CITY OF FRAMINGHAM

TASK ORDER NO. 22 - WALNUT STREET FLOOD MITIGATION

FRAMINGHAM, MA

100% CONSTRUCTION DESIGN PLAN SET

JUNE 2022

STREAM RESTORATION C
WALNUT STREET, FRAMINGHAM, MA 01702

STREAM RESTORATION B
WALNUT STREET, FRAMINGHAM, MA 01702

STREAM RESTORATION A
WALNUT STREET, FRAMINGHAM, MA 01702

STORMWATER OUTFALL BMP
WALNUT STREET, FRAMINGHAM, MA 01702

BOARDWALK
WALNUT STREET, FRAMINGHAM, MA 01702

- RENDERING FOR ILLUSTRATIVE PURPOSES ONLY -

DRAWING INDEX

Issued Date:

JUNE 30, 2022

811

Know what's below.
Call before you dig.

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Prepared By

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GENERAL NOTES

1. REFER TO EXISTING CONDITIONS FOR SURVEY LEGEND. ALL BIDDERS ARE REQUIRED TO INSPECT THE PROJECT SITE IN ITS ENTIRETY PRIOR TO SUBMITTING THEIR BID, AND BECOME FAMILIAR WITH ALL CONDITIONS AS THEY MAY AFFECT THEIR BID. CONTRACTOR AND SUB-CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS PRIOR TO COMMENCING CONSTRUCTION.
2. LOCATIONS OF ANY UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF SUCH UTILITIES, PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO PROJECT REPRESENTATIVE PRIOR TO EXCAVATION WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE EXTENT OF EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE SITE IMPROVEMENTS.
4. ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION, PERMANENT CONSTRUCTION AND WORK OF ADJACENT CONTRACTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
5. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS-BUILT" DRAWINGS.
6. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT TERMINI, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
7. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT HIS EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
8. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.
9. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER.
10. EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. NO STOCKPILING OF MATERIAL, EQUIPMENT OR VEHICULAR TRAFFIC SHALL BE ALLOWED WITHIN THE DRIP LINE OF TREES TO REMAIN. NO GUYS SHALL BE ATTACHED TO ANY TREE TO REMAIN. WHEN NECESSARY OR AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL ERECT TEMPORARY BARRIERS FOR THE PROTECTION OF EXISTING TREES DURING CONSTRUCTION.
11. NO FILLING SHALL OCCUR AROUND EXISTING TREES TO REMAIN WITHOUT THE APPROVAL OF THE OWNER OR OWNER REPRESENTATIVE.
12. ANY QUANTITIES SHOWN ON PLANS ARE FOR COMPARATIVE BIDDING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO SUBMITTING BID.
13. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS, SOIL, SEDIMENT, AND FOREIGN MATERIAL AND OPERATIONAL THROUGHOUT THE LIFE OF THE CONTRACT. REMOVE ALL SOIL, SEDIMENT, DEBRIS AND FOREIGN MATERIAL FROM ALL DRAINAGE STRUCTURES, INCLUDING BUT NOT LIMITED TO, DRAINAGE INLETS, MANHOLES AND CATCH BASINS WITHIN THE LIMIT OF WORK AND DRAINAGE STRUCTURES OUTSIDE THE LIMIT OF WORK THAT ARE IMPACTED BY THE WORK FOR THE ENTIRE DURATION OF CONSTRUCTION.
14. CONTRACTOR'S STAGING AREA MUST BE WITHIN THE CONTRACT LIMIT LINE AND IN AREAS APPROVED BY OWNER. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER AND APPROVED PRIOR TO USE.
15. THE CONTRACTOR SHALL BROOM AND CLEAN ALL STREETS, PARKING LOTS AND WALKS THAT ARE NOT RESTRICTED FROM PUBLIC USE DURING CONSTRUCTION AT ALL TIMES. THE CONTRACTOR SHALL USE ACCEPTABLE METHODS AND MATERIALS TO MAINTAIN ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION.
16. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER. NOTIFY THE CONSERVATION COMMISSION 48 HOURS PRIOR AND TO THE COMMENCEMENT OF ANY ACTIVITIES WITHIN DEP JURISDICTION PER THE DEP ORDER OF CONDITIONS.

DEMOLITION & SITE PREPARATION NOTES

1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE AT NO ADDITIONAL COST.
3. UNLESS SPECIFICALLY NOTED TO BE SAVED / STOCKPILED (R&S) OR REUSED / RELOCATED (R&R), ALL SITE FEATURES CALLED FOR REMOVAL (R&D/ REM) SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC. TO FULL DEPTH AND TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO COST TO THE OWNER.
4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
6. IT SHALL BE THE CONTRACTOR'S OPTION, WITH CONCURRENCE OF THE OWNER, TO REUSE EXISTING GRAVEL PAVEMENT BASE COURSE MATERIAL IF IT IS TESTED TO MEET THE REQUIREMENTS OF THE SPECIFICATIONS FOR GRAVEL BORROW.
7. 'CLEAR AND GRUB VEGETATION' INDICATED ON PLAN SHALL INCLUDE REMOVAL OF SHRUBS AND UNDERBRUSH, REMOVAL OF ROOTS, ROUGH GRADING, INSTALLATION OF LOAM (IF APPLICABLE), FINE GRADING, SEEDING AND TURF ESTABLISHMENT BY THE CONTRACTOR.
8. "STRIP & STORE OR SKIM & STOCKPILE" EXISTING TOPSOIL FOR LATER REUSE WHERE APPROPRIATE, AND AS NOTED ON PLAN, WITH APPROPRIATE EROSION AND SEDIMENT CONTROLS.
9. LOAM / TOPSOIL DESIGNATED FOR REUSE AS GENERAL FILL SHALL BE BLENDED WITH SUITABLE BORROW MATERIAL AS SPECIFIED.
10. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
11. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN. CONTRACTOR SHALL INSTALL TREE PROTECTION BARRIER AFTER CLEARING UNDERBRUSH AND TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS.
12. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNER'S REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
13. DISPOSAL OF EXCESS SOIL OR WASTES ARE SUBJECT TO APPROVAL OF THE OWNER

EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. REFER TO PLAN FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL MEET ALL OF THE STATE OF MASSACHUSETTS D.E.P. AND THE CITY OF FRAMINGHAM'S WETLAND ORDINANCE REGULATIONS FOR SEDIMENT AND EROSION CONTROL.
4. A PERSON SHALL BE DESIGNATED TO BE RESPONSIBLE TO MONITOR COMPLIANCE WITH THE ORDER OF CONDITIONS. NAME AND CONTACT INFORMATION SHALL BE PROVIDED TO THE OFFICE OF THE CONSERVATION COMMISSION PRIOR TO THE START OF ANY ACTIVITY.
   - 4.1. PERIODIC INSPECTIONS SHALL OCCUR TO ENSURE EFFECTIVENESS OF CONTROLS. SEE ORDER OF CONDITIONS.
   - 4.2. INSPECTIONS OF CONTROLS SHALL OCCUR AFTER ANY RAIN EVENT GREATER THAN 0.5" OR AFTER HEAVY SNOW MELT.
5. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE.
6. ALL CATCH BASINS AND DRAIN GRATES WITHIN LIMIT OF CONTRACT AND AS SHOWN IN THE DRAWINGS SHALL BE PROTECTED WITH SEDIMENT SACK DURING THE ENTIRE DURATION OF CONSTRUCTION.
7. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES. SEE GRADING & DRAINAGE PLANS, NOTES, DETAILS AND SPECIFICATIONS.
8. ANY AREA OUTSIDE THE PROJECT LIMIT THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
9. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY OWNER.
10. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC/PRIVATE ROADS.

LAYOUT & MATERIALS NOTES

1. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
2. ALL WORK SHALL BE PERFORMED BY CONTRACTOR UNLESS SPECIFICALLY INDICATED THAT THE WORK WILL BE PERFORMED "BY CITY".
3. THE LAYOUT OF SITE AMENITIES AND FENCES MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
4. THE LAYOUT OF ALL NEW PATHWAYS / WALKWAYS AND THE GRADING OF ALL SLOPES AND CROSS SLOPES SHALL CONFORM TO THE COMMONWEALTH OF MASSACHUSETTS RULES AND REGULATIONS FOR HANDICAP ACCESS CMR 521, AND THE AMERICANS WITH DISABILITIES ACT (ADA), TITLE 3. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE REQUIRED.
5. ALL LAYOUT LINES, OFFSETS, OR REFERENCES TO LOCATING OBJECTS ARE EITHER PARALLEL OR PERPENDICULAR UNLESS OTHERWISE DESIGNATED WITH ANGLE OFFSETS NOTED.
6. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
7. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENT OF ALL PROPOSED FENCES AND GATES.
10. THE DEPTH OF LOAM BORROW FOR ALL PROPOSED LAWN AREAS SHALL BE 4" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED
11. ALL REFERENCES TO LOAM AND SEED (L&S) REFER TO HYDROMULCH SEEDED LAWN.
12. EXISTING PATHWAY GRAVEL MATERIALS SHALL BE REUSED WHENEVER POSSIBLE MAKING FIELD APPROVAL MANDATORY PER SPEC.
13. REFER TO DETAIL DRAWINGS FOR SITE CONSTRUCTION DETAILS.

GRADING & DRAINAGE NOTES

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

GENERAL ABBREVIATIONS

BIT. CONC.	BITUMINOUS CONCRETE
CEM. CONC.	CEMENT CONCRETE
EQ	EQUIPMENT
EXIST. (OR EX.)	EXISTING
EOP	EDGE OF PAVEMENT
G.C.	GENERAL CONTRACTOR
L&S	LOAM AND SEED
LOW	LIMIT OF WORK
N.T.S.	NOT TO SCALE
PROT	PROTECT
PL	PROPERTY LINE
PVMT	PAVEMENT
PROP	PROPOSED
L&S	LOAM AND SEED
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK/STORE
R&D	REMOVE AND DISPOSE
TYP.	TYPICAL
CO	CLEANOUT
DI	DRAIN INLET
WF	WETLAND FLAGGED
CB	CATCH BASIN
INV	INVERT
DMH	DRAIN MANHOLE
RCP	REINFORCED CONCRETE PIPE
APPROX.	APPROXIMATE
ELEV.	ELEVATION

Project:

WALNUT STREET
FLOOD MITIGATION

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GENERAL NOTES

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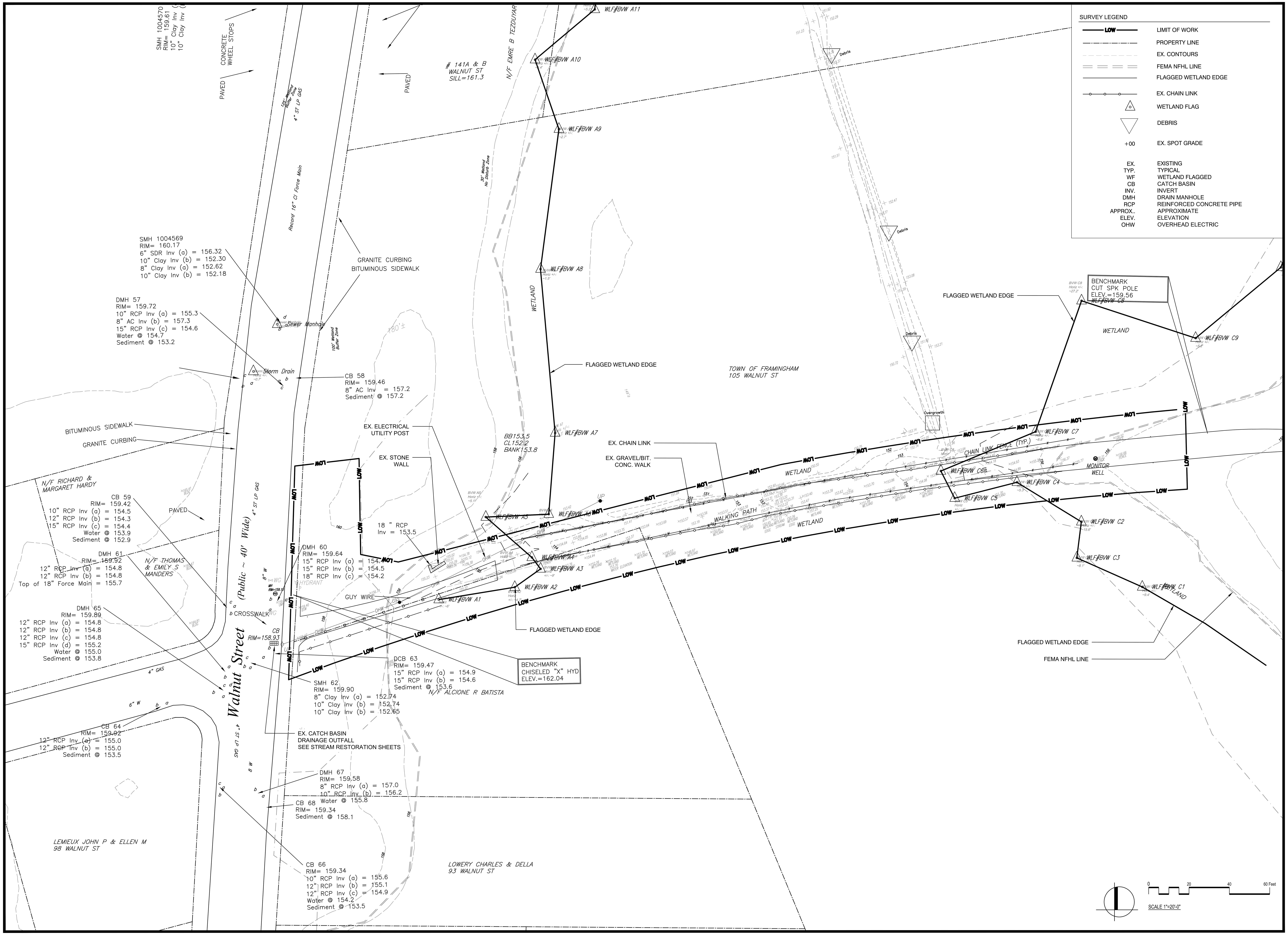

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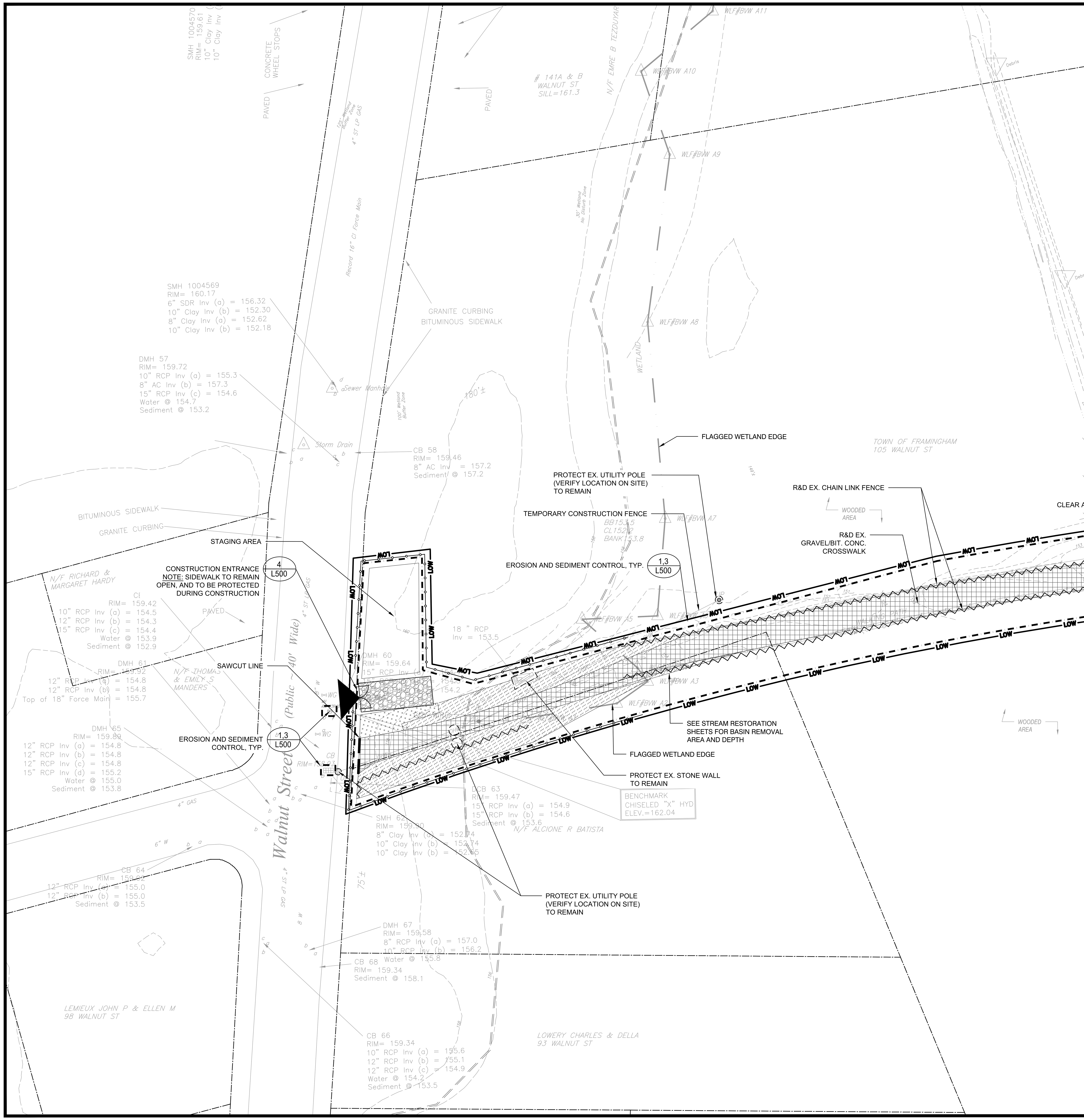

MATERIALS LEGEND

LOW	LIMIT OF WORK
	PROPERTY LINE
	EX. CONTOURS
	FEMA NFHL LINE
	FLAGGED WETLAND EDGE
	TEMPORARY CONSTRUCTION FENCE
	EROSION CONTROL, TYP.
	PROTECT, TO REMAIN
	R&D EX. CHAIN LINK FENCE
	SAWCUT LINE
	R&D EX. GRAVEL/BIT. CONC. SIDEWALK, FULL DEPTH
	STRIP AND STOCKPILE TOPSOIL 6" DEPTH
	CLEAR AND GRUB
	CONSTRUCTION ENTRANCE
	WETLAND FLAG
	DEBRIS
+00	EX. SPOT GRADE

EX.	EXISTING
TYP.	TYPICAL
WF	WETLAND FLAGGED
CB	CATCH BASIN
INV.	INVERT
DMH	DRAIN MANHOLE
RCP	REINFORCED CONCRETE PIPE
APPROX.	APPROXIMATE
ELEV.	ELEVATION
OHW	OVERHEAD ELECTRIC
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND SALVAGE

Project:

WALNUT STREET FLOOD MITIGATION

CITY OF FRAMINGHAM · 1662 · 1700 · 2018

CITY OF FRAMINGHAM, MA

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SITE PREPARATION PLAN

Sheet Number:

L110

PLANT_SCHEDULE

SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
	CO	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	24"-30" HT.	B&B
	CA	CLETHRA ALNIFOLIA	SUMMERSWEET	24"-30" HT.	B&B
	IW	ILEX VERTICILLATA	WINTERBERRY	24"-30" HT.	B&B
	NW	NEW ENGLAND WILDFLOWER SEED MIX, SEE CHART BELOW			

NEW ENGLAND WILDFLOWER SEED MIX (APPLY TO ALL DISTURBED AREAS)

Botanical Name	Common Name	Indicator
Schizachyrium scoparium	Little Bluestem	FACU
Sorghastrum nutans	Indian Grass	UPL
Chamaecrista fasciculata	Partridge Pea	FACU
Elymus virginicus	Virginia Wild Rye	FACW-
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Asclepias tuberosa	Butterfly Milkweed	NI
Vernonia noveboracensis	New York Ironweed	FACW+
Oenothera biennis	Evening Primrose	FACU-
Aster novae-angliae (Symphyotrichum novae-anglia	New England Aster	FACW-
Rudbeckia hirta	Black Eyed Susan	FACU-
Solidago juncea	Early Goldenrod	
Eupatorium fistulosum (Eutrochium fistulosum)	Hollow-Stem Joe Pye Weed	FACW
Aster lateriflorus (Symphyotrichum lateriflorum)	Starved/Calico Aster	FACW

NOTE:
1. WHEN MATURE TREES OF 10" CALIPER OR GREATER ARE TO BE REMOVED, CONTRACTOR SHALL PLANT 2 NEW TREES OF 2"-2.5" CAL PER EACH TREE REMOVED. SEE LIST BELOW FOR APPROVED TREES TO BE PLANTED AS NEEDED.

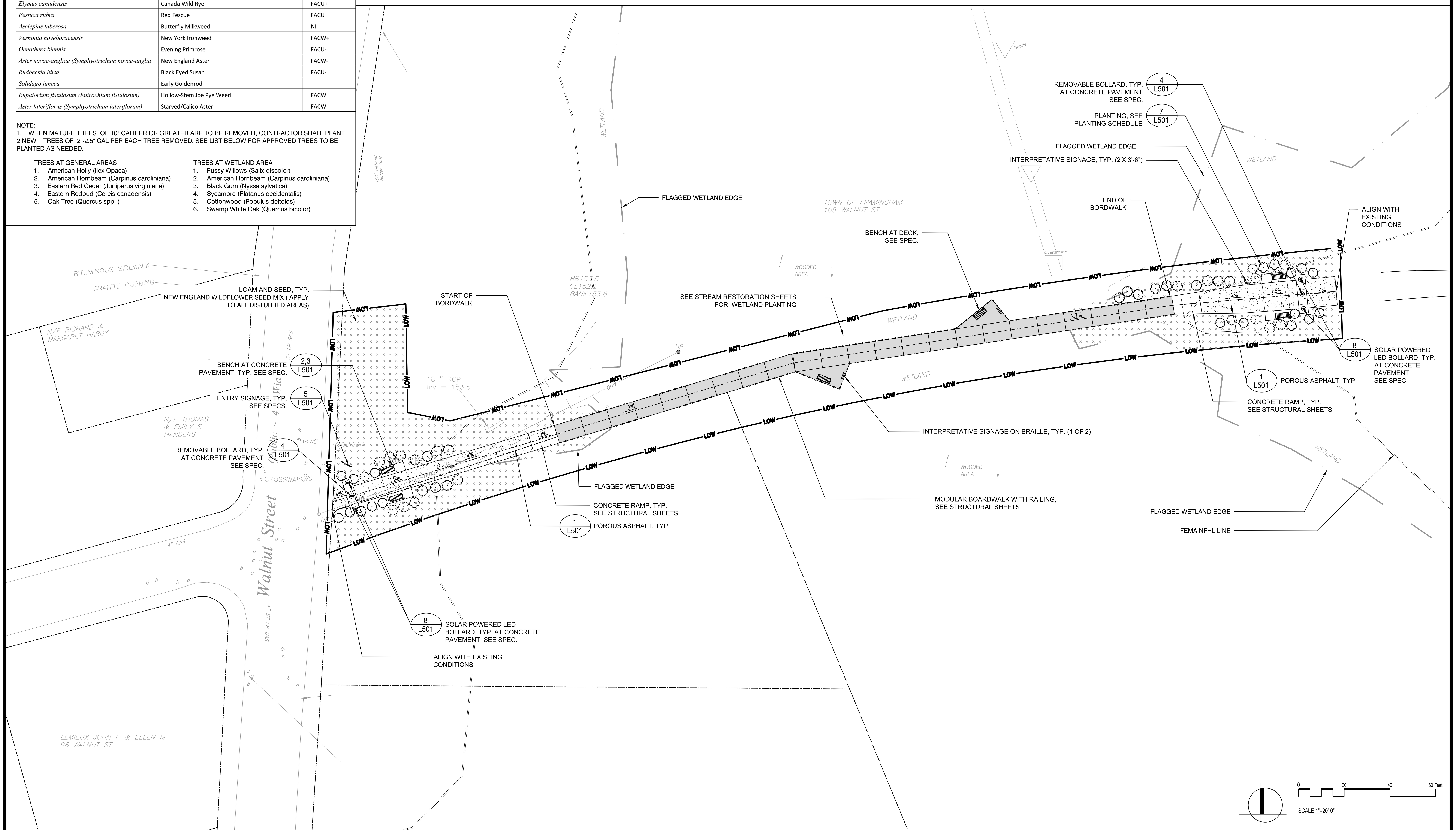
TREES AT GENERAL AREAS
1. American Holly (Ilex Opaca)
2. American Hornbeam (Carpinus caroliniana)
3. Eastern Red Cedar (Juniperus virginiana)
4. Eastern Redbud (Cercis canadensis)
5. Oak Tree (Quercus spp.)

TREES AT WETLAND AREA
1. Pussy Willows (Salix discolor)
2. American Hornbeam (Carpinus caroliniana)
3. Black Gum (Nyssa sylvatica)
4. Sycamore (Platanus occidentalis)
5. Cottonwood (Populus deltoids)
6. Swamp White Oak (Quercus bicolor)

MATERIALS LEGEND

LOW — LIMIT OF WORK
PROPERTY LINE
EX. CONTOURS
FEMA NFHL LINE
FLAGGED WETLAND EDGE
CENTERLINE
WOOD BOARDWALK, TYP.
ASPHALT PAVEMENT, TYP.
CONCRETE PAVEMENT, TYP.
BENCH, TYP.
INTERPRETATIVE SIGNAGE, TYP.
ENTRY SIGNAGE, TYP.
REMOVABLE BOLLARD, TYP.
SOLAR POWERED LED BOLLARD, TYP.

EX.	EXISTING
TYP.	TYPICAL
CONC.	CONCRETE
PA	PLANTING AREA
L&S	LOAM AND SEED
CIP	CAST IN PLACE
SPECS.	SPECIFICATIONS
WF	WETLAND
HT.	HEIGHT



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W&S Project No:
W&S File No:

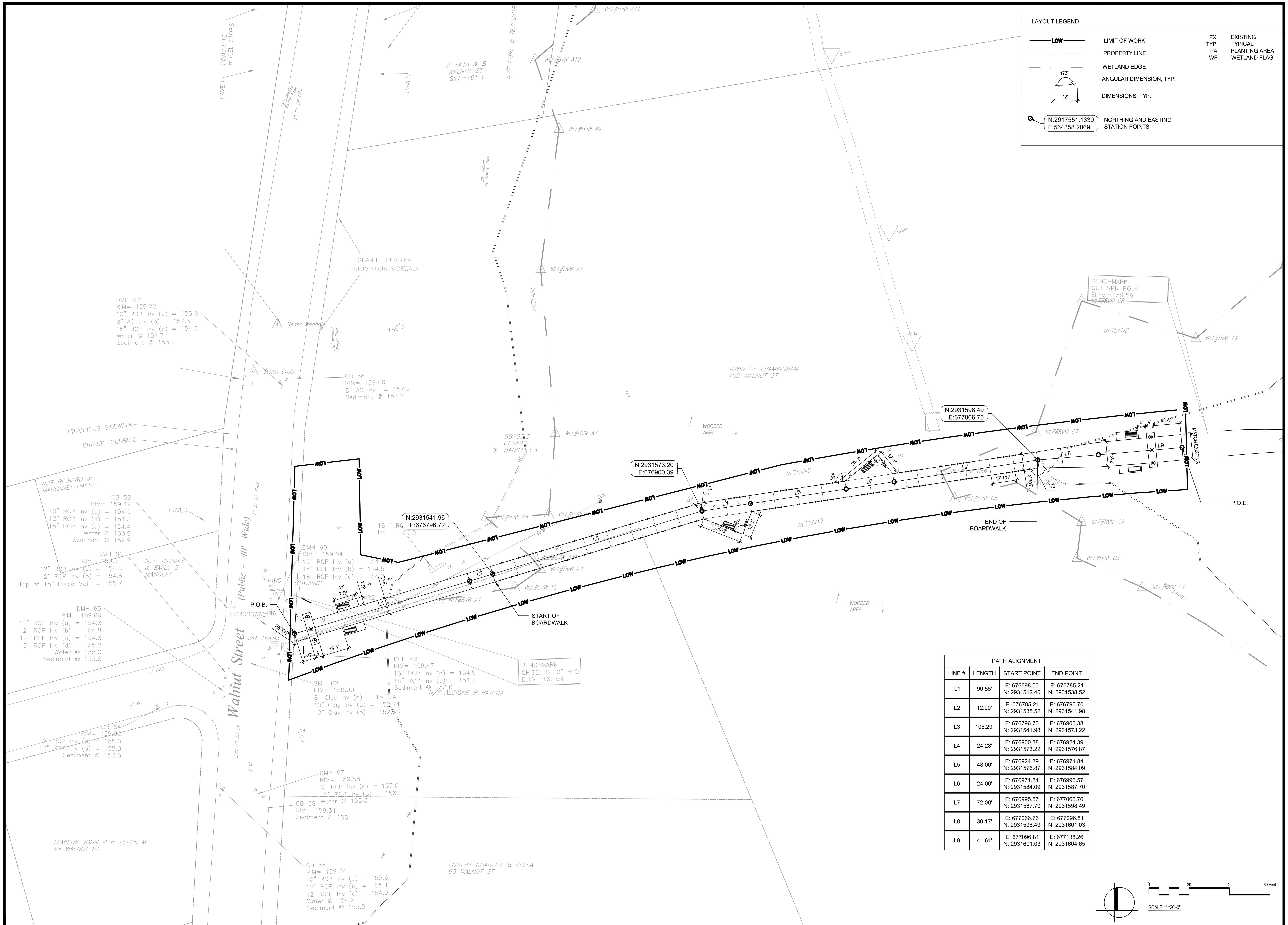
Drawing Title:
MATERIALS AND PLANTING PLAN

Sheet Number:
L120

LAYOUT LEGEND

LOW	LIMIT OF WORK
	PROPERTY LINE
	WETLAND EDGE
172°	ANGULAR DIMENSION, TYP.
12'	DIMENSIONS, TYP.
N:2917551.1339 E:564358.2069	NORTHING AND EASTING STATION POINTS

EX. EXISTING
TYP. TYPICAL
PA PLANTING AREA
WF WETLAND FLAG



PATH ALIGNMENT			
LINE #	LENGTH	START POINT	END POINT
L1	90.55'	E: 676698.50 N: 2931512.40	E: 676785.21 N: 2931538.52
L2	12.00'	E: 676785.21 N: 2931538.52	E: 676796.70 N: 2931541.98
L3	108.29'	E: 676796.70 N: 2931541.98	E: 676900.38 N: 2931573.22
L4	24.28'	E: 676900.38 N: 2931573.22	E: 676924.39 N: 2931576.87
L5	48.00'	E: 676924.39 N: 2931576.87	E: 676971.84 N: 2931584.09
L6	24.00'	E: 676971.84 N: 2931584.09	E: 676995.57 N: 2931587.70
L7	72.00'	E: 676995.57 N: 2931587.70	E: 677066.76 N: 2931598.49
L8	30.17'	E: 677066.76 N: 2931598.49	E: 677096.81 N: 2931601.03
L9	41.61'	E: 677096.81 N: 2931601.03	E: 677138.26 N: 2931604.65

Project:

WALNUT STREET
FLOOD MITIGATION

CITY OF FRAMINGHAM, MA

Weston & Sampson

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Consultants:

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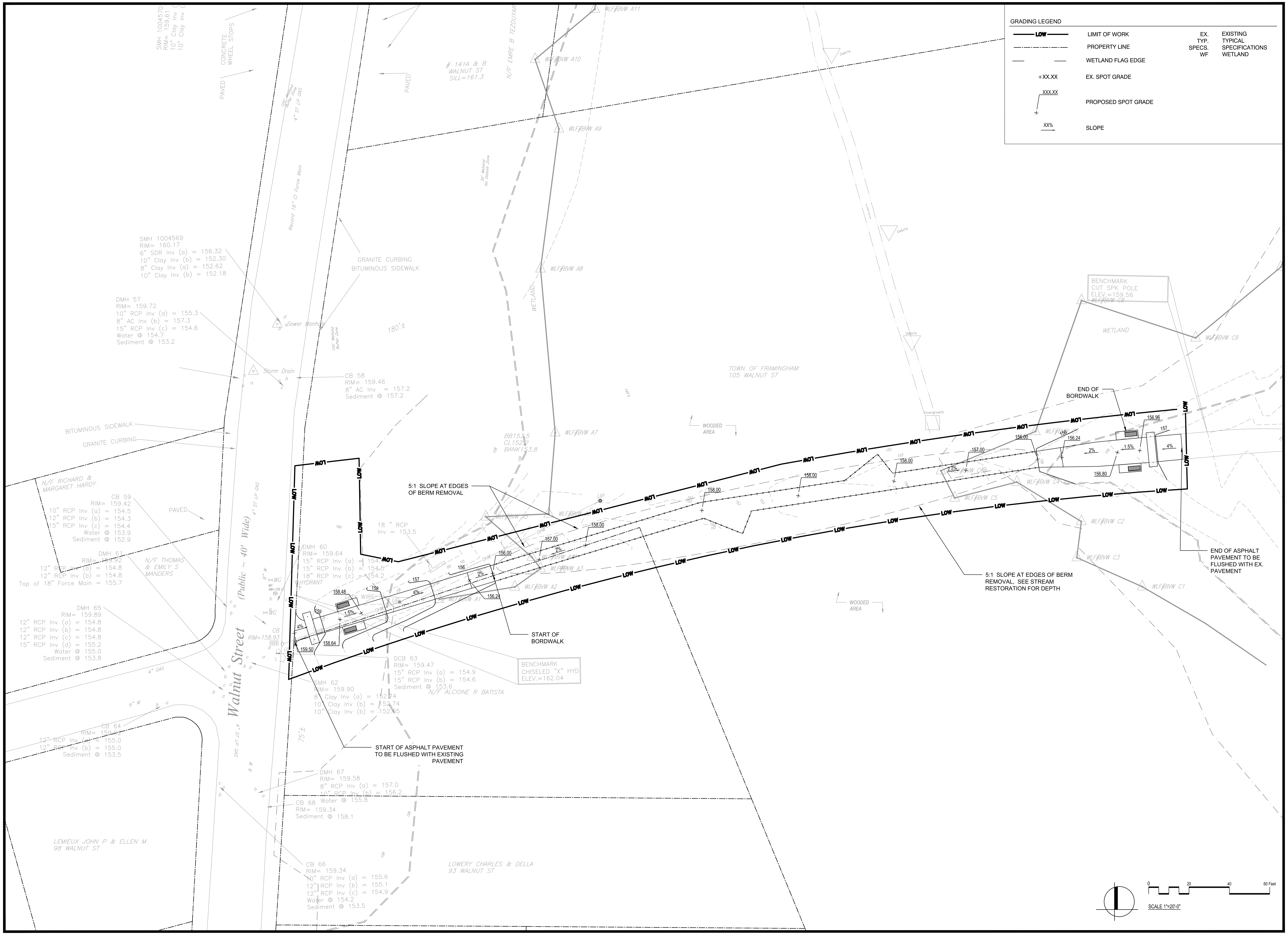
Drawing Title:

LAYOUT PLAN

Sheet Number:

L130



Project:

WALNUT STREET FLOOD MITIGATION

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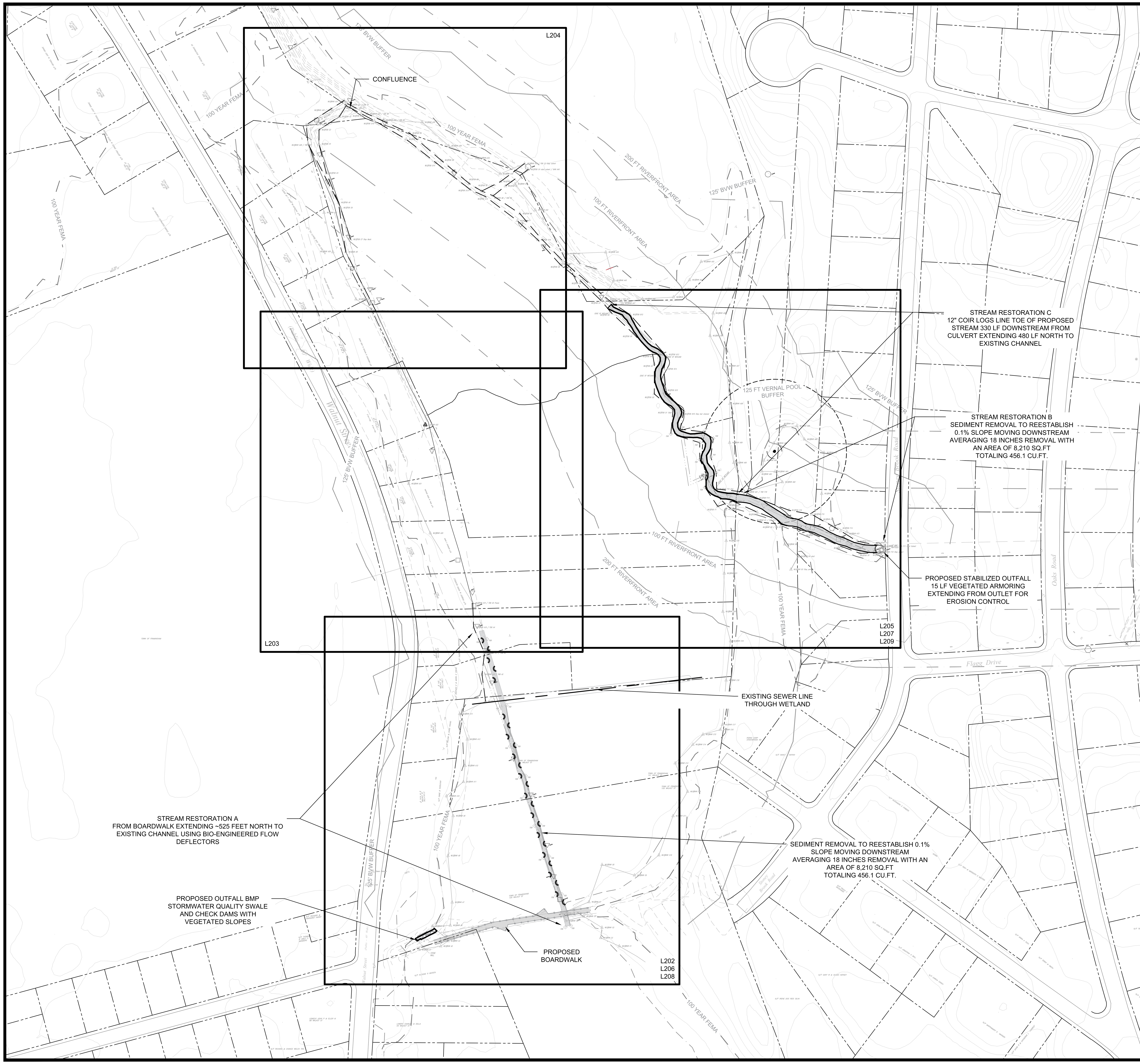
Drawing Title:

GRADING PLAN

Sheet Number:

L140



SURVEY LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- EX GRADING
- DEBRIS
- +00 EX. SPOT GRADE
- EX. WETLAND FLAGGED TOE OF BANK
- TOB Interpolated from Aerial Photography
- PROPOSED STREAM RESTORATION
- PROPOSED BOARDWALK
- 100 YEAR FEMA FLOOD ELEVATION (EL. 156)
- 100 FT RIVERFRONT AREA
- 200 FT RIVERFRONT AREA
- BORDERING VEGETATIVE WETLAND (BVW)
- 125' BVW BUFFER

0 20 40 60 80 feet

SCALE: 1" = 20'

Project:

WALNUT STREET FLOOD MITIGATION

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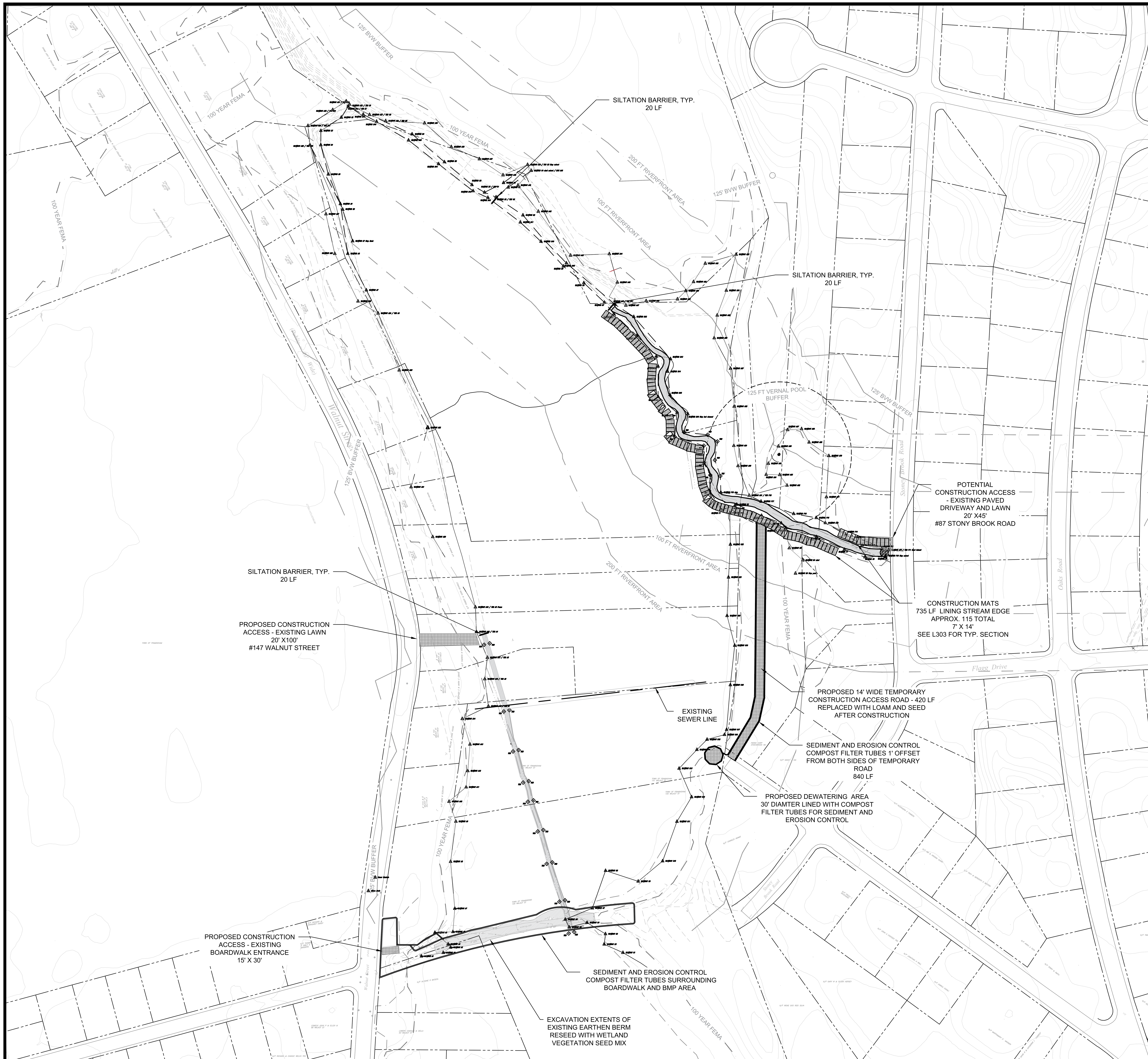
W&S File No:	

Drawing Title:

STREAM RESTORATION PLAN

Sheet Number:

L200



SURVEY LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- EX GRADING
- DEBRIS
- +00 EX. SPOT GRADE
- EX. WETLAND FLAGGED TOE OF BANK
- TOB Interpolated from Aerial Photography
- POTENTIAL CONSTRUCTION ACCESS
- PROPOSED STREAM SEDIMENT REMOVAL
- PROPOSED STABILIZED OUTFALL
- PROPOSED SEDIMENT AND EROSION CONTROLS
- PROPOSED BOARDWALK
- 100 YEAR FEMA FLOOD ELEVATION (EL. 156)
- 100 FT RIVERFRONT AREA
- 200 FT RIVERFRONT AREA
- BORDERING VEGETATIVE WETLAND (BVW)
- 125' BVW BUFFER

0 80 160 240 320 feet

SCALE: 1" = 80'

Project:

WALNUT STREET
FLOOD MITIGATION

CITY OF FRAMINGHAM, MA

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W&S File No:	

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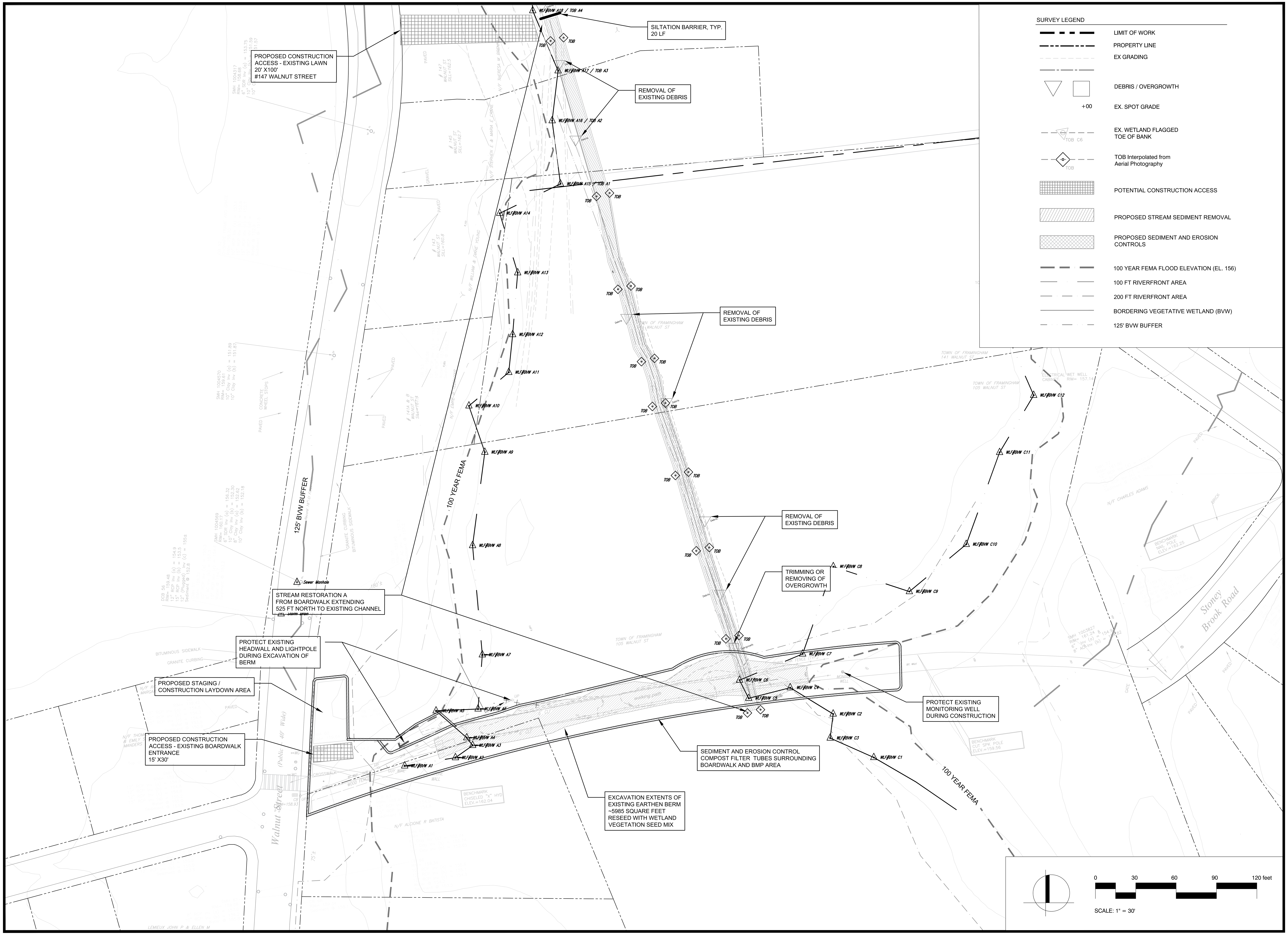
STREAM RESTORATION

SITE PREPARATION

Sheet Number:

L201



Project:

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FLOOD MITIGATION

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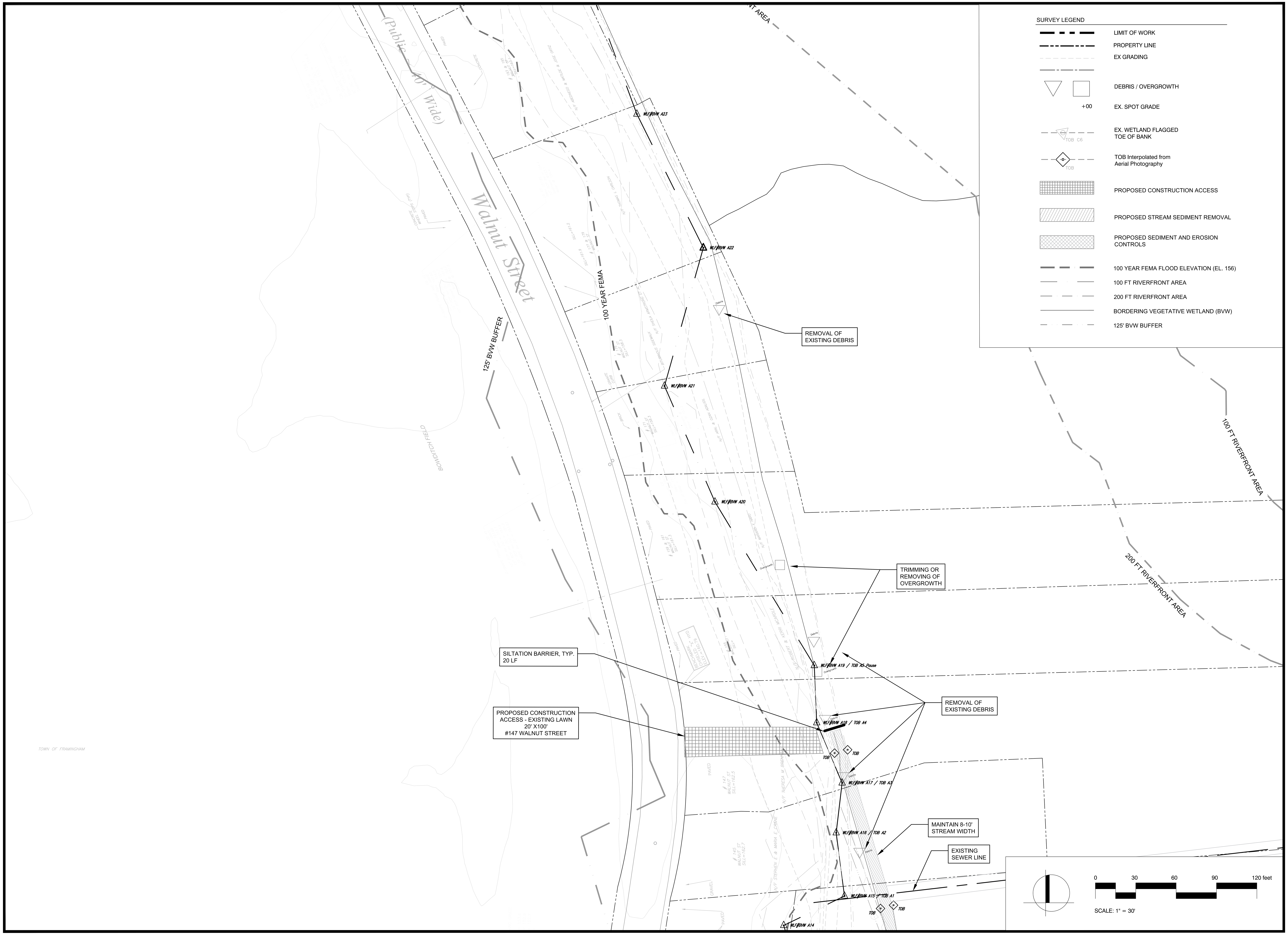
STREAM RESTORATION

SITE PREPARATION
DETAIL PLAN 1

Sheet Number:

L202



Project:

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W&S File No:	

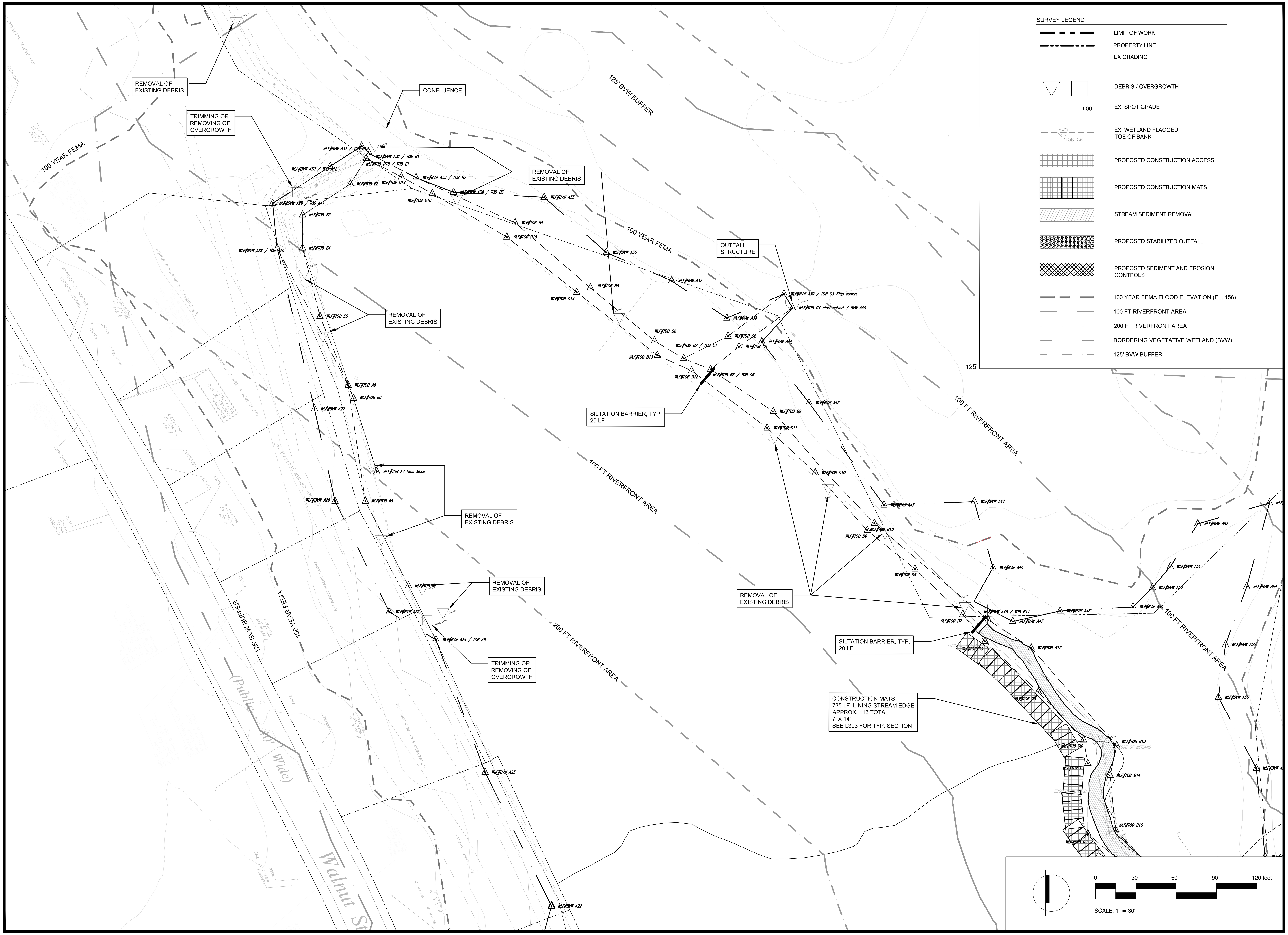
Drawing Title:

STREAM RESTORATION

SITE PREPARATION DETAIL PLAN 2

Sheet Number:

L203



Project:

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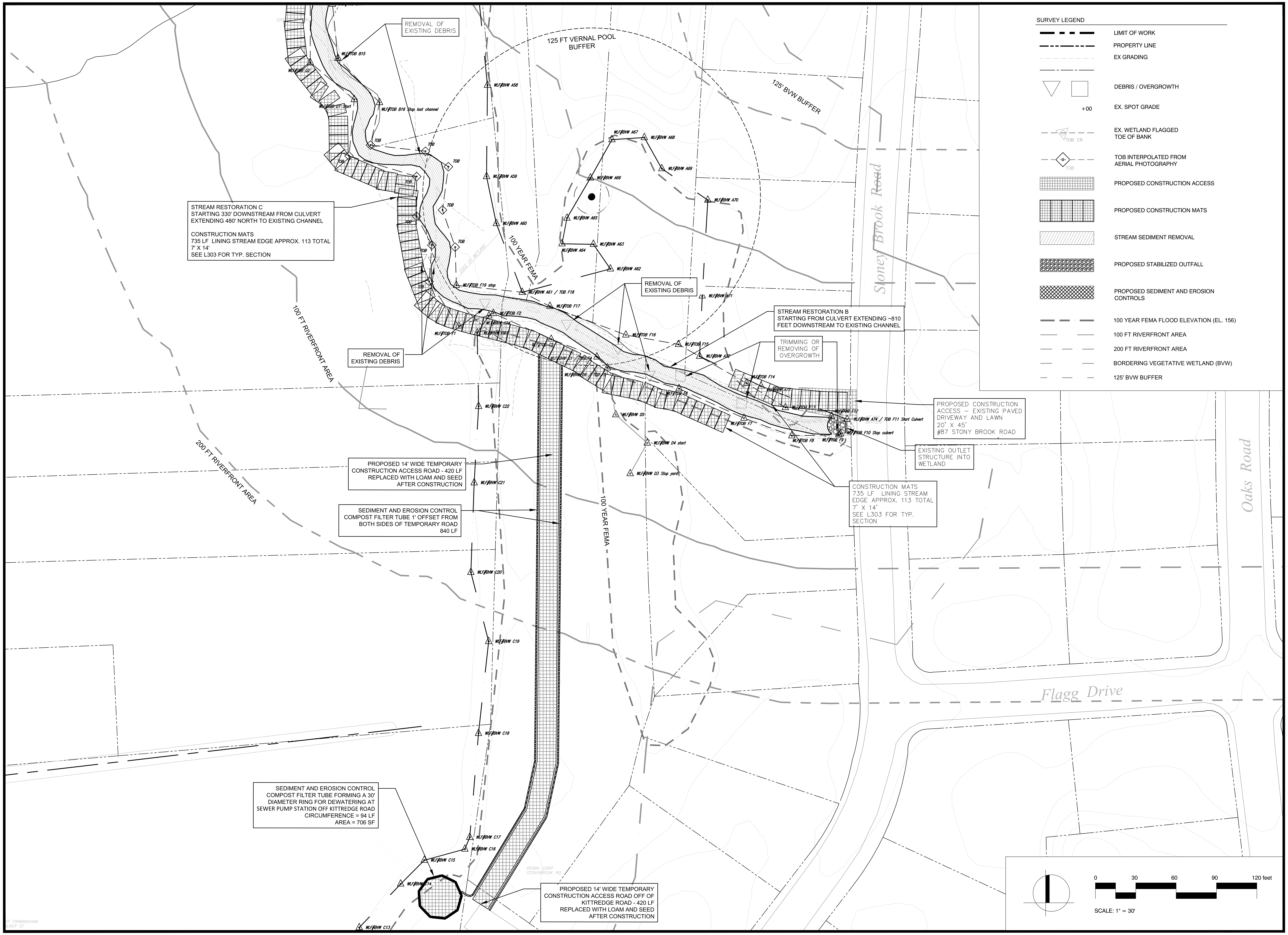
STREAM RESTORATION

SITE PREPARATION
DETAIL PLAN 3

Sheet Number:

L204



Project:

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W&S File No:

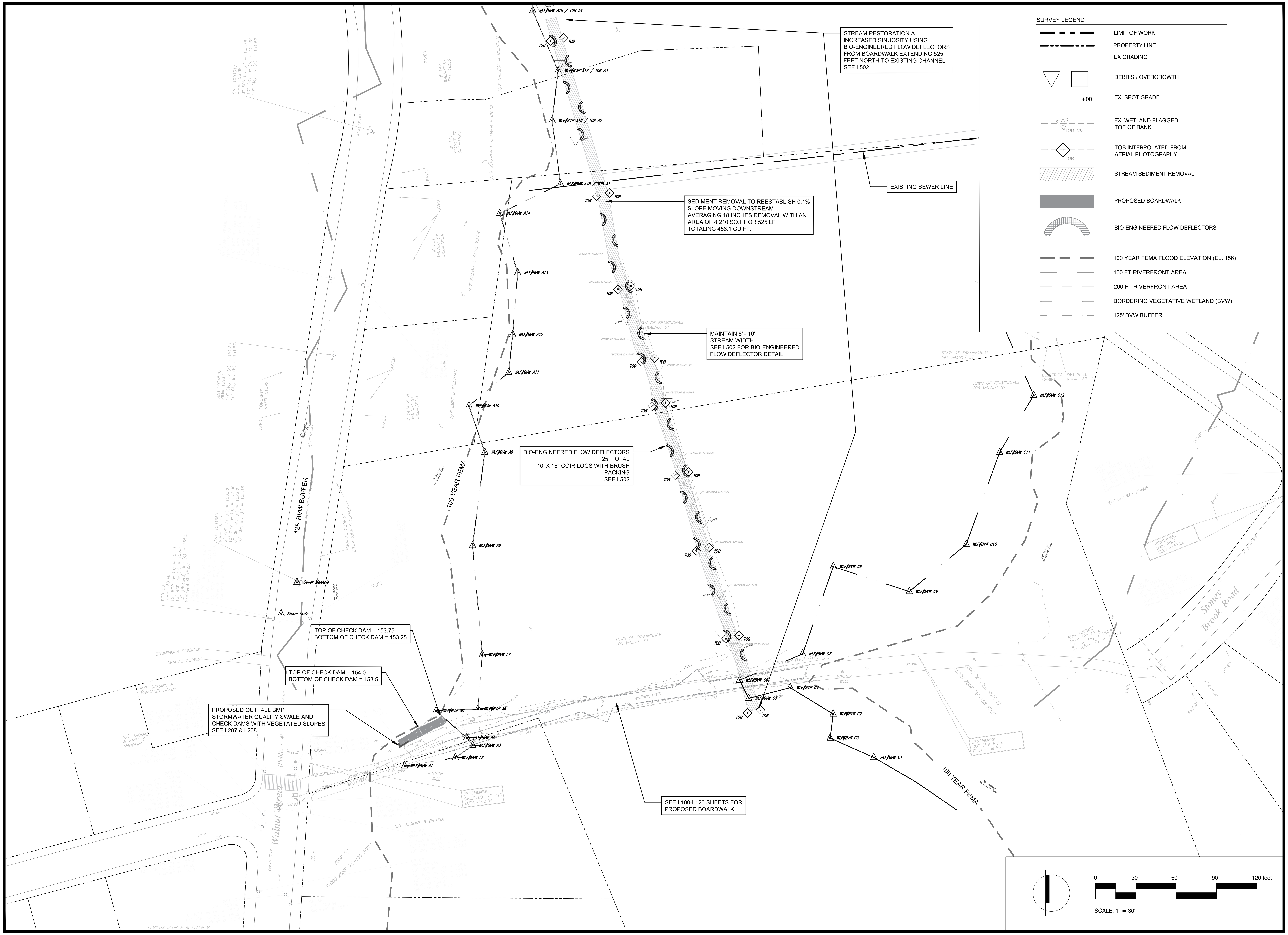
Drawing Title:

STREAM RESTORATION

SITE PREPARATION DETAIL PLAN 4

Sheet Number:

L205



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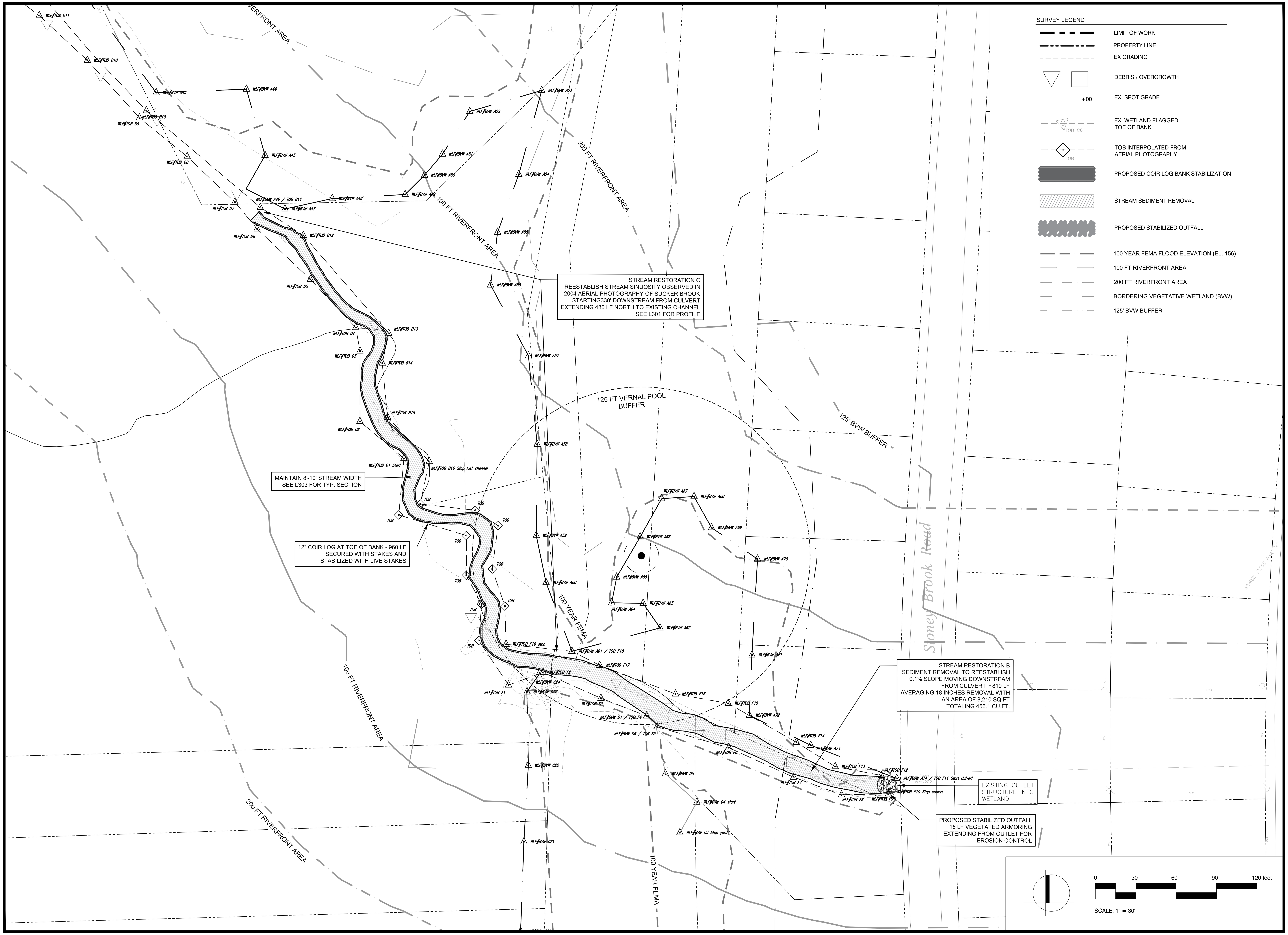
Drawing Title:

STREAM RESTORATION

PROPOSED STREAM
DETAIL PLAN 1

Sheet Number:

L206



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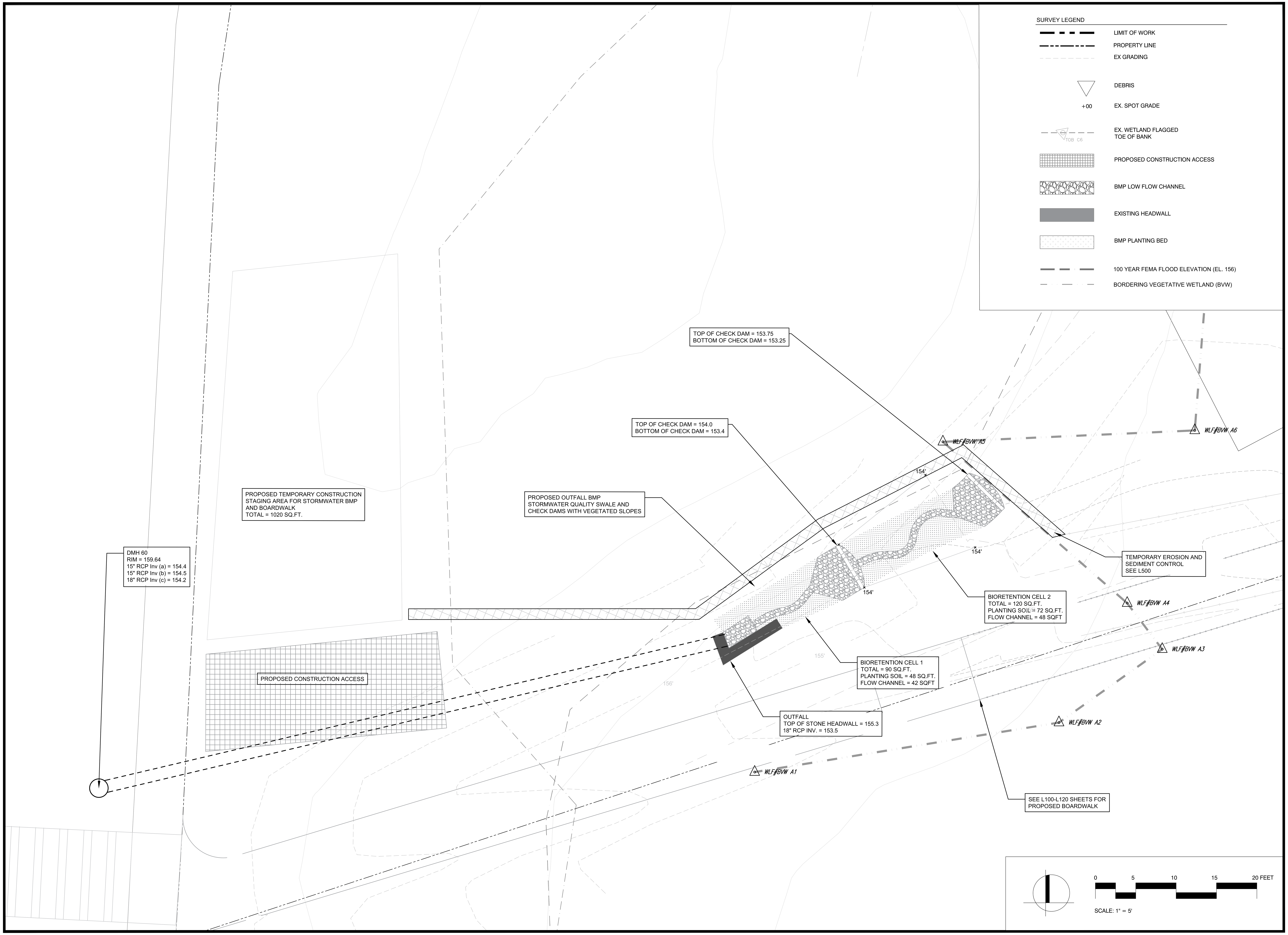
W&S File No:

Drawing Title:
STREAM RESTORATION
PROPOSED STREAM DETAIL PLAN 2

Sheet Number:
L207



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Drawing Title:

PROPOSED STORMWATER BMP

GRADING & MATERIALS

Sheet Number:

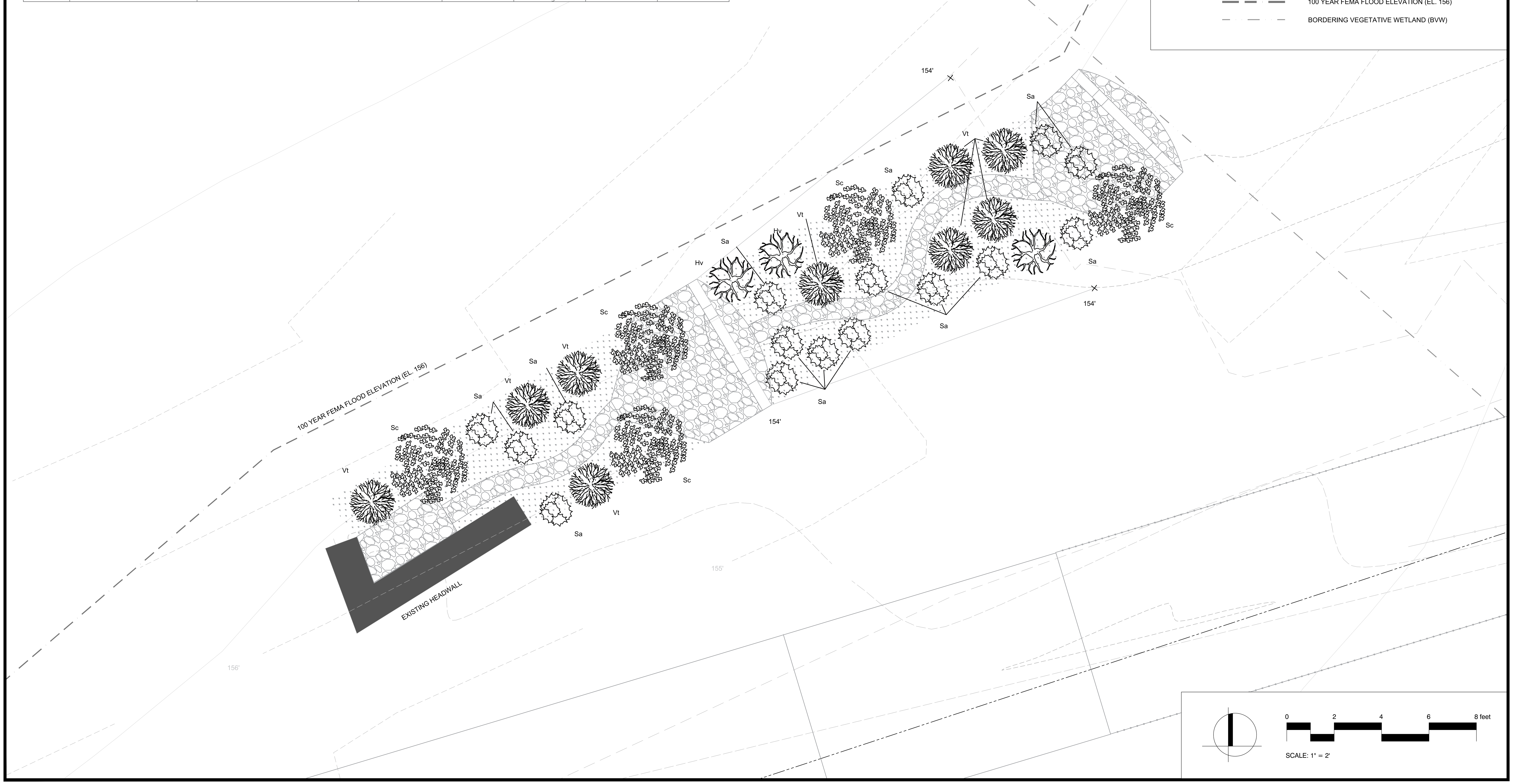
L208

Planting Inventory						
Symbol	Type	Latin Name	Common Name	Total #	Size	Height/Caliper
Shrubs						
	Sa	Spirea alba	White Meadowsweet	16	3 Gal.	2'–0" O.C.
	Vt	Viburnum trilobum	Highbush Cranberry	9	5 Gal.	3'–0" O.C.
	Hv	Hamamelis virginiana	Witch Hazel	2	5 Gal.	3'–0" O.C.
	Sc	Sambucus canadensis	Elderberry	4	5 Gal.	3'–0" O.C.

Live Stake – Varies							
	Latin Name	Common Name	Total Length (ft)	Exposed Length (ft)	Buried Length (ft)	Basal Diamter (in)	Spacing (ft)
	Salix exigua ssp. interior	Sandbar Willow	Min. 3.0	Max. 1.0	Min 2/3 Total Length	0.75 to 1.5	4.0 O.C.
	Salix sericea	Silky Willow	Min. 3.0	Max. 1.0	Min 2/3 Total Length	0.75 to 1.5	4.0 O.C.
	Cornus amomum	Silky Dogwood	Min. 3.0	Max. 1.0	Min 2/3 Total Length	0.75 to 1.5	4.0 O.C.
	Sambucus canadensis	Elderberry	Min. 3.0	Max. 1.0	Min 2/3 Total Length	0.75 to 1.5	4.0 O.C.
	Viburnum dentata	Arrowwood	Min. 3.0	Max. 1.0	Min 2/3 Total Length	0.75 to 1.5	4.0 O.C.

SURVEY LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- EX GRADING
- DEBRIS
- +00 EX. SPOT GRADE
- EX. WETLAND FLAGGED TOE OF BANK
- POTENTIAL CONSTRUCTION ACCESS
- BMP LOW FLOW CHANNEL
- EXISTING HEADWALL
- BMP PLANTING BED
- 100 YEAR FEMA FLOOD ELEVATION (EL. 156)
- BORDERING VEGETATIVE WETLAND (BVW)



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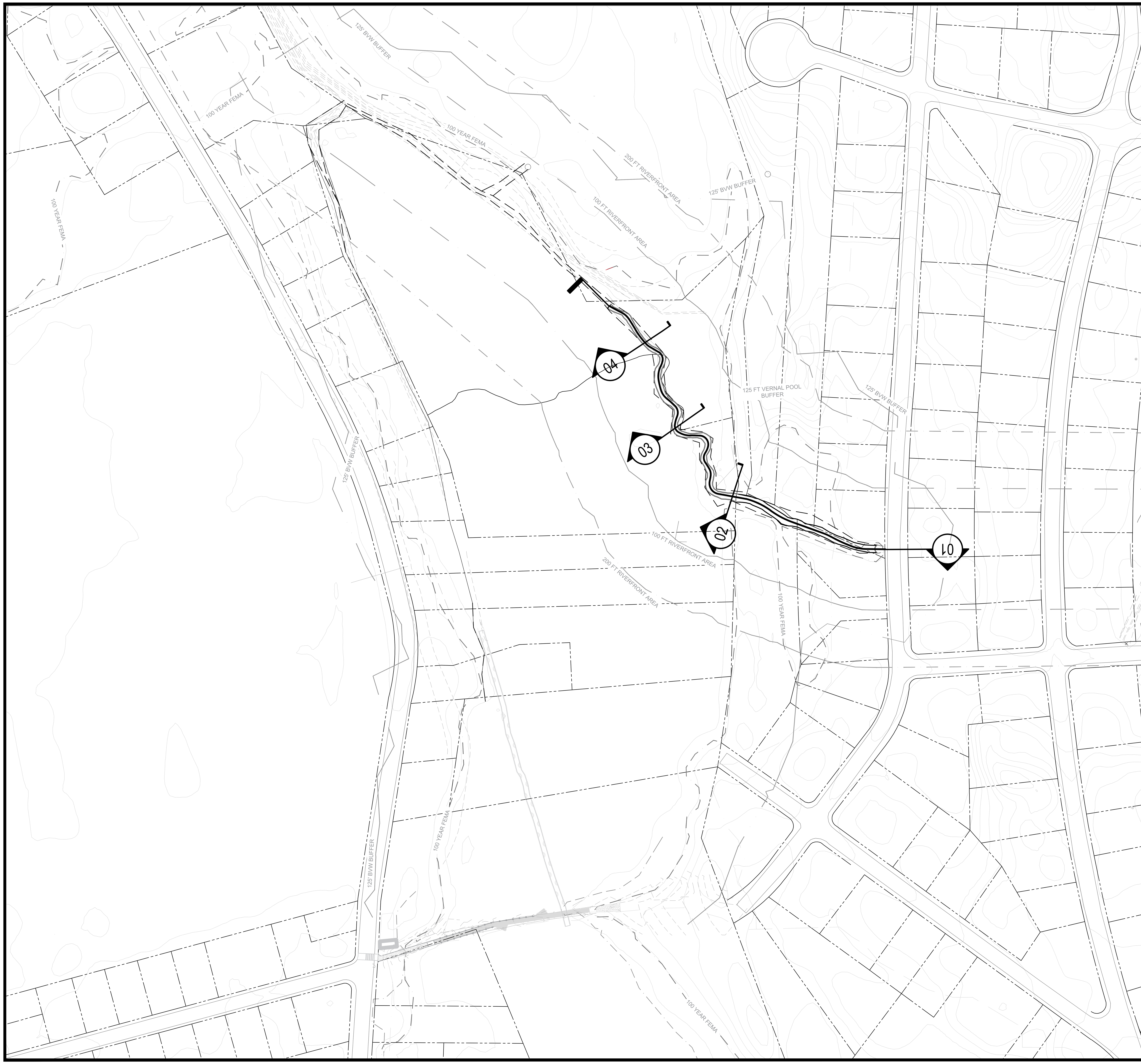
PROPOSED STORMWATER BMP
PLANTING

Sheet Number:
L209



SURVEY LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- EX GRADING
- DEBRIS
- +00 EX. SPOT GRADE
- EX. WETLAND FLAGGED TOE OF BANK
- TOB Interpolated from Aerial Photography
- 100 YEAR FEMA FLOOD ELEVATION (EL. 156)
- 100 FT RIVERFRONT AREA
- 200 FT RIVERFRONT AREA
- BORDERING VEGETATIVE WETLAND (BVW)
- 125' BVW BUFFER

0 80 160 240 320 feet

SCALE: 1" = 80'

Project:

WALNUT STREET FLOOD MITIGATION

CITY OF FRAMINGHAM · 1662 · 1700 · 2018

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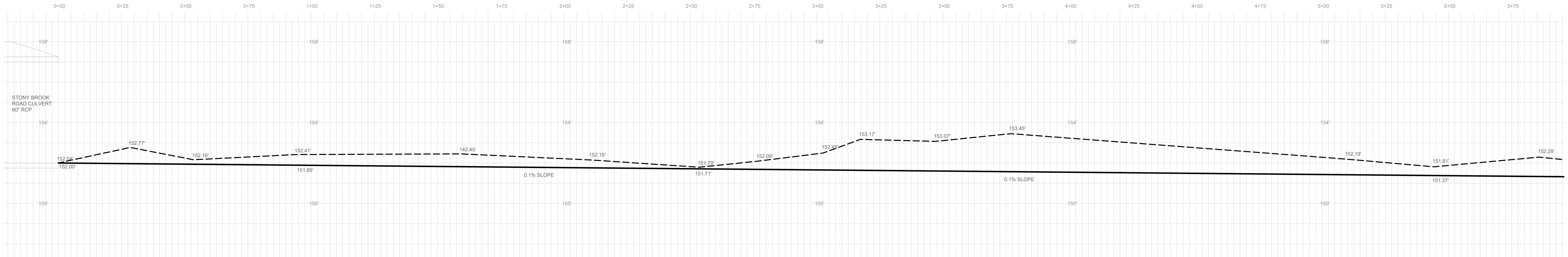
Drawing Title:

STREAM RESTORATION SECTION KEY PLAN

Sheet Number:

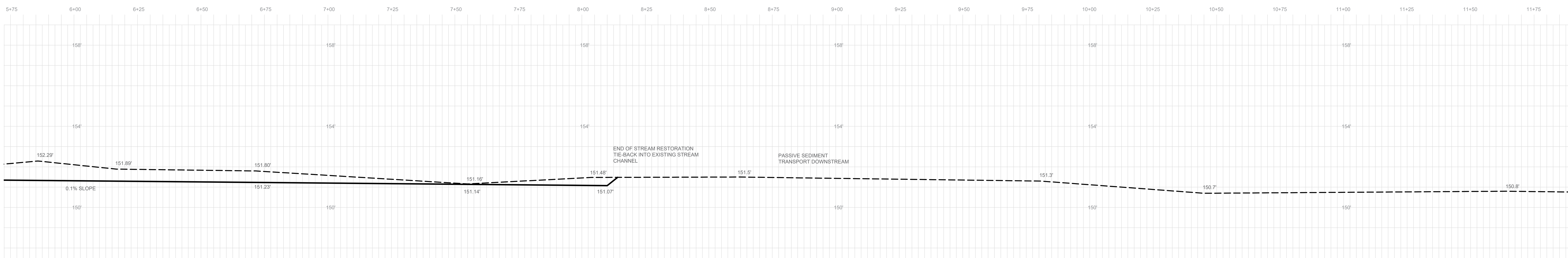
L300



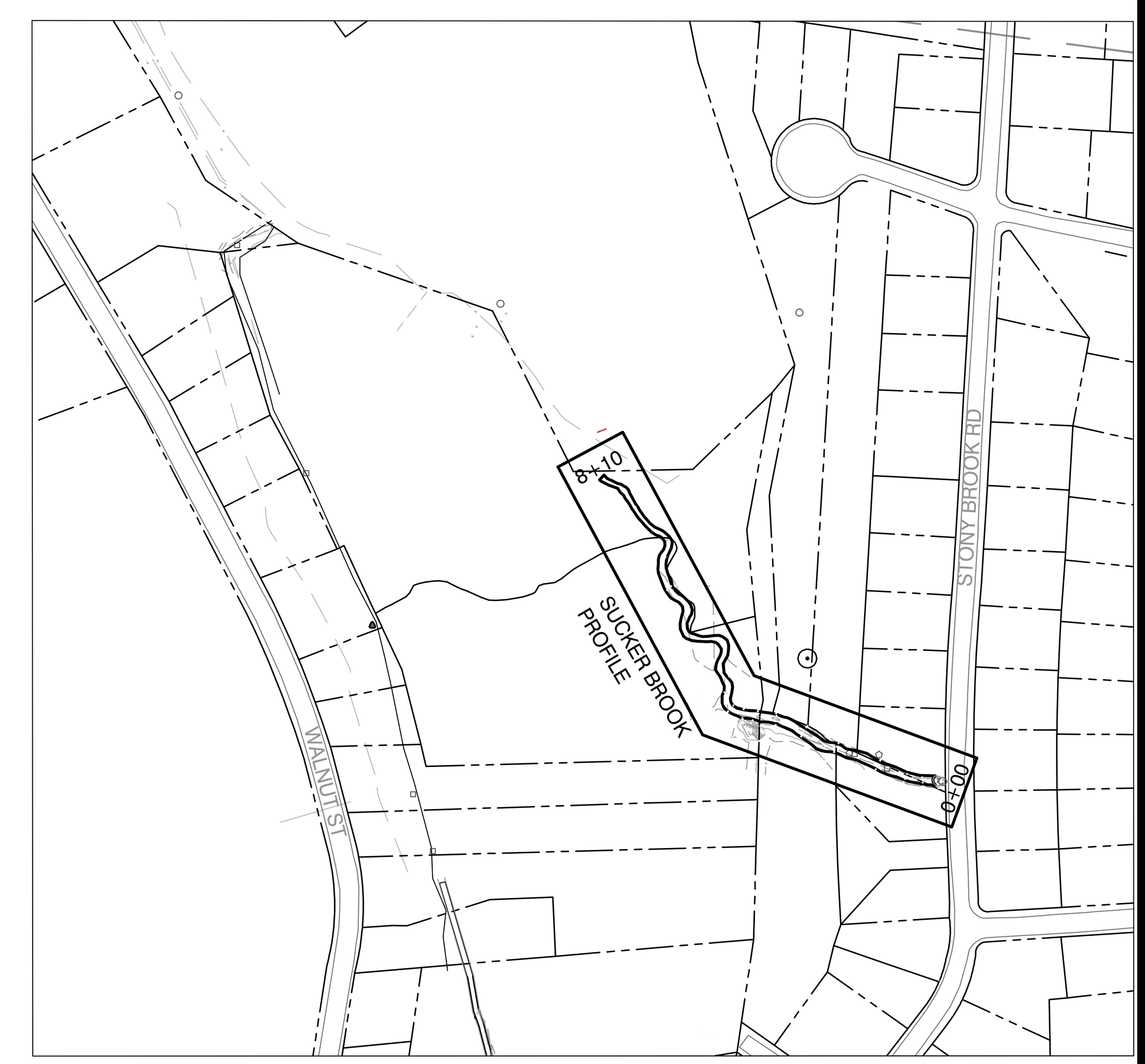
01 SUCKER BROOK PROFILE
SCALE: 1" = 5'-0"

SECTION LEGEND

- - - - - - -	EXISTING PROFILE
————	PROPOSED PROFILE



01 SUCKER BROOK PROFILE (CONT.)
SCALE: 1" = 5'-0"



0 2 4 8 10 feet

SCALE: 1" = 2'

Project:
WALNUT STREET
FLOOD MITIGATION

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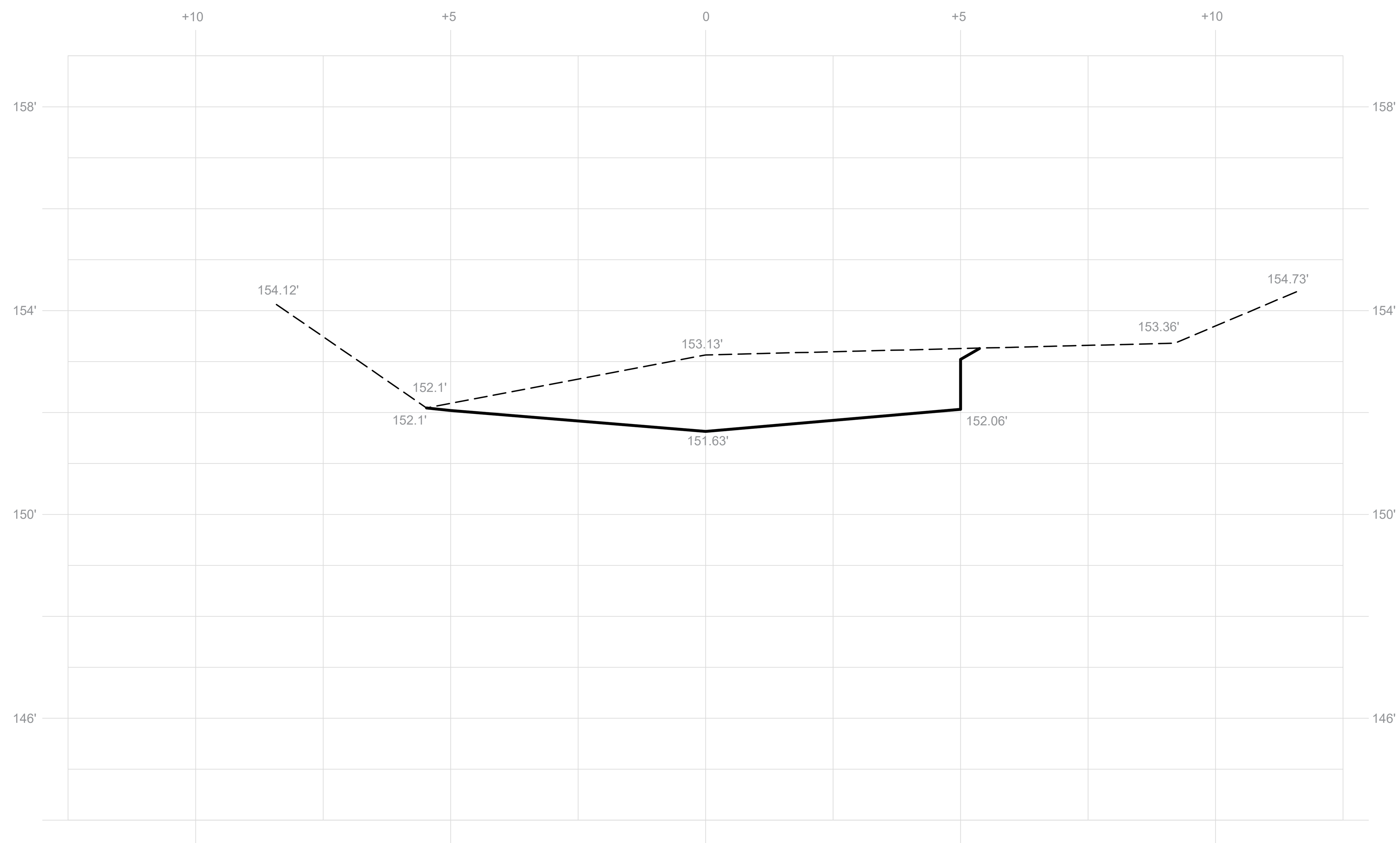
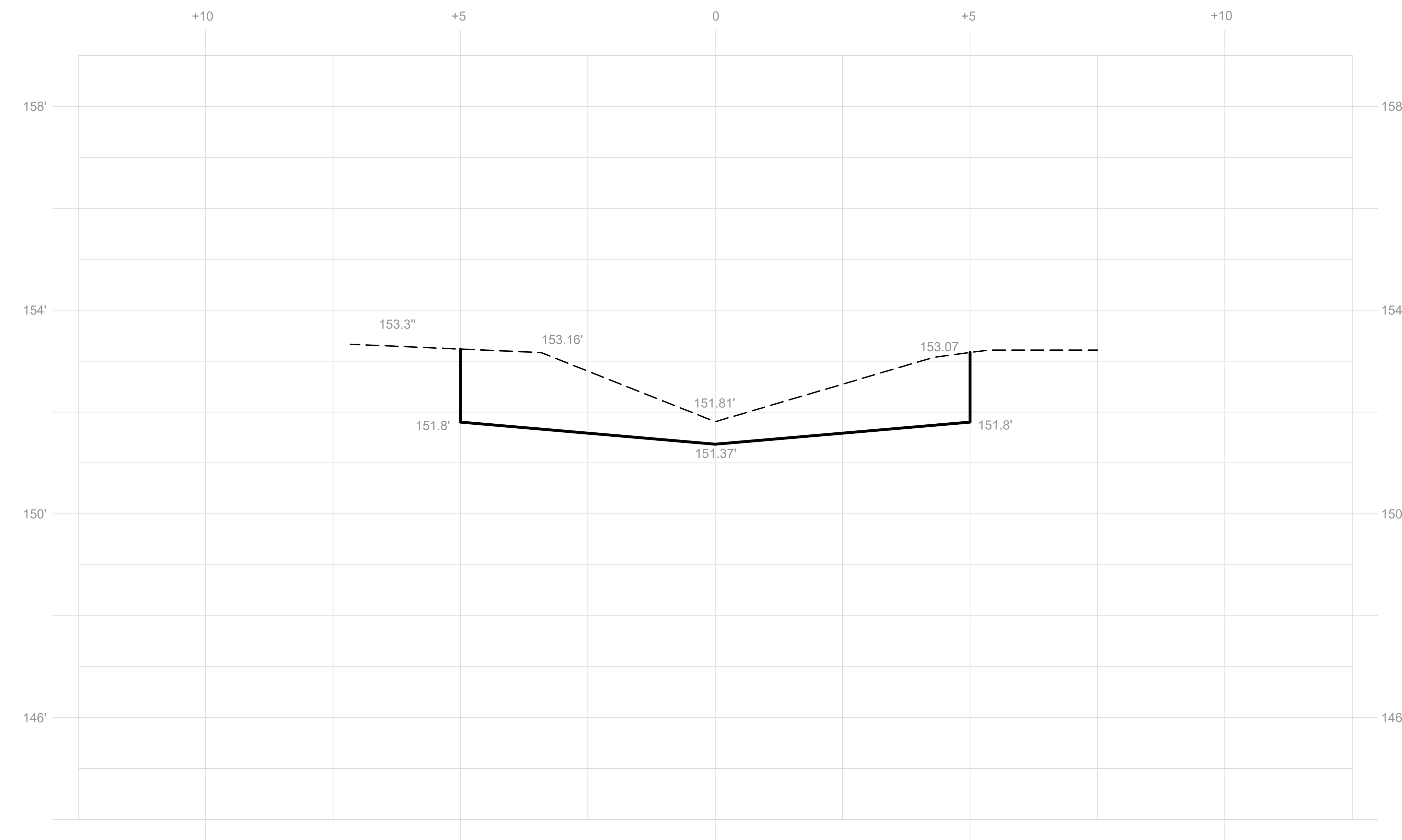
STREAM RESTORATION PROFILES

Sheet Number:

L301



02 SECTION
SCALE: 1" = 2'-0"

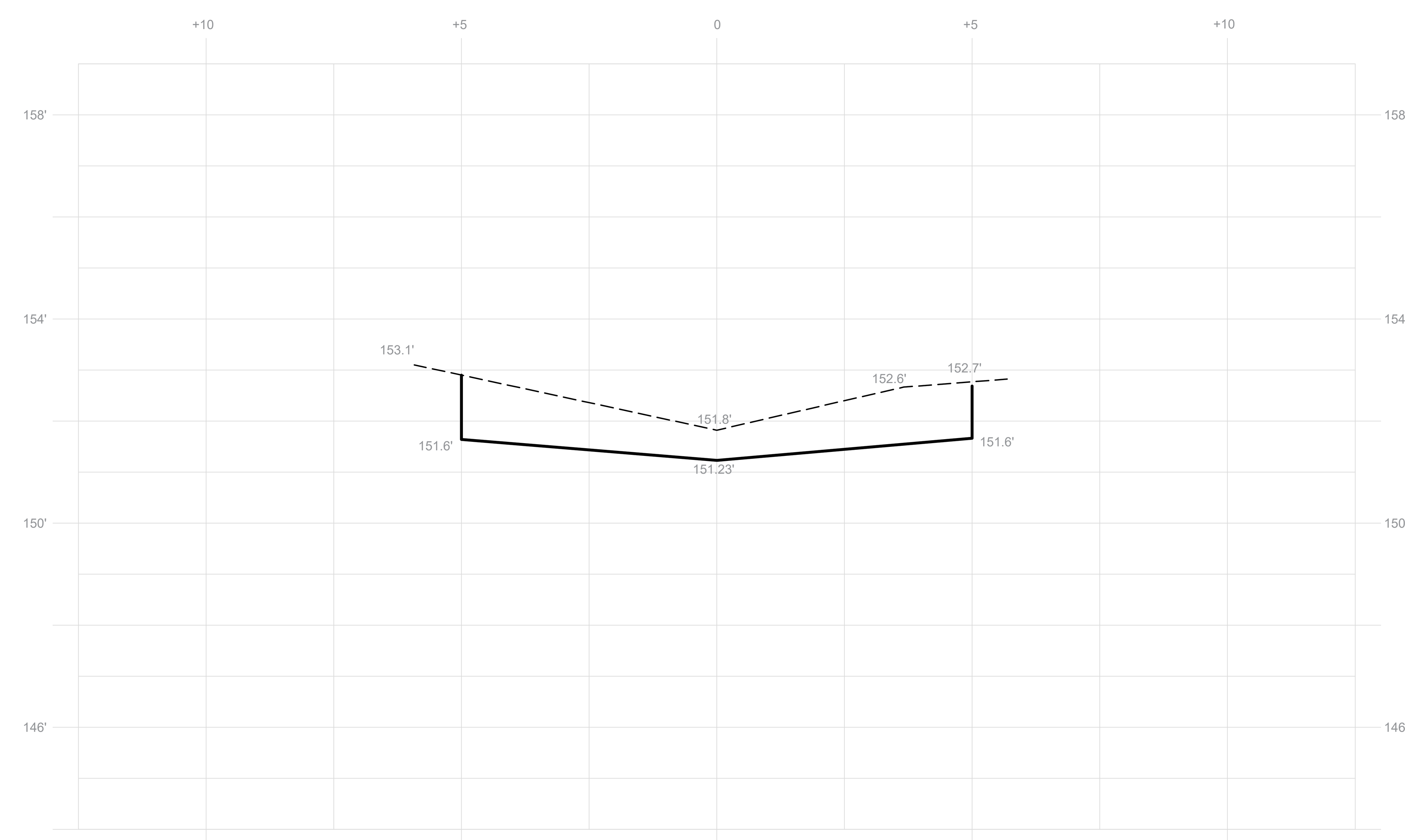


03 SECTION
SCALE: 1" = 2-0"

SECTION LEGEND

EXISTING PROFILE

PROPOSED PROFILE



04 SECTION
SCALE: 1" = 2'-0"

0 2 4 8 10 feet

SCALE: 1" = 2'

Project:

WALNUT STREET
FLOOD MITIGATION

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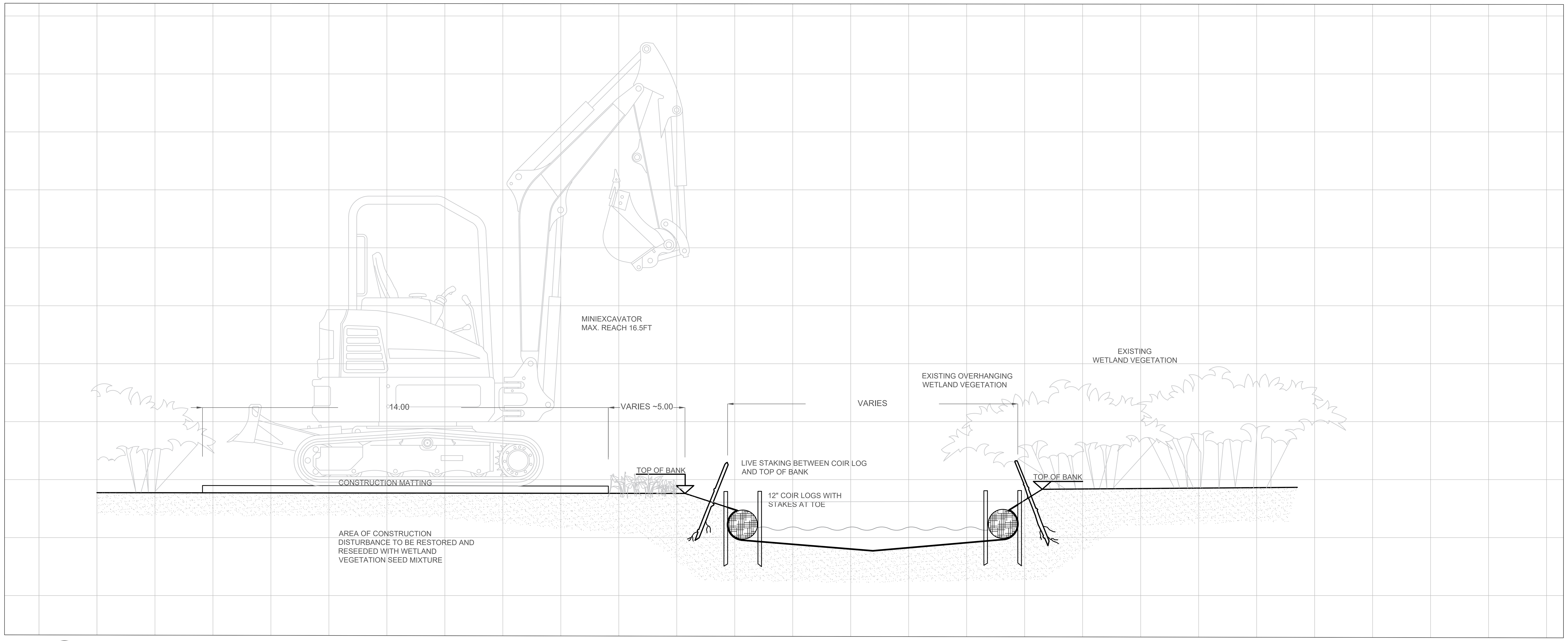
Drawing Title:

STREAM RESTORATION

CROSS SECTIONS

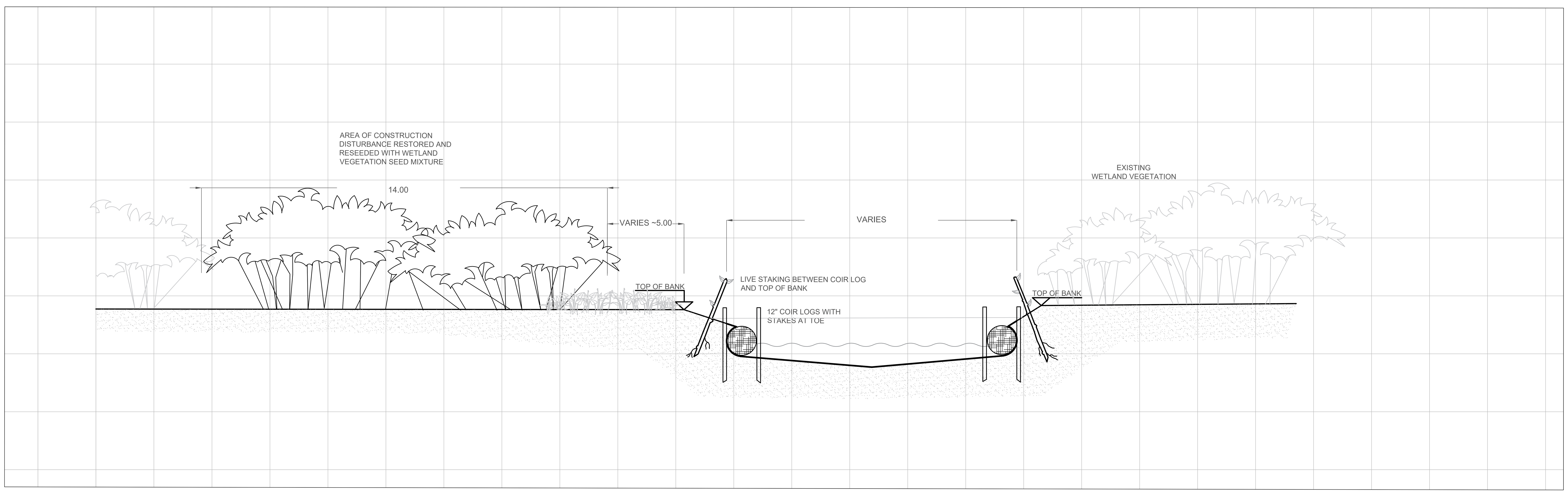
Sheet Number:

L302



STREAM RESTORATION B & C: SUCKER BROOK COIR LOG WITH LIVE STAKING STREAM EDGE TYPE (UNDER CONSTRUCTION)

SCALE: 1" = 2'-0"



STREAM RESTORATION B & C: SUCKER BROOK COIR LOG WITH LIVE STAKING STREAM EDGE TYPE

SCALE: 1" = 2'-0"

SCALE: 1" = 2' 0 2 4 8 10 feet

Project:

WALNUT STREET
FLOOD MITIGATION

CITY OF FRAMINGHAM, MA

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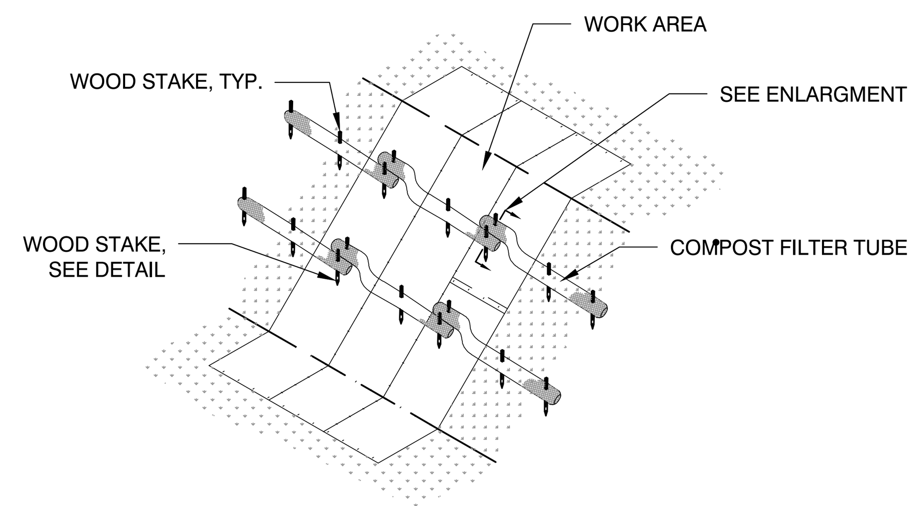
STREAM RESTORATION

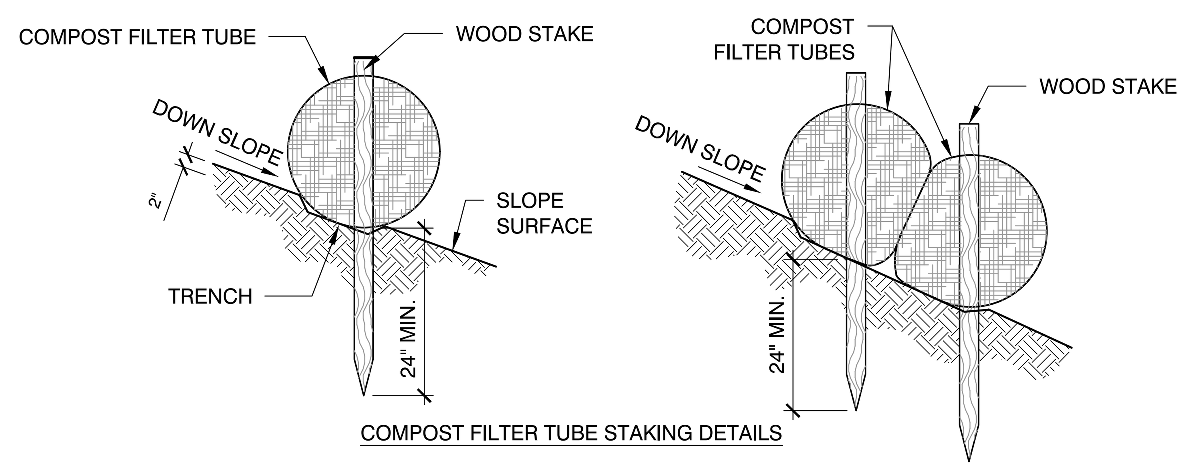
TYPICAL STREAM RESTORATION SECTIONS

Sheet Number:

L303



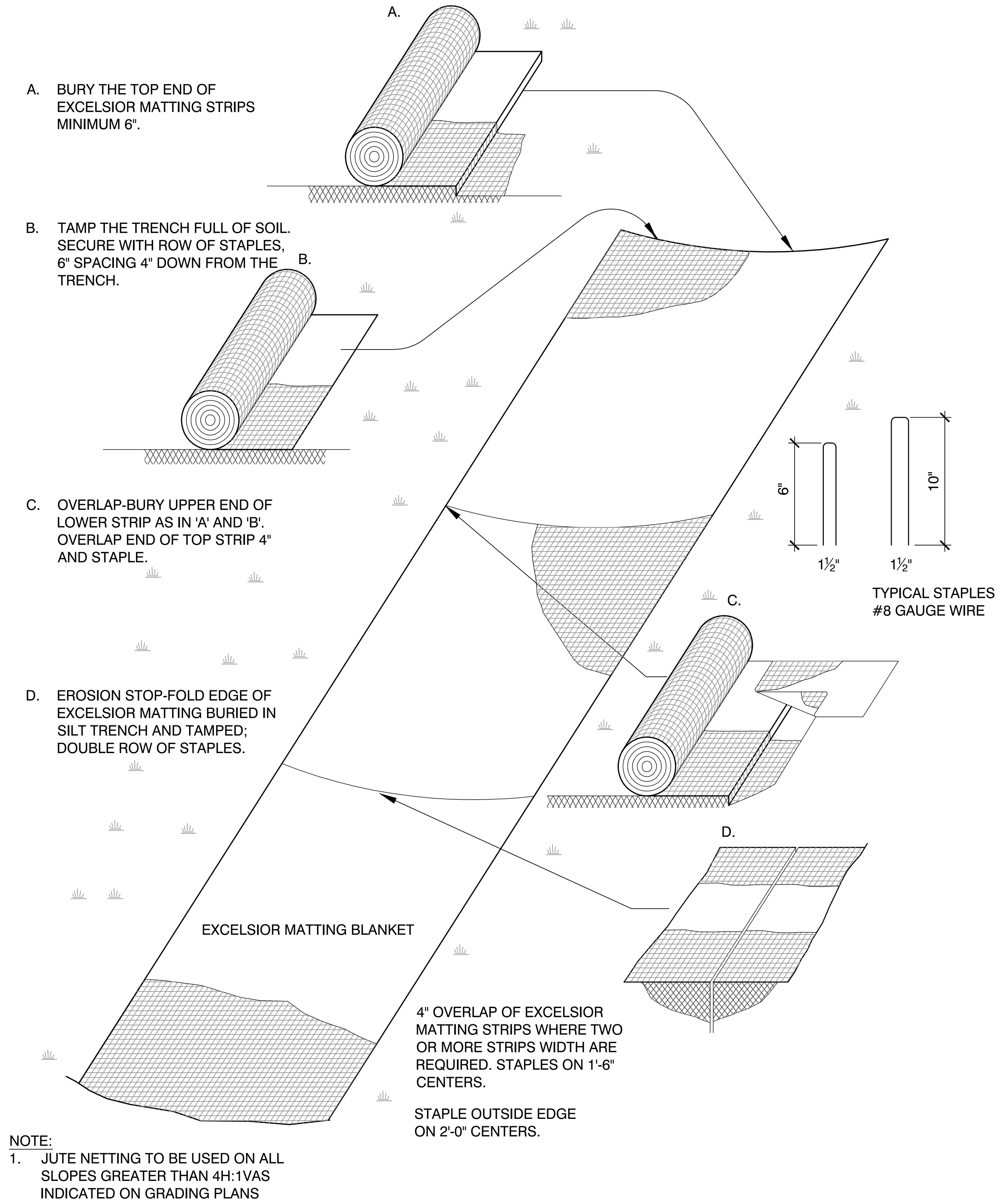
COMPOST FILTER TUBE LAYOUT ON SLOPE



COMPOST FILTER TUBE STAKING DETAILS

1 EROSION AND SEDIMENT CONTROL, TYP.

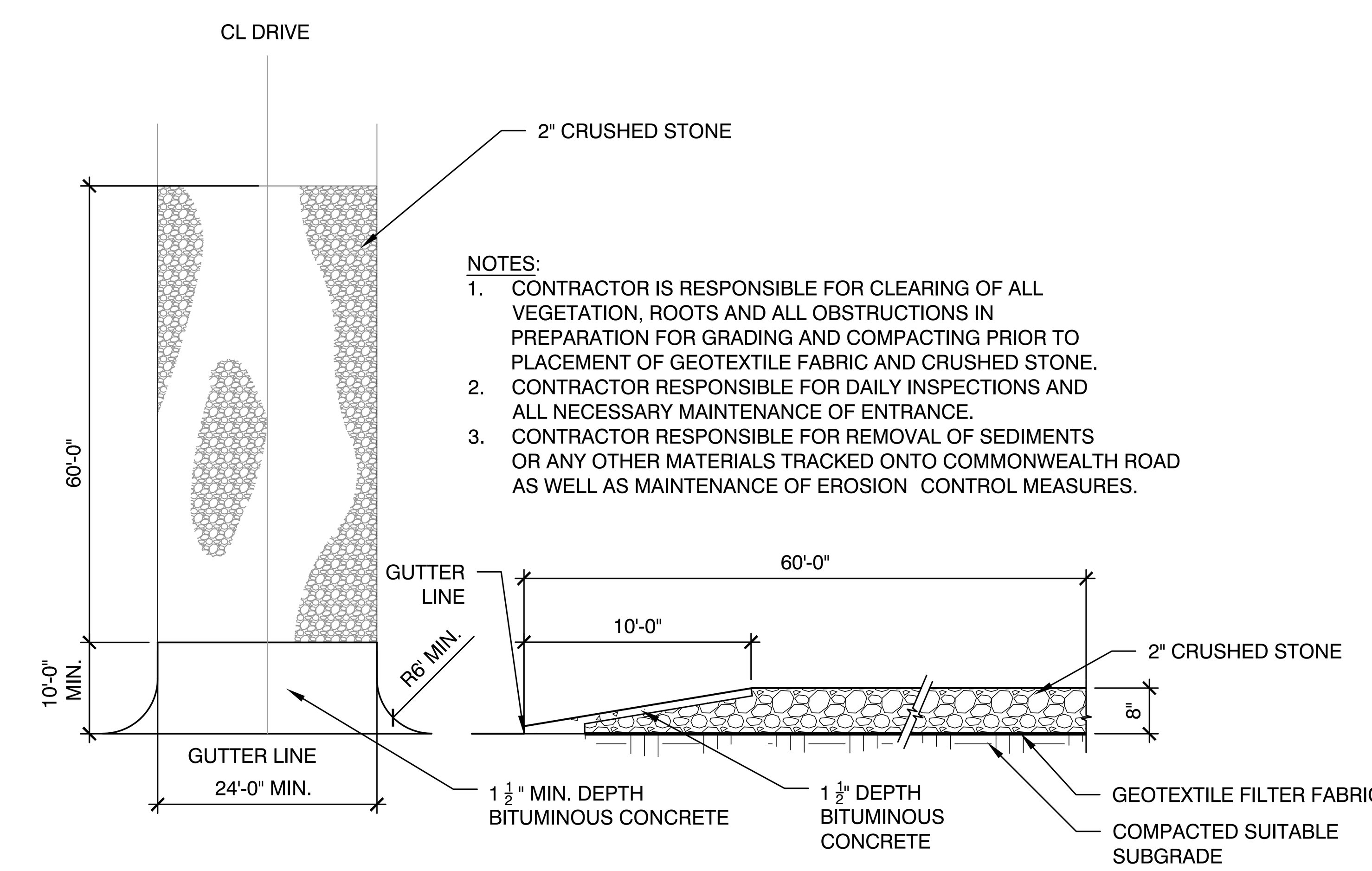
SCALE: N.T.S.



NOTE:
1. JUTE NETTING TO BE USED ON ALL SLOPES GREATER THAN 4H:1VAS INDICATED ON GRADING PLANS

3 EROSION CONTROL BLANKET, TYP.

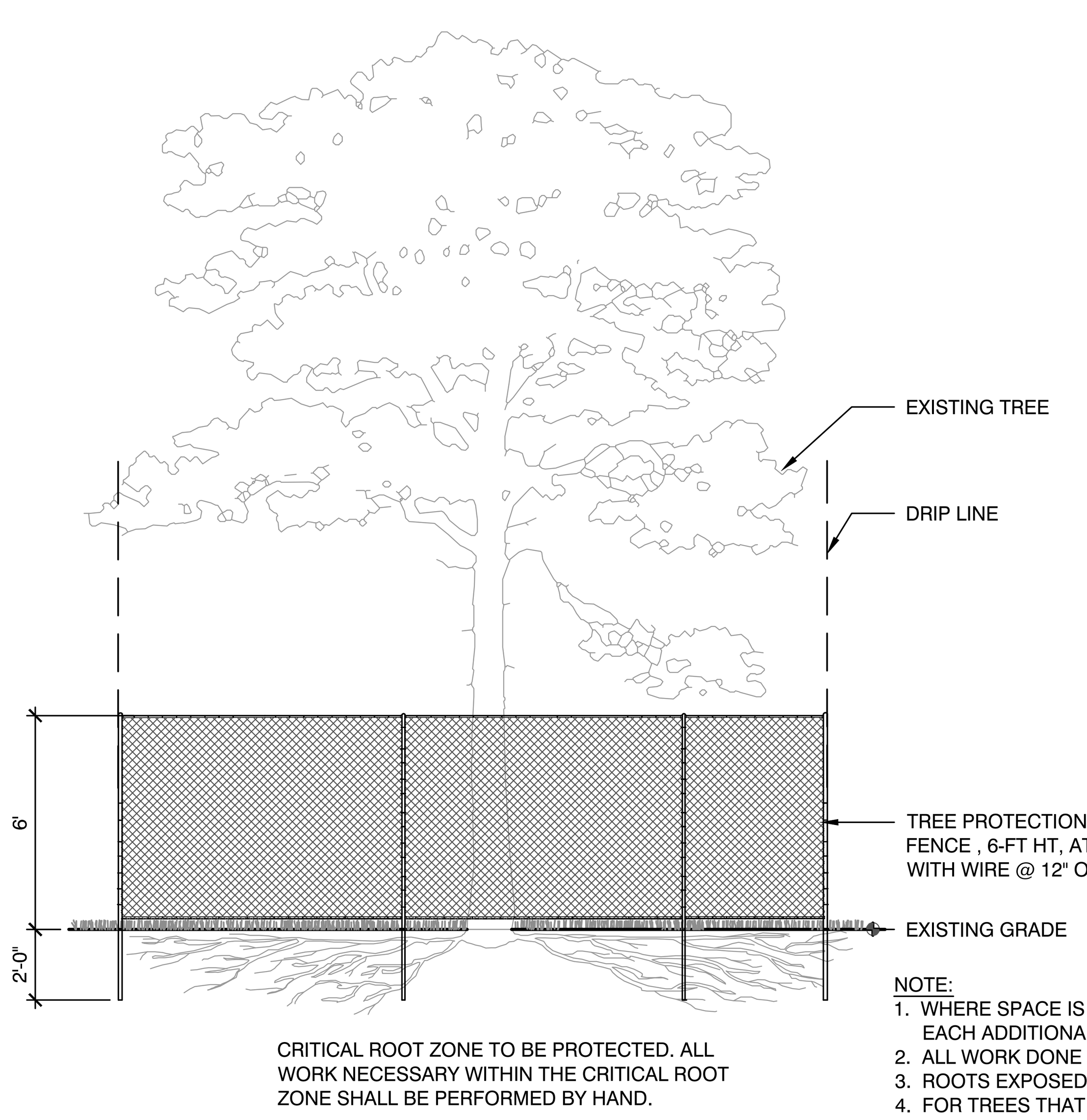
SCALE: N.T.S

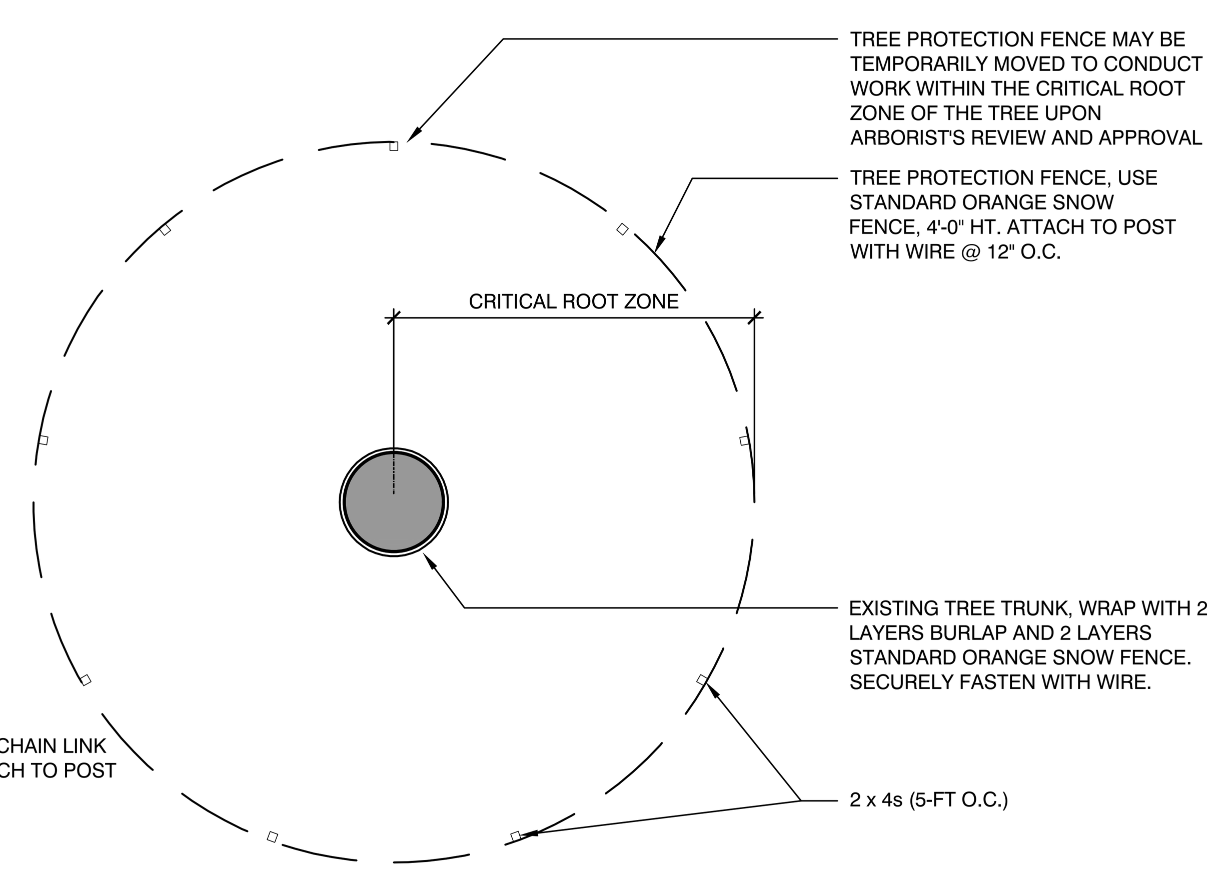


NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR CLEARING OF ALL VEGETATION, ROOTS AND ALL OBSTRUCTIONS IN PREPARATION FOR GRADING AND COMPACTING PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC AND CRUSHED STONE.
2. CONTRACTOR RESPONSIBLE FOR DAILY INSPECTIONS AND ALL NECESSARY MAINTENANCE OF ENTRANCE.
3. CONTRACTOR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

4 CONSTRUCTION ENTRANCE

SCALE: N.T.S.



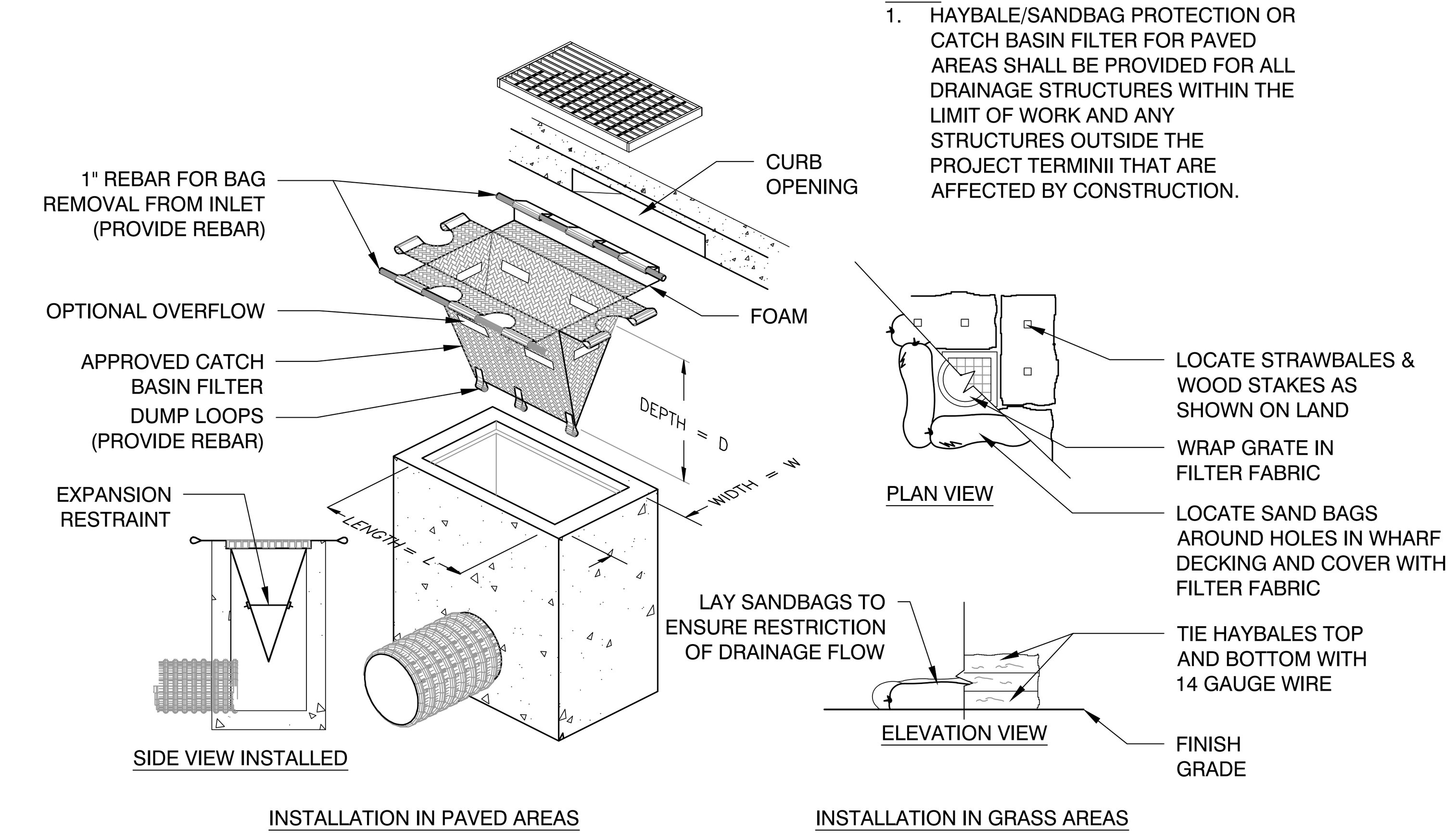


NOTE:
1. WHERE SPACE IS AVAILABLE, TREE PROTECTION FENCE TO BE PLACED A MINIMUM OF 10' FROM BASE OF TREE PLUS AN ADDITIONAL 1' FOR EACH ADDITIONAL DBH FOR TREES GREATER THAN 10" DBH (DIA. AT BREAST HT.)
2. ALL WORK DONE WITHIN TREE PROTECTION FENCE IS TO BE DONE BY HAND AND LIGHT EQUIPMENT.
3. ROOTS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

2 TREE PROTECTION, TYP.

SCALE: N.T.S.

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



5 INLET SEDIMENT CONTROL

SCALE: N.T.S.

Project:
WALNUT STREET FLOOD MITIGATION

CITY OF FRAMINGHAM 1662 · 1700 · 2018

CITY OF FRAMINGHAM, MA

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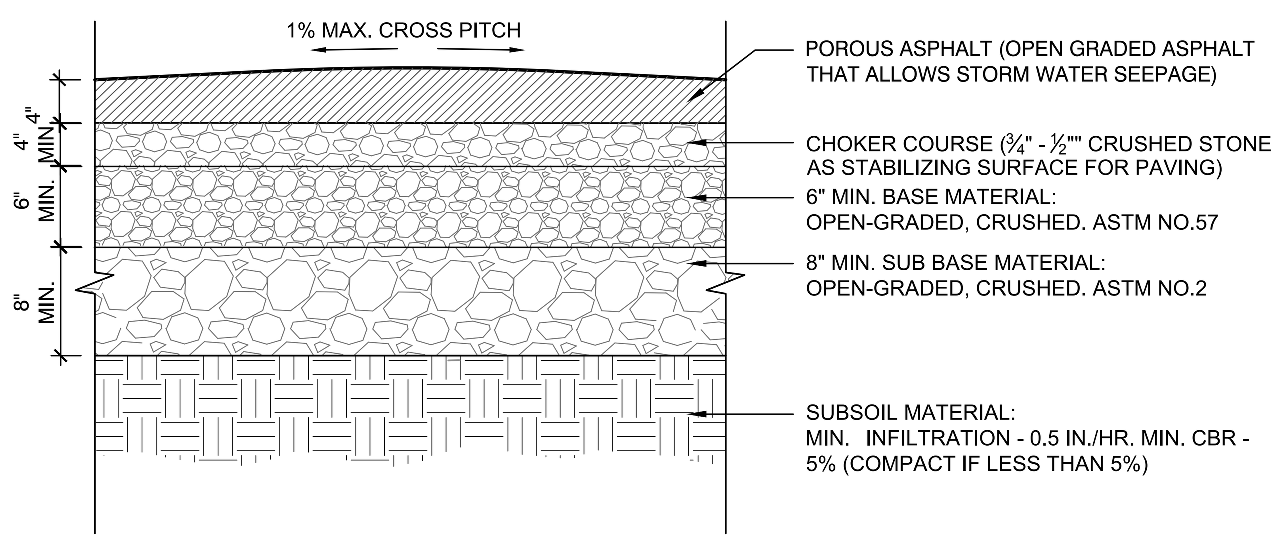
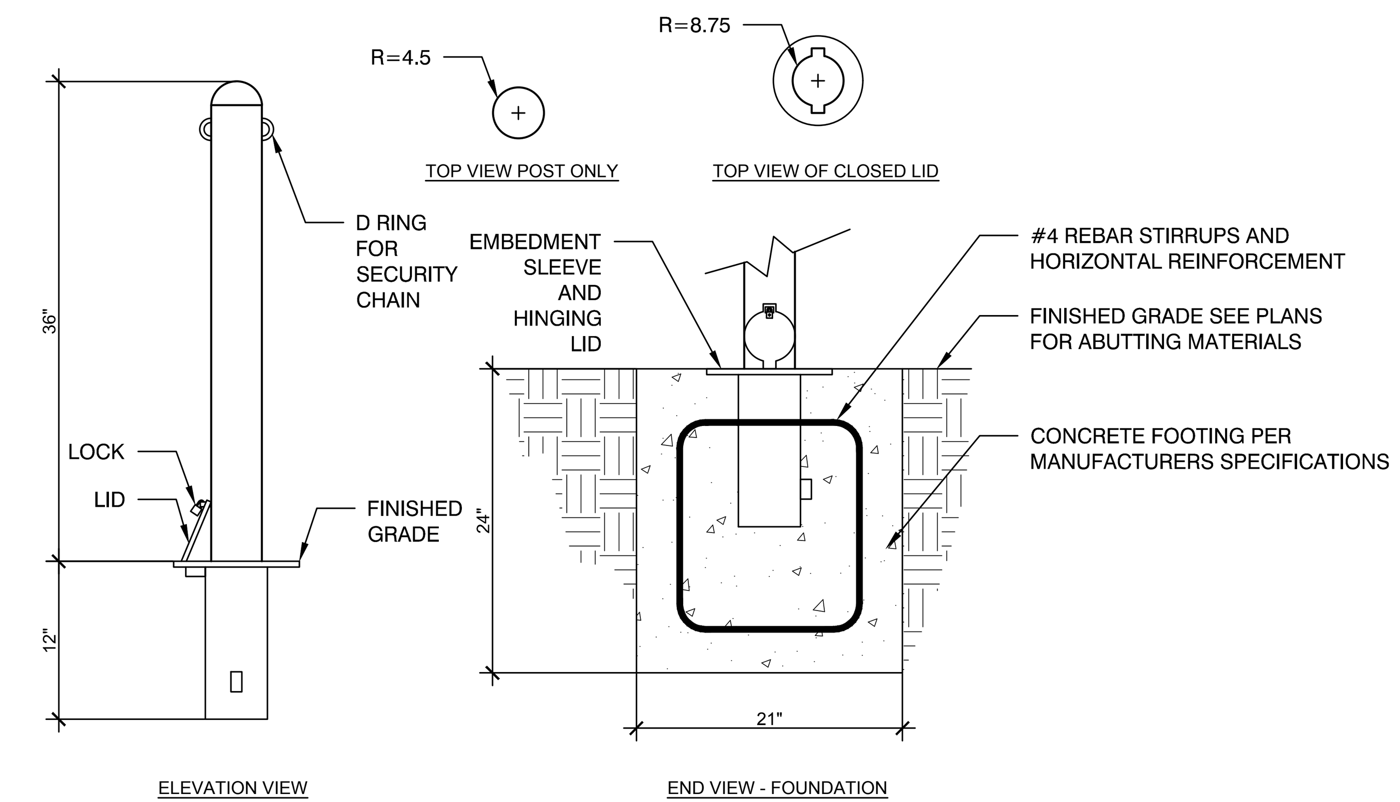


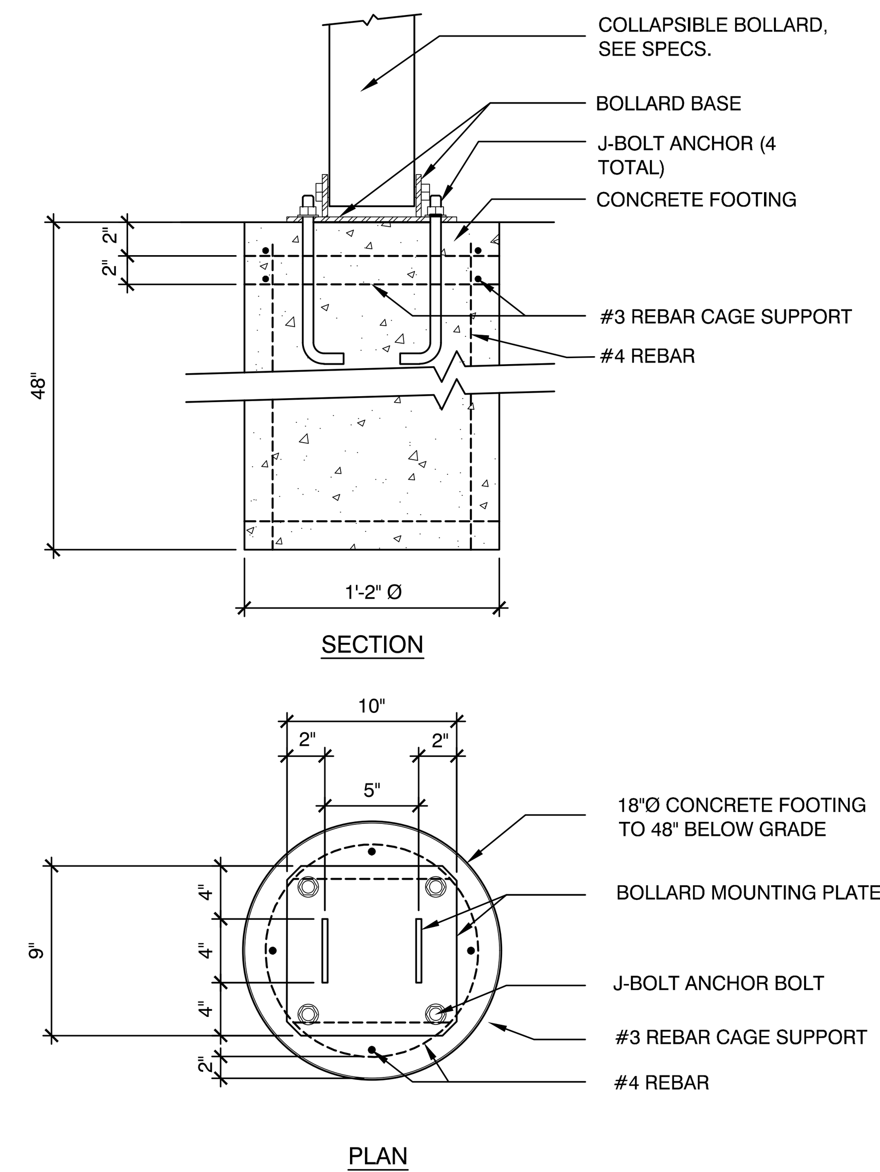
NOTES:
1. ALL AGGREGATE MATERIAL SHALL BE CRUSHED, ANGULAR STONE AND FREE OF FINES.
2. SURFACE SLOPE SHALL BE A MINIMUM OF 1% AND A MAXIMUM OF 5%.
3. THE MINIMUM AGGREGATE THICKNESS ARE AFTER COMPACTION.

1 POROUS ASPHALT, TYP.
SCALE: N.T.S.

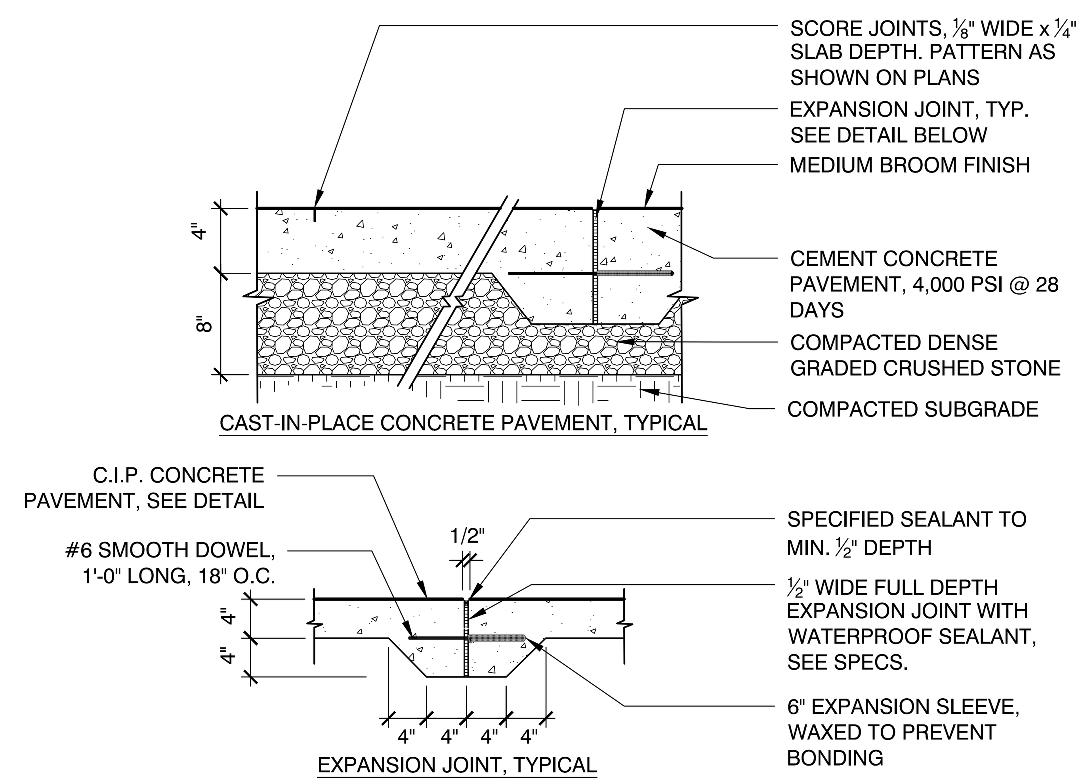


NOTES:
1. ACCEPTABLE MANUFACTURER " TRAFFIC-GUARD INC. (WWW.TRAFFICGUARD.NET)", MODEL ROUND POST REMOVABLE BOLLARD (RPL3,RPL4,RPL6) OR APPROVED EQUIVALENT.
2. MANUFACTURERS SPECIFICATIONS AND INSTALATION INSTRUCTIONS TO BE FOLLOWED AS REQUIRED.
3. GROUND SLEEVES SHOULD BE INSTALLED WITH THE TOP OF THE SLEEVE SET FLUSH WITH THE FINISHED SURFACE.

4 REMOVABLE BOLLARD, TYP.
SCALE: N.T.S.



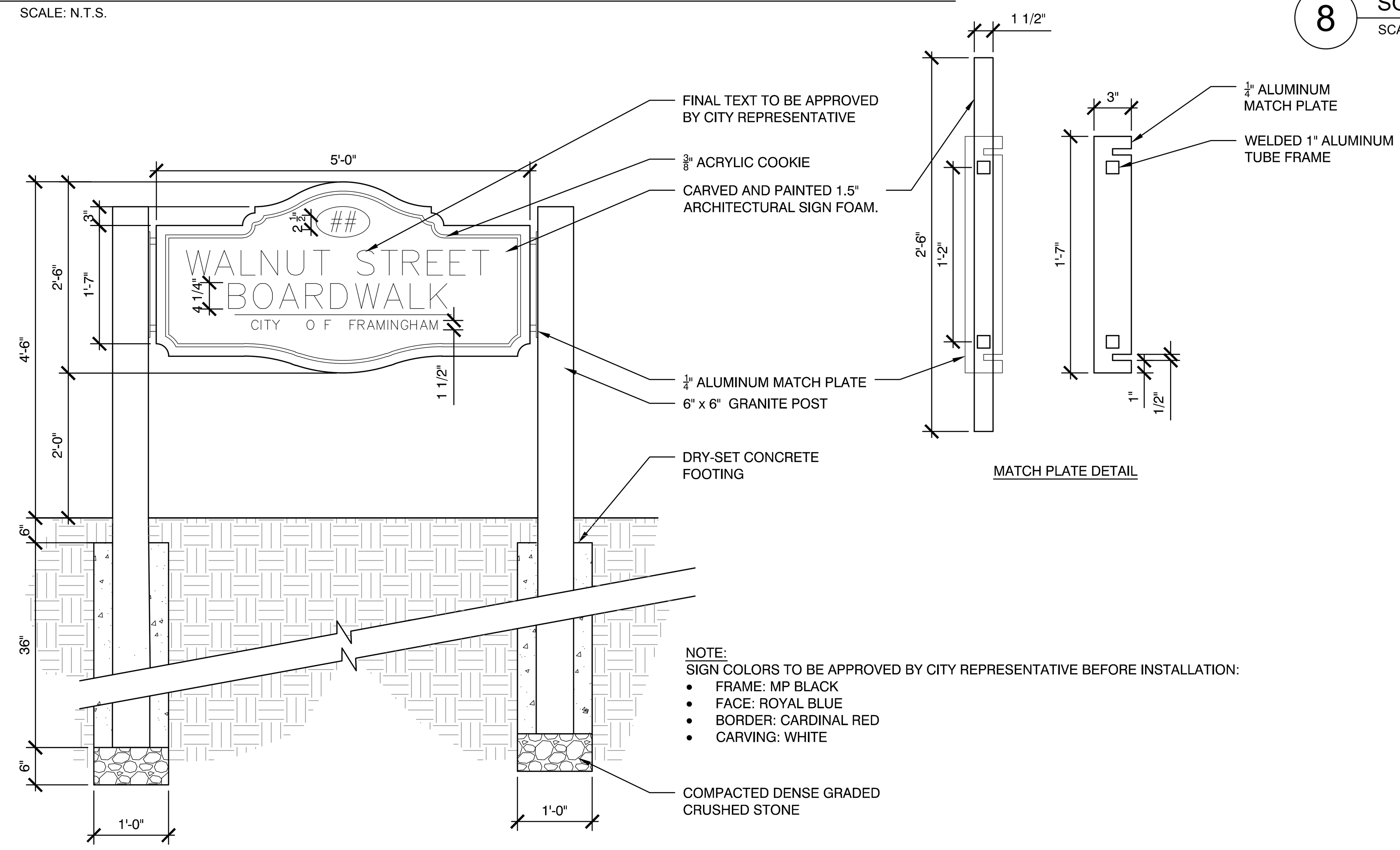
8 SOLAR POWERED LED BOLLARD, TYP.
SCALE: N.T.S.



EXPANSION JOINT INSTALLATION NOTES:

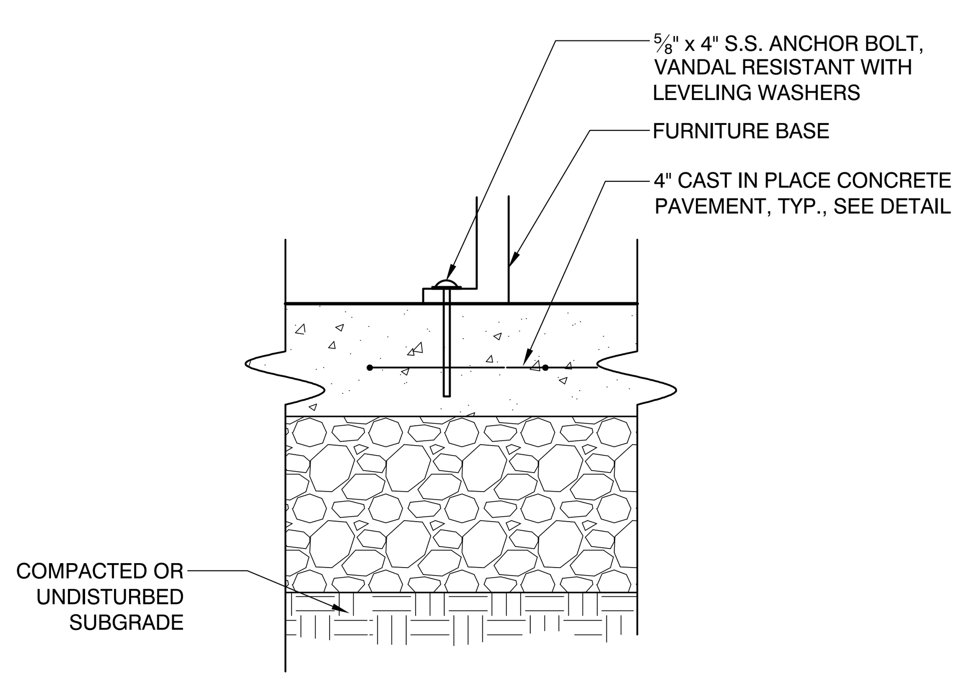
1. DOWEL IS TYPICAL AT ALL EXPANSION JOINTS (18" O.C.) WITHIN CONCRETE PAVING AND BETWEEN NEW CONCRETE PAVING AND EXISTING CONCRETE PAVING TO REMAIN.
2. DELETE EXPANSION SLEEVE AND DOWEL WHERE JOINT ABUTS WALL, CURBS, OR OTHER VERTICAL SURFACES, UNLESS OTHERWISE NOTED.
3. EXPANSION JOINTS MAX. 25'-0" O.C. UNLESS SHOWN OTHERWISE.
4. EXPANSIONS JOINTS SHALL BE PLACED WHERE NEW CEMENT CONCRETE PAVEMENT MEETS EXISTING PAVEMENT OR WALLS TO REMAIN.
5. ALL EXPANSION JOINTS SHALL BE SAW CUT.

2 CEMENT CONCRETE PAVEMENT, TYP.
SCALE: N.T.S.



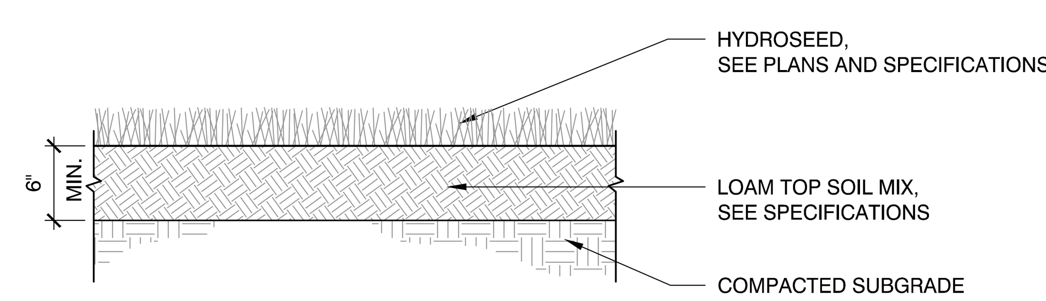
NOTE:
SIGN COLORS TO BE APPROVED BY CITY REPRESENTATIVE BEFORE INSTALLATION:
- FRAME: MP BLACK
- FACE: ROYAL BLUE
- BORDER: CARDINAL RED
- CARVING: WHITE

5 ENTRY SIGNAGE, TYP.
SCALE: N.T.S.

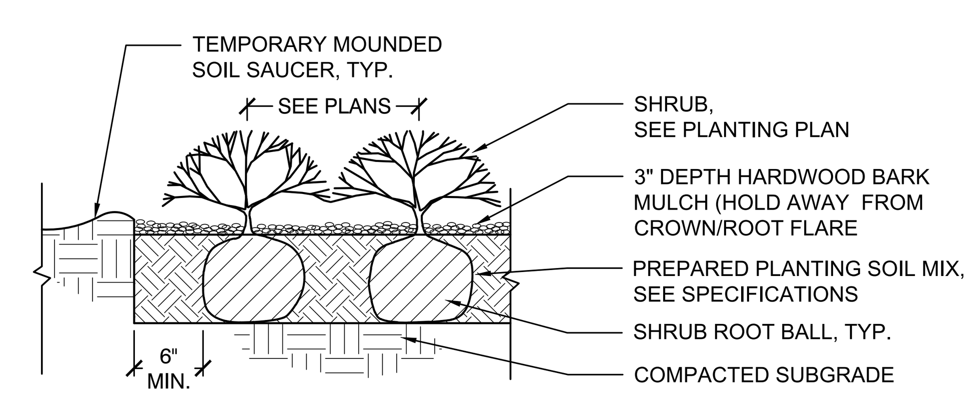


NOTE:
1. ALL SITE FURNISHINGS SHALL BE SURFACE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS.

3 SITE AMENITIES SURFACE MOUNT, TYP.
SCALE: N.T.S



6 LOAM & SEED, TYP.
SCALE: N.T.S.



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

7 SHRUB PLANTING, TYP.
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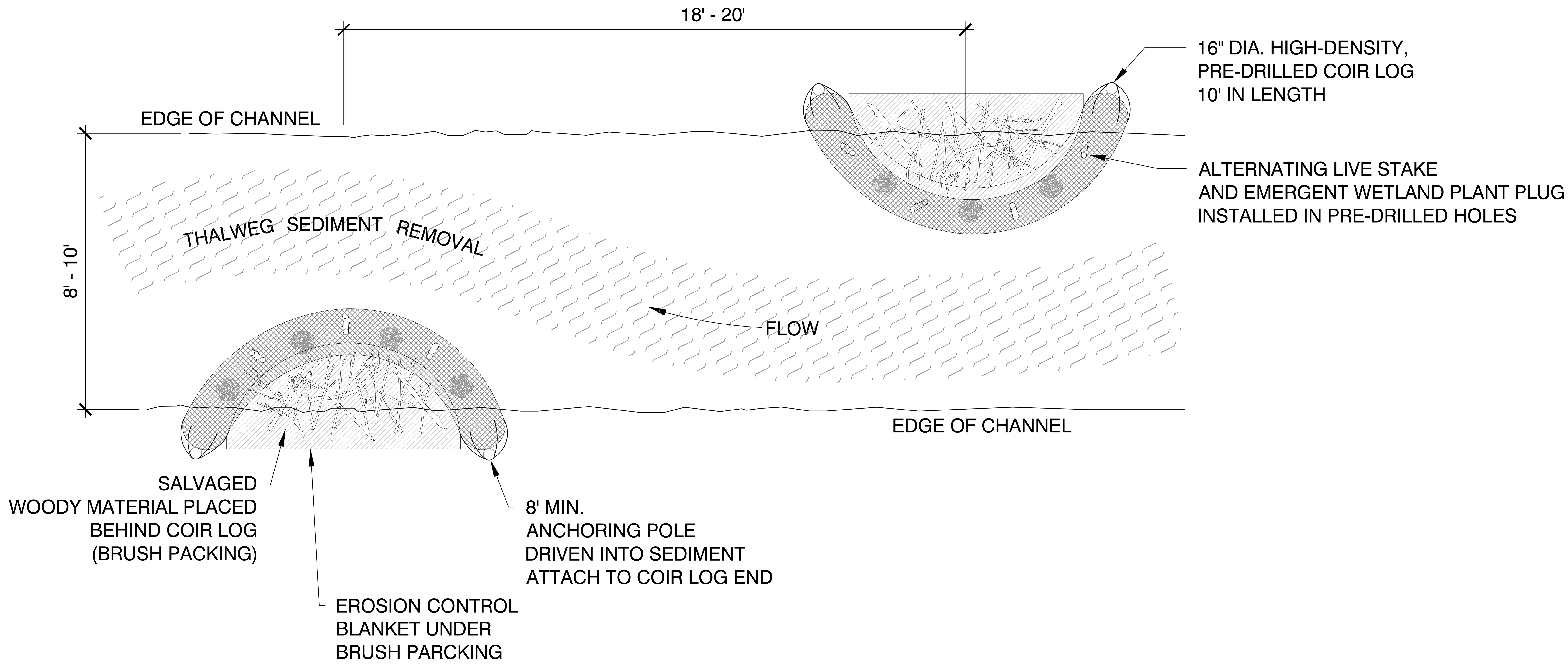

1 BIO-ENGINEERED FLOW DEFLECTORS
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STREAM RESTORATION
LANDSCAPE
DETAILS

Sheet Number:
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1.0 - GENERAL

1.01 THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. REFER TO LANDSCAPE AND ELECTRICAL DRAWINGS FOR LOCATION, DIMENSIONS, AND DETAILS OF OPENINGS, SLEEVES, EMBEDMENTS, INSERTS, PADS, CURBS, DEPRESSIONS, ANCHOR BOLTS, AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.

1.02 THE CONTRACTOR IS RESPONSIBLE FOR CHECKING, COORDINATING AND VERIFYING ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCY TO THE ARCHITECT AND ENGINEER AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.

1.03 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE EXISTENCE AND LOCATION OF OVERHEAD, BURIED AND/OR EMBEDDED UTILITIES, AND DETERMINING LOCATIONS OF ALL EMBEDDED MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS AFFECTED BY THE WORK OF THIS CONTRACT.

1.04 ALL WORK IS TO CONFORM WITH THE FOLLOWING CODES AND STANDARDS:

- (A) "780 CMR: MASSACHUSETTS AMENDMENTS MASSACHUSETTS STATE BUILDING CODE" - 9TH EDITION (MSBC)
- (B) INTERNATIONAL BUILDING CODE, (IBC 2015)
- (C) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" - AMERICAN CONCRETE INSTITUTE (ACI 318)
- (D) "MANUAL OF STEEL CONSTRUCTION" - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC 360)
- (E) "STRUCTURAL WELDING CODE - STEEL" - AMERICAN WELDING SOCIETY (AWS D1.1)
- (F) "SEISMIC PROVISION FOR STRUCTURAL STEEL BUILDINGS" -AMERICAN INSTITUTE OF STEEL CONSTRUCTION, (AISC)
- (G) "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" - AMERICAN SOCIETY OF CIVIL ENGINEERS, (ASCE 7-10)

FOR ADDITIONAL CODES AND STANDARDS REFER TO SPECIFICATIONS.

1.05 THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF UNFORESEEN CONDITIONS THAT MAY BE UNCOVERED DURING DEMOLITION AND CONSTRUCTION AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.

1.06 PERMANENT STRUCTURAL ELEMENTS TO BE DESIGNED IN ACCORDANCE WITH PERFORMANCE SPECIFICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- (A) DRIVEN HELICAL PILES

FOR PERFORMANCE DESIGN REQUIREMENTS OF ELEMENTS LISTED ABOVE, REFER TO ADDITIONAL NOTES ON THESE SHEETS AND IN THE TECHNICAL SPECIFICATIONS. ALL DESIGN SUBMITTAL DRAWINGS AND CALCULATIONS SHALL BE CERTIFIED, SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS.

1.07 DETAILS AND NOTES SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE ENGINEER.

1.08 IN ACCORDANCE WITH SPECIFICATION SECTION 01 45 23, TESTING AND INSPECTION OF STRUCTURAL WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COSTS FOR TESTING AND INSPECTIONS WILL BE PAID BY THE CONTRACTOR. PROVIDE TEST RESULTS TO THE ENGINEER IN A TIMELY MANNER.

1.09 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL REQUIRED SHORING AND TEMPORARY BRACING TO RESIST FORCES ON THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD.

2.0 - FOUNDATIONS

2.01 THE SUBSURFACE CONDITIONS DESCRIBED IN THE DRAWINGS, SPECIFICATIONS, TEST BORINGS AND TEST PITS ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING BIDDING AND SUBSEQUENT CONSTRUCTION AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE TIME THEY ARE MADE.

2.02 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL TEMPORARY EARTH SUPPORT, SHORING AND BRACING REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.

2.03 THE CONTRACTOR SHALL DESIGN AND PROVIDE SHEETING, SHORING, BRACING, AND/OR UNDERPINNING IN ORDER TO PROTECT EXISTING UTILITIES FROM EXCESSIVE MOVEMENTS DURING THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH OSHA, STATE & LOCAL REQUIREMENTS.

2.04 THE CONTRACTOR SHALL CARRY OUT CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER. DEWATER ANY AREAS REQUIRING EXCAVATION IN ADVANCE OF PERFORMING EXCAVATION. MAINTAIN GROUNDWATER LEVELS AT LEAST 2 FEET BELOW PLANNED SUBGRADES.

2.05 ALL SUBGRADES TO RECEIVE FILL MATERIALS, FOUNDATIONS, SLABS OR OTHER CONSTRUCTION SHALL BE FREE OF RUNNING OR STANDING WATER PRIOR TO PLACEMENT.

2.06 FOUNDATIONS SHALL BE INSTALLED IN THE GEOMETRY SHOWN IN THE PLANS, ANY ROCK ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED TO CLEAR THE REQUIRED FOUNDATION GEOMETRY.

2.07 SPREAD FOOTING BEARING SURFACES SHALL BE EXCAVATED BY EQUIPMENT WITH A SMOOTH, TOOTHLESS CUTTING EDGE.

2.08 THE GEOTECHNICAL REPORT PREPARED BY WESTON & SAMPSON DATED 03/07/2022 IS PROVIDED FOR INFORMATION PURPOSES ONLY.

3.0 - CAST IN PLACE CONCRETE

3.01 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).

3.02 CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.

3.03 UNLESS NOTED OTHERWISE, CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:

- (A) FOUNDATIONS: 4000 PSI
- (B) SLABS AND WALKWAYS: 5000 PSI

3.04 ALL PERMANENTLY EXPOSED VERTICAL AND HORIZONTAL CONCRETE SURFACES SHALL BE TREATED OR SEALED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

3.05 FOR SLABS-ON-GRADE, LOCATE CONSTRUCTION OR CONTROL JOINTS ALONG COLUMN LINES OR AS SHOWN. PROVIDE JOINTS AT 20FT. MAX. SPACING. SUBMIT JOINT LOCATIONS AND DETAILS FOR APPROVAL.

3.06 SEALANT FOR CONTROL/CONTRACTION JOINTS AND SAW CUT JOINTS SHALL BE SIKADUR 51 MANUFACTURED BY SIKA OR AN APPROVED EQUAL.

3.07 CONCRETE EXPOSED TO WEATHER (FREEZE-THAW CONDITIONS) IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER SPECIFICATIONS REQUIREMENTS.

3.08 A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN ADJACENT CONCRETE PLACEMENTS.

3.09 CONCRETE SLABS SHALL BE PLACED SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE DRAWINGS.

3.10 PROVIDE A 3/4" CHAMFER ON ALL VERTICAL AND HORIZONTAL CORNERS EXPOSED TO VIEW UNLESS NOTED OTHERWISE.

3.11 ALL CONCRETE SHALL BE WATER CURED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

3.12 NON-SHRINK, NON-METALLIC, GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,500 PSI (ASTM C942) AND A MINIMUM BOND STRENGTH OF 2,000 PSI AT 28-DAYS (ASTM C882). GROUT MAY BE EXTENDED WITH COARSE AGGREGATE PER THE MANUFACTURER'S RECOMMENDATIONS.

4.0 - CAST IN PLACE CONCRETE REINFORCEMENT

4.01 REINFORCEMENT DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "ACI DETAILING MANUAL" - SP-66, "CRSI MANUAL OF STANDARD PRACTICE".

4.02 STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:

- (A) BARS, TIES, AND STIRRUPS___ASTM A615 GRADE 60
- (B) WELDED WIRE FABRIC ASTM A185, FLAT SHEETS

4.03 REINFORCING STEEL SHALL BE UNCOATED AND DEFORMED.

4.04 MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS REQUIRED FOR FIRE PROTECTION OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:

- (A) CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:____3"
- (B) CONCRETE EXPOSED TO EARTH OR WEATHER:
  - (1) NO. 6 THRU NO. 18 BARS____2"
  - (2) NO. 5 BAR, W31 OR D31 WIRE AND SMALLER____2"
- (C) SURFACES NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
  - (1) SLABS, WALLS, JOISTS:
    - (a) NO. 14 AND NO 18 BARS____2"
    - (b) NO. 11 BARS AND SMALLER____2"

4.05 REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS, CORNERS, AND INTERSECTIONS UNLESS OTHERWISE NOTED. REINFORCING SHALL BE LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS, UNLESS OTHERWISE NOTED.

4.06 FOR REINFORCING STEEL SPLICE LAP LENGTHS REFER TO THE TABLE PROVIDED UNLESS OTHERWISE INDICATED.

4.07 MECHANICAL SPLICES SHALL BE PERMITTED SUBJECT TO APPROVAL BY THE ENGINEER. MECHANICAL SPLICES SHALL DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NO WELDED CONNECTIONS ARE PERMITTED.

4.08 WELDED WIRE FABRIC SHALL BE LAPPED (1) SQUARE PLUS (2) INCHES WHERE REQUIRED AND SHALL BE WIRED TOGETHER AT ALL LAPS. WWF SHALL BE SUPPORTED BY CHAIRS AND/OR CARRYING BARS PRIOR TO CONCRETE PLACEMENT.

4.09 REINFORCEMENT SHALL NOT BE TACK WELDED.

4.10 NOTIFY THE TESTING LAB AND ENGINEER A MINIMUM OF 48 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT IN ORDER TO ACCOMMODATE INSPECTION OF REINFORCEMENT AND CONCRETE TESTING. NO CONCRETE SHALL BE PLACED WITHIN 48 HOURS OF SUCH NOTIFICATION.

4.11 WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTIONS APPLIES.

4.12 DOWELS SHALL MATCH BAR SIZE, NUMBER AND SPACING, UNLESS NOTED OTHERWISE.

6.0 - STRUCTURAL STEEL

6.01 STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION", "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND BRIDGES" (ANSI/AISC 360-10), AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (ANSI/AISC 303-10).

6.02 STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING:

- (A) WIDE FLANGE SHAPES:_____ASTM A992
- (B) OTHER STEEL SHAPES, PLATES AND BARS:_____ASTM A572 OR ASTM A36.
- (C) STRUCTURAL TUBING:_____ASTM A500 GR B.

6.03 ALL WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS AND SHALL CONFORM TO A.W.S. SPECIFICATIONS AMENDED TO DATE. ELECTRODES SHALL BE E70XX.

6.04 BOLTS SHALL CONFORM TO ASTM A325 AND BE INSTALLED SNUG-TIGHT UNLESS NOTED OTHERWISE

6.05 STRUCTURAL STEEL FRAMING SHALL BE WITHIN TOLERANCE BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED.

6.06 FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER FOR EACH SPECIFIC USE.

6.07 STRUCTURAL STEEL SHAPES AND PLATES EXPOSED TO WEATHER AND AT CANOPIES SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123 U.N.O. FASTENERS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 U.N.O. HOT-DIPPED GALVANIZING SHALL ALSO CONFORM TO ASTM A385. THE GALVANIZER SHALL SUBMIT A CERTIFICATE OF CONFORMANCE FOR RECORD.

6.08 PROVIDE FIELD TOUCH-UP AND REPAIR OF GALVANIZING AS REQUIRED PER ASTM A780 USING AN INORGANIC ZINC-RICH PRIMER.

6.09 WHEN DISSIMILAR METALS ARE IN CONTACT (E.G. STAINLESS STEEL IN CONTACT WITH GALVANIZED STEEL), COAT SURFACE WITH COAL TAR EPOXY OR PROVIDE OTHER APPROVED MEANS TO PROVIDE A BARRIER.

6.10 WELDS SHALL BE 1/4" FILLET WELDS MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS.

6.11 PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED.

6.12 SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR APPROVAL PRIOR TO FABRICATION.

8.0 - POST INSTALLED CONCRETE ANCHORS AND REINFORCING DOWELS

8.01 ADHESIVE ANCHORS AND REINFORCING DOWELS SHALL BE HILTI HIT-HY-200 ADHESIVE ANCHORING SYSTEM.

8.02 EXPANSION ANCHORS SHALL BE HILTI KWIK BOLT TZ EXPANSION ANCHORS.

8.03 INSTALL ANCHORS IN STRICT CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.

8.04 HOLES SHALL BE THOROUGHLY CLEANED AND DRY PRIOR TO INSTALLING ANCHORS.

8.05 DO NOT DAMAGE EXISTING REINFORCING. LOCATE REINFORCING WITH PROFOMETER OR OTHER MEANS PRIOR TO DRILLING CONCRETE.

8.06 ANCHORS INSTALLED OVERHEAD SHALL BE PROOF TESTED BY THE MANUFACTURER'S FIELD ENGINEER OR OTHER APPROVED AGENCY. PROOF TEST A MINIMUM OF 25% OF THE ANCHORS OR (2) TOTAL, WHICHEVER IS GREATER.

9.0 - DESIGN LOADS:

9.01 GENERAL DESIGN REQUIREMENTS____(IBC 2015, SECTION 1604)
- (A) RISK CATEGORY____II (ASCE 7-10, TABLE 1-1)
- (B) MUNICIPALITY____FRAMINGHAM, MA (780 CMR, TABLE 1604.11)

9.02 DESIGN LOADS TO BE VERIFIED BY PRE-ENGINEERED METAL BUILDING DESIGNER.

9.03 LIVE LOADS
- (A) PEDESTRIAN LL ____90 PSF
- (B) VEHICLE LL ____HS TRUCK (AASHTO)

9.04 SNOW LOADS
- (A) GROUND SNOW LOAD, Pg ____40 PSF
- (B) IMPORTANCE FACTOR, Is____1.0
- (C) EXPOSURE FACTOR, Ce____1.0
- (D) THERMAL FACTOR, Ct____1.2
- (E) FLAT ROOF SNOW LOAD, Pf____35 PSF

9.05 WIND LOADS
- (A) WIND SPEED____127 MPH
- (B) EXPOSURE FACTOR____B
- (C) WIND DIRECTIONALITY FACTOR, Kd____0.85
- (D) TOPOGRAPHIC FACTOR, Kzt____1.0
- (E) PRESSURE EXPOSURE COEFFICIENT, Kz____0.57

9.06 EARTHQUAKE LOADS ____(IBC 2015, SECTION 1613)
- (A) SITE CLASS ____D (GEOTECH REPORT)
- (B) SPECTRAL RESPONSE ACCELERATIONS
  - (1) Ss ____0.227 (780 CMR, TABLE 1604.11)
  - (2) S1 ____0.072 (780 CMR, TABLE 1604.11)
- (C) SPECTRAL RESPONSE COEFFICIENTS
  - (1) Sds ____0.242 (ASCE 7-10, SEC. 11.4.3)
  - (2) Sd1 ____0.115 (ASCE 7-10, SEC. 11.4.3)
- (D) SEISMIC DESIGN CATEGORY ____C (ASCE 7-10, SEC 11.6-1)
- (E) SEISMIC IMPORTANCE FACTOR, Ie ____1.5 (ASCE 7-10, TABLE 11.5-1)
- (F) SEISMIC FORCE RESISTING SYSTEM: ____(780 CMR, TABLE 12.2-1)
  - (1) STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
    - (a) RESPONSE MODIFICATION COEFFICIENT, R _ 3
    - (b) SYSTEM OVERSTRENGTH PARAMETER,Ωo _ 3
    - (c) DEFLECTION AMPLIFICATION FACTOR, Cd _ 3
- (G) ANALYSIS PROCEDURE____EQUIVALENT LATERAL FORCE ANALYSIS (ASCE 7-10, SEC. 12.8)

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Project:

WALNUT STREET FLOOD MITIGATION

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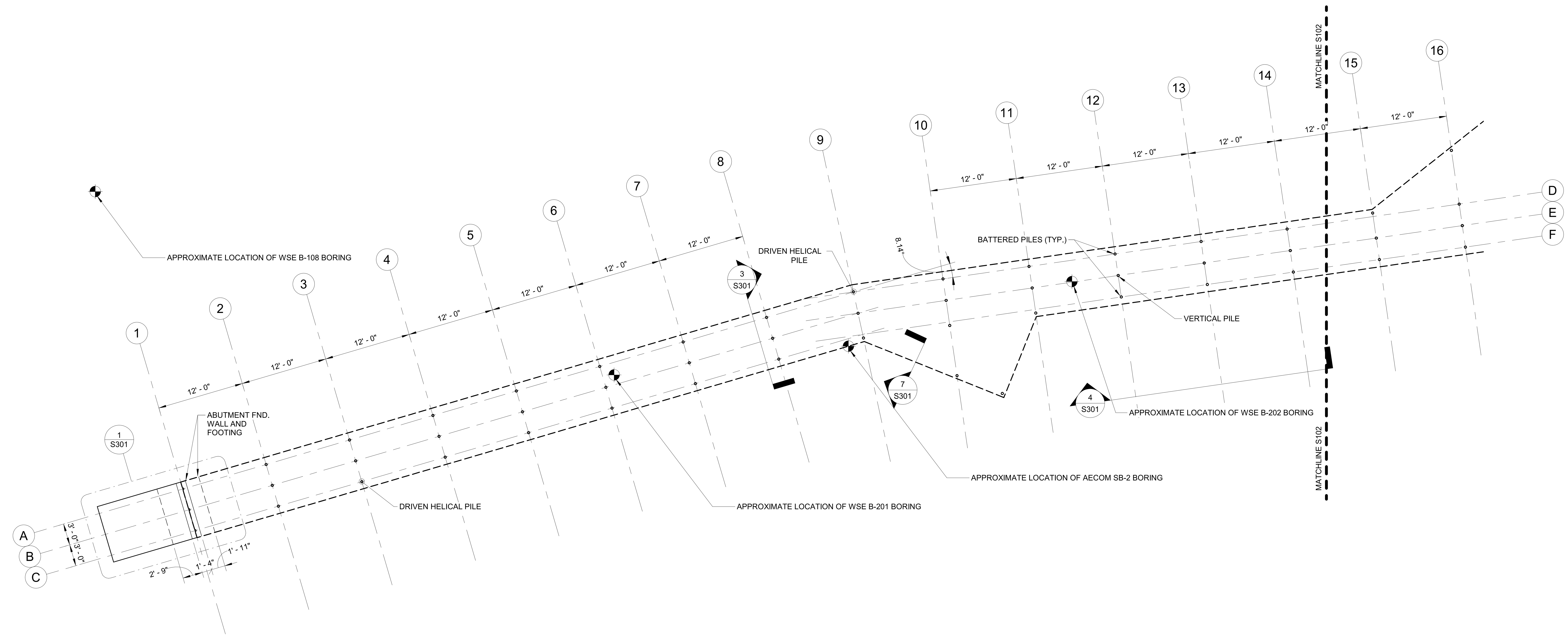
STRUCTURAL GENERAL NOTES I

Sheet Number:

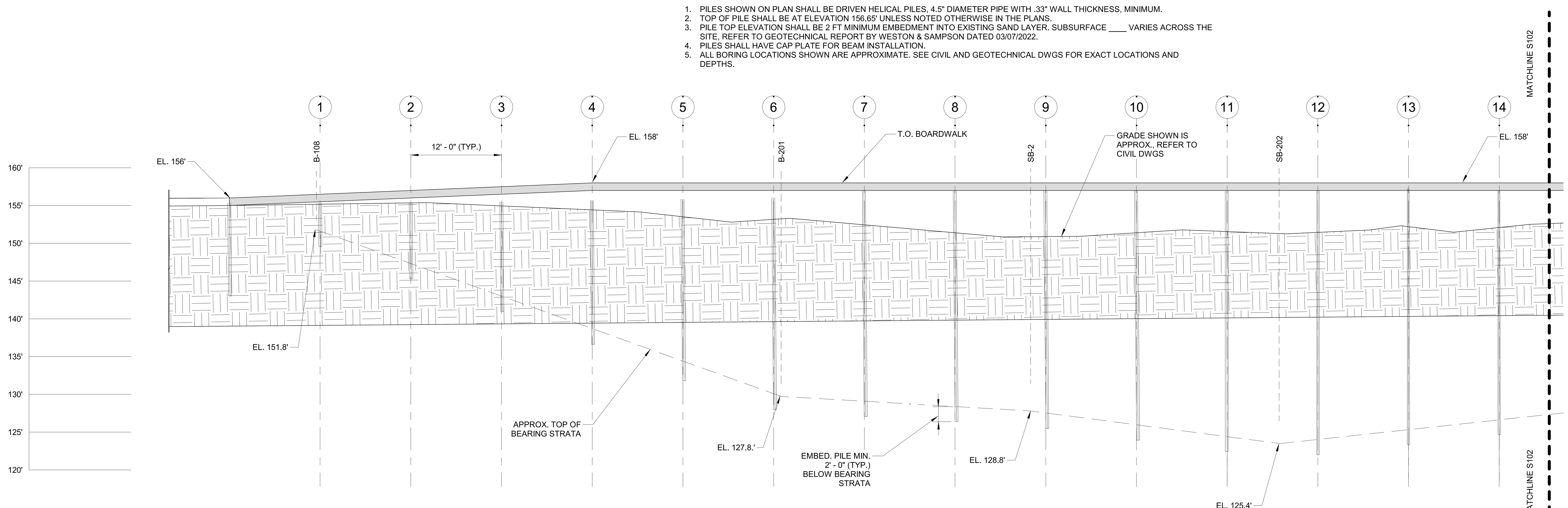
S001



1 PILE LAYOUT PLAN I
SCALE: 1/8" = 1'-0"

NOTES:

1. PILES SHOWN ON PLAN SHALL BE DRIVEN HELICAL PILES, 4.5" DIAMETER PIPE WITH .33" WALL THICKNESS, MINIMUM.
2. TOP OF PILE SHALL BE AT ELEVATION 156.65' UNLESS NOTED OTHERWISE IN THE PLANS.
3. PILE TOP ELEVATION SHALL BE 2 FT MINIMUM EMBEDMENT INTO EXISTING SAND LAYER. SUBSURFACE ____ VARIES ACROSS THE SITE, REFER TO GEOTECHNICAL REPORT BY WESTON & SAMPSON DATED 03/07/2022.
4. PILES SHALL HAVE CAP PLATE FOR BEAM INSTALLATION.
5. ALL BORING LOCATIONS SHOWN ARE APPROXIMATE. SEE CIVIL AND GEOTECHNICAL DWGS FOR EXACT LOCATIONS AND DEPTHS.



2 PILE LAYOUT ELEVATION I
SCALE: 1/8" = 1'-0"

NOTES:

1. APPROXIMATE TOP OF BEARING STRATA BOUNDARY IS BASED ON OUR INTERPRETATION OF DATA PRESENTED ON THE BORING LOGS AND THE ACTUAL TRANSITION MAY BE GRADUAL.
2. SUBSURFACE INFORMATION BASED ON LOGS FOR BORINGS ADVANCED BY SW COLE ENGINEERING, INC. IN 2012 AND 2013, BY AECOM IN 2017, AND WESTON & SAMPSON IN 2021.
3. BOTTOM OF PILE SHALL EMBED A MINIMUM OF 2'-0" BELOW THE TOP OF BEARING STRATA, COORD. WITH GEOTECHNICAL REPORT.

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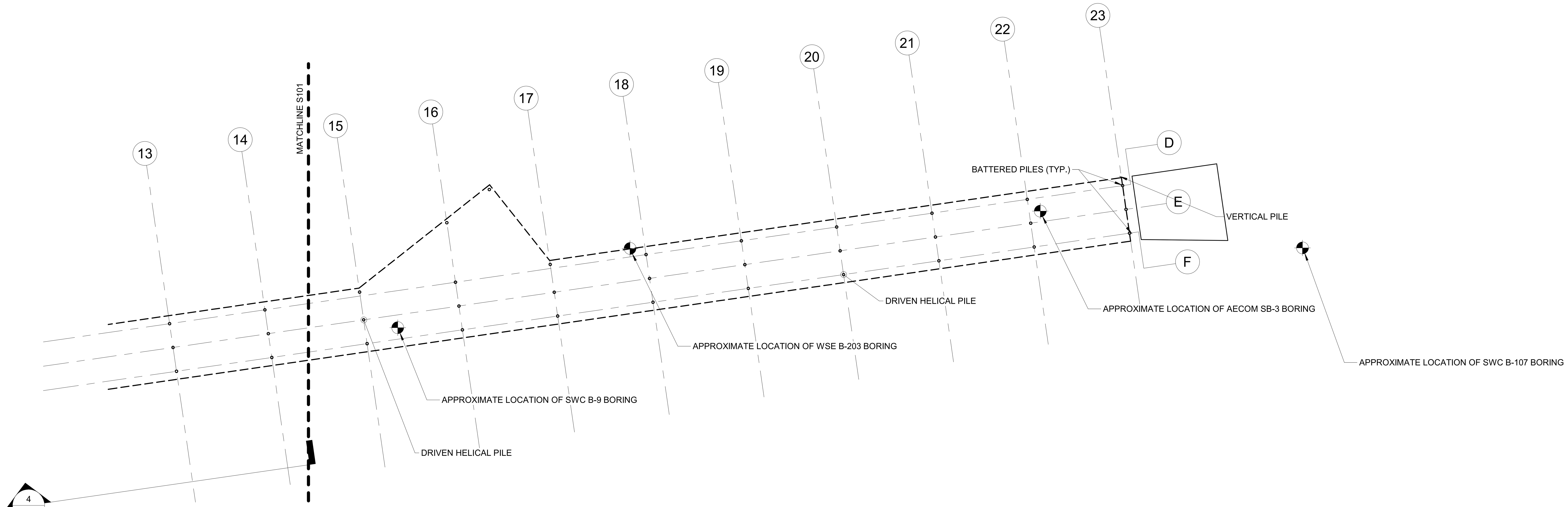
PILE LAYOUT I

Sheet Number:
S101

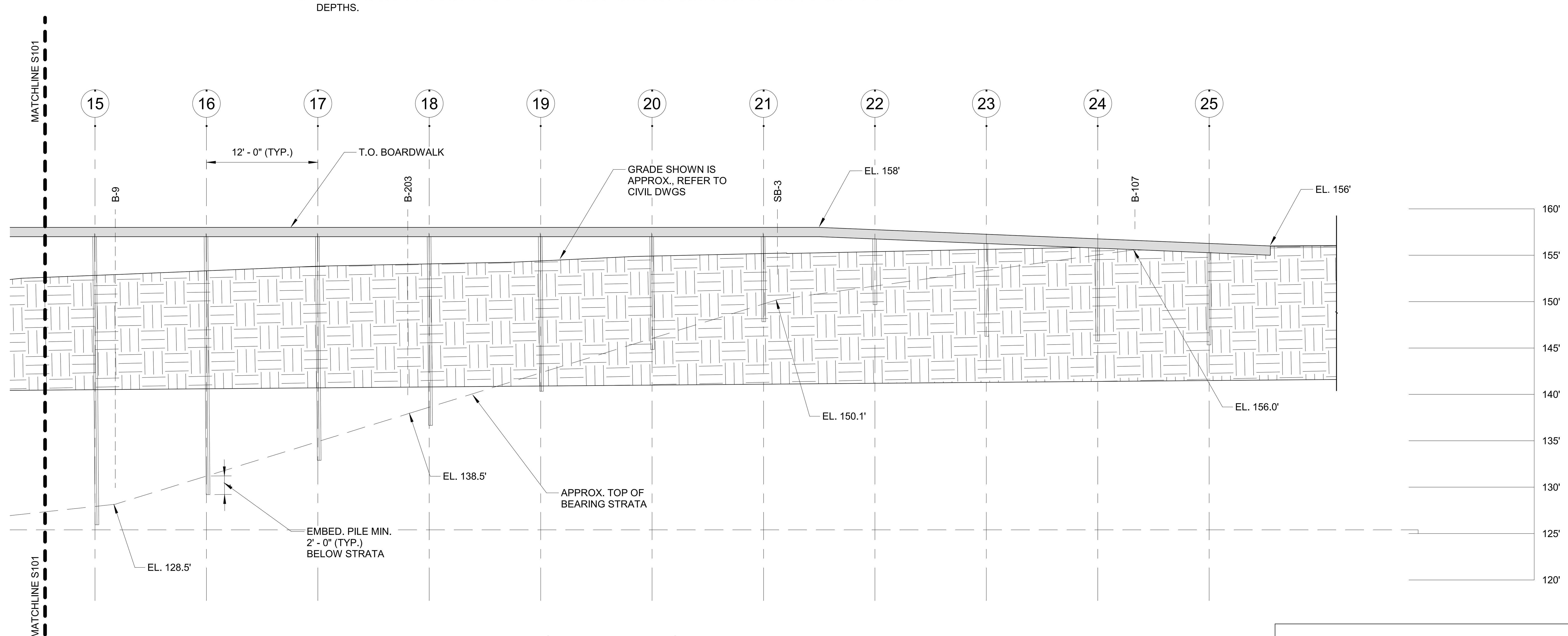


1 PILE LAYOUT PLAN II

SCALE: 1/8" = 1'-0"

NOTES:

1. PILES SHOWN ON PLAN SHALL BE DRIVEN HELICAL PILES, 4.5" DIAMETER PIPE WITH .33" WALL THICKNESS, MINIMUM.
2. TOP OF PILE SHALL BE AT ELEVATION 156.65' UNLESS NOTED OTHERWISE IN THE PLANS.
3. PILE TOP ELEVATION SHALL BE 2 FT MINIMUM EMBEDMENT INTO EXISTING SAND LAYER. SUBSURFACE ____ VARIES ACROSS THE SITE, REFER TO GEOTECHNICAL REPORT BY WESTON & SAMPSON DATED 03/07/2022.
4. PILES SHALL HAVE CAP PLATE FOR BEAM INSTALLATION.
5. ALL BORING LOCATIONS SHOWN ARE APPROXIMATE. SEE CIVIL AND GEOTECHNICAL DWGS FOR EXACT LOCATIONS AND DEPTHS.



2 PILE LAYOUT ELEVATION II

SCALE: 1/8" = 1'-0"

NOTES:

1. APPROXIMATE TOP OF BEARING STRATA BOUNDARY IS BASED ON OUR INTERPRETATION OF DATA PRESENTED ON THE BORING LOGS AND THE ACTUAL TRANSITION MAY BE GRADUAL.
2. SUBSURFACE INFORMATION BASED ON LOGS FOR BORINGS ADVANCED BY SW COLE ENGINEERING, INC. IN 2012 AND 2013, BY AECOM IN 2017, AND WESTON & SAMPSON IN 2021.
3. BOTTOM OF PILE SHALL EMBED A MINIMUM OF 2'-0" BELOW THE TOP OF BEARING STRATA, COORD. WITH GEOTECHNICAL REPORT.

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Project:

WALNUT STREET FLOOD MITIGATION

CITY OF FRAMINGHAM 1662 · 1700 · 2018

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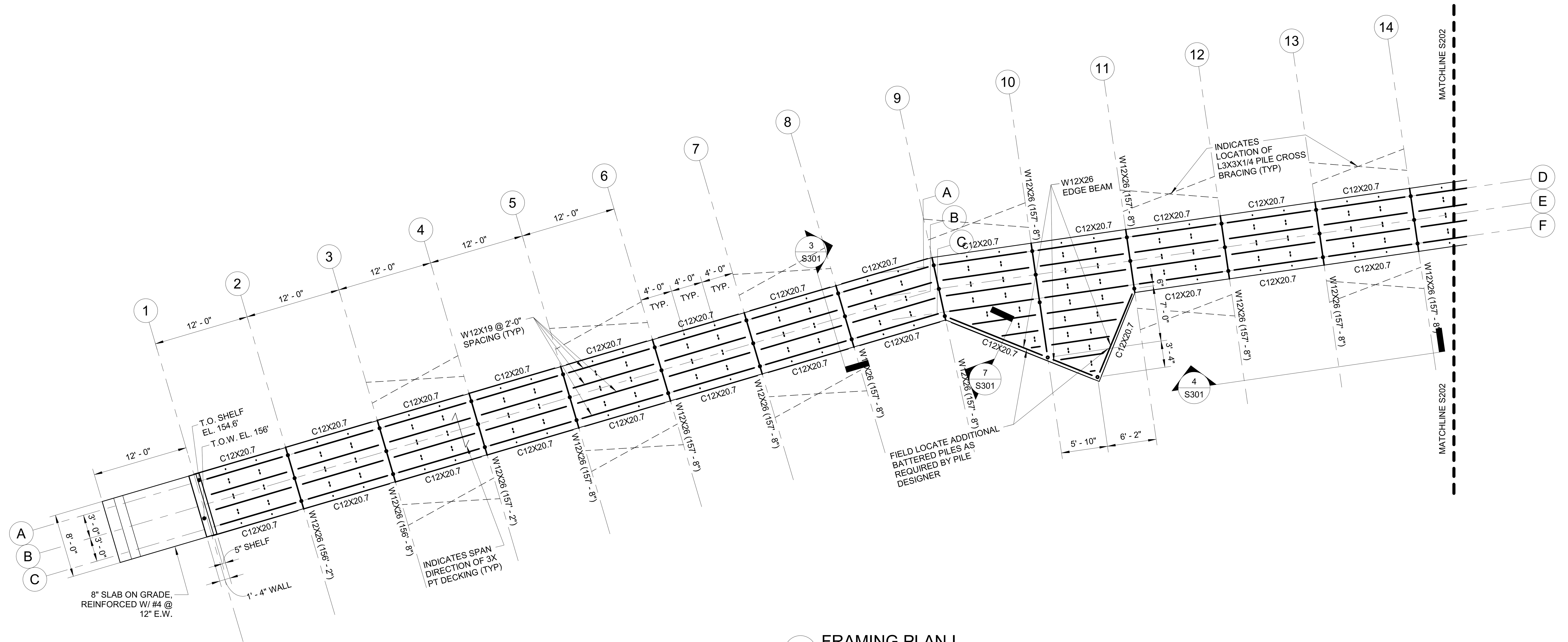
Drawing Title:

PILE LAYOUT II

Sheet Number:

S102



1 FRAMING PLAN I

SCALE: 1/8" = 1'-0"

NOTES:

1. INDICATES SPAN DIRECTION OF PT 3X6 TIMBER ECK, SOUTHERN PINE NO. 1 OR GREATER.
2. T.O. BOARDWALK SHALL BE AT ELEVATION 158' UNLESS NOTED OTHERWISE.
3. T.O. FRAMING SHALL BE AT ELEVATION 156.67' UNLESS NOTED OTHERWISE.
4. A RELATIVE ELEVATION OF (0'-0") REFERS TO ELEVATION 158'.
5. ALL STEEL FRAMING MEMBERS, INCLUDING PLATES & HARDWARE, SHALL BE HOT-DIPPED GALVANZIED IN ACCORDANCE WITH ASTM A 123 & ASTM A 153, RESPECTFULLY.
6. CONCRETE SHALL BE AIR ENTRAINED WITH A COMPRESSIVE STRENGTH F'c = 4500 PSI.

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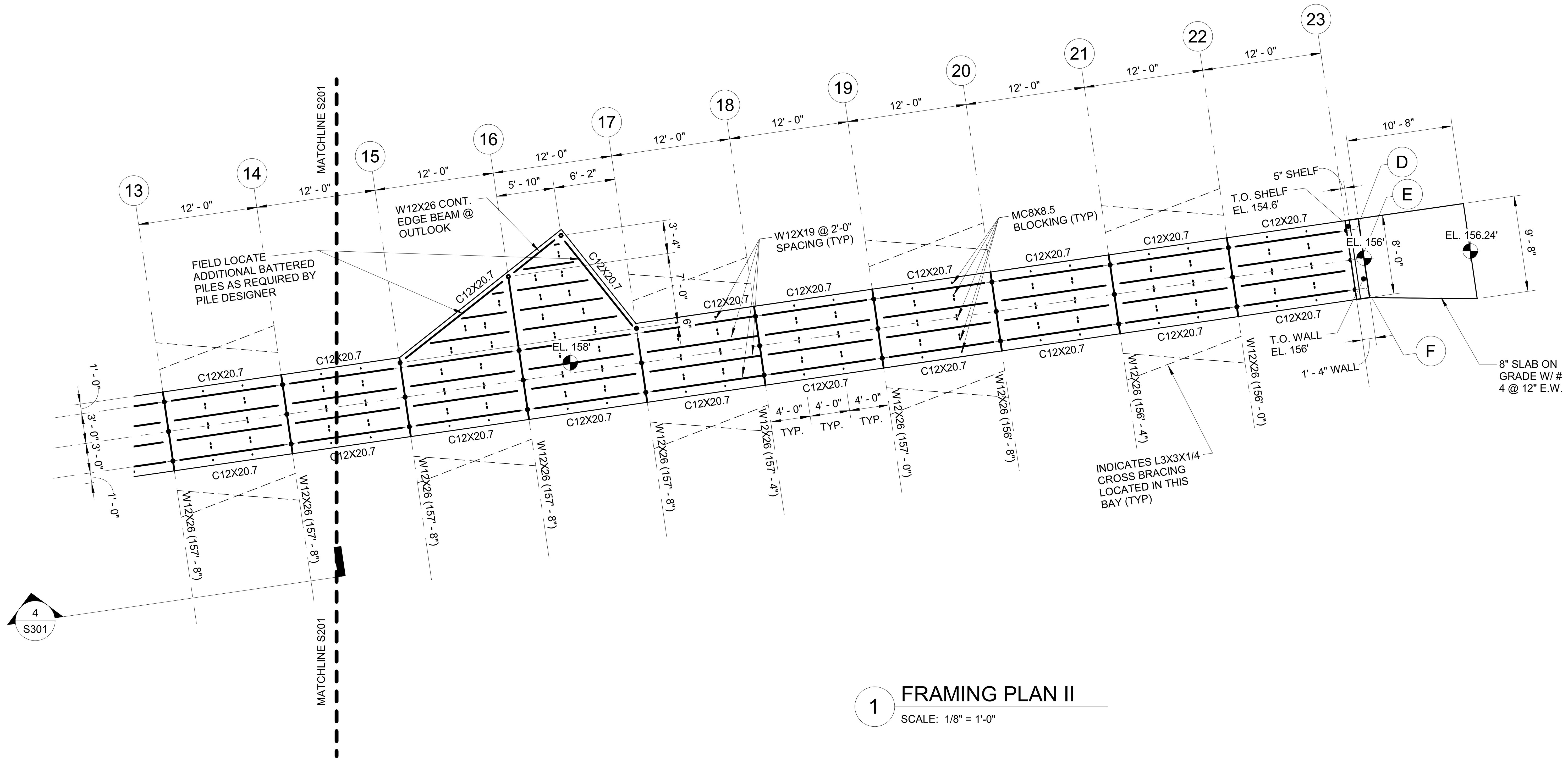
BOARDWALK FRAMING PLAN I

Sheet Number:

S201



1 FRAMING PLAN II

SCALE: 1/8" = 1'-0"

NOTES:

1. INDICATES SPAN DIRECTION OF PT 3X6 TIMBER ECK, SOUTHERN PINE NO. 1 OR GREATER.
2. T.O. BOARDWALK SHALL BE AT ELEVATION 158' UNLESS NOTED OTHERWISE.
3. T.O. FRAMING SHALL BE AT ELEVATION 156.67' UNLESS NOTED OTHERWISE.
4. A RELATIVE ELEVATION OF (0'-0") REFERS TO ELEVATION 158'.
5. ALL STEEL FRAMING MEMBERS, INCLUDING PLATES & HARDWARE, SHALL BE HOT-DIPPED GALVANZIED IN ACCORDANCE WITH ASTM A 123 & ASTM A 153, RESPECTFULLY.
6. CONCRETE SHALL BE AIR ENTRAINED WITH A COMPRESSIVE STRENGTH F'c = 4500 PSI.

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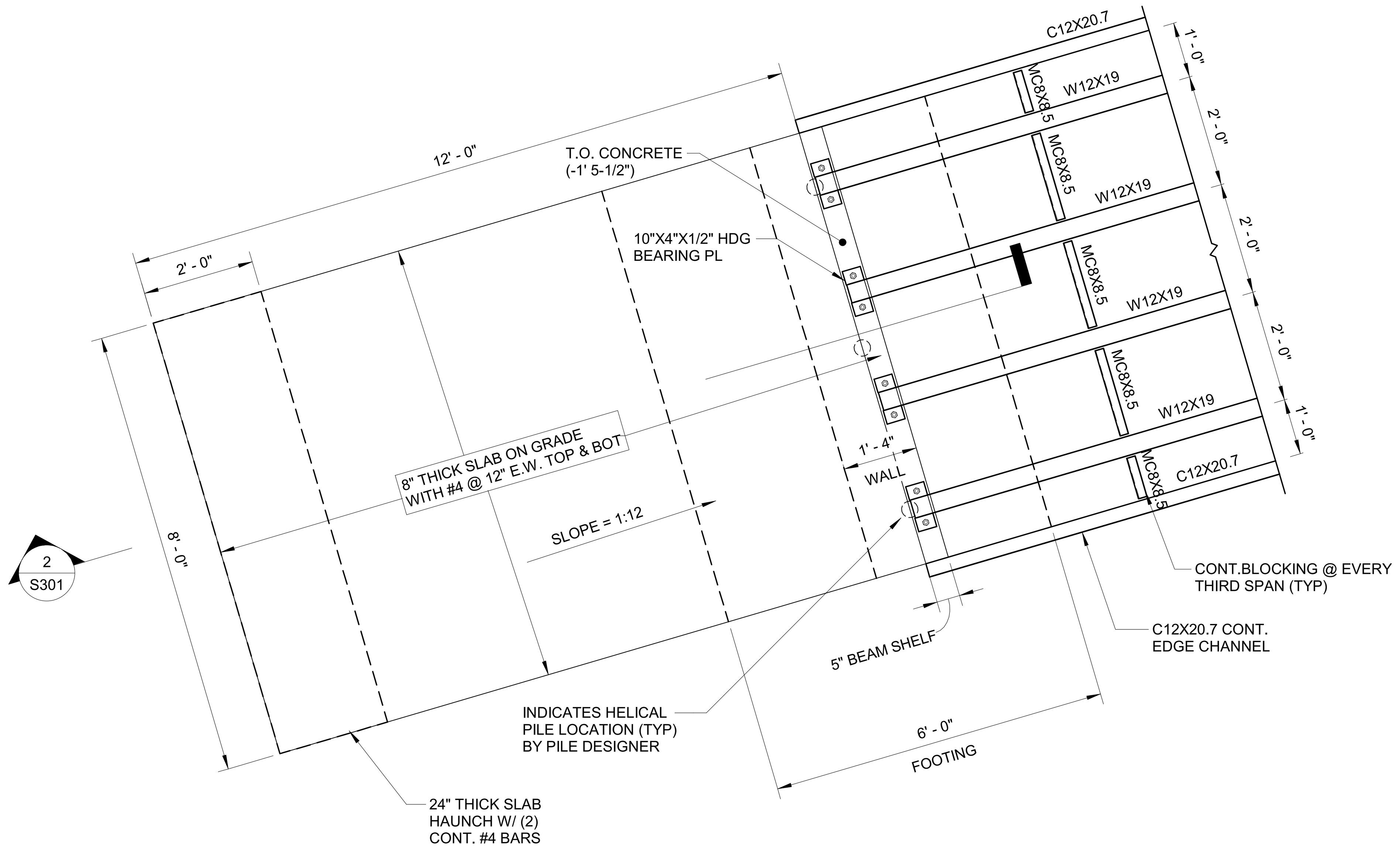
Drawing Title:

BOARDWALK FRAMING PLAN II

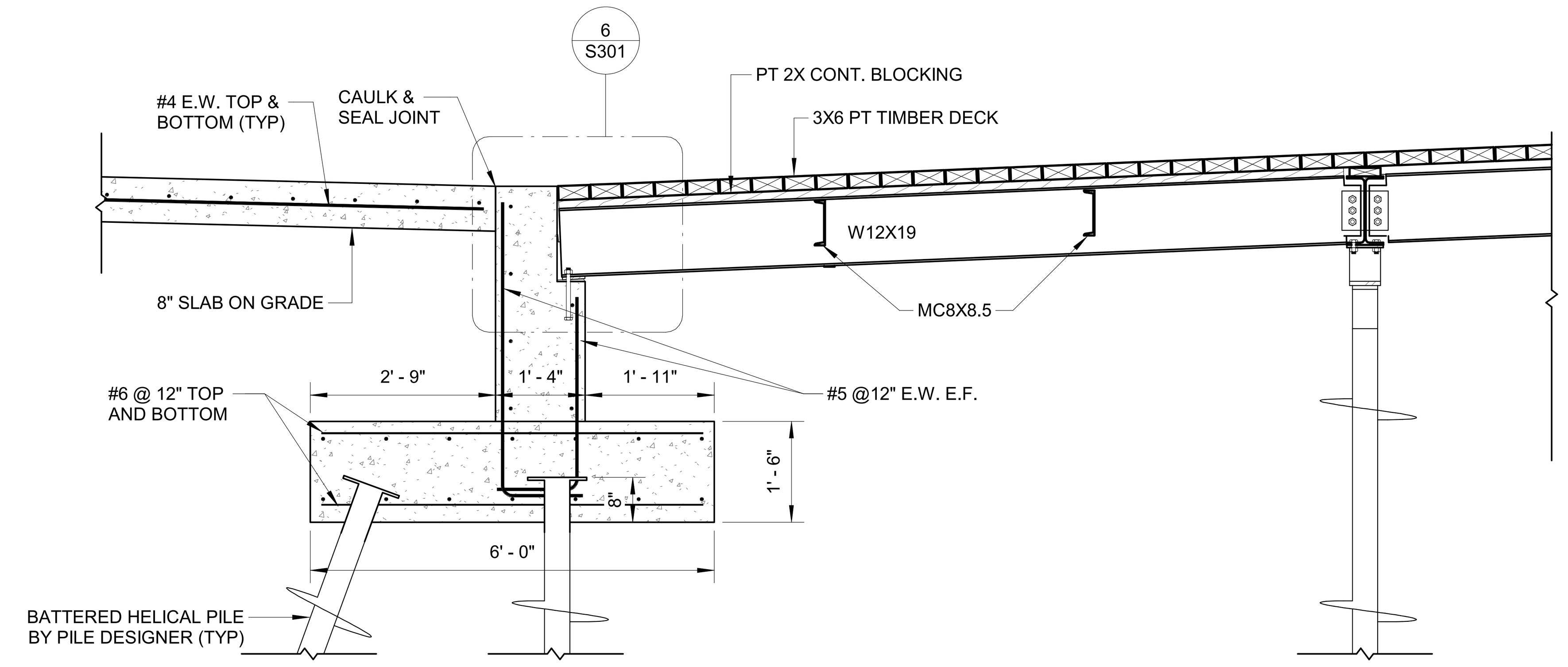
Sheet Number:

S202



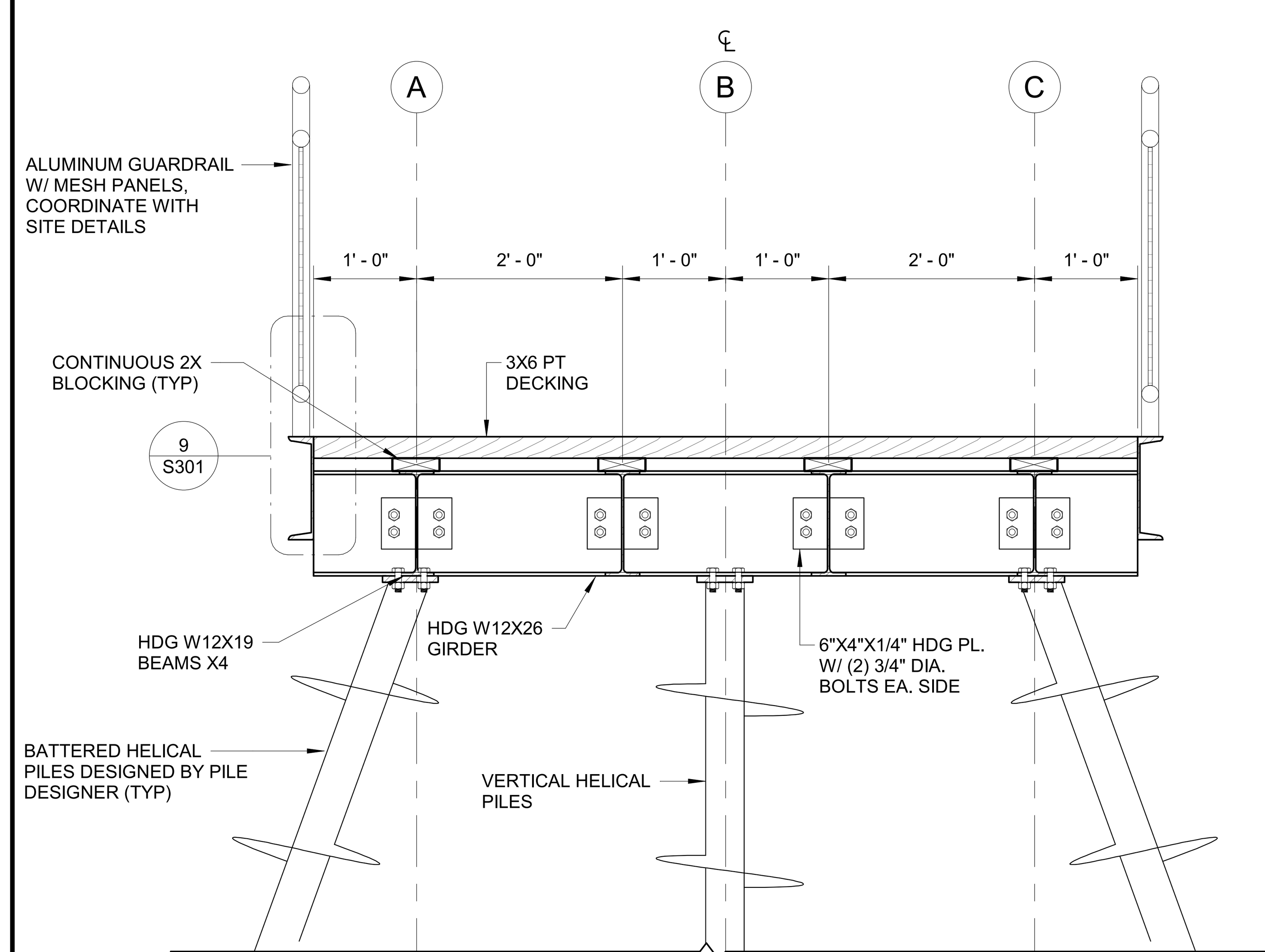
1 ENALRGED RAMP & ABUTMENT PLAN

SCALE: 1/2" = 1'-0"



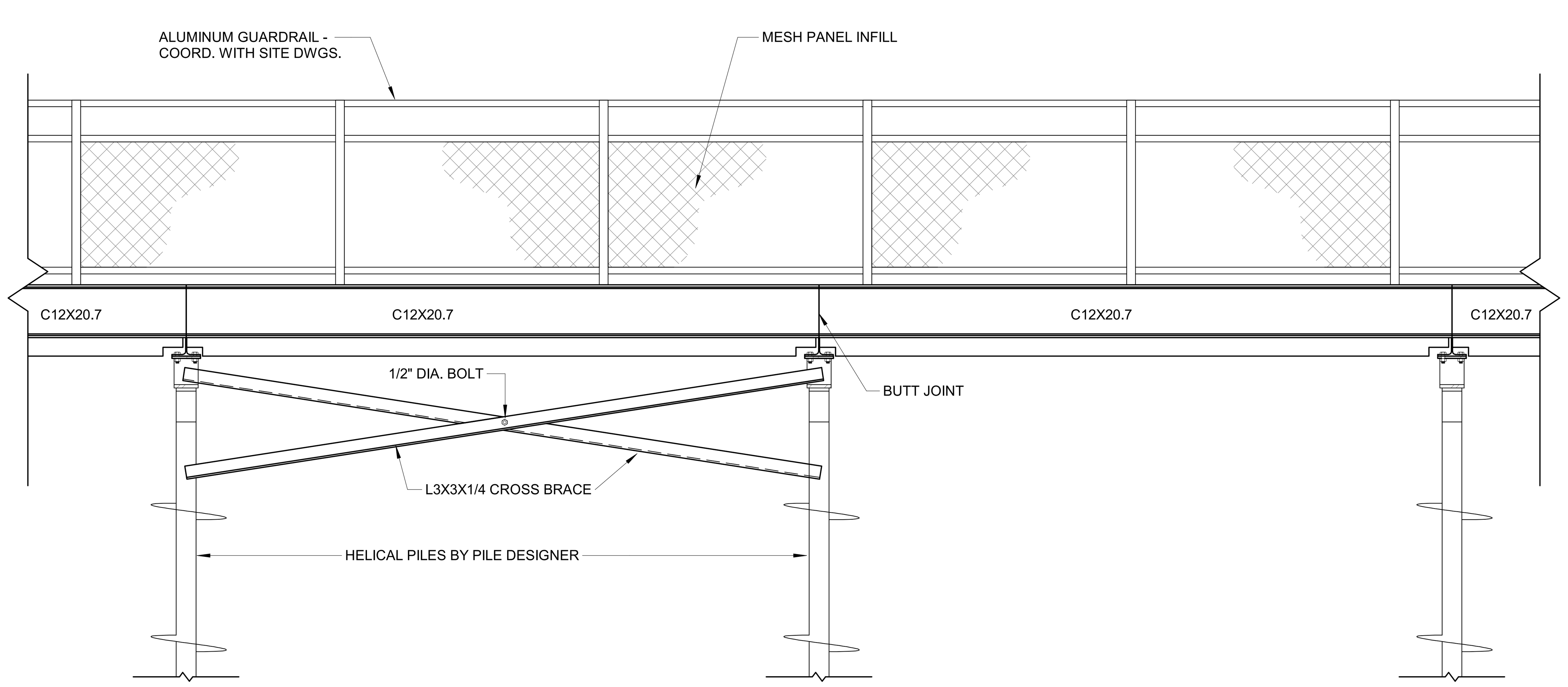
2 TYPICAL RAMP & ABUTMENT SECTION

SCALE: 1/2" = 1'-0"



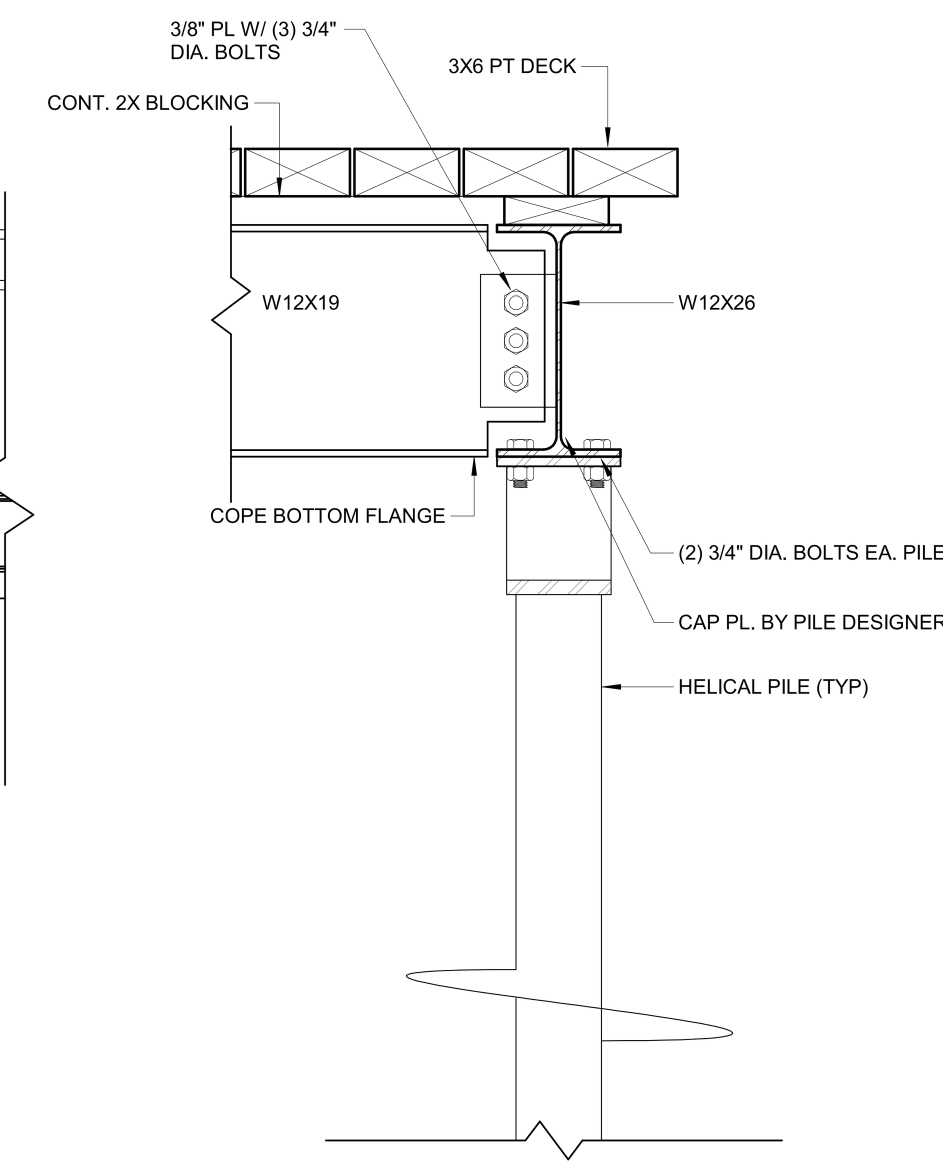
3 TYPICAL BOARDWALK CROSS SECTION

SCALE: 3/4" = 1'-0"



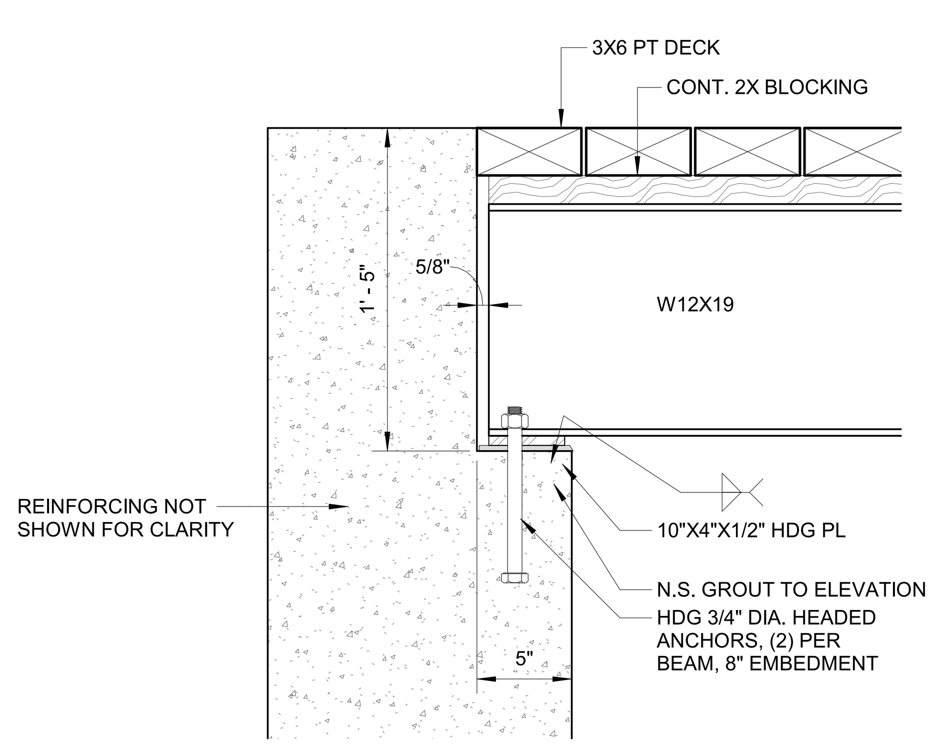
4 TYPICAL BOARDWALK ELEVATION

SCALE: 1/2" = 1'-0"



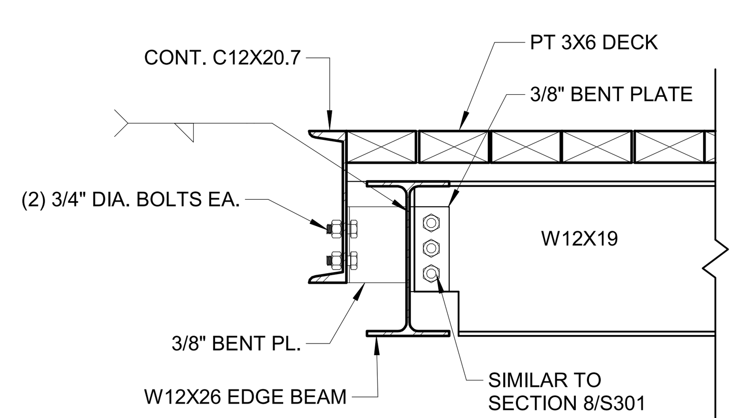
5 GIRDER TO PILE CONNECTION

SCALE: 1 1/2" = 1'-0"



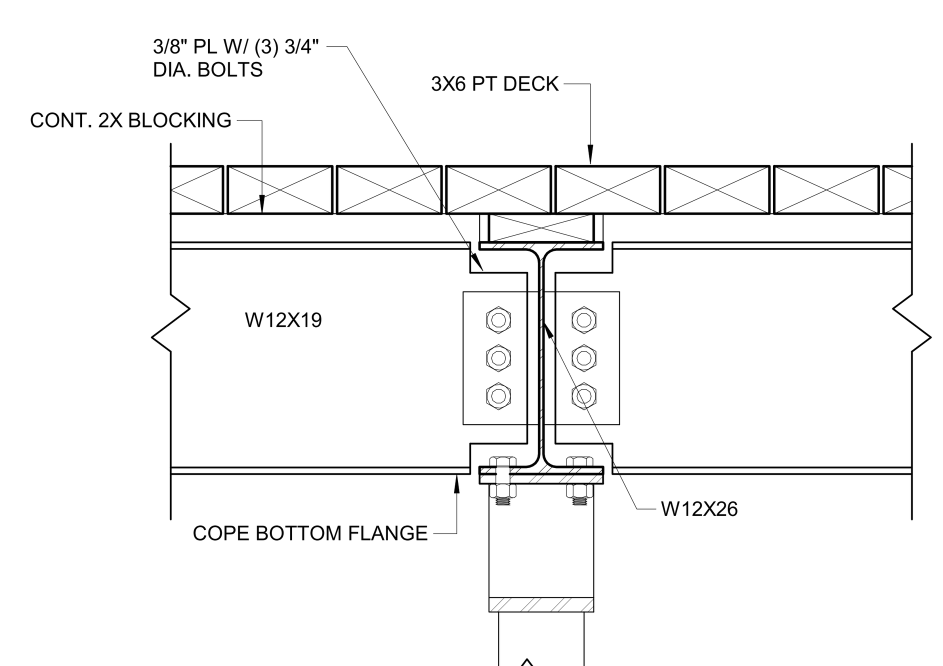
6 TYPICAL BEAM BEARING SECTION @ ABUTMENT

SCALE: 1 1/2" = 1'-0"



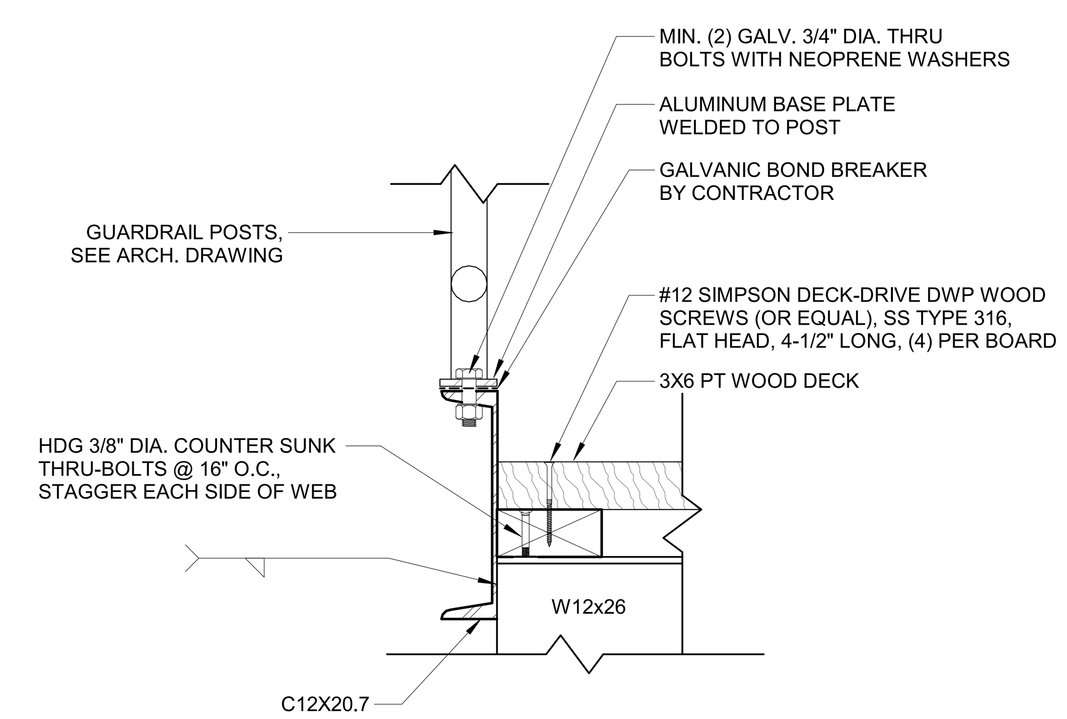
7 SECTION @ EDGE OF OUTLOOK

SCALE: 1" = 1'-0"



8 GIRDER TO GIRDER CONNECTION

SCALE: 1 1/2" = 1'-0"



9 GAURDRAIL TO CHANNEL CONNECTION

SCALE: 1 1/2" = 1'-0"

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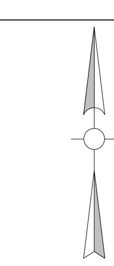

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Project:

WALNUT STREET FLOOD MITIGATION

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SECTIONS AND DETAILS

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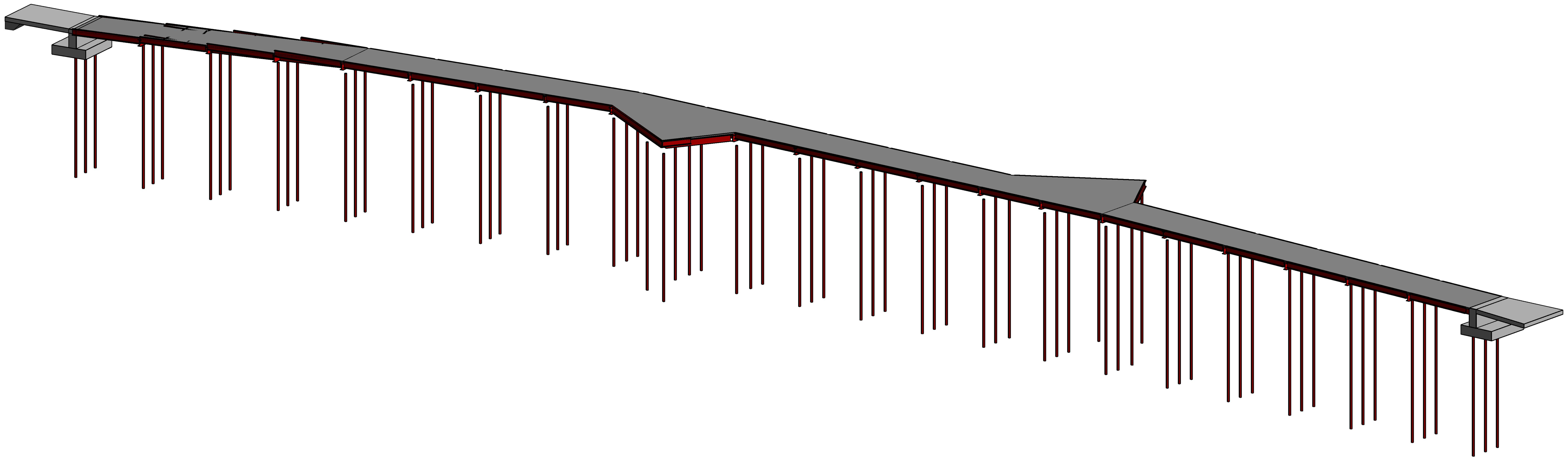
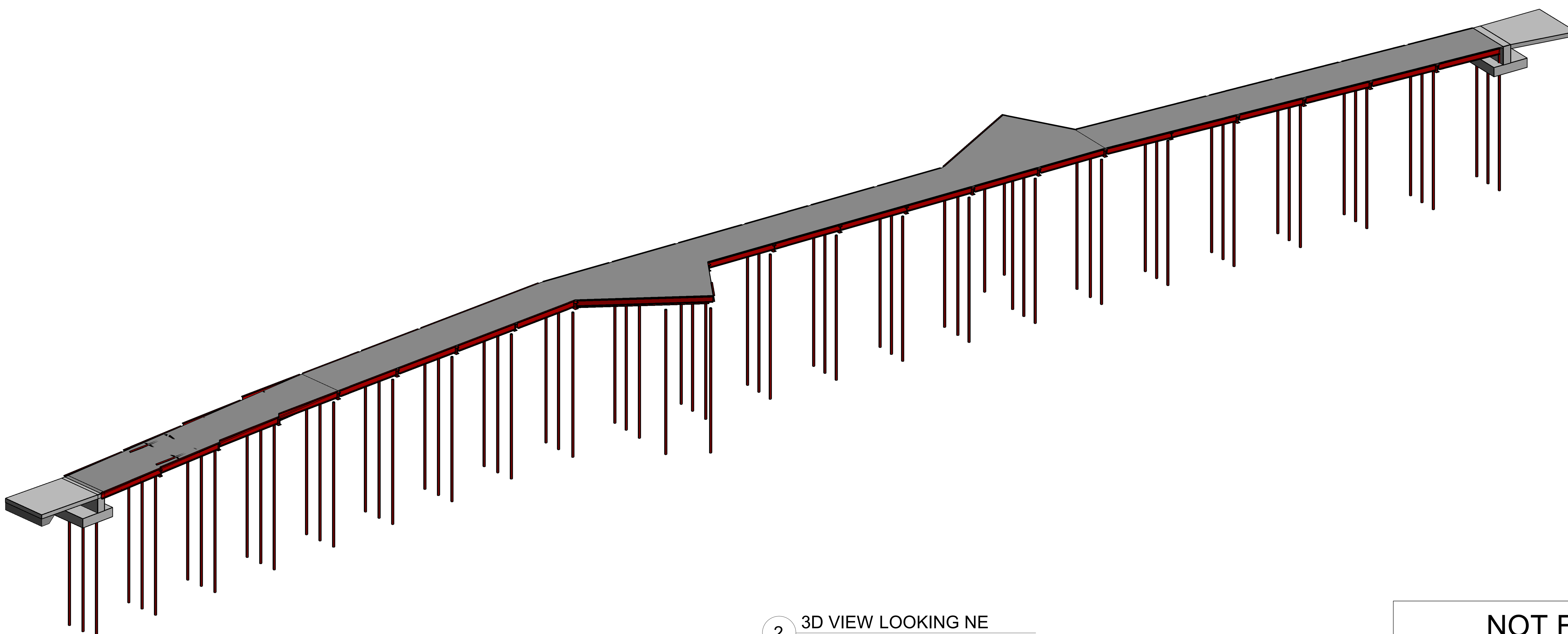
S301



1 3D VIEW LOOKING NW

SCALE:

NOTES:
3D VIEWS ARE FOR REFERENCE ONLY.



2 3D VIEW LOOKING NE

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3D VIEWS

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