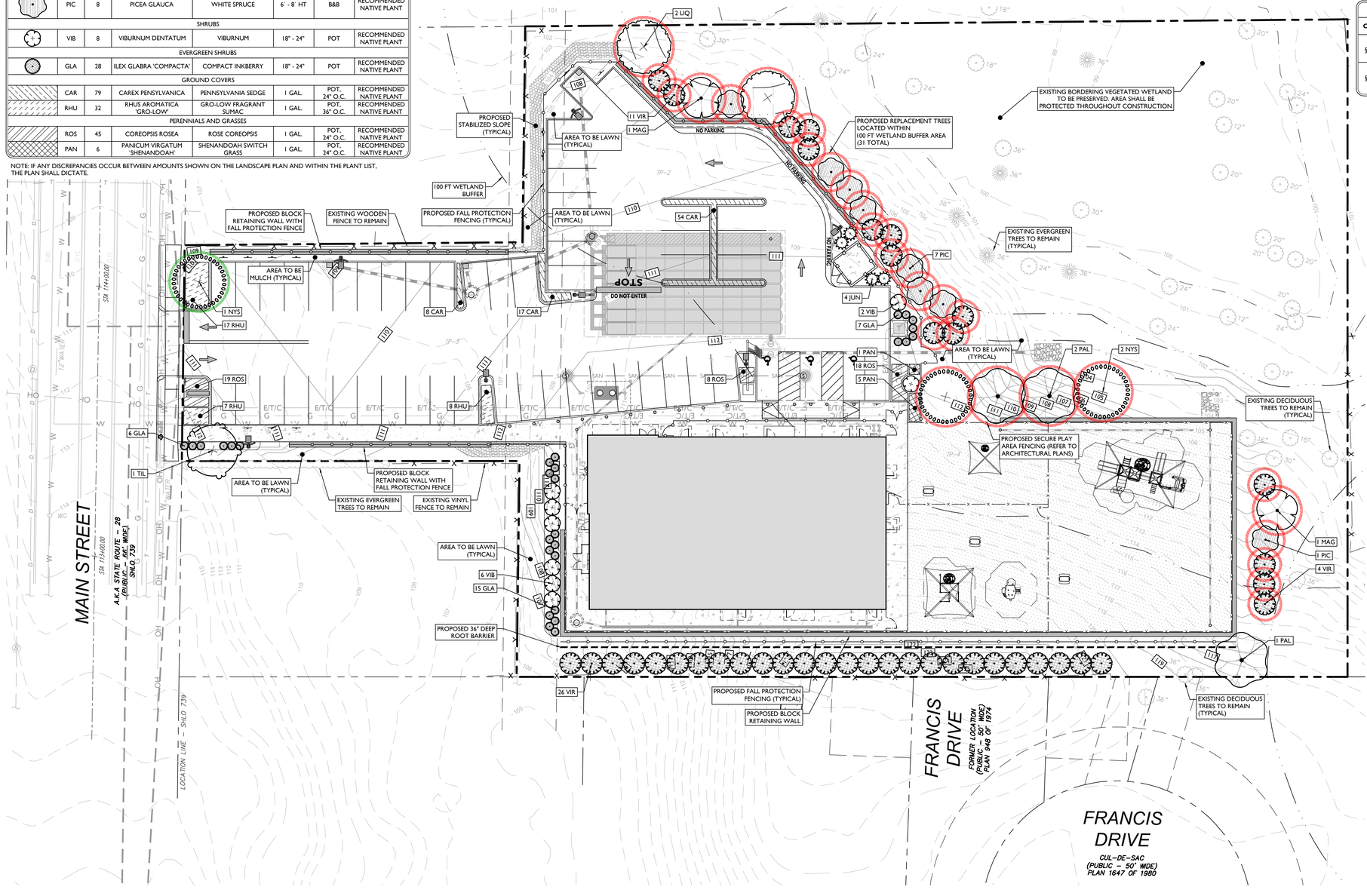
LANDSCAPE MAINTENANCE SCHEDULE

MAINTENANCE TASK	WINTER			SPRING				SUMMER				FALL			
	DEC	JAN	FEB	MAR	APR	MAY	FREQUENCY	JUN	JUL	AUG	FREQUENCY	SEP	OCT	NOV	FREQUENCY
SITE INSPECTION				X			ONCE PER SEASON		X		ONCE PER SEASON			X	ONCE PER SEASON
DEBRIS & WEED CONTROL				X	X	X	BI-WEEKLY	X	X	X	BI-WEEKLY	X	X		BI-WEEKLY
IRRIGATION MAINTENANCE					X		ONCE PER SEASON				N/A		X		ONCE PER SEASON
MULCHING					X		ONCE PER SEASON				N/A				N/A
MOWING OF TURF				X	X	X	WEEKLY	X	X	X	WEEKLY	X	X	X	WEEKLY
PRUNING				X	X		MONTHLY				N/A			X	ONCE PER SEASON
FERTILIZER & AMENDMENTS				X	X	X	MONTHLY	X	X	X	BI-WEEKLY	X	X	X	BI-WEEKLY
INSECT & DISEASE CONTROL						X	ONCE PER SEASON	X	X	X	BI-WEEKLY	X	X		N/A
PLANTING RENOVATION				X			ONCE PER SEASON				N/A		X		ONCE PER SEASON
LANDSCAPE STRUCTURES INSPECTION					X		ONCE PER SEASON				N/A				N/A
LIGHTING MAINTENANCE				X			ONCE PER SEASON				N/A		X		ONCE PER SEASON
PAVED SURFACE MAINTENANCE					X		ONCE PER SEASON				N/A				N/A



RHIZOME BARRIER SUPPLY - 36" x 24" ROOT BARRIER PANELS

NOT TO SCALE



LANDSCAPING REQUIREMENTS

CODE SECTION	REQUIRED	PROPOSED
§ 6.5.2	LANDSCAPE STANDARDS SIDE YARD SETBACKS SHALL BE PLANTED WITH GRASS, SHRUBS AND SHADE TREES	COMPLIES
§ 6.5.7	STREET TREES 1 TREE FOR EVERY 50 LF OF FRONTAGE (55 FT) * (1 TREE / 50 FT FRONTAGE) = 1 TREE	1 TREE

811 Know what's **below** **Call** before you dig.

IRRIGATION NOTE:

IRRIGATION CONTRACTOR TO PROVIDE A DESIGN FOR AN IRRIGATION SYSTEM SEPARATING PLANTING BEDS FROM LAWN AREA. PRIOR TO CONSTRUCTION, DESIGN IS TO BE SUBMITTED TO THE PROJECT LANDSCAPE DESIGNER FOR REVIEW AND APPROVAL, WHERE POSSIBLE, DRIP IRRIGATION AND OTHER WATER CONSERVATION TECHNIQUES SUCH AS RAIN SENSORS SHALL BE IMPLEMENTED. CONTRACTOR TO VERIFY MAXIMUM ON SITE DYNAMIC WATER PRESSURE AVAILABLE MEASURED IN PSI. PRESSURE REDUCING DEVICES OR BOOSTER PUMPS SHALL BE PROVIDED TO MEET SYSTEM PRESSURE REQUIREMENTS. DESIGN TO SHOW ALL VALVES, PIPING, HEADS, BACKFLOW PREVENTION, METERS, CONTROLLERS, AND SLEEVES WITHIN HARDSCAPE AREAS.

LANDSCAPING NOTES

1. THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
2. THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED.
3. THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH .
4. THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1 SLOPE) UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
5. THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION WITHIN AREAS OF DISTURBANCE.
6. THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FLUSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.

20' 0' 20' 40'

GRAPHIC SCALE IN FEET

1" = 20'

SYMBOL **DESCRIPTION**

- PROPOSED ROOT BARRIER
- PROPOSED STREET TREES
- PROPOSED REPLACEMENT TREES

ISSUE	DATE	BY	DESCRIPTION
02	04/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
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MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: 1" = 20' | PROJECT ID: BOS-240115

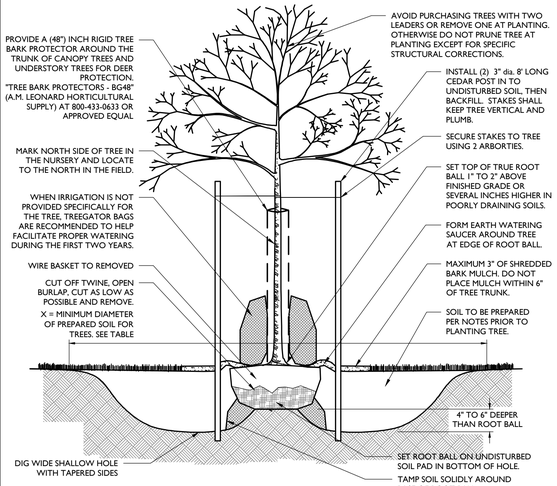
TITLE: **LANDSCAPING PLAN**

DRAWING: **C-10**

Z:\BOSTON\BOS\2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOT\XXX-LYLANDSCAPING

NOTES:

1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILDS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX



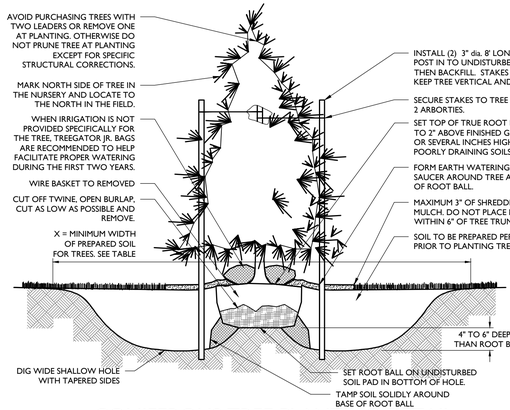
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

1

NOTES:

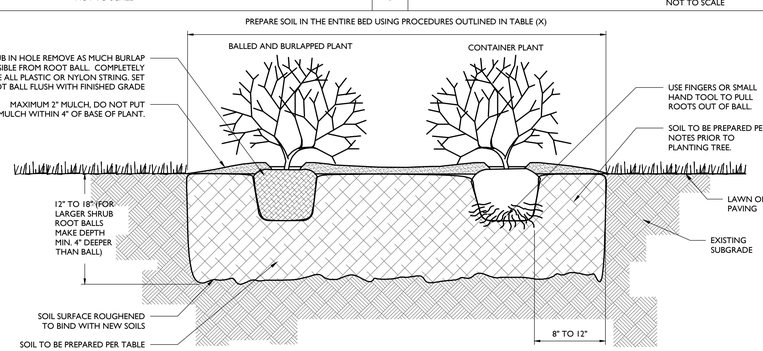
1. FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
3. SOIL AMENDMENTS:
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX



CONIFEROUS TREE PLANTING DETAIL

NOT TO SCALE

2



NOTES:

1. FOR THE CONTAINER-GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOL TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. THOROUGHLY SOAK THE SHRUB ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL

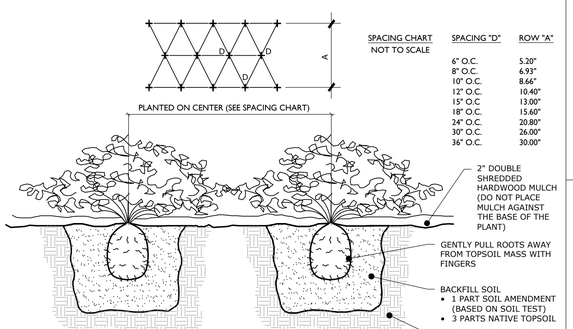
DECIDUOUS AND EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

3

NOTES:

1. THOROUGHLY SOAK THE GROUND COVER ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
2. SOIL AMENDMENTS:
   - MODIFY HEAVY CLAY OR SILT SOILDS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
   - MODIFY EXTREMELY SANDY SOILDS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX
3. ALL GROUND COVER AREAS SHALL BE TREATED WITH A PRE-EMERGENT PER MANUFACTURER'S SPECIFICATIONS



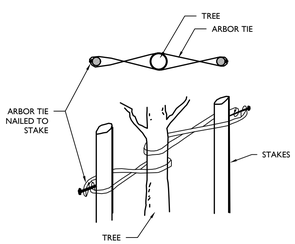
SPACING CHART
NOT TO SCALE

SPACING "D"	ROW "A"
6" O.C.	5.20"
8" O.C.	6.93"
10" O.C.	8.66"
12" O.C.	10.40"
15" O.C	13.00"
18" O.C.	15.60"
24" O.C.	20.80"
30" O.C.	26.00"
36" O.C.	30.00"

GROUND COVER/PERENNIAL/ANNUAL PLANTING DETAIL

NOT TO SCALE

4



INSTALLATION GUIDELINES:
1. LOOP TIE AROUND TREE AND NAIL TO CEDAR STAKE.
2. REMOVE ALL STAKING AND TIES AT END OF FIRST GROWING SEASON.
3. FOLD ENDS OF ARBORTIE BACK. SECURE TO STAKES WITH 1" GALVANIZED ROOFING NAIL OR USE A KNOT.
4. CONSULT LANDSCAPE ARCHITECT FOR STAKING OF TREES LARGER THAN 6".
5. SOURCES INCLUDE:
   GEMPLERS 1-800-332-6744 or GEMPLERS.COM
   CSP OUTDOORS 1-800-592-6940 or
   CSPOUTDOORS.COM

ARBORTIE DETAIL

NOT TO SCALE

5

GENERAL LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL FURNISH ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH THESE SPECIFICATIONS, APPROVED OR FINAL DRAWINGS, AND INSTRUCTIONS PROVIDED BY THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIALS, OR OWNER/OWNER'S REPRESENTATIVE. ALL WORK COMPLETED AND MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH THE INTENTION OF THE SPECIFICATIONS, DRAWINGS, AND INSTRUCTIONS AND EXECUTED WITH THE STANDARD LEVEL OF CARE FOR THE LANDSCAPE INDUSTRY.
2. WORK MUST BE CARRIED OUT ONLY DURING WEATHER CONDITIONS FAVORABLE TO LANDSCAPE CONSTRUCTION AND TO THE HEALTH AND WELFARE OF PLANTS. THE SUITABILITY OF SUCH WEATHER CONDITIONS SHALL BE DETERMINED BY THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL.
3. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR, BEFORE ORDERING OR PURCHASING MATERIALS, TO PROVIDE SAMPLES OF THOSE MATERIALS TO THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL FOR APPROVAL, IF SO REQUESTED.
4. IF SAMPLES ARE REQUESTED, THE LANDSCAPE CONTRACTOR IS TO SUBMIT CERTIFICATION TAGS FROM TREES, SHRUBS AND SEED VERIFYING TYPE AND PURITY.
5. UNLESS OTHERWISE AUTHORIZED BY THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL, THE LANDSCAPE CONTRACTOR SHALL PROVIDE NOTICE AT LEAST FORTY-EIGHT HOURS (48 HRS.) IN ADVANCE OF THE ANTICIPATED DELIVERY DATE OF ANY PLANT MATERIALS TO THE PROJECT SITE. A LEGIBLE COPY OF THE INVOICE, SHOWING VARIETIES AND SIZES OF MATERIALS INCLUDED FOR EACH SHIPMENT SHALL BE FURNISHED TO THE PROJECT LANDSCAPE DESIGNER, OR GOVERNING MUNICIPAL OFFICIAL.
6. THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL RESERVES THE RIGHT TO INSPECT AND REJECT PLANTS AT ANY TIME AND AT ANY PLACE.

PROTECTION OF EXISTING VEGETATION NOTES:

1. BEFORE COMMENCING WORK, ALL EXISTING VEGETATION WHICH COULD BE IMPACTED AS A RESULT OF THE PROPOSED CONSTRUCTION ACTIVITIES MUST BE PROTECTED FROM DAMAGE BY THE INSTALLATION OF TREE PROTECTION FENCING. FENCING SHALL BE LOCATED AT THE DRIP-LINE OR LIMIT OF DISTURBANCE AS DEPICTED WITHIN THE APPROVED OR FINAL PLAN SET, ESTABLISHING THE TREE PROTECTION ZONE. FENCE INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED “TREE PROTECTION FENCE DETAIL.” NO WORK MAY BEGIN UNTIL THIS REQUIREMENT IS FULFILLED. THE FENCING SHALL BE INSPECTED REGULARLY BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
2. IN ORDER TO AVOID DAMAGE TO ROOTS, BARK OR LOWER BRANCHES, NO VEHICLE, EQUIPMENT, DEBRIS, OR OTHER MATERIALS SHALL BE DRIVEN, PARKED OR PLACED WITHIN THE TREE PROTECTION ZONE. ALL ON-SITE CONTRACTORS SHALL USE ANY AND ALL PRECAUTIONARY MEASURES WHEN PERFORMING WORK AROUND TREES, WALKS, PAVEMENTS, UTILITIES, AND ANY OTHER FEATURES EITHER EXISTING OR PREVIOUSLY INSTALLED UNDER THIS CONTRACT.
3. IN RARE INSTANCES WHERE EXCAVATING, FILL, OR GRADING IS REQUIRED WITHIN THE DRIP-LINE OF TREES TO REMAIN, THE WORK SHALL BE PERFORMED AS FOLLOWS:
   - TRENCHING: WHEN TRENCHING OCCURS AROUND TREES TO REMAIN, THE TREE ROOTS SHALL NOT BE CUT, BUT THE TRENCH SHALL BE TUNNELED UNDER OR AROUND THE ROOTS BY CAREFUL HAND DIGGING AND WITHOUT INJURY TO THE ROOTS. NO ROOTS, LIMBS, OR WOODS ARE TO HAVE ANY PAINT OR MATERIAL APPLIED TO ANY SURFACE.
   - RAISING GRADES: WHEN THE GRADE AT AN EXISTING TREE IS BELOW THE NEW FINISHED GRADE, AND FILL NOT EXCEEDING 6 INCHES (6") IS REQUIRED, CLEAN, WASHED GRAVEL FROM ONE TO TWO INCHES (1" - 2") IN SIZE SHALL BE PLACED DIRECTLY AROUND THE TREE TRUNK. THE GRAVEL SHALL EXTEND OUT FROM THE TRUNK ON ALL SIDES A MINIMUM OF 18 INCHES (18") AND FINISH APPROXIMATELY TWO INCHES (2") ABOVE THE FINISH GRADE AT TREE. INSTALL GRAVEL BEFORE ANY EARTH FILL IS PLACED. NEW EARTH FILL SHALL NOT BE LEFT IN CONTACT WITH THE TRUNK OF ANY TREE REQUIRING FILL. WHERE FILL EXCEEDING 6 INCHES (6") IS REQUIRED, A DRY LAID TREE WELL SHALL BE CONSTRUCTED. IF APPLICABLE, TREE WELL INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED “TREE WELL DETAIL.”
   - LOWERING GRADES: EXISTING TREES LOCATED IN AREAS WHERE THE NEW FINISHED GRADE IS TO BE LOWERED, SHALL HAVE RE-GRADING WORK DONE BY HAND TO THE INDICATED ELEVATION, NO GREATER THAN SIX INCHES (6”). ROOTS SHALL BE CUT CLEANLY THREE INCHES (3") BELOW FINISHED GRADE UNDER THE DIRECTION OF A LICENSED ARBORIST. WHERE CUT EXCEEDING 6 INCHES (6") IS REQUIRED, A DRY LAID RETAINING WALL SHALL BE CONSTRUCTED. IF APPLICABLE, THE RETAINING WALL INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED “TREE RETAINING WALL DETAIL.”

SOIL PREPARATION AND MULCH NOTES:

1. LANDSCAPE CONTRACTOR SHALL OBTAIN A SOIL TEST OF THE IN-SITU TOPSOIL BY A CERTIFIED SOIL LABORATORY PRIOR TO PLANTING. LANDSCAPE CONTRACTOR SHALL ALLOW FOR A TWO WEEK TURNAROUND TIME FROM SUBMITTAL OF SAMPLE TO NOTIFICATION OF RESULTS.
2. BASED ON SOIL TEST RESULTS, ADJUST THE RATES OF LIME AND FERTILIZER THAT SHALL BE MIXED INTO THE TOP SIX INCHES (6”) OF TOPSOIL. THE LIME AND FERTILIZER RATES PROVIDED WITHIN THE “SEED SPECIFICATION” OR “SOD SPECIFICATION” IS APPROXIMATE AND FOR BIDDING PURPOSES ONLY. IF ADDITIONAL AMENDMENTS ARE NECESSARY, ADJUST THE TOPSOIL AS FOLLOWS:
   - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM.
   - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.
3. TOPSOIL SHALL BE FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMING CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL OBTAINED FROM A WELL-DRAINED ARABLE SITE, FREE FROM ALL CLAY, LUMPS, COARSE SANDS, STONES, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIAL GREATER THAN ONE INCH (1”).
4. TOPSOIL SHALL HAVE A PH RANGE OF 5.0-7.0 AND SHALL NOT CONTAIN LESS THAN 6% ORGANIC MATTER BY WEIGHT.
5. OBTAIN TOPSOIL ONLY FROM LOCAL SOURCES OR FROM AREAS HAVING SIMILAR SOIL CHARACTERISTICS TO THAT FOUND AT THE PROJECT SITE.
6. CONTRACTOR SHALL PROVIDE A SIX INCH (6") DEEP LAYER OF TOPSOIL IN ALL PLANTING AREAS. TOPSOIL SHALL BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN SOIL CONDITIONS.
7. UNLESS OTHERWISE NOTED IN THE CONTRACT, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBED AREA OF THE SITE.
8. LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE SUB-GRADE ELEVATION MEETS THE FINISHED GRADE ELEVATION (LESS THE REQUIRED TOPSOIL), IN ACCORDANCE WITH THE APPROVED OR FINAL GRADING PLAN.
9. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THE APPROVED OR FINAL CONSTRUCTION SET UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE DESIGNER OR MUNICIPAL OFFICIAL.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SURFACE AND SUBSURFACE PLANT BED DRAINAGE PRIOR TO THE INSTALLATION OF PLANTINGS. IF POOR DRAINAGE CONDITIONS EXIST, CORRECTIVE ACTION SHALL BE TAKEN PRIOR TO INSTALLATION. ALL PLANTING AND LAWN AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW A FREE FLOW OF SURFACE WATER.
11. DOUBLE SHREDDED HARDWOOD MULCH OR APPROVED EQUAL SHALL BE USED AS A THREE INCH (3") TOP DRESSING IN ALL SHRUB PLANTING BEDS AND AROUND ALL TREES PLANTED BY LANDSCAPE CONTRACTOR. GROUND COVER, PERENNIAL, AND ANNUAL PLANTING BEDS SHALL BE MULCHED WITH A TWO INCH (2”) TOP DRESSING. SINGLE TREES OR SHRUBS SHALL BE MULCHED TO AVOID CONTACT WITH TRUNK OR PLANT STEM. MULCH SHALL BE OF SUFFICIENT CHARACTER AS NOT TO BE EASILY DISPLACED BY WIND OR WATER RUNOFF.
12. WHENEVER POSSIBLE, THE SOIL PREPARATION AREA SHALL BE CONNECTED FROM PLANTING TO PLANTING.
13. SOIL SHALL BE LOOSENED WITH A BACKHOE OR OTHER LARGE COARSE-TILING EQUIPMENT UNLESS THE SOIL IS FROZEN OR EXCESSIVELY WET. TILING THAT PRODUCES LARGE, COARSE CHUNKS OF SOIL IS PREFERABLE TO TILING THAT RESULTS IN FINE GRAINS UNIFORM IN TEXTURE. AFTER THE AREA IS LOOSENED IT SHALL NOT BE DRIVEN OVER BY ANY VEHICLE.
14. APPLY PRE-EMERGENT WEED CONTROL TO ALL PLANT BEDS PRIOR TO MULCHING. ENSURE COMPATIBILITY BETWEEN PRODUCT AND PLANT MATERIAL.
15. ALL PLANTING SOIL SHALL BE AMENDED WITH THE FOLLOWING:

MYCRO® TREE SAVER - A DRY GRANULAR MYCORRHIZAL FUNGI INOCULANT THAT IS MIXED IN THE BACKFILL WHEN PLANTING TREES AND SHRUBS. IT CONTAINS SPORES OF BOTH ECTOMYCORRHIZAL AND VA MYCORRHIZAL FUNGI (VAM), BENEFICIAL RHIZOSPHERE BACTERIA, TERRA-SORB SUPERABSORBENT HYDROGEL TO REDUCE WATER LEACHING, AND SELECTED ORGANIC MICROBIAL NUTRIENTS.

- DIRECTIONS FOR USE: USE 3-OZ PER EACH FOOT DIAMETER OF THE ROOT BALL, OR 3-OZ PER INCH CALIPER. MIX INTO THE BACKFILL WHEN TRANSPLANTING TREES AND SHRUBS. MIX PRODUCT IN A RING-SHAPED VOLUME OF SOIL AROUND THE UPPER PORTION OF THE ROOT BALL, EXTENDING FROM THE SOIL SURFACE TO A DEPTH OF ABOUT 8 INCHES, AND EXTENDING OUT FROM THE ROOT BALL ABOUT 8 INCHES INTO THE BACKFILL. APPLY WATER TO SOIL SATURATION.
- MYCOR® TREE SAVER® IS EFFECTIVE FOR ALL TREE AND SHRUB SPECIES EXCEPT RHODODENDRONS, AZALEAS, AND MOUNTAIN LAUREL, WHICH REQUIRE ERICOID MYCORRHIZAE.
- SOIL PH: THE FUNGI IN THIS PRODUCT WERE CHOSEN BASED ON THEIR ABILITY TO SURVIVE AND COLONIZE PLANT ROOTS IN A PH RANGE OF 3 TO 9.
- FUNGICIDES: THE USE OF CERTAIN FUNGICIDES CAN HAVE A DETRIMENTAL EFFECT ON THE INOCULATION PROGRAM. SOIL APPLICATION OF ANY FUNGICIDE IS NOT RECOMMENDED FOR TWO WEEKS AFTER APPLICATION.
- OTHER PESTICIDES: HERBICIDES AND INSECTICIDES DO NOT NORMALLY INTERFERE WITH MYCORRHIZAL FUNGAL DEVELOPMENT, BUT MAY INHIBIT THE GROWTH OF SOME TREE AND SHRUB SPECIES IF NOT USED PROPERLY.

HEALTHY START MACRO TABS 12-8-8

- FERTILIZER TABLETS ARE PLACED IN THE UPPER 4 INCHES OF BACKFILL SOIL WHEN PLANTING TREES AND SHRUBS.
- TABLETS ARE FORMULATED FOR LONG-TERM RELEASE BY SLOW BIODEGRADATION, AND LAST UP TO 2 YEARS AFTER PLANTING. TABLETS CONTAIN 12-8-8 NPK FERTILIZER, AS WELL AS A MINIMUM OF SEVEN PERCENT (7%) HUMIC ACID BY WEIGHT, MICROBIAL NUTRIENTS DERIVED FROM SEA KELP, PROTEIN BYPRODUCTS, AND YUCCA SCHIDIGERA, AND A COMPLEMENT OF BENEFICIAL RHIZOSPHERE BACTERIA. THE STANDARD 21 GRAM TABLET IS SPECIFIED HERE. DIRECTIONS FOR USE: FOR PLANTING BALLED & BURLAPPED (B&B) TREES AND SHRUBS, MEASURE THE THICKNESS OF THE TRUNK, AND USE ABOUT 1 TABLET (21-G) PER HALF-INCH. PLACE THE TABLETS DIRECTLY NEXT TO THE ROOT BALL, EVENLY DISTRIBUTED AROUND ITS PERIMETER, AT A DEPTH OF ABOUT 4 INCHES.

IRRIGATION DURING ESTABLISHMENT

SIZE AT PLANTING	IRRIGATION FOR VITALITY	IRRIGATION FOR SURVIVAL
< 2" CALIPER	DAILY FOR TWO WEEKS, EVERY OTHER DAY FOR TWO MONTHS, WEEKLY UNTIL ESTABLISHED	TWO TO THREE TIMES WEEKLY FOR TWO TO THREE MONTHS
2"-4 CALIPER	DAILY FOR ONE MONTH, EVERY OTHER DAY FOR THREE MONTHS, WEEKLY UNTIL ESTABLISHED	TWO TO THREE TIMES WEEKLY FOR THREE TO FOUR MONTHS
4 >" CALIPER	DAILY FOR SIX WEEKS, EVERY OTHER DAY FOR FIVE MONTHS, WEEKLY UNTIL ESTABLISHED	TWICE WEEKLY FOR FOUR TO FIVE MONTHS

TABLE NOTES:

1. AT EACH IRRIGATION, APPLY TWO TO THREE GALLONS PER INCH TRUNK CALIPER TO THE ROOT BALL SURFACE. APPLY IT IN A MANNER SO ALL WATER SOAKS THE ENTIRE ROOT BALL. DO NOT WATER IF ROOT BALL IS WET/SATURATED ON THE IRRIGATION DAY.

2. WHEN IRRIGATING FOR VITALITY, DELETE DAILY IRRIGATION WHEN PLANTING IN WINTER OR WHEN PLANTING IN COOL CLIMATES. ESTABLISHMENT TAKES THREE TO FOUR MONTHS PER INCH TRUNK CALIPER. NEVER APPLY IRRIGATION IF THE SOIL IS SATURATED.

3. WHEN IRRIGATION FOR SURVIVAL, TREES TAKE MUCH LONGER TO ESTABLISH THAN REGULARLY IRRIGATED TREES. IRRIGATION MAY BE REQUIRED IN THE NORMAL HOT, DRY PORTIONS OF THE FOLLOWING YEAR.

PLANT QUALITY AND HANDLING NOTES:

1. ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004) OR LATEST REVISION AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. IN ALL CASES, BOTANICAL NAMES LISTED WITHIN THE APPROVED OR FINAL PLANT LIST SHALL TAKE PRECEDENCE OVER COMMON NAMES.
3. ALL PLANTS SHALL BE OF SELECTED SPECIMEN QUALITY, EXCEPTIONALLY HEAVY, TIGHTLY KNIT, SO TRAINED OR FAVORED IN THEIR DEVELOPMENT AND APPEARANCE AS TO BE SUPERIOR IN FORM, NUMBER OF BRANCHES, COMPACTNESS AND SYMMETRY. ALL PLANTS SHALL HAVE A NORMAL HABIT OR SOUND, HEALTHY, VIGOROUS PLANTS WITH WELL DEVELOPED ROOT SYSTEM. PLANTS SHALL BE FREE OF DISEASE, INSECT PESTS, EGGS OR LARVAE.
4. PLANTS SHALL NOT BE PRUNED BEFORE DELIVERY. TREES WITH ABRASION OF THE BARK, SUNSCALDS, DISFIGURING KNOTS OR FRESH CUTS OF LIMBS OVER ONE AND ONE-FOURTH INCHES (1-1/4") WHICH HAVE NOT COMPLETELY CALLOUSED SHALL BE REJECTED.
5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH AND BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE.
6. THE ROOT SYSTEM OF EACH PLANT SHALL BE WELL PROVIDED WITH FIBROUS ROOTS. ALL PARTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL-BRANCHED AND DENSELY FOLIATED WHEN IN LEAF.
7. ALL PLANTS DESIGNATED BALL AND BURLAP (B&B) MUST BE MOVED WITH THE ROOT SYSTEM AS SOLID UNITS WITH BALLS OF EARTH FIRMLY WRAPPED WITH BURLAP. THE DIAMETER AND DEPTH OF THE BALLS OF EARTH MUST BE SUFFICIENT TO ENCOMPASS THE FIBROUS ROOT FEEDING SYSTEMS NECESSARY FOR THE HEALTHY DEVELOPMENT OF THE PLANT. NO PLANT SHALL BE ACCEPTED WHEN THE BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN BADLY CRACKED OR BROKEN PREPARATORY TO OR DURING THE PROCESS OF PLANTING. THE BALLS SHALL REMAIN INTACT DURING ALL OPERATIONS. ALL PLANTS THAT CANNOT BE PLANTED AT ONCE MUST BE HEELED-IN BY SETTING IN THE GROUND AND COVERING THE BALLS WITH SOIL OR MULCH AND THEN WATERING. HEMP BURLAP AND TWINE IS PREFERABLE TO TREATED. IF TREATED BURLAP IS USED, ALL TWINE IS TO BE CUT FROM AROUND THE TRUNK AND ALL BURLAP IS TO BE REMOVED.
8. PLANTS TRANSPORTED TO THE PROJECT IN OPEN VEHICLES SHALL BE COVERED WITH TARPS OR OTHER SUITABLE COVERS SECURELY FASTENED TO THE BODY OF THE VEHICLE TO PREVENT INJURY TO THE PLANTS. CLOSED VEHICLES SHALL BE ADEQUATELY VENTILATED TO PREVENT OVERHEATING OF THE PLANTS. EVIDENCE OF INADEQUATE PROTECTION FOLLOWING DIGGING, CARELESSNESS WHILE IN TRANSIT, OR IMPROPER HANDLING OR STORAGE SHALL BE CAUSE FOR REJECTION OF PLANT MATERIAL. ALL PLANTS SHALL BE KEPT MOIST, FRESH, AND PROTECTED. SUCH PROTECTION SHALL ENCOMPASS THE ENTIRE PERIOD DURING WHICH THE PLANTS ARE IN TRANSIT, BEING HANDLED, OR ARE IN TEMPORARY STORAGE.
9. ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE CORRESPONDING LANDSCAPE PLAN AND PLANTING DETAILS.
10. LANDSCAPE CONTRACTOR SHALL MAKE BEST EFFORT TO INSTALL PLANTINGS ON THE SAME DAY AS DELIVERY. IF PLANTS ARE NOT PLANTED IMMEDIATELY ON SITE, PROPER CARE SHALL BE TAKEN TO PLACE THE PLANTINGS IN PARTIAL SHADE WHEN POSSIBLE. THE ROOT BALL SHALL BE KEPT MOIST AT ALL TIME AND COVERED WITH MOISTENED MULCH OR AGED WOODCHIPS. PROPER IRRIGATION SHALL BE SUPPLIED SO AS TO NOT ALLOW THE ROOT BALL TO DRY OUT. PLANTINGS SHALL BE UNTIED AND PROPER SPACING SHALL BE ALLOTTED FOR AIR CIRCULATION AND TO PREVENT DISEASE, WILTING, AND LEAF LOSS. PLANTS THAT REMAIN UNPLANTED FOR A PERIOD OF TIME GREATER THAN THREE (3) DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH AND WATERED AS REQUIRED TO PRESERVE ROOT MOISTURE.
11. NO PLANT MATERIAL SHALL BE PLANTED IN MUDDY OR FROZEN SOIL.
12. PLANTS WITH INJURED ROOTS OR BRANCHES SHALL BE PRUNED PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY DISEASED OR INJURED PLANTS SHALL BE REMOVED.
13. IF ROCK OR OTHER UNDERGROUND OBSTRUCTION IS ENCOUNTERED, THE LANDSCAPE DESIGNER RESERVES THE RIGHT TO RELOCATE OR ENLARGE PLANTING PITS OR DELETE PLANT MATERIAL FROM THE CONTRACT.
14. IF PLANTS ARE PROPOSED WITHIN SIGHT TRIANGLES, TREES SHALL BE LIMBED AND MAINTAINED TO A HEIGHT OF EIGHT FEET (8') ABOVE GRADE, AND SHRUBS, GROUND COVER, PERENNIALS, AND ANNUALS SHALL BE MAINTAINED TO A HEIGHT NOT TO EXCEED TWO FEET (2') ABOVE GRADE UNLESS OTHERWISE NOTED OR SPECIFIED BY THE GOVERNING MUNICIPALITY OR AGENCY.
15. INSTALLATION SHALL OCCUR DURING THE FOLLOWING SEASONS:
    PLANTS (APRIL 15 - SEPTEMBER 30)
    LAWNS (MARCH 15 - JUNE 15 OR SEPTEMBER 1 - DECEMBER 1)
16. THE FOLLOWING TREES ARE SUSCEPTIBLE TO TRANSPLANT SHOCK AND SHALL NOT BE PLANTED DURING THE FALL SEASON (STARTING SEPTEMBER 15):
    ABIES CONCOLOR
    ACER BUERGERIANUM
    ACER FREEMANII
    ACER RUBRUM
    ACER SACCHARINUM
    BETULA VARIETIES
    CARPINUS VARIETIES
    CEDRUS DEODARA
    CELTIS VARIETIES
    CERCIDIPHYLLUM VARIETIES
    CERCIS CANADENSIS
    CORNUS VARIETIES
    CRATAEGUS VARIETIES
    CORNUS VARIETIES
    CRATAEGUS VARIETIES
    CUPRESSOCYPARIS LEYLANDII
    FAGUS VARIETIES
    HALESIA VARIETIES
    ILEX X FOSTERII
    ILEX NELLIE STEVENS
    ILEX OPACA
    JUNIPERUS VIRGINIANA
    KOELREUTERIA PANICULATA
    LIQUIDAMBAR VARIETIES
    LIRIODENDRON VARIETIES
    MALUS IN LEAF
    NYSSA SYLVATICA
    OSTRYA VIRGINIANA
    PINUS NIGRA
    PLATANUS VARIETIES
    POPULUS VARIETIES
    PRUNUS VARIETIES
    PYRUS VARIETIES
    QUERCUS VARIETIES (NOT Q. PALUSTRIS)
    SALIX WEEPING VARIETIES
    SORBUS VARIETIES
    TAXODIUM VARIETIES
    TAXUX B REPANDENS
    TILIA TOMENTOSA VARIETIES
    ULMUS PARVIFOLIA VARIETIES
    ZELKOVA VARIETIES
17. IF A PROPOSED PLANT IS UNATTAINABLE OR ON THE FALL DIGGING HAZARD LIST, AN EQUIVALENT SPECIES OF THE SAME SIZE MAY BE REQUESTED FOR SUBSTITUTION OF THE ORIGINAL PLANT. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE PROJECT LANDSCAPE DESIGNER OR MUNICIPAL OFFICIAL PRIOR TO ORDERING AND INSTALLATION.
18. DURING THE COURSE OF CONSTRUCTION/PLANT INSTALLATION, EXCESS AND WASTE MATERIALS SHALL BE CONTINUOUSLY AND PROMPTLY REMOVED AT THE END OF EACH WORK DAY. ALL DEBRIS, MATERIALS, AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF AND ALL PAVED AREAS SHALL BE CLEANED.
19. THE LANDSCAPE CONTRACTOR SHALL DISPOSE OF ALL RUBBISH AND EXCESS SOIL AT HIS EXPENSE TO AN OFF-SITE LOCATION AS APPROVED BY THE LOCAL MUNICIPALITY.
20. A 90-DAY MAINTENANCE PERIOD SHALL BEGIN IMMEDIATELY AFTER ALL PLANTS HAVE BEEN SATISFACTORILY INSTALLED.
21. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS IF ORIGINALLY REQUIRED, WATERING WHEN NEEDED OR DIRECTED, WEEDING, PRUNING, SPRAYING, FERTILIZING, MOWING THE LAWN, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.
22. MOW ALL GRASS AREAS AT REGULAR INTERVALS TO KEEP THE GRASS HEIGHT FROM EXCEEDING THREE INCHES (3"). MOWING SHALL BE PERFORMED ONLY WHEN GRASS IS DRY. MOWER BLADE SHALL BE SET TO REMOVE NO MORE THAN ONE THIRD (1/3) OF THE GRASS LENGTH. WHEN THE AMOUNT OF GRASS IS HEAVY, IT SHALL BE REMOVED TO PREVENT DESTRUCTION OF THE UNDERLYING TURF. MOW GRASS AREAS IN SUCH A MANNER AS TO PREVENT CLIPPINGS FROM BLOWING ON PAVED AREAS, AND SIDEWALKS. CLEANUP AFTER MOWING SHALL INCLUDE SWEEPING OR BLOWING OF PAVED AREAS AND SIDEWALKS TO CLEAR THEM FROM MOWING DEBRIS.
23. GRASSED AREAS DAMAGED DURING THE PROCESS OF THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, WHO SHALL RESTORE THE DISTURBED AREAS TO A CONDITION SATISFACTORY TO THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIAL, OR OWNER/OWNER'S REPRESENTATIVE. THIS MAY INCLUDE FILLING TO GRADE, FERTILIZING, SEEDING, AND MULCHING.
24. SHOULD THE OWNER REQUIRE MAINTENANCE BEYOND THE STANDARD 90-DAY MAINTENANCE PERIOD, A SEPARATE CONTRACT SHALL BE ESTABLISHED.
25. LANDSCAPE CONTRACTOR SHALL WATER NEW PLANTINGS FROM TIME OF INSTALL AND THROUGHOUT REQUIRED 90-DAY MAINTENANCE PERIOD UNTIL PLANTS ARE ESTABLISHED. IF ON-SITE WATER IS NOT AVAILABLE AT THE PROJECT LOCATION, THE LANDSCAPE CONTRACTOR SHALL FURNISH IT BY MEANS OR A WATERING TRUCK OR OTHER ACCEPTABLE MANNER.
26. THE QUANTITY OF WATER APPLIED AT ONE TIME SHALL BE SUFFICIENT TO PENETRATE THE SOIL TO A MINIMUM OF EIGHT INCHES (8") IN SHRUB BEDS AND SIX INCHES (6") IN TURF AREAS AT A RATE WHICH WILL PREVENT SATURATION OF THE SOIL.
27. IF AN AUTOMATIC IRRIGATION SYSTEM HAS BEEN INSTALLED, IT CAN BE USED FOR WATERING PLANT MATERIAL. HOWEVER, FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY OF PLANT HEALTH AND ESTABLISHMENT.

PLANT MATERIAL GUARANTEE NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR (1 YR.) FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIAL, OR OWNER/OWNER'S REPRESENTATIVE.
2. THE LANDSCAPE CONTRACTOR SHALL REMOVE AND REPLACE DYING, DEAD, OR DEFECTIVE PLANT MATERIAL AT HIS EXPENSE. THE LANDSCAPE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS COMPANY'S OPERATIONS.
3. ALL REPLACEMENT PLANTS SHALL BE OF THE SAME SPECIES AND SIZE AS SPECIFIED ON THE APPROVED OR FINAL PLANT LIST. REPLACEMENTS RESULTING FROM REMOVAL, LOSS, OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART, VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTAILMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE OWNER.
4. THE CONTRACTOR SHALL INSTRUCT THE OWNER AS TO THE PROPER CARE AND MAINTENANCE OF ALL PLANTINGS.

LAWN (SEED OR SOD) NOTES:

1. SEED MIXTURE SHALL BE FRESH, CLEAN, NEW CROP SEED. SOD SHALL BE STRONGLY ROOTED, UNIFORM IN THICKNESS, AND FREE OF WEEDS, DISEASE, AND PESTS.
2. SEED OR SOD SHALL BE PURCHASED FROM A RECOGNIZED DISTRIBUTOR AND SHALL BE COMPOSED OF THE MIX OR BLEND WITHIN THE PROVIDED “SEED SPECIFICATION” OR “SOD SPECIFICATION.”
3. REFERENCE LANDSCAPE PLAN FOR AREAS TO BE SEEDED OR LAID WITH SOD.
4. SEEDING SHALL NOT BE PERFORMED IN WINDY WEATHER. IF THE SEASON OF THE PROJECT COMPLETION PROHIBITS PERMANENT STABILIZATION, TEMPORARY STABILIZATION SHALL BE PROVIDED IN ACCORDANCE WITH THE “TEMPORARY SEEDING SPECIFICATION.”
5. PROTECT NEW LAWN AREAS AGAINST TRESPASSING WHILE THE SEED IS GERMINATING. FURNISH AND INSTALL FENCES, SIGNS, BARRIERS OR ANY OTHER NECESSARY TEMPORARY PROTECTIVE DEVICES. DAMAGE RESULTING FROM TRESPASS, EROSION, WASHOUT, SETTLEMENT OR OTHER CAUSES SHALL BE REPAIRED BY THE LANDSCAPE CONTRACTOR AT HIS EXPENSE. REMOVE ALL FENCES, SIGNS, BARRIERS OR OTHER TEMPORARY PROTECTIVE DEVICES ONCE LAWN HAS BEEN ESTABLISHED.

ISSUE	DATE	BY	DESCRIPTION
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION

NOT APPROVED FOR CONSTRUCTION

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LAND DEVELOPMENT PLANS

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PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28-113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

PRIMROSE® SCHOOLS

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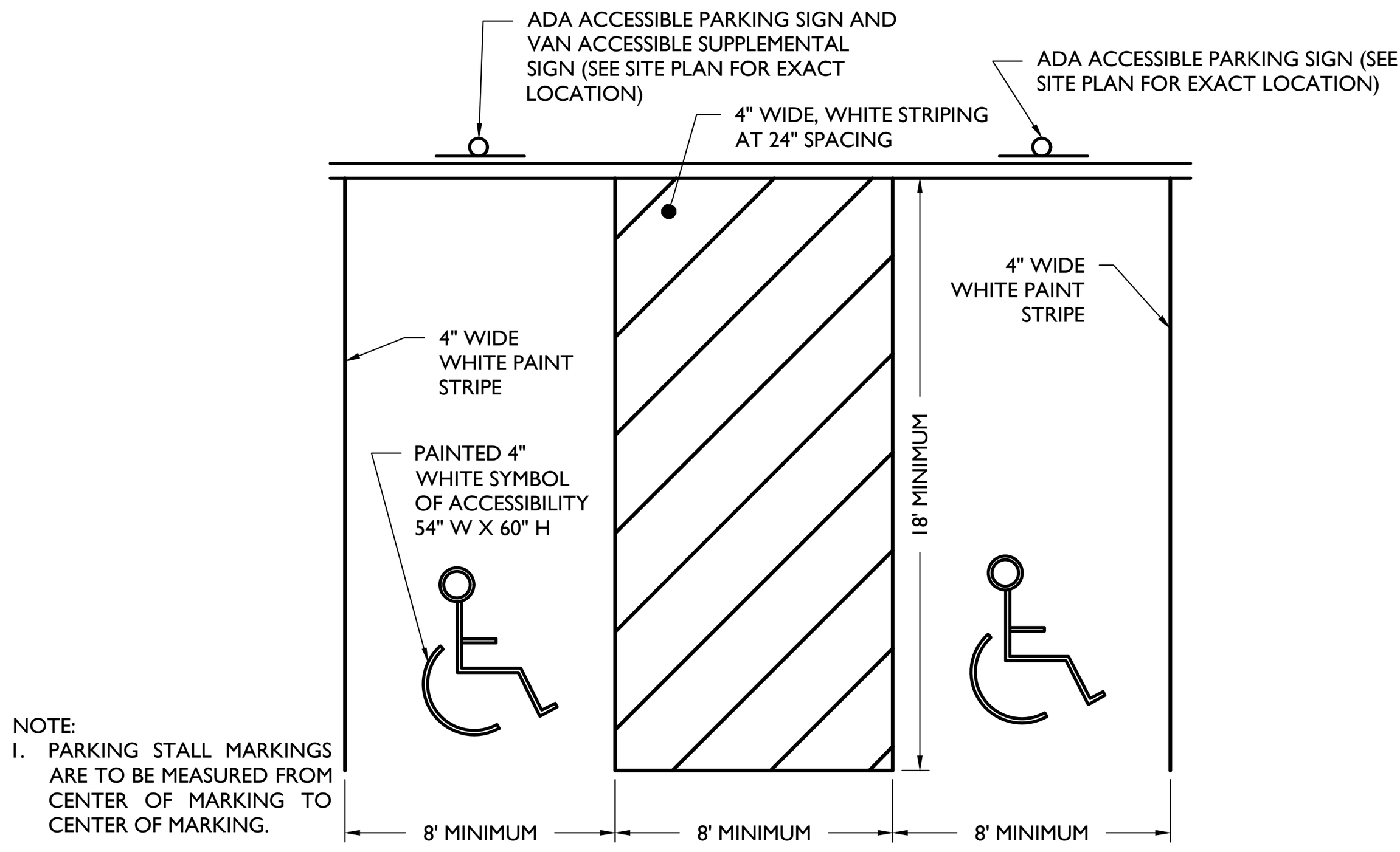
SCALE: AS SHOWN | PROJECT ID: BOS-240115

TITLE:
LANDSCAPING DETAILS

DRAWING:
C-11

Z:\BOSTON\BOS\2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CADD\PLOT\XXX-10-LAND.DWG

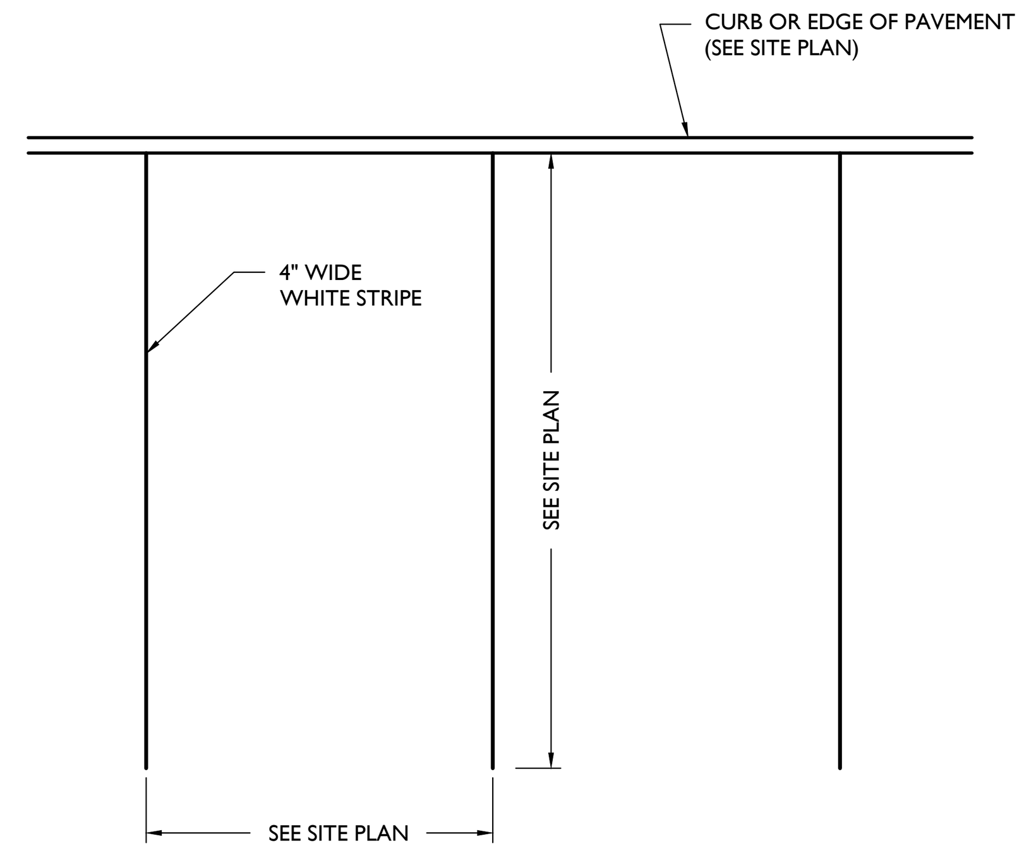


NOTE:
1. PARKING STALL MARKINGS ARE TO BE MEASURED FROM CENTER OF MARKING TO CENTER OF MARKING.

ACCESSIBLE PARKING STALL MARKINGS

NOT TO SCALE

1



PARKING STALL MARKINGS

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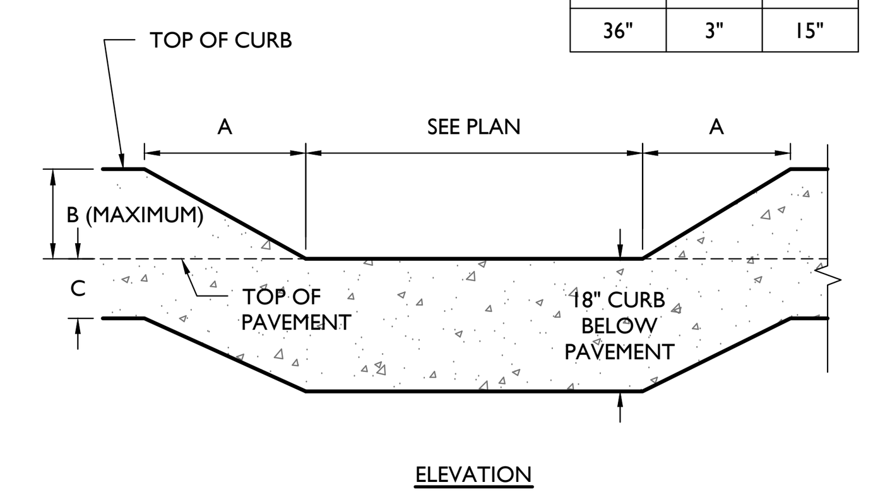
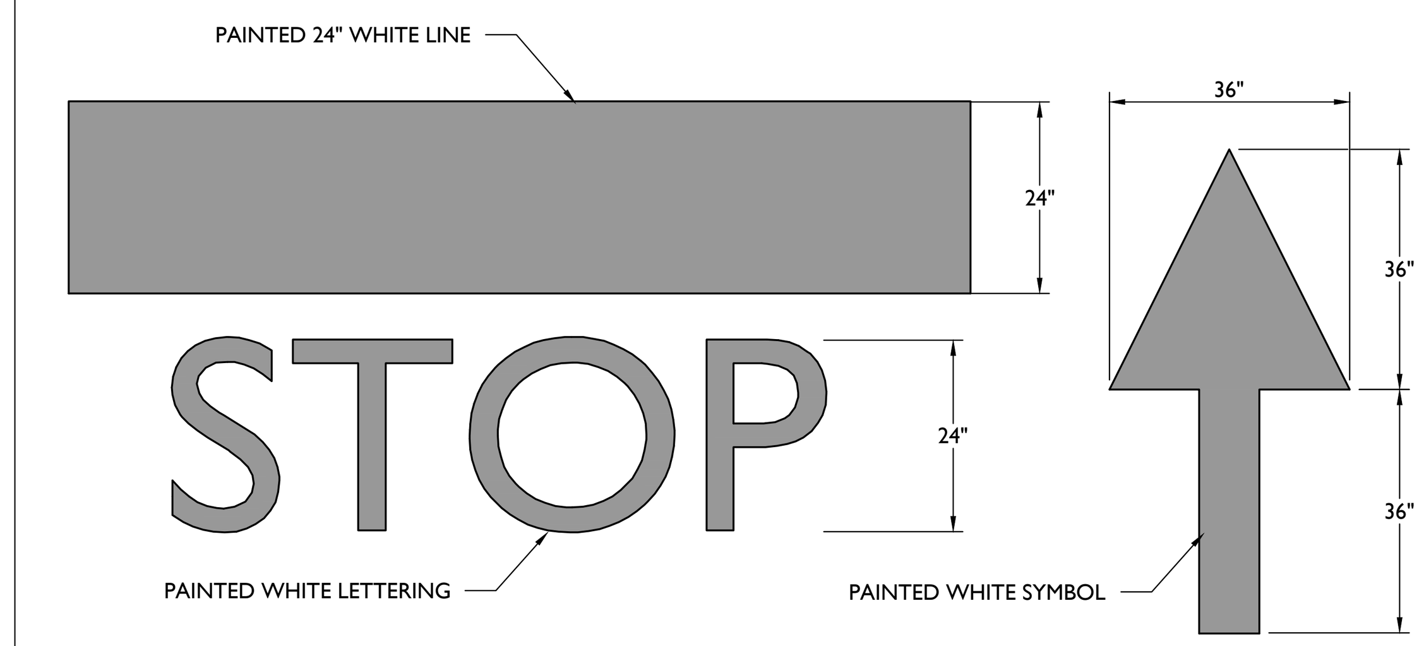


FLUSH OPENING DIMENSIONS		
A	B	C
72"	6"	12"
60"	5"	13"
48"	4"	14"
36"	3"	15"

FLUSH OPENING DETAIL

NOT TO SCALE

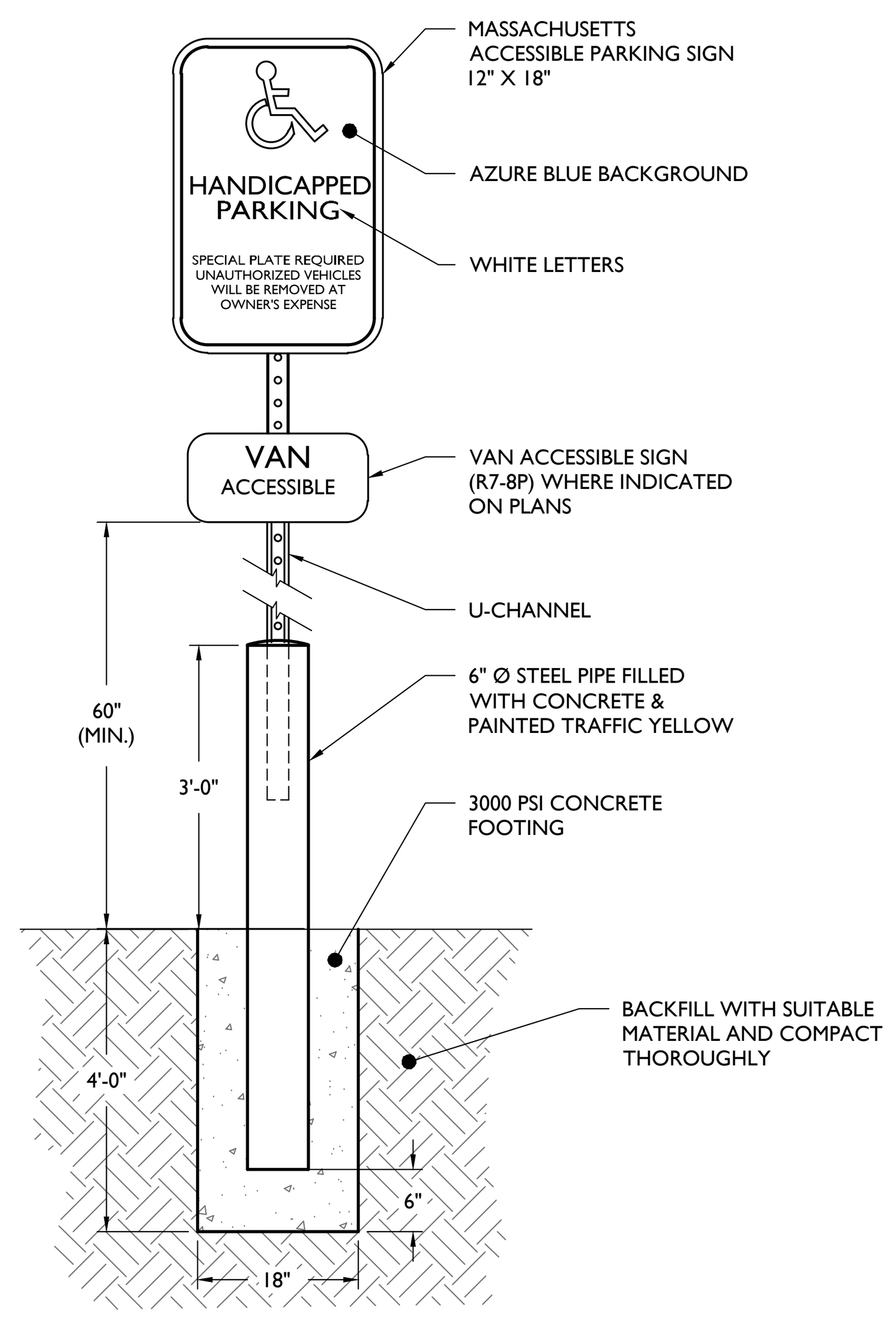
3



STOP BAR & ARROW DETAILS

NOT TO SCALE

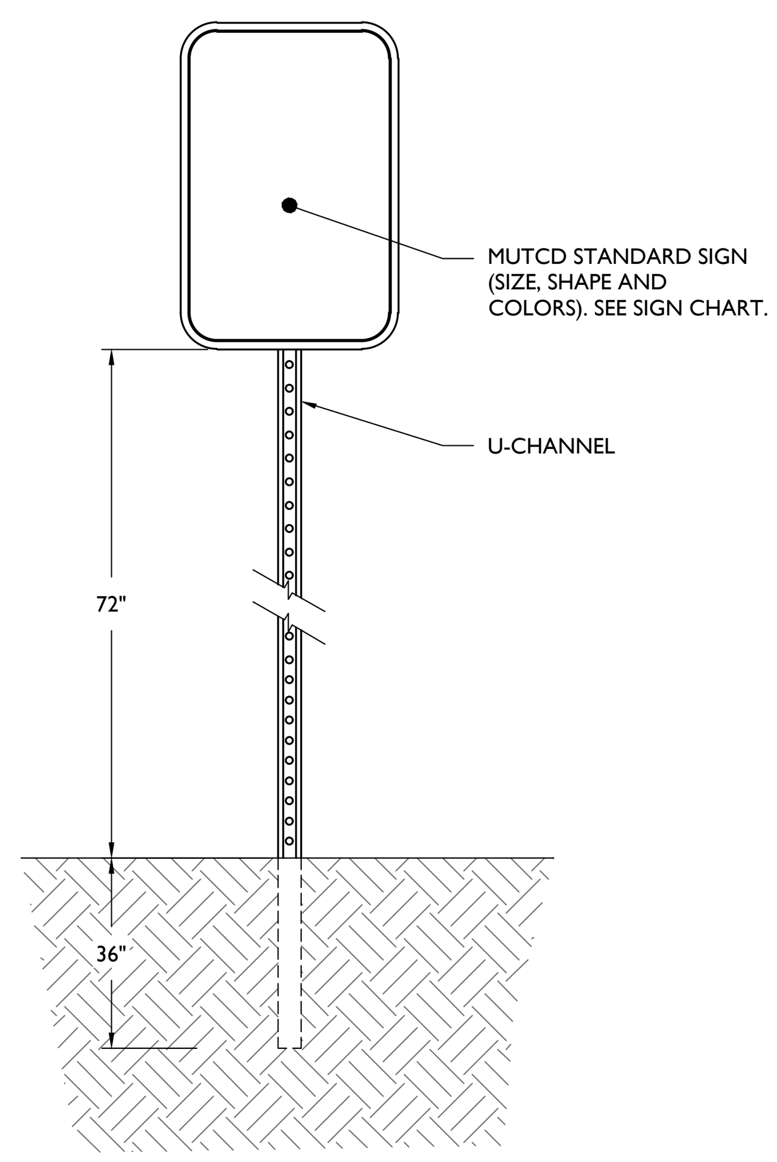
4



ACCESSIBLE PARKING SIGN WITH BOLLARD DETAIL

NOT TO SCALE

5



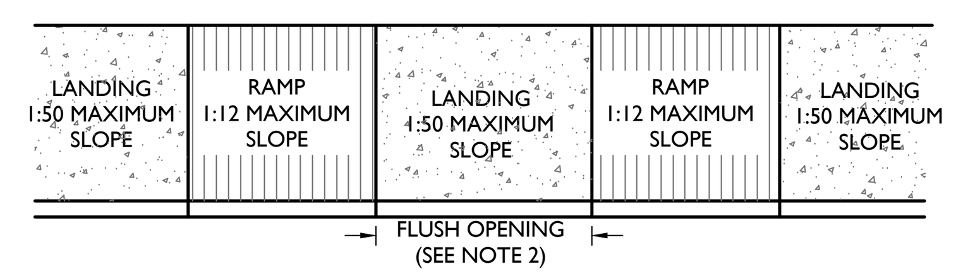
M.U.T.C.D. NUMBER	TEXT	COLOR		SIZE OF SIGN (WIDTH X HEIGHT)	TYPE OF MOUNT
		LEGEND	BACKGROUND		
STOP SIGN (R1-1)	STOP	RED	WHITE	36"x36"	GROUND
DO NOT ENTER (R5-1)	DO NOT ENTER	RED	WHITE	30"x30"	GROUND

NOTE:
1. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), EXCEPT AS NOTED.
2. ALL SIGNS SHALL BE MOUNTED AS TO NOT OBSTRUCT THE SHAPE OF "STOP" (R1-1) AND "YIELD" (R1-2) SIGNS.

SIGN POST DETAIL & SIGN DATA TABLE

NOT TO SCALE

6

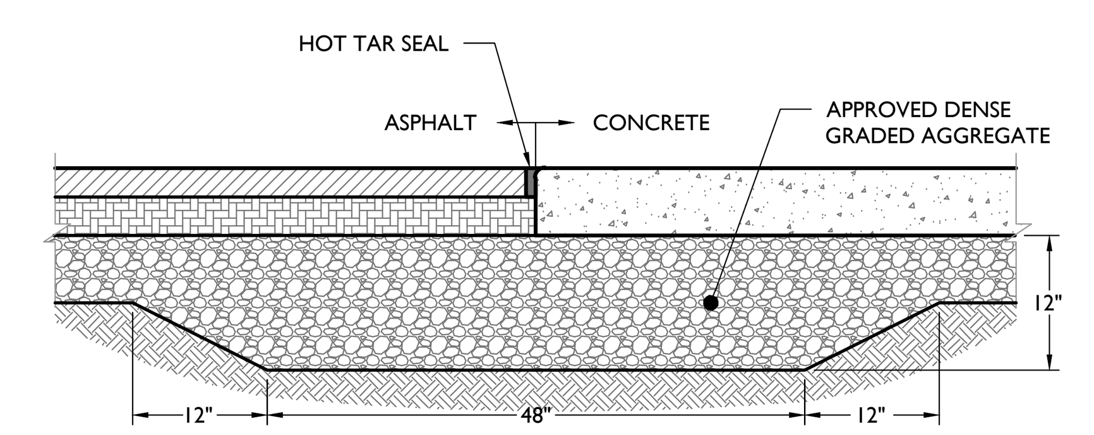


TRANSITION RAMP DETAIL

NOT TO SCALE

NOTES:
1. CROSS SLOPE ON RAMP SHALL NOT EXCEED 2%.
2. A FLUSH OPENING SHALL HAVE A MINIMUM WIDTH OF 36". SEE PLAN FOR EXACT WIDTH.
3. RAMP SHALL HAVE A MAXIMUM RISE OF 6" WITHOUT A HANDRAIL.

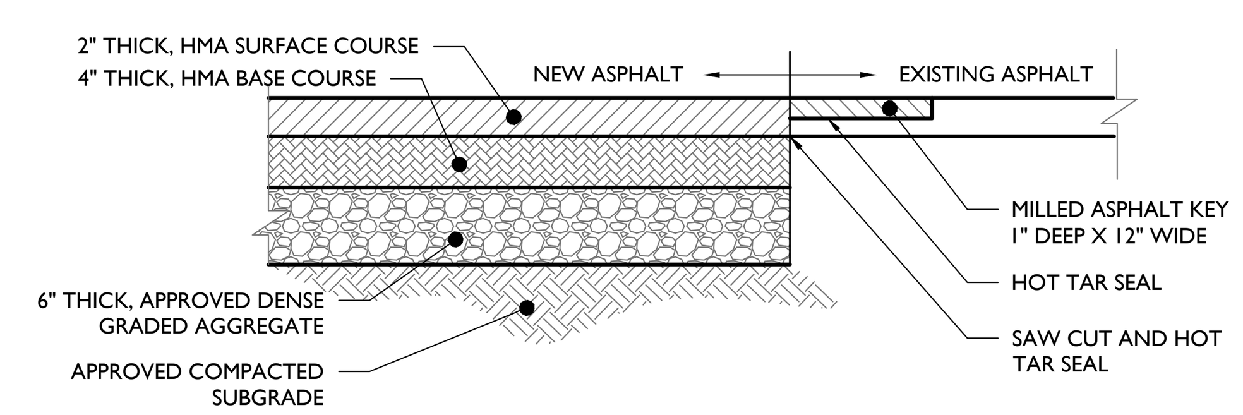
7



CONCRETE TO ASPHALT TRANSITION DETAIL

NOT TO SCALE

8

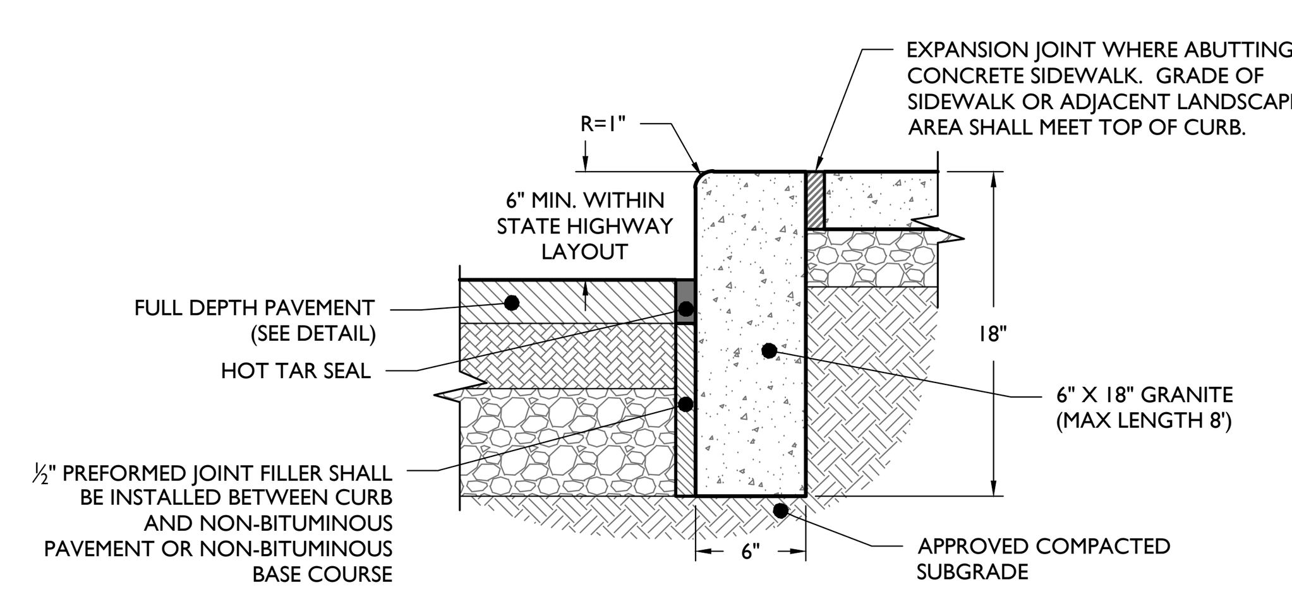


FULL DEPTH ASPHALT PAVEMENT DETAIL

NOT TO SCALE

NOTE:
HMA MIX AND DENSE GRADED AGGREGATE SHALL CONFORM TO STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

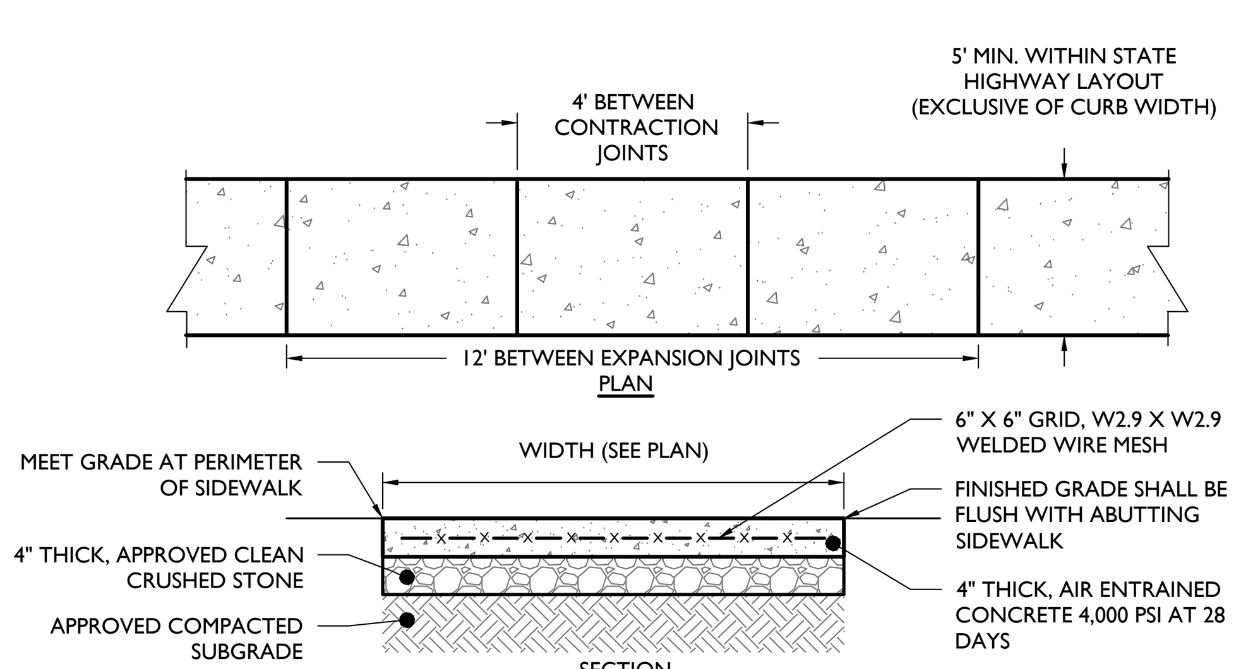
9



GRANITE BLOCK CURB DETAIL

NOT TO SCALE

10

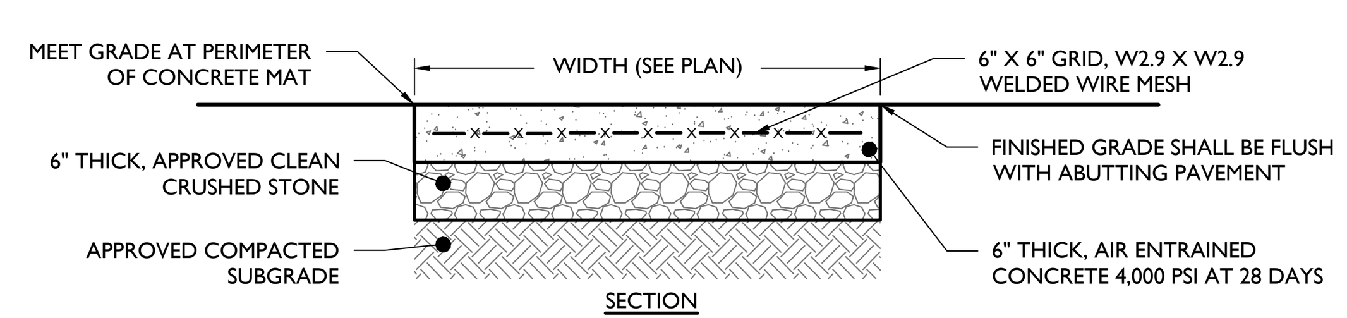


REINFORCED CONCRETE WALKWAY DETAIL

NOT TO SCALE

NOTES:
1. MAXIMUM CROSS SLOPE SHALL BE ¼" PER FOOT.
2. ¼" EXPANSION JOINTS SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM THE SURFACE.
3. 1" DEEP BY ¼" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT 4' INTERVALS.
4. EXPANSION JOIN SHALL BE PROVIDED WHERE ADJACENT TO A BUILDING.

11

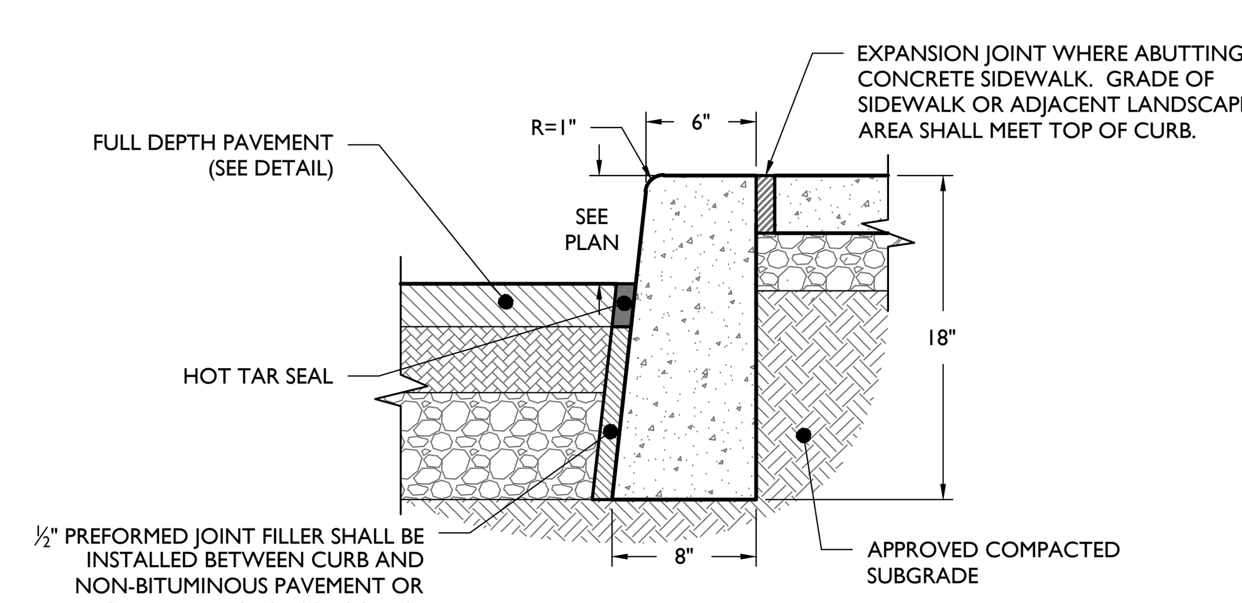


REINFORCED 6" CONCRETE MAT

NOT TO SCALE

NOTES:
1. ½" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 12' INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM THE SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
2. 1" DEEP BY ¼" WIDE, TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS OR 6' INTERVALS MAX.
3. CONCRETE SHALL RECEIVE BROOM FINISH.
4. ALL EXPOSED CORNERS TO HAVE 12" CHAMFER.

12

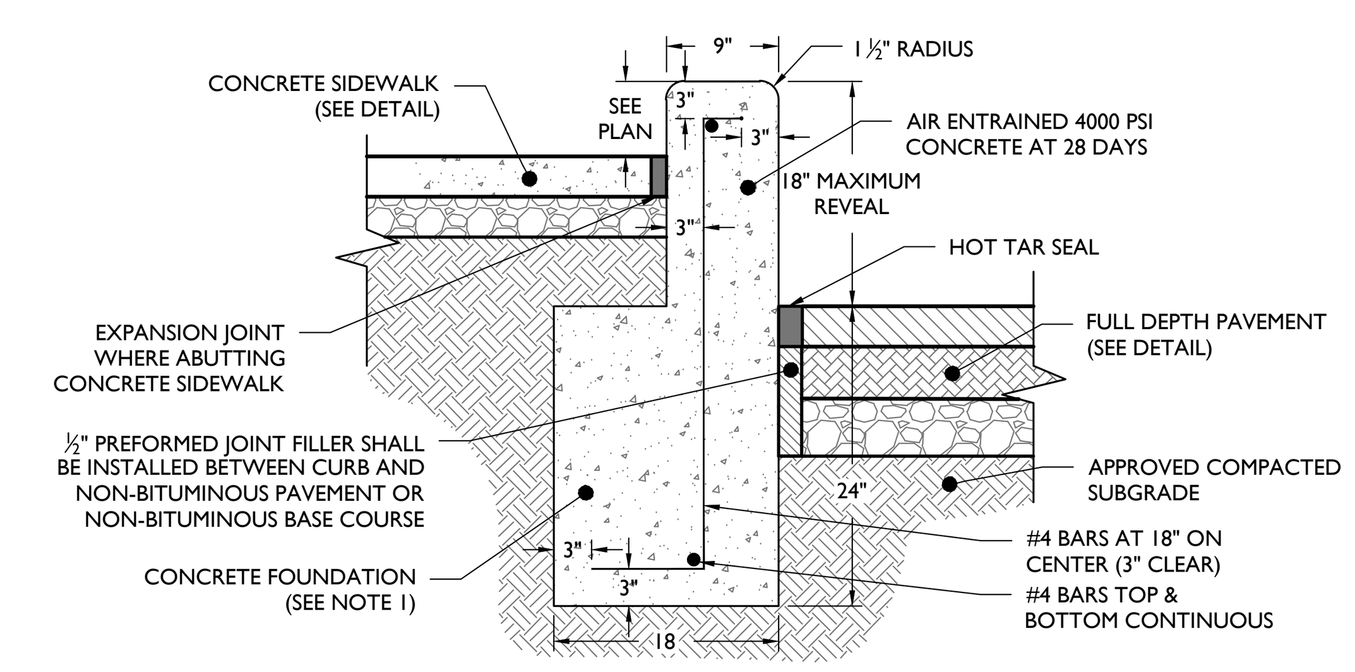


CONCRETE CURB DETAIL

NOT TO SCALE

NOTES:
1. CONCRETE SHALL BE 3500 PSI AT 28 DAYS, AIR-ENTRAINED.
2. TRANSVERSE EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM SURFACE.
3. HALF DEPTH CONTRACTION JOINTS SHALL BE PROVIDED AT 10 FOOT INTERVALS.
4. 18" CURB DEPTH SHALL BE MAINTAINED AT DEPRESSED OR FLUSH CURBED AREAS.

13



EXTENDED CONCRETE CURB DETAIL

NOT TO SCALE

NOTES:
1. CONCRETE SHALL BE 4000 PSI AT 28 DAYS, AIR-ENTRAINED.
2. ½" EXPANSION JOINTS WITH WATER SEAL SHALL BE PROVIDED AT 50 FOOT INTERVALS WITH PRE-MOLDED, BITUMINOUS JOINT FILLER, RECESSED ¼" FROM SURFACE. LONGITUDINAL REBAR TO BE CUT AT EXPANSION JOINTS.
3. 1" DEEP AND ½" WIDE TOOLED CONTRACTION JOINTS SHALL BE PROVIDED AT MID-POINT BETWEEN EXPANSION JOINTS, OR 30 FOOT MAX.

14

ISSUE	DATE	BY	DESCRIPTION
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION

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120 Washington Street, Suite 201, Salem, MA 01970
Phone 617.203.2076

LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28-113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

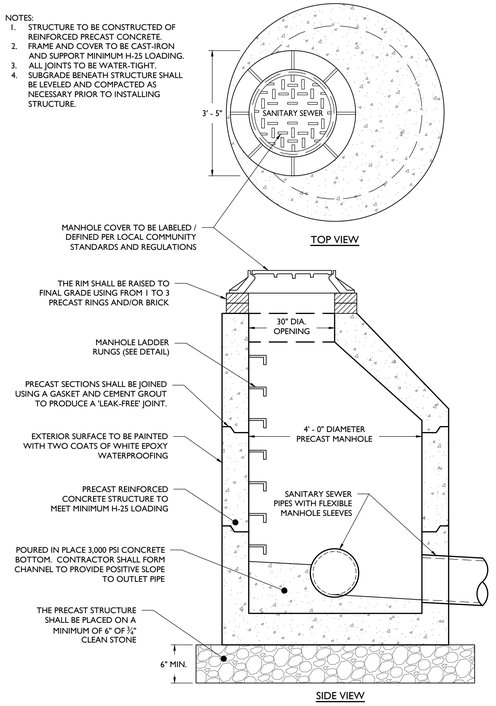
SCALE: AS NOTED | PROJECT ID: BOS-240115

TITLE: CONSTRUCTION DETAILS

DRAWING: C-12

Z:\BOSTON\BOS\2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CADD\PLOTS\XX-11-DETL.DWG

NOTES:
1. STRUCTURE TO BE CONSTRUCTED OF REINFORCED PRECAST CONCRETE.
2. FRAME AND COVER TO BE CAST-IRON AND SUPPORT MINIMUM H-25 LOADING.
3. ALL JOINTS TO BE WATER-TIGHT.
4. SUBGRADE BENEATH STRUCTURE SHALL BE LEVELED AND COMPACTED AS NECESSARY PRIOR TO INSTALLING STRUCTURE.

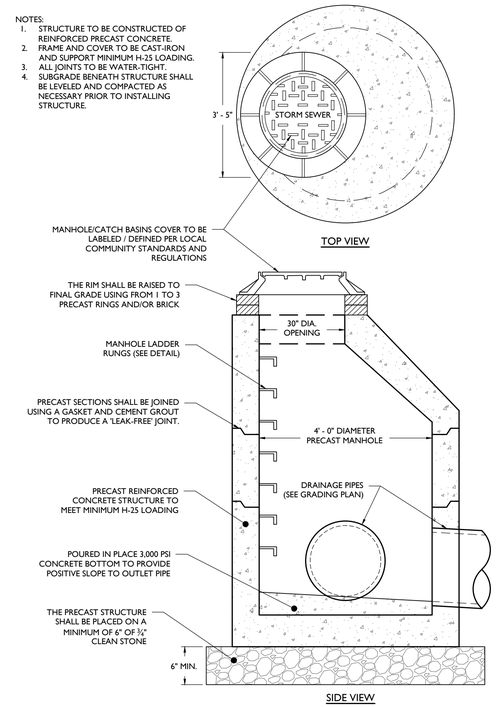


SANITARY MANHOLE DETAIL

NOT TO SCALE

1

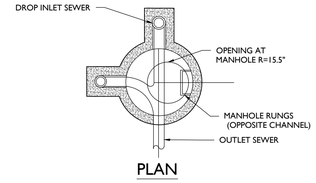
NOTES:
1. STRUCTURE TO BE CONSTRUCTED OF REINFORCED PRECAST CONCRETE.
2. FRAME AND COVER TO BE CAST-IRON AND SUPPORT MINIMUM H-25 LOADING.
3. ALL JOINTS TO BE WATER-TIGHT.
4. SUBGRADE BENEATH STRUCTURE SHALL BE LEVELED AND COMPACTED AS NECESSARY PRIOR TO INSTALLING STRUCTURE.



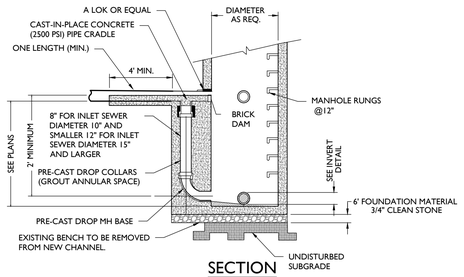
STORM STRUCTURE DETAIL

NOT TO SCALE

2



PLAN



SECTION

NOTE:
1. SUBMIT SHOP DRAWINGS FOR APPROVAL

2.BUTYL LOK SEALANT TUBE USED BETWEEN PRECAST SECTIONS

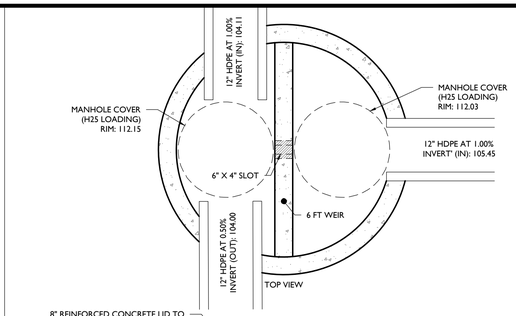
3. DROP CONNECTIONS MORE THAN 10 FEET DEEP SHALL BE DUCTILE IRON PIPE CONSTRUCTION

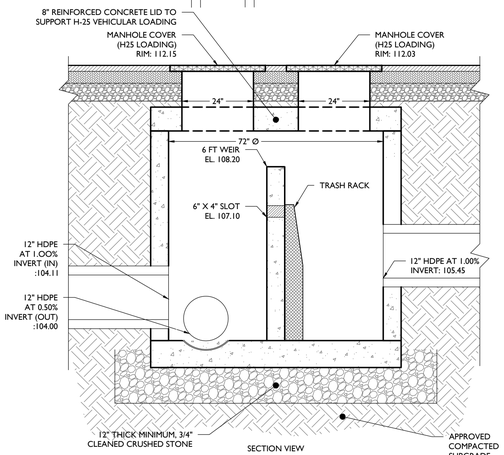
4.MANHOLE TO BE CONSTRUCTED IN ACCORDANCE WITH STANDARD MANHOLE DETAIL EXPECT AS MODIFIED HEREIN

DROP CONNECTION

NOT TO SCALE

3

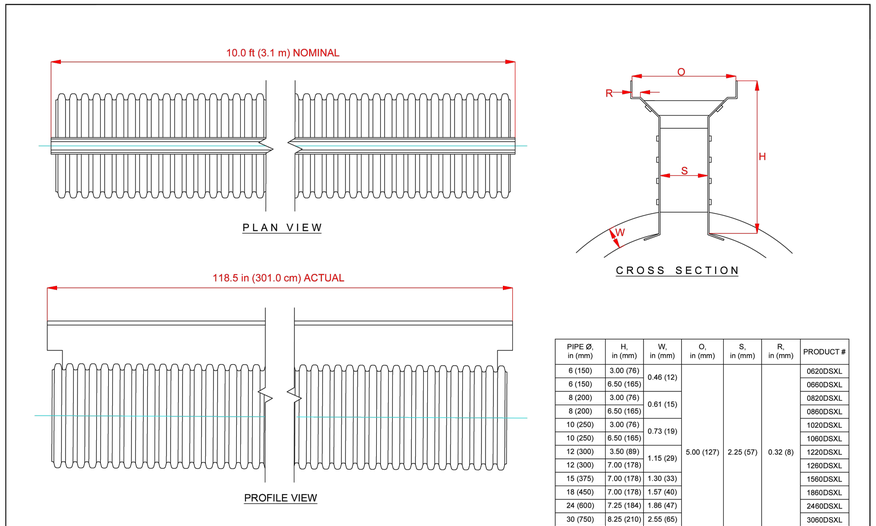




OUTLET STRUCTURE (OS-1) DETAIL

NOT TO SCALE

4



PIPE Ø, in (mm)	H, in (mm)	W, in (mm)	O, in (mm)	S, in (mm)	R, in (mm)	PRODUCT #
6 (150)	3.00 (76)	0.46 (12)	5.00 (127)	2.25 (57)	0.32 (8)	0620DSXL
6 (150)	6.50 (165)					0660DSXL
8 (200)	3.00 (76)	0.61 (15)				0820DSXL
8 (200)	6.50 (165)					0860DSXL
10 (250)	3.00 (76)	0.73 (19)				1020DSXL
10 (250)	6.50 (165)					1060DSXL
12 (300)	3.50 (89)	1.15 (29)				1220DSXL
12 (300)	7.00 (178)					1260DSXL
15 (375)	7.00 (178)	1.30 (33)				1560DSXL
18 (450)	7.00 (178)	1.57 (40)				1860DSXL
24 (600)	7.25 (184)	1.86 (47)				2460DSXL
30 (750)	8.25 (210)	2.55 (65)				3060DSXL
36 (900)	8.25 (210)	2.85 (72)				3660DSXL

NOTES:
1. SEE GRATING DETAILS FOR SURFACE TREATMENT OPTIONS.
2. ALL DIMENSIONS ARE FOR REFERENCE ONLY.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
3	Updated Layers & Logo	KJS	01/09/2025	-

ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

Duraslot XL Pipe
Standard Slot Height

DRAWING NUMBER: STD-1400B

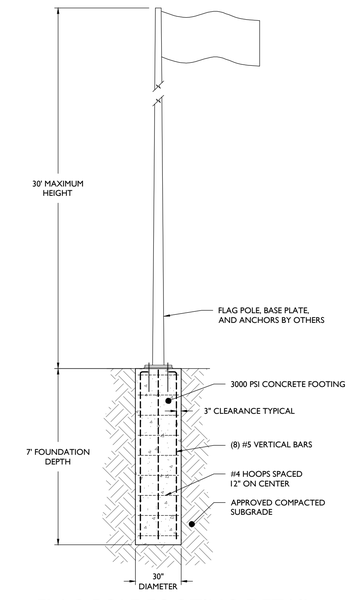
ADS Advanced Drainage Systems, Inc.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DRAWN BY:	KJS
DATE:	04-18-2023
SHT'S BY:	-
STATUS:	NTS
SHEET:	1 OF 1

ADS DURASLOT XL DETAIL

NOT TO SCALE

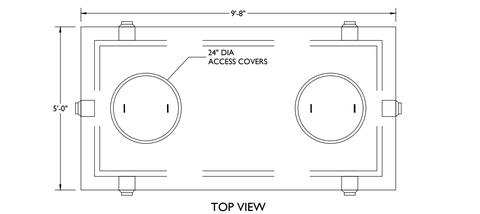
5

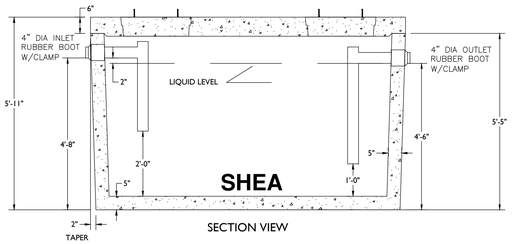


FLAG POLE FOOTING DETAIL

NOT TO SCALE

6





NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. CONSTRUCTION OF GREASE TRAPS CONFORMS WITH 310 CMR, SECTION 15.00 DEP TITLE 5 REGS.
3. ALL REINFORCEMENT PER ASTM C1227.
4. TEES AND BAFFLES SOLD SEPARATELY.
5. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
6. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER.

WEIGHT:
BOTTOM = 11,250#
10" TOP = 5,960#
6" TOP = 3,575#

ITEM NO.		
M1000H	H-20 (6" TOP)	
M1000HT10	H-20 (10" TOP)	

1,000 GALLON GREASE TRAP DETAIL

NOT TO SCALE

7

NO.	DATE	BY	DESCRIPTION
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
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PRIMROSE SCHOOLS FRANCHISING COMPANY

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MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

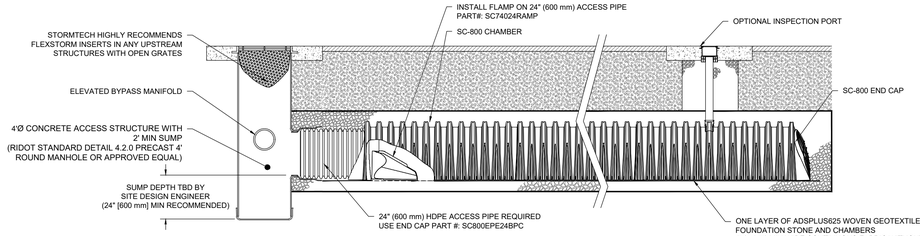
STONEFIELD engineering & design

SCALE: AS NOTED | PROJECT ID: BOS-240115

TITLE: CONSTRUCTION DETAILS

DRAWING: C-13

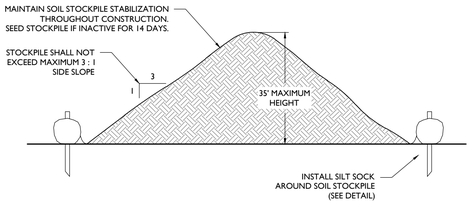
Z:\BOS\PROJECTS\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOTWORX 1\DETL.DWG



SC-800 ISOLATOR ROW PLUS DETAIL

NOT TO SCALE

1



NOTES:
1. STOCKPILES SHALL BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
2. STOCKPILES SHALL BE STABILIZED IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT OR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, AS APPROPRIATE (SEE SOIL EROSION NOTES).
3. IN THE EVENT A SOIL STOCKPILE REMAINS INACTIVE FOR A MINIMUM OF 14 DAYS, THE STOCKPILE SHALL BE SEEDED AND STABILIZED IN ACCORDANCE WITH APPLICABLE STANDARDS.

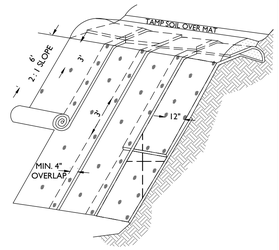
SOIL STOCKPILE DETAIL

NOT TO SCALE

2

NOTES:
1. **SITE PREPARATION:** THE SITE MUST BE GRADED TO THE DESIGN SPECIFICATIONS (GRADE, GEOMETRY, DENSITY OF SOIL, ETC.) AND THEN DRESSED TO BE FREE OF SOIL CLODS, CLUMPS, ROCKS, OR VEHICLE IMPRINTS OF ANY SIGNIFICANT SIZE THAT WOULD PREVENT ENKAMAT FROM LYING FLUSH TO SURFACE CONTOURS.
2. **ANCHOR TRENCH:** ANCHOR TRENCHES ARE REQUIRED TO SECURELY FASTEN THE ENKAMAT TO THE GROUND SURFACE. THE ENKAMAT IS INSTALLED IN TO THE BOTTOM OF THE TRENCH AND FASTENED WITH PINS SPACED 3 FEET APART. THE ANCHOR TRENCH / INTERMEDIATE CHECK SLOTS ARE THEN BACKFILLED AND COMPACTED IN A MANNER AS TO NOT DAMAGE THE ENKAMAT.
3. **ENKAMAT INSTALLATION:** ROLL THE ENKAMAT DOWN THE SLOPE OR CHANNEL. THE OVERLAP BETWEEN ROLLS IS 3 TO 4 INCHES. THE SPLICE BETWEEN ROLLS IS BETWEEN 2 AND 3 FEET. SHINGLE THE ROLL IN THE DIRECTION OF WATER FLOW. INSTALL PINS DOWN THE CENTER OF EACH MAT (MAT IS 3.25 FEET WIDE) STAGGERING THEM BETWEEN THE OUTSIDE PINS WITH A SPACING INTERVAL OF 3 TO 5 FEET. PINS PATTERNS WILL VARY DEPENDING UPON APPLICATION, SOIL TYPE, SLOPE OR CHANNEL SLOPE, GEOMETRY, ETC. A RULE OF THUMB FOR ESTIMATING THE AMOUNT OF PINS REQUIRED FOR A PROJECT IS:
   1:1 TO 2:1 SLOPES: 3-4 PINS PER SQ. YD.
   3:1 AND LESSER SLOPES: 2-3 PINS PER SQ. YD.

   ALWAYS INSTALL TWO ROWS OF PINS SPACED 1.5 X 1.5 FEET APART AT ALL ROLL SPLICE LOCATIONS.
4. **ANCHORING DEVICES:** TYPICALLY 11-8 GAUGE OF A 6" X 1" X 6" METAL PINS ARE USED. WHEN SURFACE SOIL CONDITIONS ARE LOOSE, USE 8" X 1" X 8" OR 12" X 1.5" X 12" METAL PINS, 8"-18" PINS WITH 1.5" DIAMETER WASHER, OR 12-30" J-SHAPE PINS (BENT REBAR) HAVING A ½" DIAMETER. DRIVE PINS OR PINS FLUSH WITH THE GROUND SURFACE.
5. **SEEDING:** FOR NON-SOIL FILLING APPLICATIONS, BROADCAST SEED OR HYDROSEED OVER THE INSTALLED ENKAMAT. MAKE SURE HYDROMULCH OCCURS AFTER SEEDING TO ENSURE THE SEED REACHES THE TOPSOIL. IF SOIL FILLING, SEED AFTER FILLING IS COMPLETED. YOU MAY ALSO SEED BEFORE AND AFTER SOIL FILLING TO CREATE A BETTER ESTABLISHED ROOT STRUCTURE AND INCREASE VEGETATION STRENGTH.



ENKAMAT DETAIL

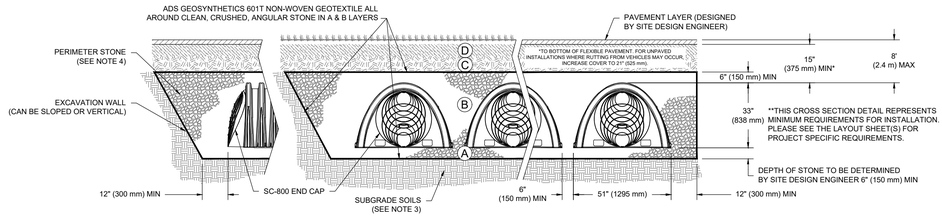
NOT TO SCALE

3

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 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 15" (375 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 OR RECYCLED CONCRETE[5]	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 OR RECYCLED CONCRETE[5]	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" (150 mm) (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.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



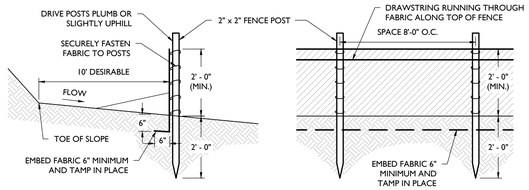
NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 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/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SC-800 CROSS SECTION DETAIL

NOT TO SCALE

6

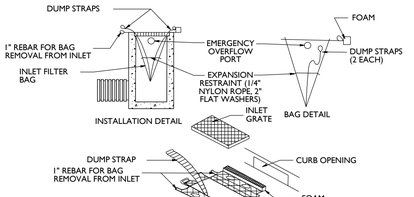


NOTES:
1. SECURELY FASTEN GEOTEXTILE TO FENCE POST BY USE OF WIRE TIES, HOG RINGS, STAPLES OR POCKETS. FOUR TO SIX FASTENERS PER POST.
2. GEOTEXTILE FABRIC TO BE EMBEDDED 6" (MIN.) AND TAMP IN PLACE.
3. SECURELY FASTEN ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE TO A POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND THE POST TWICE AND ATTACHING AS SPECIFIED IN NOTE 1 ABOVE. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
4. SET SILT FENCE WITHIN PROJECT LIMITS. 10'-0" IS DESIRABLE.
5. SILT FENCE SHALL BE CLEANED AND SEDIMENTS REMOVED AND PROPERLY DISPOSED OF ONCE SEDIMENT ACCUMULATION REACHES ¼ TO ½ THE HEIGHT OF THE FENCE. FENCE SHALL BE REPAIRED AND/OR REPLACED AS NEEDED.

SILT FENCE DETAIL

NOT TO SCALE

4

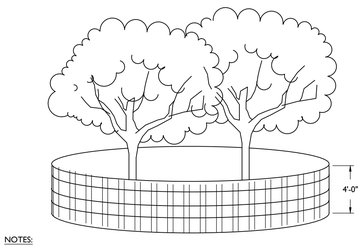


NOTES:
1. THE FILTER BAG SHALL SAFELY PASS FLOWS GREATER THAN THE 1-YEAR 24-HOUR STORM EVENT.
2. SEDIMENT REMOVAL AND MAINTENANCE SHALL BE PERFORMED FREQUENTLY AND AFTER EVERY STORM EVENT, AT MINIMUM. MAINTENANCE SHALL BE CONDUCTED AND SEDIMENTS REMOVED AND DISPOSED OF WHEN SEDIMENT ACCUMULATION REACHES ½ THE DEPTH OF THE FILTER BAG.

INLET FILTER BAG DETAIL

NOT TO SCALE

5



NOTES:
1. SNOW FENCING IS TO BE 4'-0" HIGH AND SELF SUPPORTED.
2. DO NOT STOCKPILE MATERIALS OR STORE EQUIPMENT WITHIN THE TREE PROTECTION FENCING.
3. SNOW FENCE TO BE INSTALLED AT DRIP LINE OF EXISTING TREE OR TREE CLUSTER TO BE PROTECTED OR NO CLOSER THAN 6' FROM TREE TRUNK IF NECESSARY.
4. IF THE PROJECT AREA ENCOMPASSES A PORTION OF THE DRIP LINE OF THE TREE, NO MORE THAN ONE THIRD OF THE OF THE TOTAL AREA OF WITHIN THE DRIP LINE SHOULD BE DISTURBED BY CONSTRUCTION OR REGRADING AND A 3" THICK LAYER OF MULCH SHALL BE INSTALLED OVER THE AREA OF THE DRIP LINE WHICH IS NOT PROTECTED BY FENCING TO PROVIDE A CUSHION.

TREE PROTECTION DETAIL

NOT TO SCALE

8

SC-800 TECHNICAL SPECIFICATION

NTS

NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	81.0 CUBIC FEET	(2.29 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

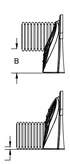
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	46.5" X 32.6" X 10.5"	(1181 mm X 828 mm X 267 mm)
END CAP STORAGE	3.4 CUBIC FEET	(0.09 m³)
MINIMUM INSTALLED STORAGE**	15.4 CUBIC FEET	(0.43 m³)
WEIGHT	15.7 lbs.	(7.1 kg)

* ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS
** ASSUMES 6" (152 mm) STONE ABOVE AND BELOW END CAPS, 6" (152 mm) BETWEEN ROWS, 12" (305 mm) BEYOND END CAPS

PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"
PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24BPC	24" (600 mm)	---	2.3" (58 mm)
SC800EPE	NONE	SOLID END CAP	



NOTE: ALL DIMENSIONS ARE NOMINAL

SC-800 TECHNICAL SPECIFICATIONS

NOT TO SCALE

9

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.

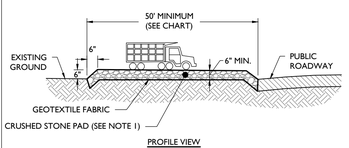
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED.

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

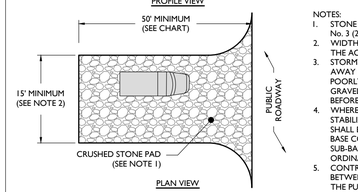
STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

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.



SLOPE OF PUBLIC ROADWAY	LENGTH OF STONE REQ'D	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0% TO 2%	50 FEET	100 FEET
2% TO 5%	100 FEET	200 FEET
> 5%	SEE NOTE 4	

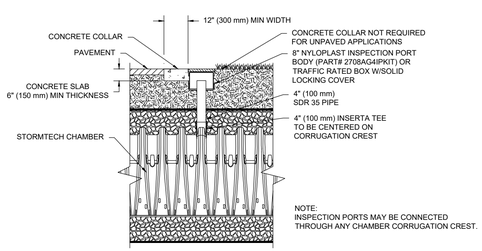


NOTES:
1. STONE SHALL BE ASTM C-33, SIZE No. 2 (2.5" TO 1.5") OR No. 3 (2" TO 1") CLEAN CRUSHED ANGULAR STONE.
2. WIDTH SHALL BE 15' MINIMUM OR THE FULL WIDTH OF THE ACCESS POINT, WHICHEVER IS GREATER.
3. STORMWATER FROM UP-SLOPE AREAS SHALL BE DIVERTED AWAY FROM THE STABILIZED PAD, WHERE POSSIBLE. AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE THE STABILIZED CONSTRUCTION ENTRANCE.
4. WHERE THE SLOPE OF THE ROADWAY EXCEEDS 5%, A STABILIZED BASE OF HOT MIX ASPHALT BASE COURSE SHALL BE INSTALLED. THE TYPE AND THICKNESS OF THE BASE COURSE AND USE OF DENSE GRADED AGGREGATE SUB-BASE SHALL BE AS PRESCRIBED BY LOCAL MUNICIPAL ORDINANCE OR GOVERNING AUTHORITY.
5. CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE STABILIZED CONSTRUCTION ACCESS AND THE PUBLIC ROADWAY.

STABILIZED CONSTRUCTION ACCESS DETAIL

NOT TO SCALE

7



4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

NOT TO SCALE

10

		02	04/26/2025	ISSUED FOR PEER REVIEW COMMENTS	AJD
		01	05/06/2025	ISSUED FOR TOWN COMMENTS	SCL
		00	03/07/2025	ISSUED FOR MUNICIPAL SUBMISSION	AJD
		ISSUE	DATE	DESCRIPTION	BY

NOT APPROVED FOR CONSTRUCTION

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LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28 113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

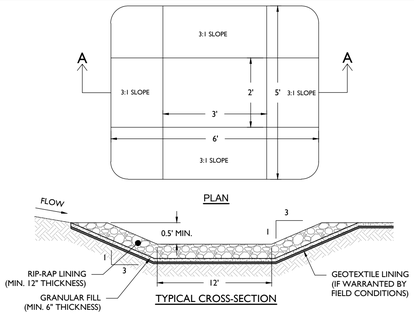
JOSHUA H. RINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: AS NOTED | PROJECT ID: BOS-240115

TITLE: **CONSTRUCTION DETAILS**

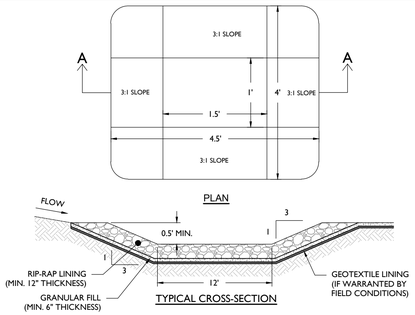
DRAWING: **C-14**



PREFORMED SCOUR HOLE DETAIL (SC-1)

NOT TO SCALE

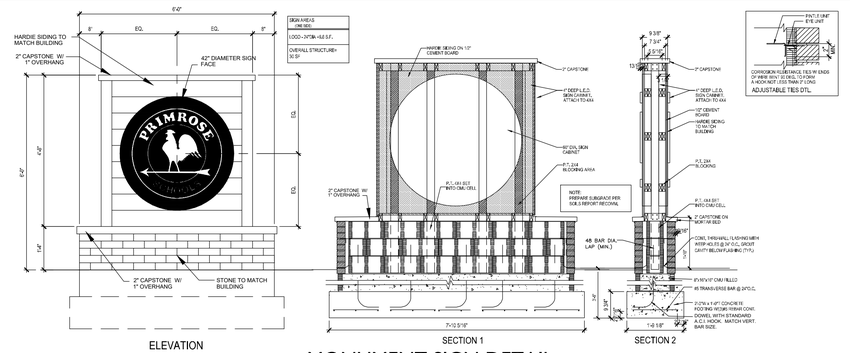
1



PREFORMED SCOUR HOLE DETAIL (SC-2)

NOT TO SCALE

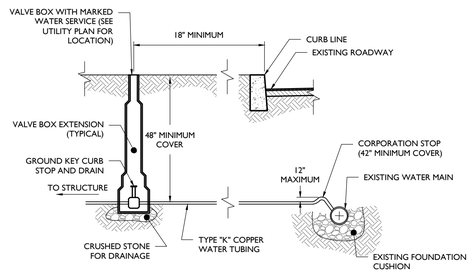
2



MONUMENT SIGN DETAIL

NOT TO SCALE

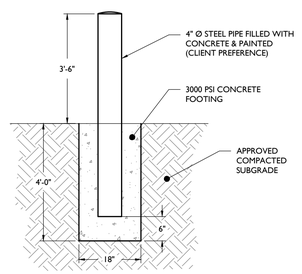
3



WATER CONNECTION DETAIL

NOT TO SCALE

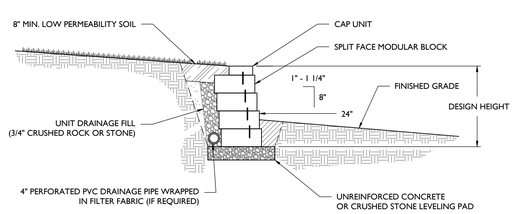
4



BOLLARD DETAIL

NOT TO SCALE

5



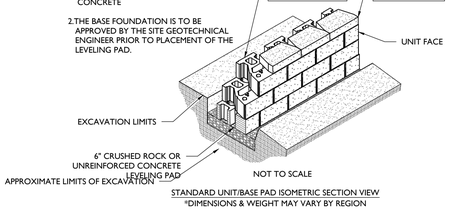
TYPICAL GRAVITY WALL SECTION

STANDARD UNIT - 1" SETBACK

BASE LEVELING PAD NOTES:

1. THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 2,000 PSI± UNREINFORCED CONCRETE
2. THE BASE FOUNDATION IS TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE LEVELING PAD.

STANDARD UNIT	CAP UNIT
WIDTH: 18"	WIDTH: 18"
*DEPTH: 18"	*DEPTH:10 1/2"
HEIGHT: 8"	HEIGHT: 4"
**WEIGHT: 108 LBS	**WEIGHT: 50 LBS



NOT TO SCALE

STANDARD UNIT/BASE PAD ISOMETRIC SECTION VIEW

*DIMENSIONS & WEIGHT MAY VARY BY REGION

BLOCK WALL DETAIL

NOT TO SCALE

NOTES:

1. RETAINING WALL DESIGN PLANS TO BE PREPARED BY LICENSED PROFESSIONAL IN THE STATE OF NEW JERSEY.
2. KEYSTONE WALL SYSTEM, OR APPROVED EQUIVALENT, TO BE CONSTRUCTED.

8

CityScapes®

ARCHITECTURAL INNOVATIONS

CITYSCAPES INC.
4200 LYMAN COURT
HILLIARD, OH 43026
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FAX: (614) 850-2553
www.cityscapesinc.com

☑ SELECT DESIRED WALL (1-INCH PVC PLANK):

☐ VERTICAL ☐ WIDE HORIZONTAL
☐ HORIZONTAL ☐ DIAGONAL

☑ SELECT DESIRED WALL (METAL):

☐ 7.2 RIB ☐ PERFORATED 7.2 RIB
☐ TEXTURED FLAT ☐ TRUE LOUVER
☐ SLAT WALL

☑ SELECT DESIRED WALL (NATURESCREEN®):

☐ NATURESCREEN® DMT
☐ NATURESCREEN® GMT
☐ NATURESCREEN® SMT
☐ NATURESCREEN® SMT E

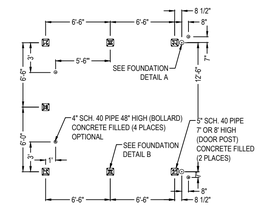
☑ SELECT DESIRED WALL (ACRYLICAP® ABS):

☐ CLAPBOARD ☐ 7.2 RIB
☐ HORIZONTAL LOUVER ☐ GRAPHIC OPTION
☐ CLAPBOARD WITH BRICK

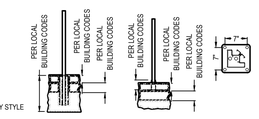
☑ SELECT DESIRED WALL (NATURAL WOOD & STONE):

☐ IPE ☐ BRICK
☐ CEDAR ☐ VERSETTA STONE (TIGHT CUT)
☐ VERSETTA STONE (LEDGESTONE)

FEATURES & BENEFITS
- MAINTENANCE FREE MATERIALS
- WIDE SELECTION OF WALL INFILLS AND GATES TO SUIT ANY STYLE AND BUDGET
- EASY INSTALL, NO SPECIAL TOOLS REQUIRED
- STANDARD AND PROJECT SPECIFIC CONFIGURATIONS AVAILABLE
- PROFESSIONAL GRADE EXTRUDED ALUMINUM STRUCTURAL COMPONENTS



TOP VIEW



DETAIL A FOUNDATION (TYP. 6 PLACES) | DETAIL B FOUNDATION (TYP. 9 PLACES) | DETAIL BOLT PATTERN (TYP 6 PLACES)

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER XXX-11-DE

COVRIT® SCREENING SYSTEMS

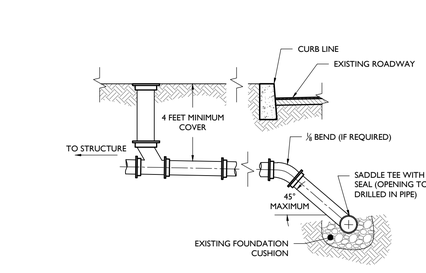
COVRIT® STANDARD (MODEL 1313)

XXX-11-D REVISION DATE 03/07/2025

DUMPSTER ENCLOSURE DETAIL

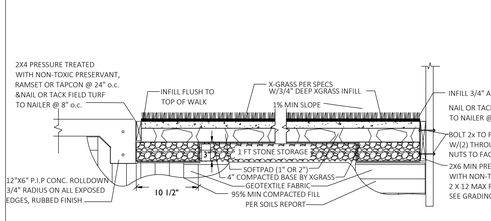
NOT TO SCALE

9



SEWER CONNECTION DETAIL

6

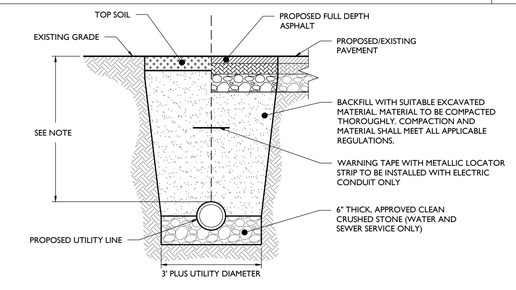


NOTES:
1. FALL SURFACING SHALL COMPLY WITH ASTM F1951 FOR WHEELCHAIR ACCESSIBILITY & ASTM F1292 FOR FALL ATTENUATION.
2. PREPARE SUBGRADE 5.75" BELOW FINISH GRADE WITH 1" SOFTPAD & 6.75" WITH 2" SOFTPAD - CONSULT XGRASS FOR AREAS OF PAD.
3. STONE DETENTION TO BE ADDED UNDER 4" COMPACTED SUBBASE PER INFILTRATION BASIN B-1C DETAIL.

ARTIFICIAL TURF DETAIL

NOT TO SCALE

7



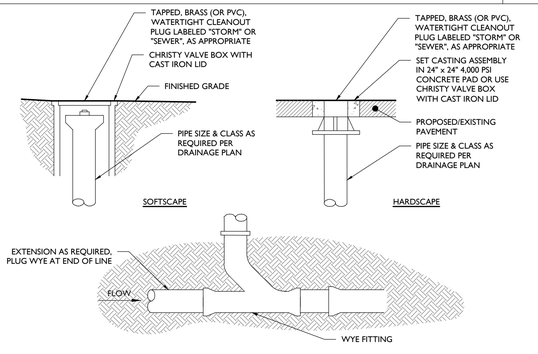
UTILITY TRENCH DETAIL

NOTE:

NOT TO SCALE

MINIMUM PIPE COVER SHALL BE AS FOLLOW:
- ELECTRIC SERVICE - PER APPLICABLE UTILITY AUTHORITY
- GAS SERVICE - PER APPLICABLE UTILITY AUTHORITY
- SEWER SERVICE - 36" MINIMUM
- WATER SERVICE - 48" MINIMUM

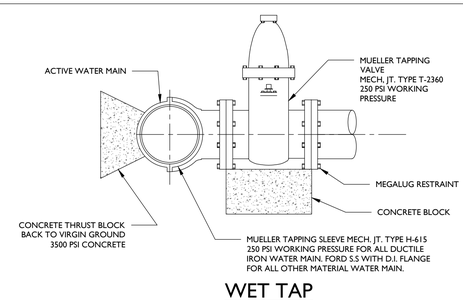
10



CLEAN-OUT DETAIL

NOT TO SCALE

11



WET TAP

NOT TO SCALE

NOTES:

1. ALL NEWLY INSTALLED TAPPING SLEEVES AND TAPPING VALVES SHALL BE PNEUMATICALLY TESTED AT A TEST PRESSURE OF 150 PSI FOR A PERIOD OF THIRTY MINUTES AT THE END OF THE TEST PERIOD, IF THE TEST PRESSURE HAS REMAINED CONSTANT, THE TAPPING SLEEVE AND AND VALVE SHALL HAVE PASSED THE TEST.
2. ANY VALVE INSTALLED OUTSIDE OF ASPHALT AREAS MUST BE CONSTRUCTED WITH A 2'x2'x6" CONCRETE COLLAR AROUND IT.

12

ISSUE	DATE	BY	DESCRIPTION
02	04/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION

NOT APPROVED FOR CONSTRUCTION

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Phone 617.203.2076

LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28-113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: AS NOTED | PROJECT ID: BOS-240115

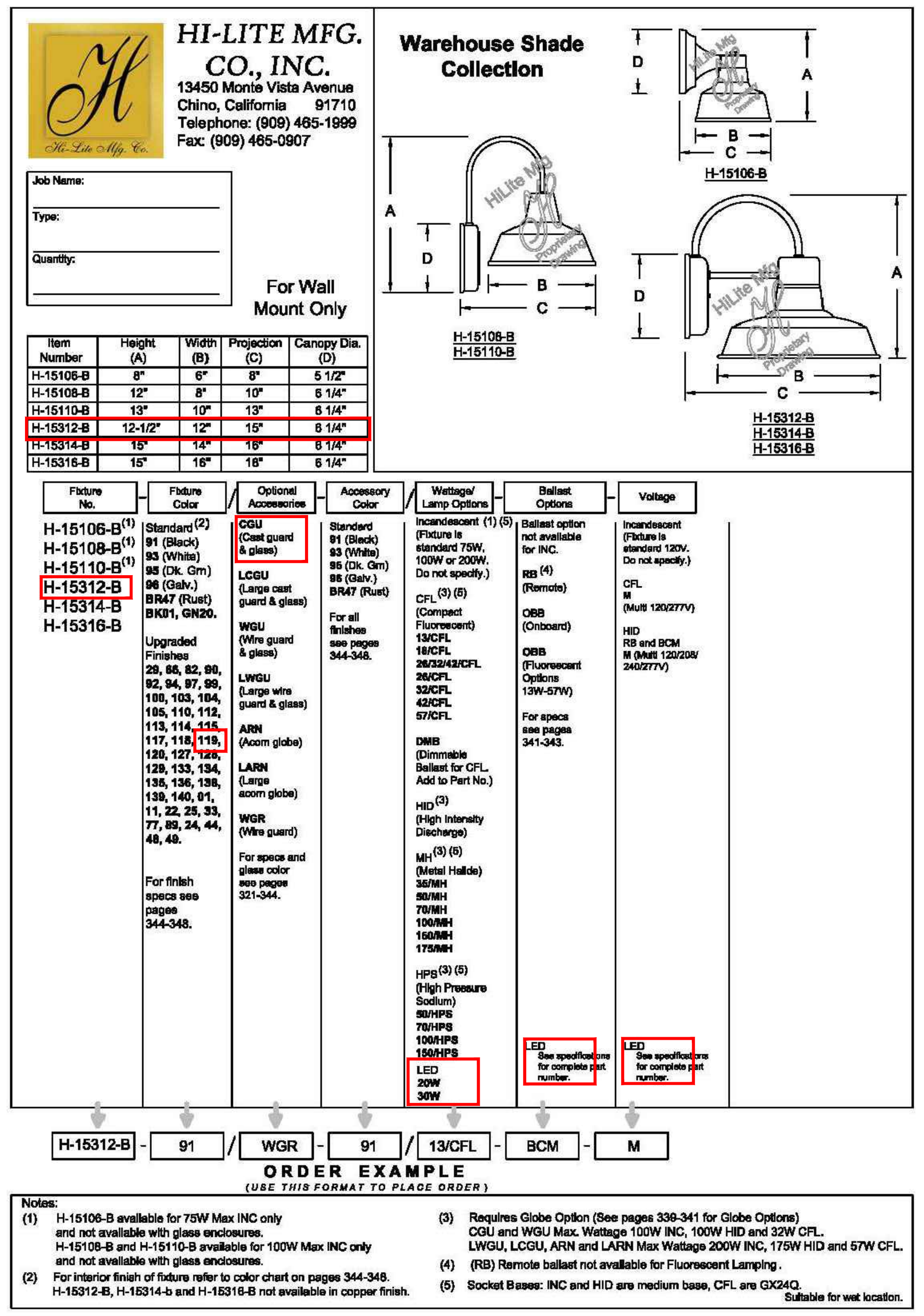
TITLE:

CONSTRUCTION DETAILS

DRAWING:

C-15

Z:\BOS\TOWNS\2024\BOS-240115 PRIMROSE SCHOOLS - 885 MAIN STREET, READING, MA\CAD\PLOTSTYLE\11 DETS.DWG



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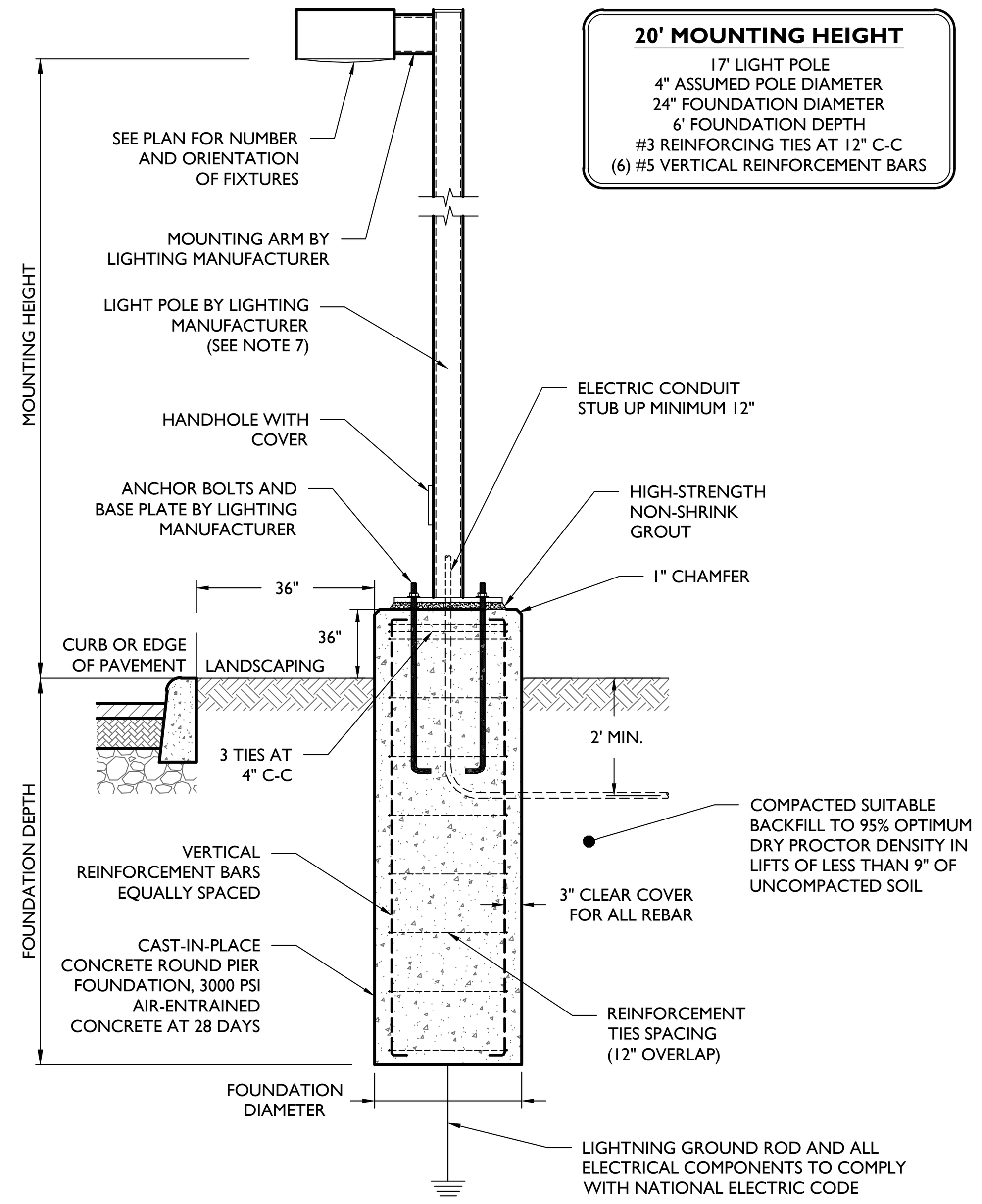

LIGHT POLE INSTALLATION DETAIL

NOT TO SCALE

NOTES:

1. MINIMUM SOIL BEARING PRESSURE OF 1500 PSF, SOIL FRICTION ANGLE OF 30 DEGREES, AND SOIL DRY UNIT WEIGHT OF 120 PCF SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED PROFESSIONAL.
2. CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
3. ALL REBAR TO BE NEW GRADE 60 STEEL.
4. PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
5. CONCRETE TO BE INSTALLED A MINIMUM OF 7 DAYS PRIOR TO INSTALLING LIGHT POLE. POURED CONCRETE MIX REQUIRED TO OBTAIN 80% OF DESIGN STRENGTH PRIOR TO INSTALLING LIGHT POLE.
6. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" (WITHIN 1" TOLERANCE).
7. POLE SHALL BE RATED FOR 10 MPH HIGHER THAN MAXIMUM WIND SPEED 33FT ABOVE GROUND FOR THE AREA BASED ON ANSI/ASCE 7-93.
8. POUR TO BE TERMINATED AT A FORM.
9. WORK SHALL CONFORM TO ACI BEST PRACTICES FOR APPROPRIATE TEMPERATURE AND WEATHER CONDITIONS.
10. CONTRACTOR TO TEMPORARILY SUPPORT ADJACENT SOIL AND STRUCTURES DURING EXCAVATION IF REQUIRED.

2

AREA LIGHT FIXTURE SPECIFICATIONS

NOT TO SCALE

3

ISSUE	DATE	BY	DESCRIPTION
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION

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JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

STONEFIELD engineering & design

SCALE: AS NOTED | PROJECT ID: BOS-240115

TITLE:

CONSTRUCTION DETAILS

DRAWING:

C-16

massDOT Highway Division
CONSTRUCTION STANDARDS

CURB TRANSITION LENGTH FOR WHEELCHAIR RAMPS

DATE OF ISSUE: OCTOBER 2017
DRAWING NUMBER: E 107.9.0

ROADWAY PROFILE GRADE %	* HIGH SIDE TRANSITION LENGTH ENGLISH UNITS
=0%	6'-6"
>0% TO 1%	7'-8"
>1% TO 2%	9'-0"
>2% TO 3%	11'-0"
>3% TO 4%	14'-0"
>4% TO 5%	15'-0" Max

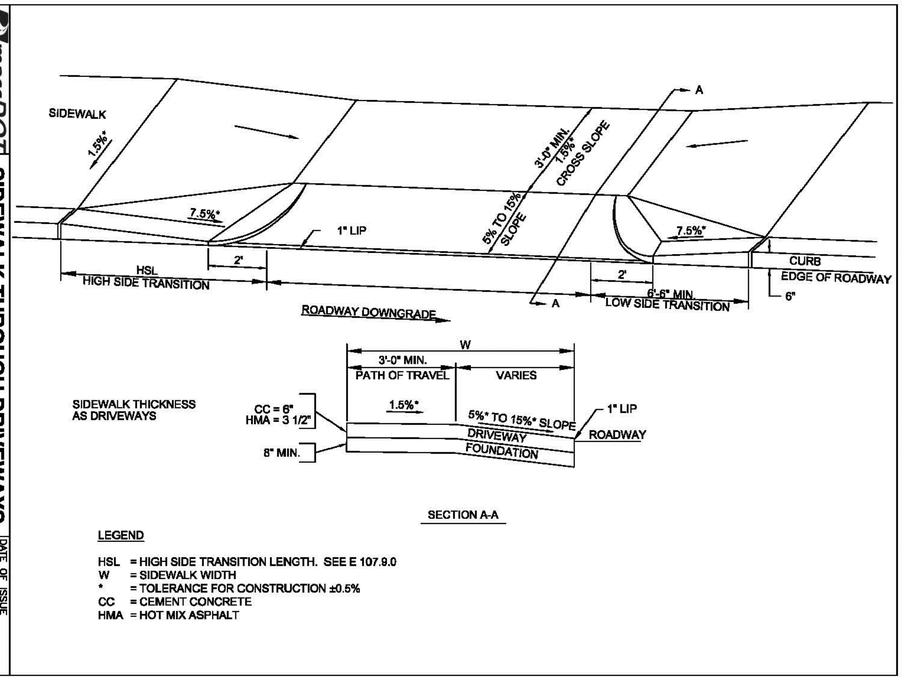
NOTE:

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

massDOT Highway Division
CONSTRUCTION STANDARDS

SIDEWALK THROUGH DRIVEWAYS WITH CURB RETURNS 2' CURB CORNERS

DATE OF ISSUE: OCTOBER 2017
DRAWING NUMBER: E 107.8.0



SECTION A-A

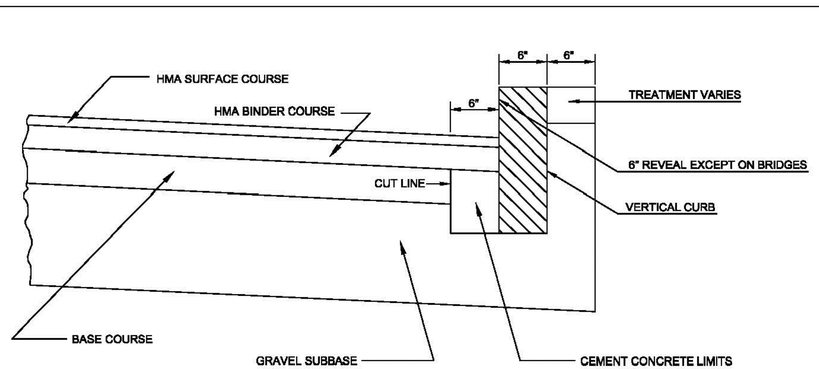
LEGEND

HSL = HIGH SIDE TRANSITION LENGTH. SEE E 107.9.0
W = SIDEWALK WIDTH
* = TOLERANCE FOR CONSTRUCTION ±0.5%
CC = CEMENT CONCRETE
HMA = HOT MIX ASPHALT

massDOT Highway Division
CONSTRUCTION STANDARDS

METHOD OF SETTING VERTICAL CURB

DATE OF ISSUE: OCTOBER 2017
DRAWING NUMBER: E 106.3.0

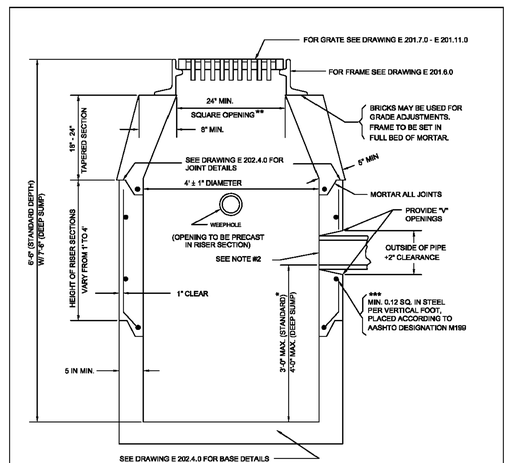


NOTES:

1. THIS PROCEDURE IS APPLICABLE ONLY IF CURB IS TO BE SET AFTER BASE COURSE IS IN PLACE PRIOR TO BINDER AND TOP PLACEMENT.

2. CUT NEAT LINE 6" FROM CURB LINE AND REMOVE BASE AND GRAVEL. REPLACE WITH CEMENT CONCRETE.

3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED; ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT TO BE USED AS A SUBSTITUTE.



* MINIMUM DEPTH OF SUMP TO BE 2 FT
** WHEN A CURB INLET IS INSTALLED, THE OPENING IS TO BE 24"±1" X 27"±1"
*** REINFORCING STEEL BASED ON A WALL THICKNESS OF 5".

NOTES:

1. DETAILS NOT INDICATED ABOVE ARE TO BE SIMILAR TO THOSE SHOWN ON E 201.3.0
2. FACE OF PIPE FLUSH OR NOT TO PROJECT MORE THAN 4" FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
3. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHOD, SEE STANDARD SPECIFICATIONS.
4. ALL CONCRETE TO BE AIR ENTRAINED

massDOT Highway Division
CONSTRUCTION STANDARDS

PRECAST CONCRETE CATCH BASIN

DATE OF ISSUE: OCTOBER 2017
DRAWING NUMBER: E 201.4.0

ISSUE	DATE	BY	DESCRIPTION
00	03/07/2025	AJD	ISSUED FOR MUNICIPAL SUBMISSION
01	05/06/2025	SCL	ISSUED FOR TOWN COMMENTS
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS

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LAND DEVELOPMENT PLANS

PRIMROSE SCHOOLS FRANCHISING COMPANY

PROPOSED CHILD DAY CARE FACILITY

PARCEL ID: 28 113
885 MAIN STREET
TOWN OF READING
MIDDLESEX COUNTY, MASSACHUSETTS

JOSHUA H. KLINE, P.E.
MASSACHUSETTS LICENSE No. 53936
LICENSED PROFESSIONAL ENGINEER

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SCALE: AS NOTED | PROJECT ID: BOS-240115

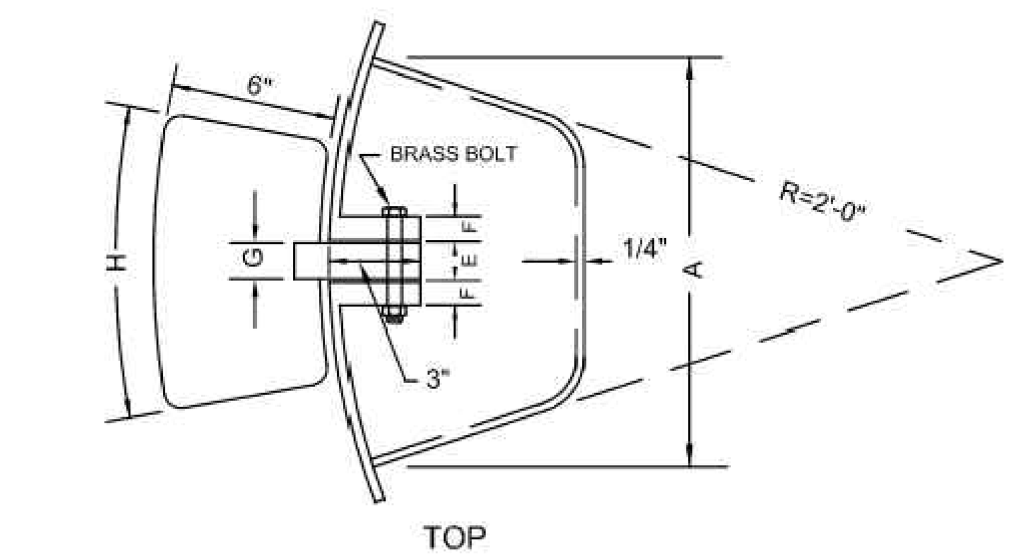
TITLE: CONSTRUCTION DETAILS

DRAWING: C-17

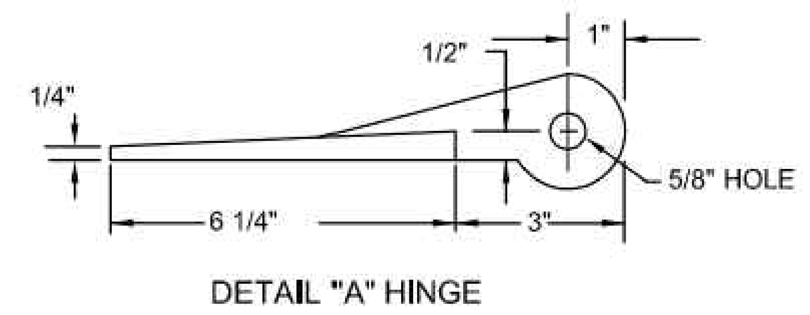
CATCH BASIN HOOD

massDOT Highway Division
CONSTRUCTION STANDARDS

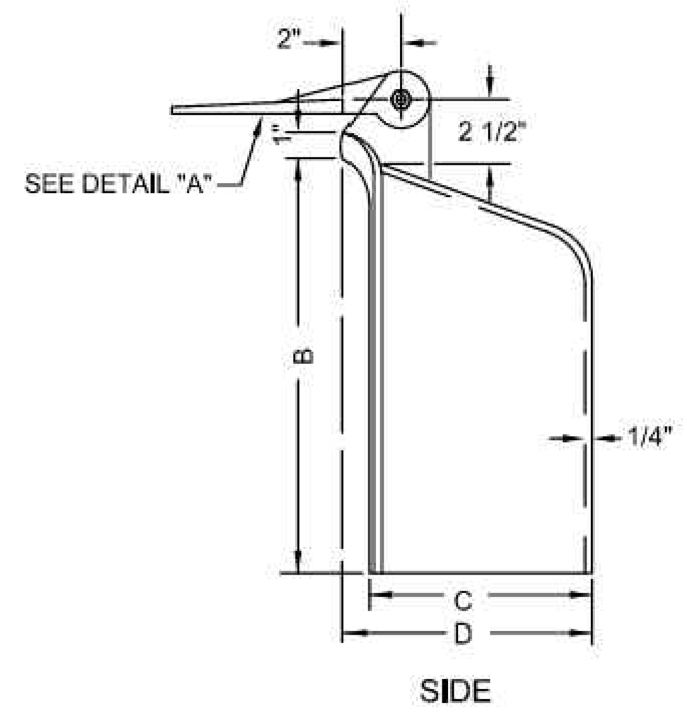
DIMENSIONS (In.)	A	B	C	D	E	F	G	H
8" and 10" PIPE	15	15	8	9	2	7/8	1 7/8	14
12" and 15" PIPE	18	18	10	11 1/4	2	1	1 7/8	14



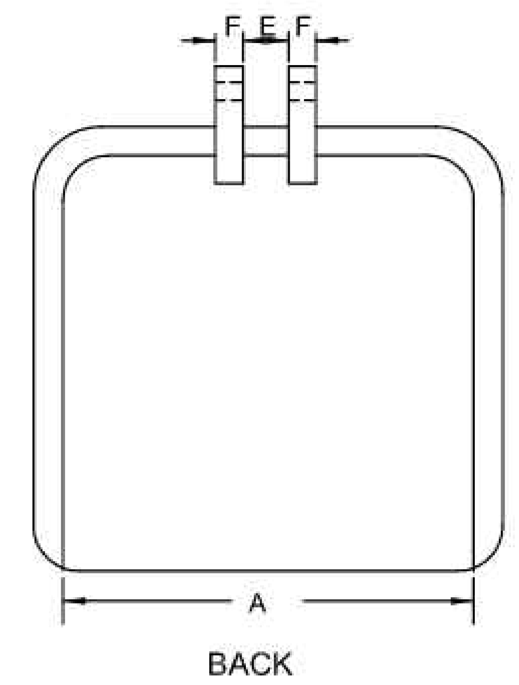
TOP



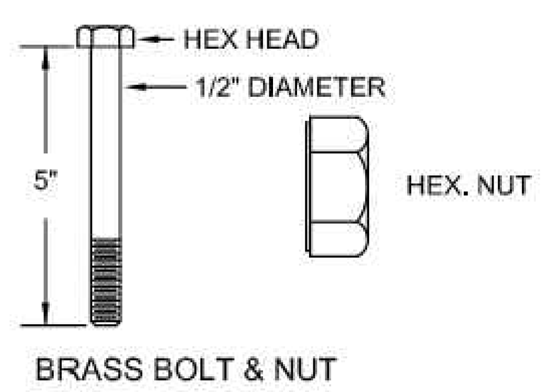
DETAIL "A" HINGE



SIDE



BACK



BRASS BOLT & NUT

NOTE:
1. HOODS TO BE GRAY CAST IRON - SEE STANDARD SPECIFICATIONS WITH NO BLACK ASPHALT COATING ALLOWED

DATE OF ISSUE OCTOBER 2017
DRAWING NUMBER E 201.12.0

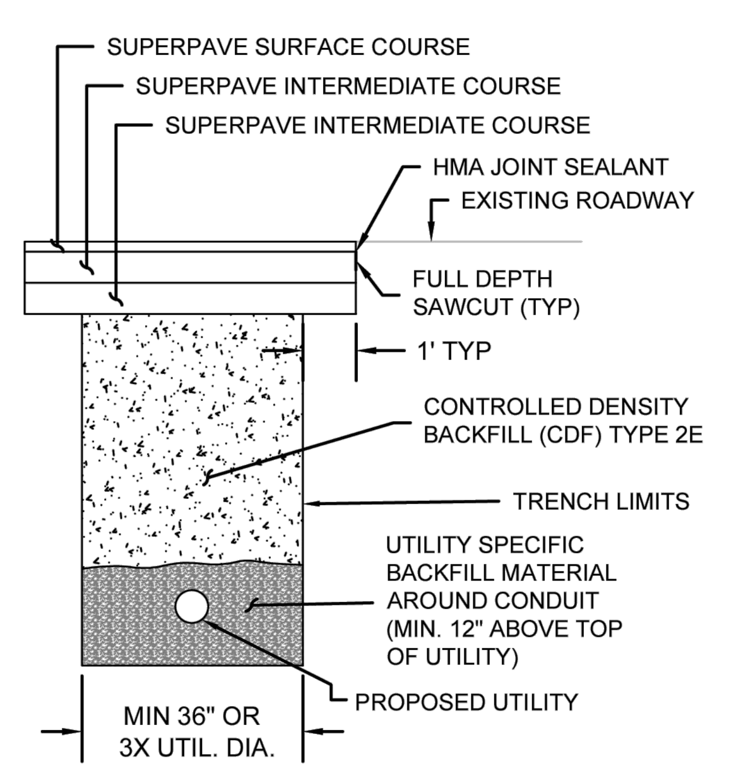
1

NOTES:

1. ALL DIMENSIONS OF STANDARD GUARDRAIL COMPONENTS, INCLUDING PANELS, POSTS, OFFSET BLOCKS, BOLTS, NUTS, WASHERS AND HOLES, ARE BASED UPON ENGLISH UNIT CONVERSIONS OF THE AASHTO-ARTBA-AGC JOINT COMMITTEE TASK FORCE 13 REPORT: *A GUIDE TO STANDARDIZING HIGHWAY BARRIER HARDWARE* (http://www.aashtotf13.org/Barrier-Hardware.php).
2. ALL GUARDRAIL MATERIALS SHALL CONFORM TO M8.07.0 UNLESS OTHERWISE INDICATED.
3. APPROVAL BY THE ENGINEER IS REQUIRED WHERE A DIFFERING GUARDRAIL CONFIGURATION IS REQUIRED FOR CONSTRUCTABILITY BEYOND THE OPTIONS SHOWN IN THESE STANDARDS OR THE PLANS.
4. THE BEGIN OR END STATION LABELS SHOWN IN THESE STANDARDS CORRESPOND TO THE STATION AND OFFSET CALLOUTS SPECIFIED IN THE PLANS.
5. USE 12'-6" NOMINAL LENGTH PANELS UNLESS OTHERWISE INDICATED IN THESE STANDARDS OR THE PLANS.
6. ALL LAP SPLICES SHALL BE MIDSPAN UNLESS OTHERWISE SHOWN.
7. LAP SPLICES SHALL BE CONSTRUCTED WITH THE SPLICE RIDGE ORIENTED DOWNSTREAM OF THE FINAL DIRECTION OF TRAFFIC IN THE NEAREST TRAVEL LANE. REORIENTING LAP SPLICES FOR TEMPORARY TRAFFIC CONTROL IS NOT REQUIRED.
8. STANDARD POSTS SHALL BE STEEL OR TIMBER, UNLESS OTHERWISE INDICATED IN THE PLANS, FABRICATED TO THE DIMENSIONS SHOWN ON 400.1.4. POSTS OF A SINGLE MATERIAL TYPE SHALL BE USED THROUGHOUT AN ENTIRE RUN OF GUARDRAIL; EXCEPTIONS ARE ALLOWED ONLY WHEN SPECIFIC MATERIAL TYPES ARE REQUIRED FOR TRANSITIONS, END TREATMENTS, AND/OR ANCHORAGES.
9. DEEP POST SHALL ONLY BE USED WHERE INDICATED IN THESE STANDARDS OR THE PLANS.
10. OFFSET BLOCKS, WHERE REQUIRED, SHALL BE TIMBER AND FABRICATED TO THE NOMINAL DIMENSIONS SHOWN ON 400.1.4. PLASTIC OR COMPOSITE OFFSET BLOCKS OF THE SAME NOMINAL DIMENSIONS THAT ARE LISTED ON THE QUALIFIED CONSTRUCTION MATERIALS LIST MAY BE SUBSTITUTED. OFFSET BLOCKS OF A SINGLE MATERIAL TYPE SHALL BE USED THROUGHOUT AN ENTIRE RUN OF GUARDRAIL; EXCEPTIONS ARE ALLOWED ONLY WHEN SPECIFIC MATERIAL TYPES ARE REQUIRED FOR TRANSITIONS, END TREATMENTS, AND/OR ANCHORAGES.
11. PAVEMENT MILLING MULCH, WHERE CALLED FOR IN THE STANDARDS, SHALL CONFORM TO SECTION 739.
12. GUARDRAIL DELINEATORS, CONFORMING TO SECTION 601, SHALL BE INSTALLED AT 25' INTERVALS WITHIN 100' OF AN END TREATMENT OR TRAILING ANCHORAGE AND AT 100' INTERVALS IN ALL OTHER AREAS UNLESS OTHERWISE SHOWN IN THE PLANS.
13. MINIMUM OFFSET DISTANCE FROM FACE OF W-BEAM PANEL TO A FIXED (NON-BREAKAWAY) OBJECT SHALL BE 48" FOR TL-2 AND 60" FOR TL-3.

massDOT Massachusetts Department of Transportation Highway Division | CONSTRUCTION STANDARDS SECTION 400 | GENERAL NOTES | DATE OF ISSUE OCTOBER 2017 | DRAWING NUMBER 400.1.0

2



TRENCH SECTION
NTS

QUALITY CONTROL TESTING REQUIREMENTS

1. ASPHALT PLANT TESTING PER SUBSECTION 450 SHALL BE REQUIRED DAILY
2. IN-PLACE NUCLEAR GAUGE TESTING SHALL BE REQUIRED DAILY PER LOCATION FOR GRAVE BACKFILL AND FOR EACH LIFT OF HMA
3. IN-PLACE CORE DENSITY TESTING SHALL BE REQUIRED EVERY 600 TONS, WITH A MINIMUM OF ONE CORE DENSITY TEST (FULL-DEPTH) PER LOCATION
4. THE CONTRACTOR SHALL SUBMIT ALL QUALITY CONTROL TESTING REPORTS TO THE DISTRICT OFFICE FOR REVIEW AND APPROVAL

MASSDOT ACCEPTANCE

- PLANT TESTING: 1 TEST PER 600 TONS
- CORE TESTING: 1 TEST PER 600 TONS

PAVEMENT MINIMUM DEPTHS
1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER

3.0" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER

3.0" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)

PAVEMENT NOTES

1. PAVEMENT DEPTH SHALL BE A MINIMUM OF 7.5 INCHES PER THE TRENCH SECTION DETAIL OR MATCH THE DEPTH OF THE EXITING HMA, WHICHEVER IS GREATER
2. MATERIAL WHICH MEETS THE SPECIFICATIONS FOR GRAVEL BORROW MAY BE USED IN PLACE OF THE CDF WITH APPROVAL FROM THE DISTRICT HIGHWAY DIRECTOR. GRAVEL BORROW SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE MASSDOT STANDARD SPECIFICATIONS
3. ALL HOT MIX ASPHALT SHALL BE IN ACCORDANCE WITH SUBSECTION 450 OF THE MASSDOT STANDARD SPECIFICATIONS
4. THE FACE OF THE VERTICAL SAWCUT SHALL BE CLEANED AND TREATED WITH ASPHALT EMULSION FOR TACK COAT AT THE INTERMEDIATE COURSES OF HMA ASPHALT. THE VERTICAL SAWCUT AT THE SURFACE COURSE OF HMA SHALL BE TREATED WITH HOT APPLIED PAVEMENT JOINT ADHESIVE (HOT RUBBER) MEETING THE REQUIREMENTS OF 450.30
5. ALL SUPERPAVE HMA FOR TRENCH PATCHES SHALL BE 75 GYRATION MIXTURE
6. THE SUPERPAVE SURFACE COURSE SSC-9.5 SHALL USE PG BINDER 64E-28
7. YELLOW METAL FOIL MARKING TAPE SHALL BE PLACED 18" OVER THE CONDUIT (METAL MARKING TAPE/WIRE SHOULD BE USED FOR NON-METALLIC CONDUIT.)
8. TRENCHES ON FREEWAYS SHALL REQUIRE A PAVEMENT DESIGN TO BE SUBMITTED FOR APPROVAL

PLOTTED ON: Oct-24

massDOT Highway Division HIGHWAY DESIGN	UTILITY TRENCH PERMANENT PAVEMENT REPAIR	DRAWN BY: FA	DATE: 9/24/2024
		DATE: 9/24/2024	SCALE: N.T.S.
		CHECKED BY: PMC	DRAWING NO.:
		DATE: 9/24/2024	SHEET: 1 OF 1

SAVED LOCATION: S:\D4\PROJECTS\DESIGN\SHAREDCADFOLDER\DETAILS\TRENCH DETAIL\TRENCHREPAIRSTANDARDDETAIL_09172024.DWG

3

ISSUE	DATE	BY	DESCRIPTION
02	06/26/2025	AJD	ISSUED FOR PEER REVIEW COMMENTS
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