

# KING RAIL RESERVE GOLF COURSE CLUBHOUSE

## 397 WALNUT STREET aka 1 KING RAIL DRIVE

### LYNNFIELD, MA

AUGUST 31, 2023

**APPLICANT:**

TOWN OF LYNNFIELD, MASSACHUSETTS  
 C/O MS. LISA DIMEO, P.E. TOWN ENGINEER  
 TOWN HALL, 55 SUMMER STREET  
 LYNNFIELD, MASSACHUSETTS 01940

**PROPERTY OWNER:**

TOWN OF LYNNFIELD, MASSACHUSETTS  
 C/O MR. ROBERT J. DOLAN, TOWN ADMINISTRATOR  
 TOWN HALL, 55 SUMMER STREET  
 LYNNFIELD, MASSACHUSETTS 01940

**CIVIL ENGINEER:**

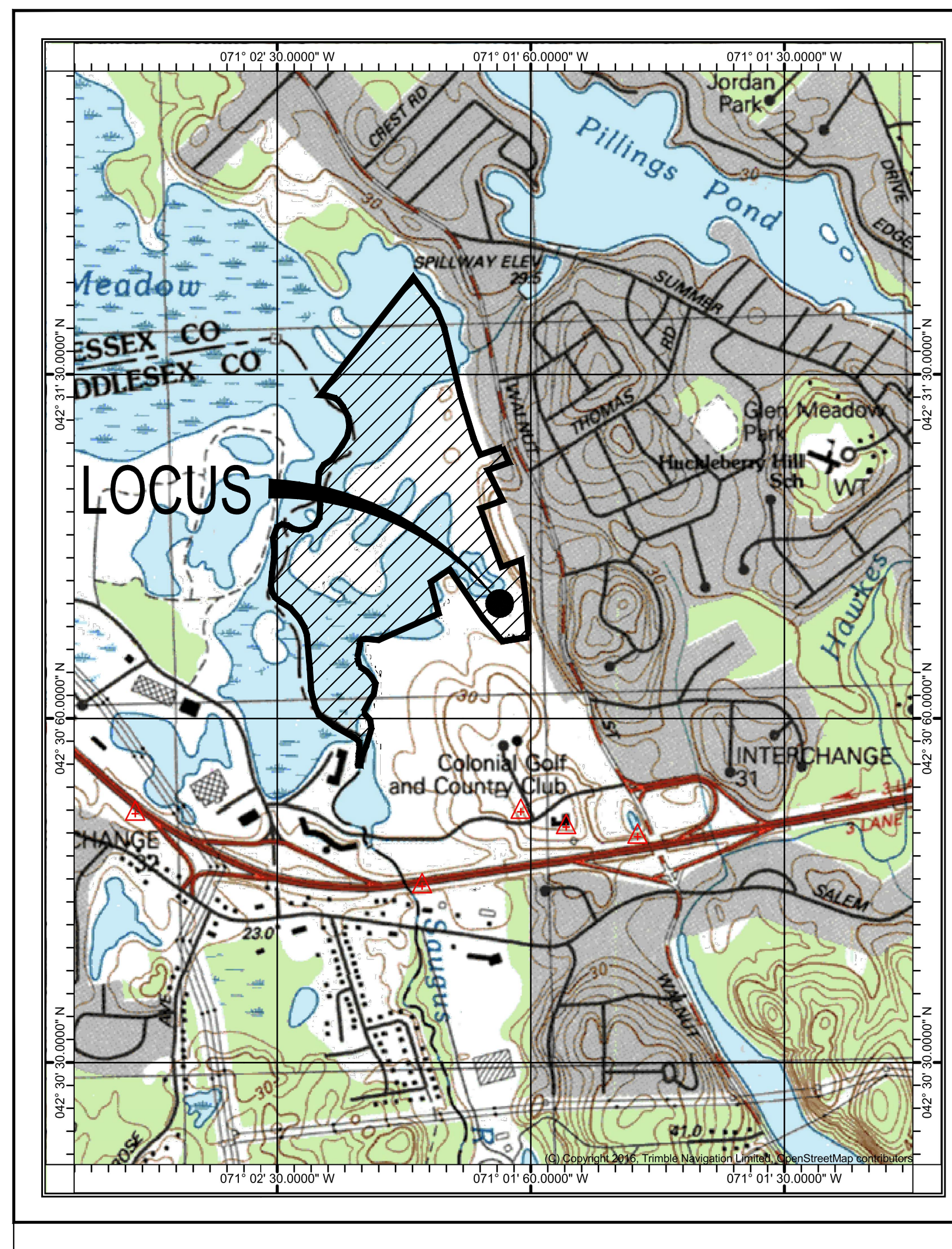
LINDEN ENGINEERING PARTNERS, LLC  
 18 HENDERSON ROAD  
 WOBURN, MA 01801-5919  
 TEL: (781) 933-3711

**NOTE:**

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION STANDARDS AND SPECIFICATIONS AS WELL AS THE TOWN OF LYNNFIELD STANDARDS AND SPECIFICATIONS..



ALL UNDERGROUND UTILITIES ARE NOT SHOWN ON THIS PLAN AND IF ANY ARE SHOWN THEY SHOULD BE CONSIDERED APPROXIMATE ONLY. BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.



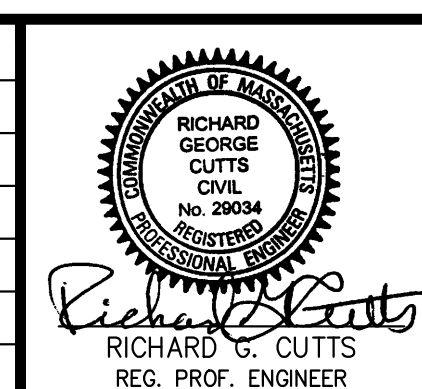
LOCUS MAP  
 SCALE: 1"=1,000'

**DRAWING LIST:**

- |              |   |
|--------------|---|
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DES. BY:	WAJ
DR. BY:	WAJ
CKD. BY:	RGC/WAJ
APPD. BY:	RGC
JOB NO.:	23120
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REV#	

ISSUED FOR NOI FILING
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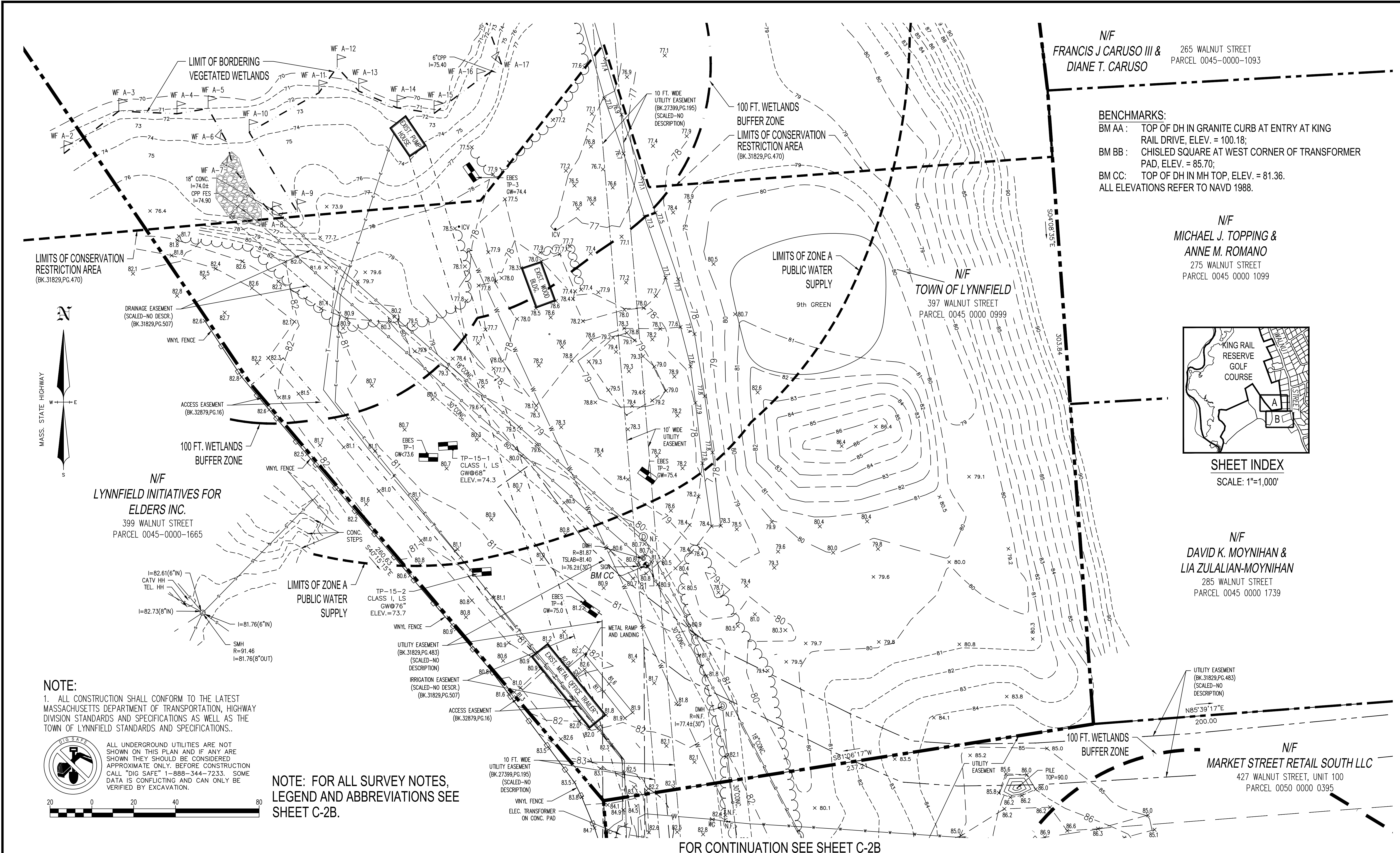
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Civil - Environmental Engineering including Storm water, Wastewater, Water Supply, Highway & Infrastructure Design, Land Planning, Land Subdivision, Site Design, Environmental Permitting, Wetlands Permitting & Land Development Permitting

PREPARED FOR:  
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*COVER SHEET*  
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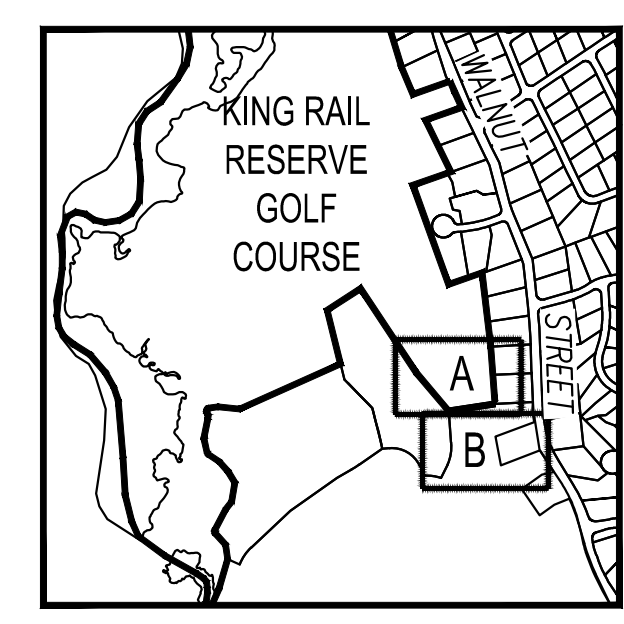
SHEET  
**C-1**



N/F  
**FRANCIS J CARUSO III & DIANE T. CARUSO**  
 265 WALNUT STREET  
 PARCEL 0045-0000-1093

**BENCHMARKS:**  
 BM AA : TOP OF DH IN GRANITE CURB AT ENTRY AT KING RAIL DRIVE, ELEV. = 100.18;  
 BM BB : CHISLED SQUARE AT WEST CORNER OF TRANSFORMER PAD, ELEV. = 85.70;  
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**MICHAEL J. TOPPING & ANNE M. ROMANO**  
 275 WALNUT STREET  
 PARCEL 0045 0000 1099



**SHEET INDEX**  
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N/F  
**DAVID K. MOYNIHAN & LIA ZULALIAN-MOYNIHAN**  
 285 WALNUT STREET  
 PARCEL 0045 0000 1739

N/F  
**MARKET STREET RETAIL SOUTH LLC**  
 427 WALNUT STREET, UNIT 100  
 PARCEL 0050 0000 0395

LIMITS OF CONSERVATION RESTRICTION AREA  
 (BK.31829,PG.470)

100 FT. WETLANDS BUFFER ZONE  
 LIMITS OF CONSERVATION RESTRICTION AREA  
 (BK.31829,PG.470)

LIMITS OF ZONE A PUBLIC WATER SUPPLY  
 9th GREEN

N/F  
**TOWN OF LYNNFIELD**  
 397 WALNUT STREET  
 PARCEL 0045 0000 0999

N/F  
**LYNNFIELD INITIATIVES FOR ELDERS INC.**  
 399 WALNUT STREET  
 PARCEL 0045-0000-1665

**NOTE: FOR ALL SURVEY NOTES, LEGEND AND ABBREVIATIONS SEE SHEET C-2B.**

FOR CONTINUATION SEE SHEET C-2B

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**RICHARD GEORGE CUTTS CIVIL**  
 REG. PROF. ENGINEER  
 No. 20034

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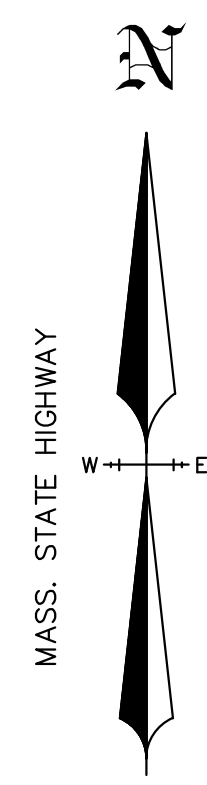
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**LYNNFIELD, MASSACHUSETTS**

SHEET  
**C-2A**

**LEGEND**

- CATCH BASIN (SINGLE OR DOUBLE)
- D — DRAIN LINE W/MANHOLE
- S — SEWER LINE W/MANHOLE
- SFM — SFM SEWER FORCE MAIN
- W — WATER LINE W/GATE VALVE
- W — HYDRANT W/GATE VALVE & TEE
- G — GAS LINE W/GATE VALVE
- UE — UNDERGROUND ELECTRIC W/MANHOLE
- UT — UNDERGROUND TELEPHONE W/MANHOLE
- UC — UNDERGROUND CABLE
- UC — UTILITY POLE W/GUY WIRE
- OHW — OVERHEAD WIRES W/UTILITY POLE LIGHT POLE
- OHW — TREE LIGHT OR FLOOD LIGHT
- CLF — CHAIN LINK FENCE
- W — WIRE GUARD RAIL
- MW — MONITORING WELL
- BCC — BITUMINOUS CONCRETE CURBING
- SSC — SLOPED GRANITE CURBING
- VGC — VERTICAL GRANITE CURBING
- P — HANDICAP PARKING SPACE
- R — REGULAR PARKING SPACE
- S — SIGN
- E — EDGE OF WOODS
- D — DECIDUOUS TREE
- C — CONIFEROUS TREE



FOR CONTINUATION SEE SHEET C-2A

**ABBREVIATIONS**

- |            |                              |           |                            |
|------------|------------------------------|-----------|----------------------------|
| AB         | ABANDONED                    | L.C.C.    | LAND COURT CASE            |
| A.C.       | ASBESTOS CEMENT              | LOC.      | LOCATION                   |
| APPROX.    | APPROXIMATE                  | LP        | LIGHT POLE                 |
| BCB        | BITUMINOUS CONCRETE BERM     | M.W.      | MONITORING WELL            |
| BCC        | BITUMINOUS CONCRETE CURB     | N.F.      | NOT FOUND                  |
| BIT.       | BITUMINOUS                   | N/F       | NOW OR FORMERLY            |
| BIT. CONC. | BITUMINOUS CONCRETE          | OHW       | OVERHEAD WIRE              |
| BOR.       | BORING                       | P.P.      | POLYPROPYLENE              |
| BLDG.      | BUILDING                     | P & R     | POST & RAIL                |
| BSW        | BITUMINOUS CONCRETE SIDEWALK | PIV       | POST INDICATOR VALVE       |
| C.B.       | CATCH BASIN                  | PVC       | POLYVINYL CHLORIDE         |
| CBICI      | CB W/CURB INLET              | PVMT      | PAVEMENT                   |
| CC         | CONCRETE CURB                | R=        | RISE ELEV. =               |
| CI         | CAST IRON                    | R.D.      | RETAINING WALL             |
| CLDI       | CEMENT LINED DUCTILE IRON    | RET. WALL | RETAINING WALL             |
| CLF        | CHAIN LINK FENCE             | S         | SEWER                      |
| C.O.       | CLEANOUT                     | S.F.      | SQUARE FEET                |
| CONC.      | CEMENT CONCRETE              | SGC       | SLOPED GRANITE CURB        |
| CT         | CONIFEROUS TREE              | SFM       | SEWER FORCE MAIN           |
| CSW        | CONCRETE SIDEWALK            | S.M.H.    | SEWER MANHOLE              |
| D          | DRAIN                        | STL       | STEEL                      |
| DBL        | DOUBLE                       | STOCK     | STOCKADE                   |
| D.I.       | DUCTILE IRON                 | TBM       | TEMPORARY BENCHMARK        |
| DOC.       | DOCUMENT                     | TEL.      | TELEPHONE                  |
| D.M.H.     | DRAIN MANHOLE                | T.O.W.    | TOP OF WALL                |
| DT         | DECIDUOUS TREE               | T.P.      | TEST PIT                   |
| E          | ELECTRIC                     | T.M.H.    | TELEPHONE MANHOLE          |
| ELEC.      | ELECTRIC                     | TRANSF.   | TRANSFORMER                |
| ELEV.      | ELEVATION                    | TYP       | TYPICAL                    |
| E.M.H.     | ELECTRIC MANHOLE             | UE        | UNDERGROUND ELECTRIC       |
| FDN        | FOUNDATION                   | U.G.      | UNDERGROUND                |
| F.E.S.     | FLARED END SECTION           | UP        | UTILITY POLE               |
| FIN. FLR.  | FINISH FLOOR                 | UT        | UNDERGROUND TELEPHONE      |
| F.L.       | FLOOD LIGHT                  | UT/FA     | UNDERGROUND TEL/FIRE ALARM |
| FNC        | FENCE                        | VASD      | VERT. ASBESTOS SUBDRAIN    |
| FT.        | FEET                         | VC        | VITRIFIED CLAY             |
| G          | GAS                          | VGC       | VERTICAL GRANITE CURB      |
| G=         | GRADE =                      | W         | WATER                      |
| GG         | GAS GATE                     | WD.       | WOOD                       |
| GUY        | GUY WIRE                     | WE=       | WATER ELEV. =              |
| H.P.       | HIGH PRESSURE                | WG        | WATER GATE                 |
| HYD.       | FIRE HYDRANT                 | WT #      | WETLAND FLAG #             |
| I=         | INVERT ELEV. =               | WS        | WATER SHUT OFF             |

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ELDERS INC.**  
399 WALNUT STREET  
PARCEL 0045-0000-1665

N/F  
**MARKET STREET RETAIL SOUTH LLC**  
427 WALNUT STREET  
PARCEL 0050 0000 0395

STORMWATER BASIN  
MADEP FILE  
#209-0451  
(POND 2C)

100 FT. WETLANDS  
BUFFER ZONE

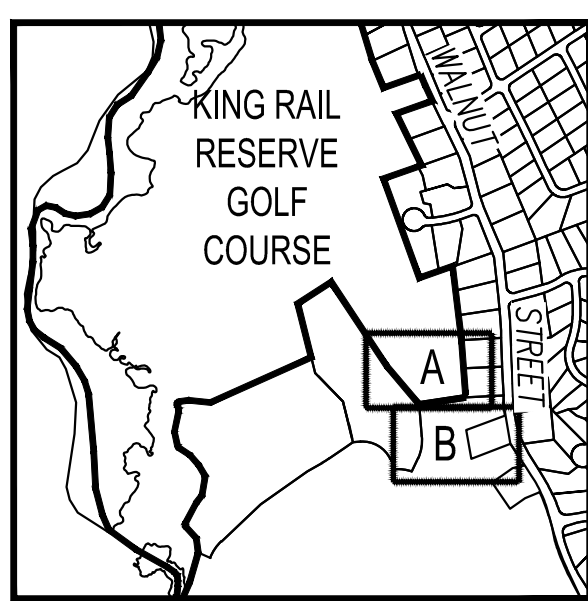
N/F  
**SUSAN A. ROACH**  
299 WALNUT STREET  
PARCEL 0045-0000-1874

LIMITS OF WETLANDS  
FROM MADEP FILE  
#209-0451

LIMITS OF  
WETLANDS FROM  
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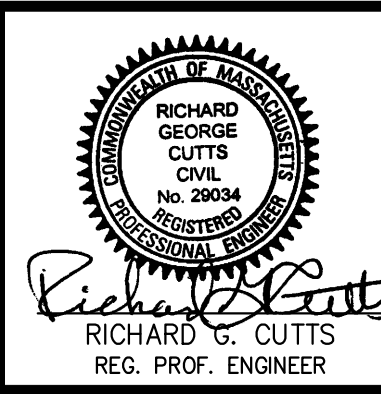


**SHEET INDEX**  
SCALE: 1"=1,000'

**IMPORTANT NOTES:**

1. THE KING RAIL GOLF COURSE PROPERTY IS OWNED BY THE TOWN OF LYNNFIELD BY VIRTUE OF A DEED FROM MARKET STREET AT LYNNFIELD DEVELOPMENT LLC DATED OCTOBER 9, 2012 AND RECORDED AT THE ESSEX COUNTY REGISTRY OF DEEDS, SOUTHERN DISTRICT (ESRD) IN BOOK 32117, PAGE 59. THE LAND IS SHOWN ON THE TOWN OF LYNNFIELD ASSESSOR'S MAP 045 AS PARCEL 099 WITH AN ADDRESS OF 397 WALNUT STREET (ALSO KNOWN AS 1 KING RAIL DRIVE). THE LAND IS ALSO SHOWN AS LOT 1 ON PLAN RECORDED IN PLAN BOOK 437 AS PLAN 37 RECORDED AT THE ESRD AND CONTAINS 103± ACRES OF LAND ACCORDING TO SAID PLAN.
2. IN ADDITION TO THE EASEMENTS SHOWN ON THIS PLAN, THE ENTIRETY OF LOT 1 IS SUBJECT TO AN EASEMENT FOR WATER WITHDRAWAL SET FORTH IN ESRD BOOK 31829, PAGE 507 AND ANY OTHER EASEMENTS OF RECORD OR OTHERWISE.
3. THE PROPERTY LINES, EASEMENTS, GROUND CONTOURS, EXISTING CONDITIONS AND UTILITY INFORMATION SHOWN ON THIS PLAN WERE COMPILED FROM PREVIOUS PLANS OF THE PROPERTY PREPARED BY STANTEC, INC. (MARKET STREET PROJECT), WILLIAMS AND SPARGES, INC. (2015 CLUBHOUSE PROJECT), BCS (2017 CLUBHOUSE PROJECT AMENDMENT) AND EAGLEBROOK ENGINEERING AND SURVEY, LLC AS WELL AS A LIMITED ON THE GROUND SURVEY BY LINDEN ENGINEERING PARTNERS, LLC.
4. THE PROPERTY LINES SHOWN ON THIS PLAN WERE COMPILED FROM PREVIOUS PLANS BY OTHERS AND ARE NOT THE RESULT OF A COMPLETE PROPERTY LINE SURVEY BY LINDEN ENGINEERING PARTNERS, LLC.
5. THE LOCATION OF THE UTILITIES AS SHOWN HEREON HAVE BEEN COMPILED FROM PREVIOUS PLANS OF THE SITE BY OTHERS. UNDERGROUND ELECTRIC LINES AND CONDUITS, TELEPHONE LINES AND CONDUITS, COMMUNICATIONS LINES AND CONDUITS, CABLE TV LINES AND CONDUITS, FIRE ALARM LINES AND CONDUITS, GAS MAINS AND SERVICES, SANITARY SEWER MAINS AND SERVICES, SURFACE DRAINAGE MAINS AND SERVICES AND WATER MAINS AND SERVICES (IF ANY) AND IRRIGATION LINES MAY NOT BE SHOWN ON THIS PLAN AND IF SHOWN THEIR LOCATIONS AND ELEVATIONS SHOULD BE CONSIDERED ONLY APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ON THE PROPERTY. LINDEN ENGINEERING PARTNERS, LLC MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED AND FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE THE INFORMATION SHOWN ON THESE PLANS IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. ANY PERSON PERFORMING WORK ON OR ADJACENT TO THE SITE SHALL CALL 811 OR 1-888-344-7233 (1-888-DIGSAFE) "DIG SAFE" AS REQUIRED BY THE MASSACHUSETTS GENERAL LAWS SECTION 40 AND CHAPTER 82, SECTION 76(D) AT LEAST 72 HOURS PRIOR TO PERFORMING ANY EXCAVATION IN ORDER TO HAVE THE UTILITIES MARKED OUT. PRIOR TO PLANNING ANY NEW UTILITY CONNECTIONS, THE PROPER PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED TO VERIFY THE SIZE AND LOCATIONS OF THEIR EXISTING FACILITIES.
6. THE LIMITS OF BORDERING VEGETATED WETLANDS AT THE NORTHERLY END OF THE PROJECT AREA (WETLAND FLAGS 2 THROUGH 17) WERE FLAGGED IN THE FIELD BY PATRICK SEEKAMP, PWS, CWS OF SEEKAMP ENVIRONMENTAL CONSULTANTS, INC., KINGSTON, NH ON JULY 12, 2023 AND THE FLAGS WERE FIELD LOCATED BY OUR FIRM. THE WETLAND LIMITS SHOWN ON THE ADJUTING PROPERTY TO THE SOUTHEAST OF THE PROJECT AREA WERE TAKEN FROM THE PLANS APPROVED AS PART OF MADEP WETLAND FILE #209-0451.
7. THE LIMITS OF BORDERING LAND SUBJECT TO FLOODING WERE PREPARED FROM THE 100 YEAR FLOOD ELEVATION SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANELS #25009C-393F AND 25009C-394F WITH AN EFFECTIVE DATE OF JULY 3, 2012.
8. ZONE A FOR THE PUBLIC WATER SUPPLY WAS TAKEN FROM THE MASSMAPPER WEB SITE.
9. NO TREES WERE LOCATED AS PART OF THIS SURVEY.
10. ALL PAVEMENT, UNLESS OTHERWISE NOTED, IS BITUMINOUS CONCRETE.
11. IF THESE PLANS ARE UTILIZED FOR EARTHWORK CALCULATIONS THE PERSON PERFORMING THE CALCULATIONS SHOULD BE KNOWLEDGEABLE IN THE STANDARD SURVEYING TOLERANCES AND ACCURACIES INVOLVED IN THE PREPARATION OF A ONE FOOT CONTOUR INTERVAL TOPOGRAPHIC PLAN USING A COMBINATION OF METHODOLOGIES. THIS PLAN HAS BEEN PREPARED SUCH THAT 90% OF THE CONTOURS ARE ACCURATE TO WITHIN 0.5 FEET AND THE REMAINING 10% OF THE CONTOURS ARE ACCURATE TO WITHIN 1 FOOT. 90% OF THE SPOT ELEVATIONS SHOWN ARE ACCURATE TO WITHIN 0.3 FEET AND THE REMAINING 10% ARE ACCURATE TO WITHIN 0.5 FEET. ANYONE USING THESE PLANS SHOULD MAKE APPROPRIATE ALLOWANCES IN THEIR CALCULATIONS OR STUDIES.
12. NO VISIBLE ROCK OR LEDGE WAS OBSERVED AT THE SITE, HOWEVER, THESE PLANS SHOULD NOT BE UTILIZED FOR THE CALCULATION OF LEDGE QUANTITIES.
13. THE TEST PITS SHOWN ON THIS PLAN ARE FROM PREVIOUS WORK BY OTHERS.

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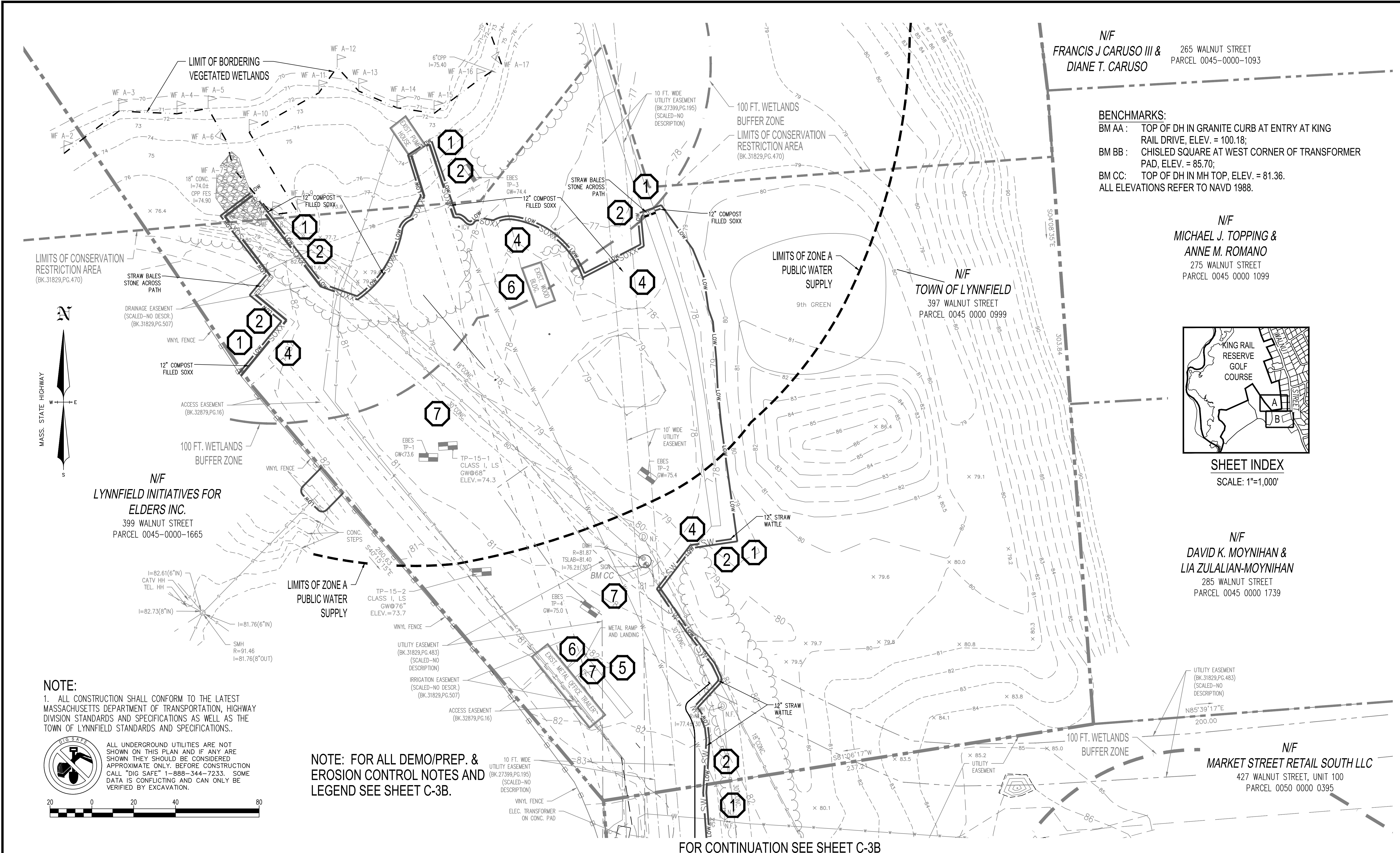
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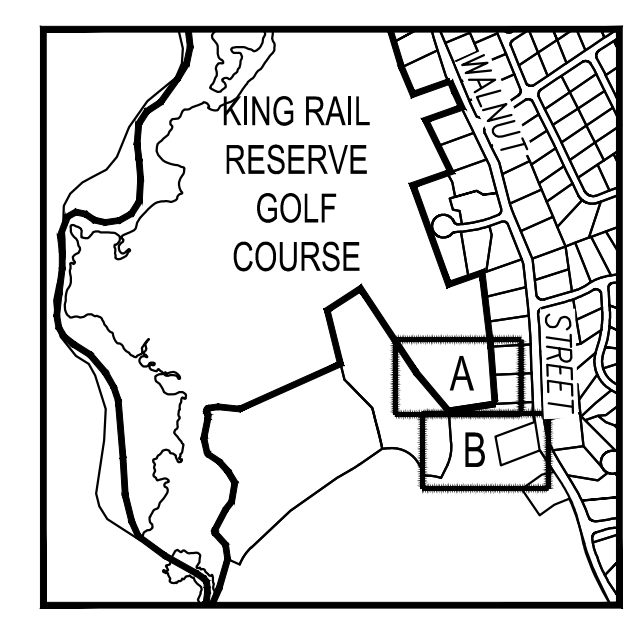


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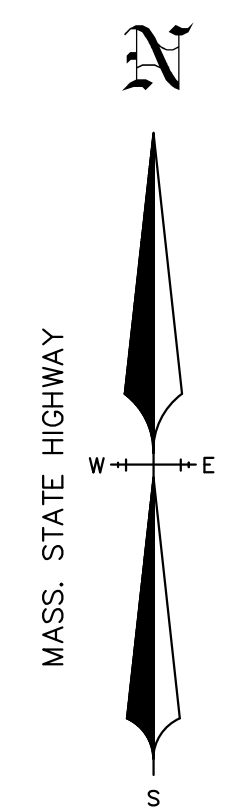
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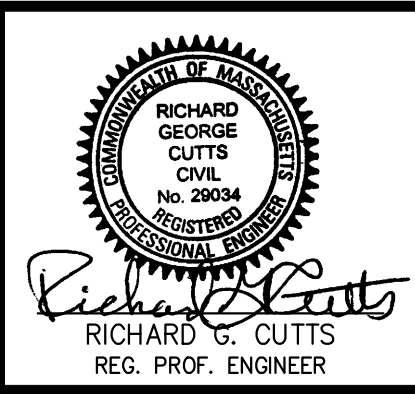
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FOR CONTINUATION SEE SHEET C-3A

**DEMOLITION AND EROSION CONTROL LEGEND:**

- Low LIMIT OF WORK LINE
- SOXX 12" COMPOST FILLED FILTREXX SOXX
- STRAW BALE EROSION CHECKS
- SW STRAW WADDLE
- SILT SACK @ CATCH BASIN

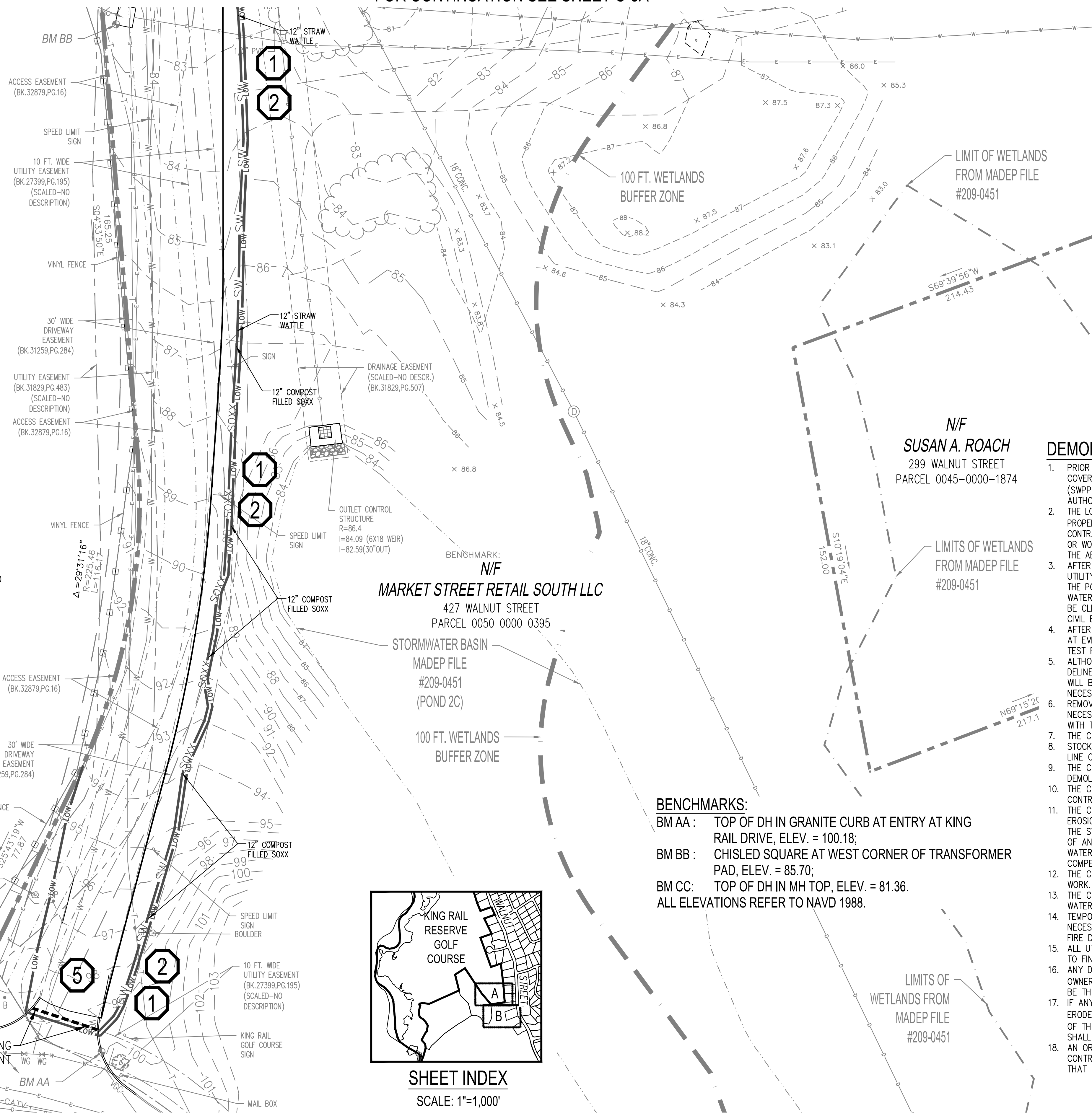
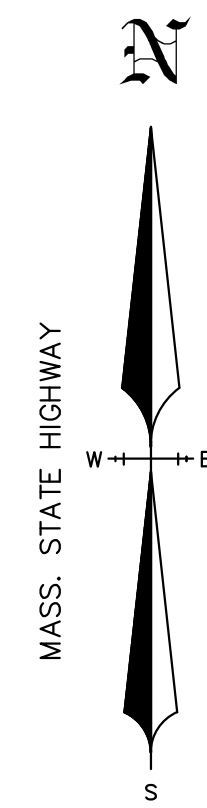
**SITE DEMOLITION KEY**

NOTE: DISPOSE OF ALL RESULTING DEBRIS IN AN APPROVED OFF-SITE LOCATION UNLESS DIRECTED OTHERWISE.

- 1 MARK OR STAKE THE LIMIT OF WORK LINE IN THE FIELD FOR REVIEW BY THE OWNER, THE LYNNFIELD CONSERVATION COMMISSION AND THE CIVIL ENGINEER.
- 2 INSTALL EROSION CONTROLS IN THE LOCATIONS SHOWN.
- 3 INSTALL SILT SACKS IN CATCH BASINS IN THE LOCATIONS SHOWN.
- 4 INSTALL ORANGE PLASTIC TREE PROTECTION FENCING ON TEMPORARY METAL POSTS AROUND ANY EXISTING TREES TO REMAIN. REMOVE EXISTING TREES, SHRUBBERY AND STUMPS WITHIN THE LIMIT OF WORK AS NECESSARY TO PERMIT THE WORK.
- 5 INSTALL CRUSHED STONE TRACKING PAD IN A LOCATION TO BE DETERMINED BY THE CONTRACTOR.
- 6 REMOVE THE EXISTING SHED AND TRAILER. DISCONNECT AND MAKE SAFE ALL UTILITY CONNECTIONS TO THESE STRUCTURES PRIOR TO MOVING.
- 7 REMOVE ANY OTHER EXISTING SITE IMPROVEMENTS SUCH AS WALLS, SIGNS, METAL RAMPS, ETC.

**DEMOLITION AND PREPARATION & EROSION CONTROL NOTES:**

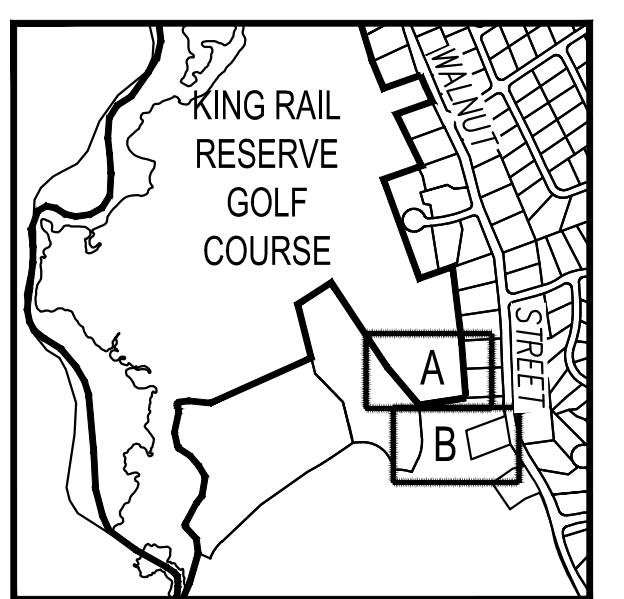
1. PRIOR TO CONDUCTING ANY EARTH DISTURBANCE ON THE SITE, THE CONTRACTOR SHALL FILE A NOTICE OF INTENT FOR COVERAGE UNDER THE USEPA CONSTRUCTION GENERAL PERMIT AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) TO BE IMPLEMENTED DURING CONSTRUCTION. NO EARTH DISTURBANCE SHALL OCCUR UNTIL THE USEPA AUTHORIZATION CERTIFICATION IS COMPLETED.
2. THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON THE PROPERTY. AS REQUIRED BY MASSACHUSETTS GENERAL LAWS, CHAPTER 82, SECTION 40 AND CHAPTER 164, SECTION 76(D), THE CONTRACTOR MUST CALL DIG SAFE, TELEPHONE NO. 1-888-344-7233, AT LEAST 72 HOURS PRIOR TO CONDUCTING ANY EXCAVATION OR WORK ON THE PROPERTY IN ORDER TO HAVE ALL EXISTING UTILITY LINES MARKED OUT ON THE PROPERTY AND THE PORTION OF THE ADJUTING PROPERTY WHERE THE SEWER CONNECTION IS TO BE MADE.
3. AFTER THE UTILITIES HAVE BEEN MARKED OUT BY DIG SAFE, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PRIVATE UTILITY LOCATING COMPANY OR COMPANIES TO MARK OUT ALL UNDERGROUND UTILITY LINES WITHIN THE LIMIT OF WORK AND THE PORTION OF THE ADJUTING PROPERTY WHERE THE SEWER CONNECTION IS TO BE MADE. THE LINES TO BE LOCATED INCLUDE WATER LINES, DRAIN LINES, TELEPHONE LINES, CABLE TV LINES, ELECTRIC LINES AND IRRIGATION LINES. THESE LINES SHALL BE CLEARLY MARKED OUT ON THE GROUND AND LOCATED ON A PLAN WHICH SHALL BE PROVIDED TO THE OWNER AND THE CIVIL ENGINEER.
4. AFTER ALL OF THE UTILITY LINES HAVE BEEN MARKED OUT ON THE GROUND, THE CONTRACTOR SHALL CONDUCT TEST PITS AT EVERY LOCATION WHERE A NEW UTILITY LINE IS TO CONNECT TO OR CROSS AN EXISTING LINE. THE RESULTS OF THE TEST PITS SHALL BE RECORDED ON A PLAN WHICH SHALL BE PROVIDED TO THE OWNER AND THE CIVIL ENGINEER.
5. ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COMPLETION OF ALL SITE CLEARING, TREE AND VEGETATION REMOVAL AND DEMOLITION WORK NECESSARY TO COMPLETE THE PROJECT.
6. REMOVE ONLY THOSE AREAS OR ITEMS NOTED ON THIS DRAWING. IF, IN THE OPINION OF THE CONTRACTOR, IT IS NECESSARY TO REMOVE ADDITIONAL ITEMS NOT NOTED ON THIS DRAWING FOR REMOVAL THE CONTRACTOR SHALL CONSULT WITH THE CIVIL ENGINEER AND THE OWNER PRIOR TO REMOVING SUCH ITEMS.
7. THE CONTRACTOR PROTECT ALL TREES WITHIN THE LIMIT OF WORK THAT ARE DESIGNATED BY THE OWNER TO REMAIN STOCKPILE MATERIALS IN LOCATIONS APPROVED BY THE OWNER ONLY. ALL SOIL STOCKPILES SHALL BE SURROUNDED BY A LINE OF STAKED STRAW BALES OR A COMPOST FILLED SOXX.
8. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE DRAWING PRIOR TO BEGINNING ANY DEMOLITION ACTIVITIES.
9. THE CONTRACTOR SHALL INSTALL THE CRUSHED STONE TRACKING PAD IN A LOCATION TO BE MUTUALLY DETERMINED BY THE CONTRACTOR AND THE OWNER PRIOR TO ANY DEMOLITION ACTIVITIES.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROLS AND FOR PROVIDING ADDITIONAL EROSION CONTROLS THROUGHOUT THE CONSTRUCTION IN ACCORDANCE WITH THE USEPA CONSTRUCTION GENERAL PERMIT AND THE SWPPP, AS NECESSARY TO RETAIN ALL SOIL WITHIN THE WORK AREA AND AS NECESSARY TO PREVENT ANY SILTATION OF ANY AREAS OUTSIDE THE ACTUAL WORK AREA. RUNOFF FROM THE SITE IS TRIBUTARY TO THE CITY OF LYNN DRINKING WATER SUPPLY. ALL SUCH ADDITIONAL EROSION CONTROLS ARE PART OF THE WORK OF THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE DUE TO THE CONTRACTOR FOR SUCH WORK.
11. THE CONTRACTOR SHALL PROVIDE STREET SWEEPING OF THE ADJACENT ROADWAY ON AN AS NEEDED BASIS AS PART OF HIS WORK.
12. THE CONTRACTOR SHALL PROVIDE CONTINUOUS DUST CONTROL ON A 7 DAY A WEEK BASIS THROUGHOUT THE WORK. WATERING SHALL BE THE ONLY ACCEPTABLE METHOD OF DUST CONTROL.
13. TEMPORARY FENCING FOR THE SITE SHALL BE LOCATED IN CONSULTATION WITH THE OWNER TO MAINTAIN ACCESS TO ALL NECESSARY AREAS AND EMERGENCY ACCESS AND EGRESS FROM THE WORK SITE AS REQUIRED BY THE TOWN OF LYNNFIELD FIRE DEPARTMENT. THE PHASING OF THE WORK MAY REQUIRE THAT THE FENCING BE RELOCATED SEVERAL TIMES.
14. ALL UTILITY CASTINGS FOR NEW UTILITIES AND EXISTING UTILITIES TO REMAIN ARE TO BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL PAVING OR WALKWAY INSTALLATION, PLANTING, LOAMING AND SODDING.
15. ANY DAMAGE TO ITEMS NOT SCHEDULED FOR REMOVAL SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AND THE CIVIL ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE. THE STANDARDS FOR REPLACEMENT WORK SHALL BE THE SAME AS FOR NEW WORK.
16. IF ANY SILTATION OCCURS OUTSIDE OF THE LIMITS OF WORK AND EROSION CONTROLS THE CONTRACTOR SHALL REMOVE THE ERODED MATERIAL AND RESTORE THE AFFECTED SURFACES/AREAS TO THEIR PRE-EXISTING CONDITION TO THE SATISFACTION OF THE OWNER AND THE CIVIL ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE. THE STANDARDS FOR REPLACEMENT WORK SHALL BE THE SAME AS FOR NEW WORK.
17. AN ORDER OF CONDITIONS WILL BE ISSUED BY THE LYNNFIELD CONSERVATION COMMISSION FOR THIS PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE, AS PART OF HIS WORK, FOR COMPLYING WITH ALL OF THE CONDITIONS CONTAINED IN THAT ORDER.



N/F  
SUSAN A. ROACH  
299 WALNUT STREET  
PARCEL 0045-0000-1874

N/F  
MARKET STREET RETAIL SOUTH LLC  
427 WALNUT STREET  
PARCEL 0050 0000 0395

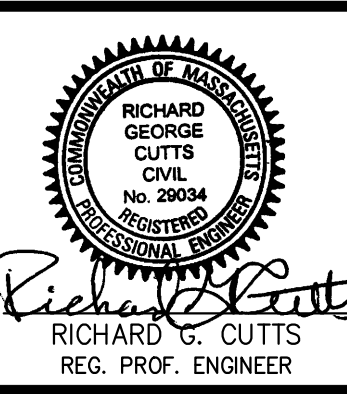
**BENCHMARKS:**  
 BM AA: TOP OF DH IN GRANITE CURB AT ENTRY AT KING RAIL DRIVE, ELEV. = 100.18;  
 BM BB: CHISLED SQUARE AT WEST CORNER OF TRANSFORMER PAD, ELEV. = 85.70;  
 BM CC: TOP OF DH IN MH TOP, ELEV. = 81.36.  
 ALL ELEVATIONS REFER TO NAVD 1988.



**SHEET INDEX**  
SCALE: 1"=1,000'

DES. BY:	WAJ
DR. BY:	WAJ
CKD. BY:	RGC/WAJ
APPD. BY:	RGC
JOB NO.:	23120
SCALE:	1" = 20'
DATE:	AUG. 31, 2023
DATE:	8/31/2023
BY:	WAJ
REV#:	1

ISSUED FOR NOI FILING	
REVISIONS	



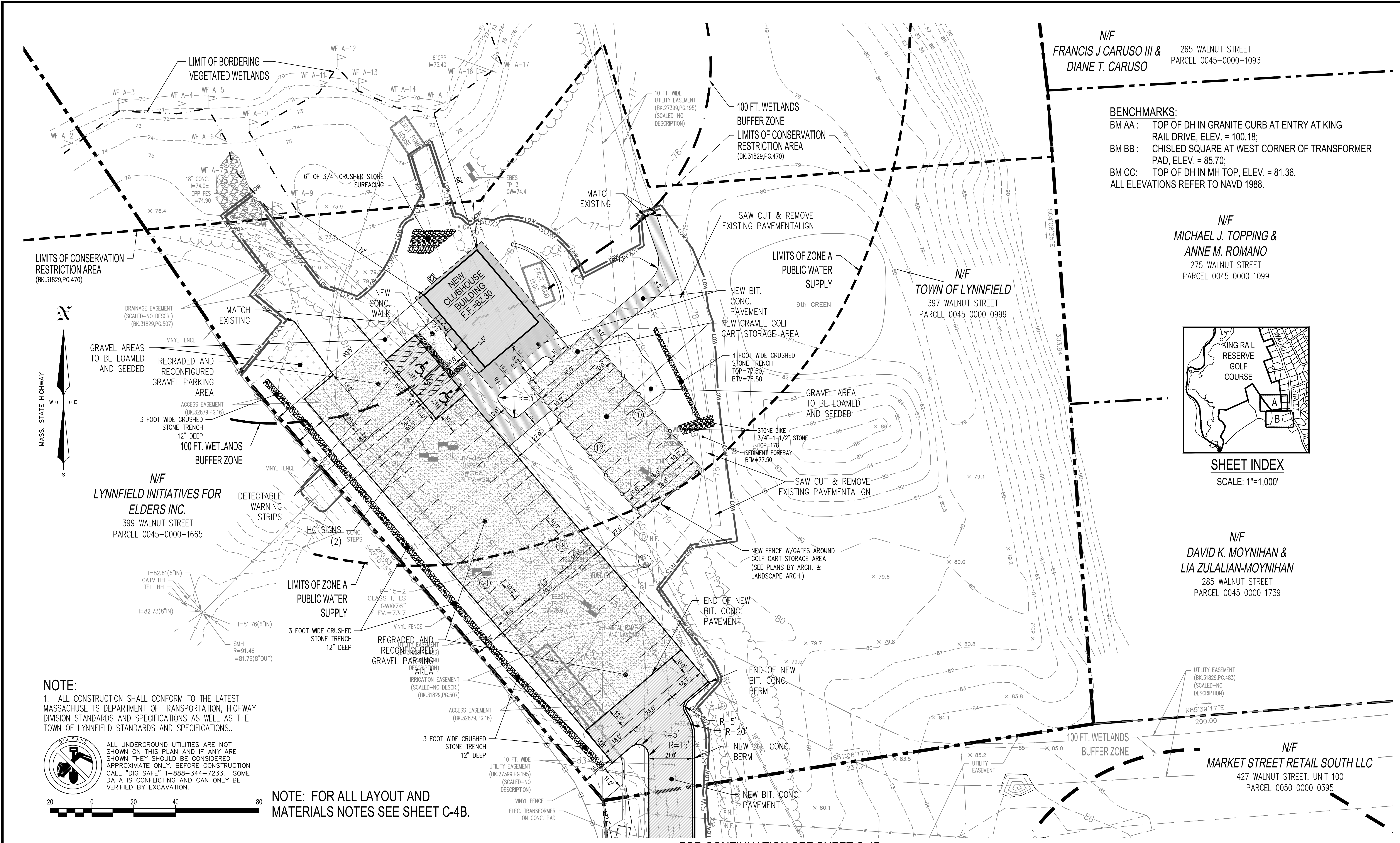
**LINDEN ENGINEERING PARTNERS LLC**  
 18 Henderson Road  
 Woburn, MA 01801-5919  
 Tel: (781) 933-3711  
 Fax: (781) 287-1277

Civil - Environmental Engineering including Storm water, Wastewater, Water Supply, Highway & Infrastructure Design, Land Planning, Land Subdivision, Site Design, Environmental Permitting, Wetlands Permitting & Land Development Permitting

PREPARED FOR:  
**TOWN OF LYNNFIELD, MA**  
 DEPARTMENT OF PUBLIC WORKS  
 TOWN HALL, 55 SUMMER STREET  
 LYNNFIELD, MASSACHUSETTS 01940  
 TEL: (781) 334-9500

**SITE DEMOLITION, PREPARATION AND EROSION CONTROL PLAN**  
**KING RAIL RESERVE GOLF COURSE CLUBHOUSE**  
 397 WALNUT STREET aka 1 KING RAIL DRIVE  
 LYNNFIELD, MASSACHUSETTS

SHEET  
**C-3B**

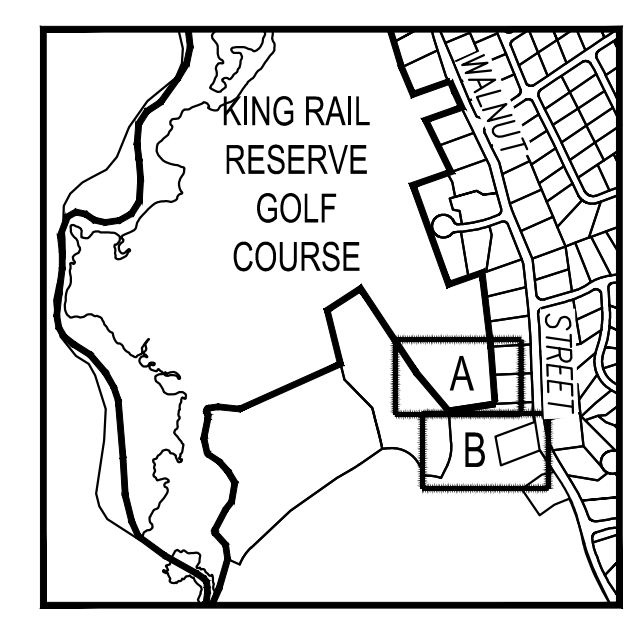


N/F  
**FRANCIS J. CARUSO III & DIANE T. CARUSO**  
 265 WALNUT STREET  
 PARCEL 0045-0000-1093

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N/F  
**MICHAEL J. TOPPING & ANNE M. ROMANO**  
 275 WALNUT STREET  
 PARCEL 0045 0000 1099

N/F  
**TOWN OF LYNNFIELD**  
 397 WALNUT STREET  
 PARCEL 0045 0000 0999



**SHEET INDEX**  
 SCALE: 1"=1,000'

N/F  
**DAVID K. MOYNIHAN & LIA ZULALIAN-MOYNIHAN**  
 285 WALNUT STREET  
 PARCEL 0045 0000 1739

N/F  
**MARKET STREET RETAIL SOUTH LLC**  
 427 WALNUT STREET, UNIT 100  
 PARCEL 0050 0000 0395

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**NOTE: FOR ALL LAYOUT AND MATERIALS NOTES SEE SHEET C-4B.**

FOR CONTINUATION SEE SHEET C-4B

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JOB NO.:	23120
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REG. PROF. ENGINEER

**RICHARD G. CUTTS**  
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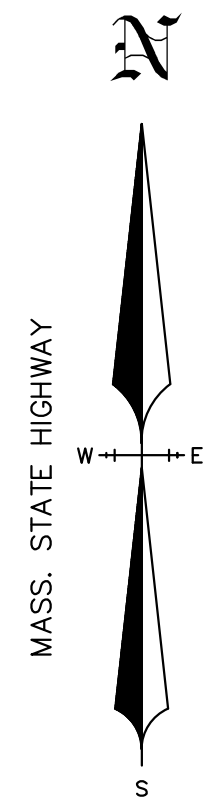
PREPARED FOR:  
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 DEPARTMENT OF PUBLIC WORKS  
 TOWN HALL, 55 SUMMER STREET  
 LYNNFIELD, MASSACHUSETTS 01940  
 TEL: (781) 334-9500

**SITE LAYOUT AND MATERIALS PLAN**  
**KING RAIL RESERVE GOLF COURSE CLUBHOUSE**  
**397 WALNUT STREET aka 1 KING RAIL DRIVE**  
**LYNNFIELD, MASSACHUSETTS**

SHEET  
**C-4A**

FOR CONTINUATION SEE SHEET C-4A

N/F  
LYNNFIELD INITIATIVES FOR  
ELDERS INC.  
399 WALNUT STREET  
PARCEL 0045-0000-1665

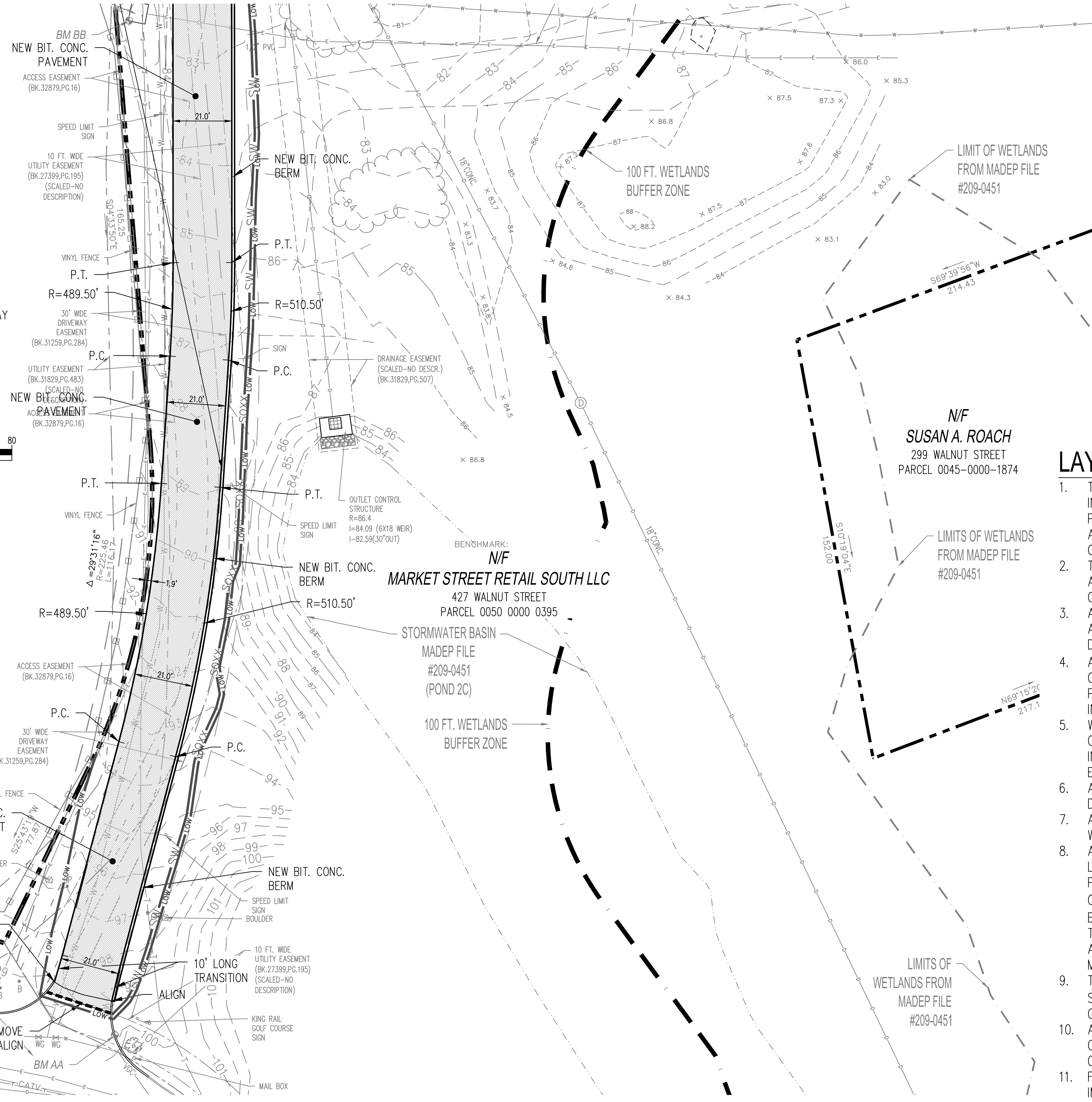


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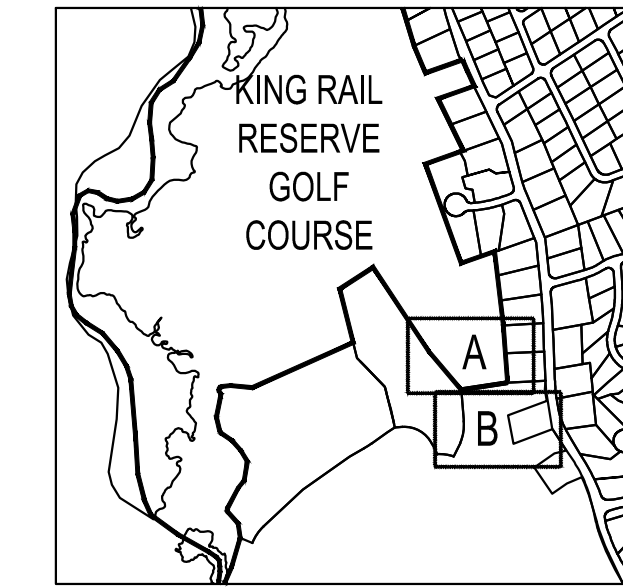


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**SHEET INDEX**

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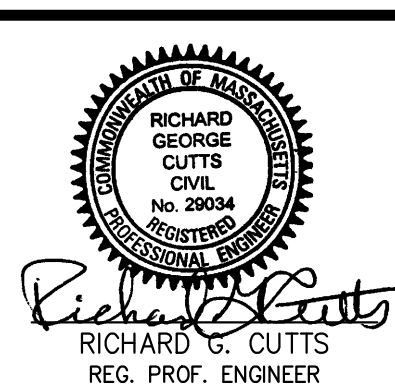
**LAYOUT AND MATERIALS NOTES:**

1. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE CIVIL ENGINEER IN WRITING OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO ANY WORK AND DURING THE WORK. ANY FIELD ADJUSTMENTS ARE TO BE APPROVED BY THE OWNER AND THE CIVIL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
2. THE CONTRACTOR SHALL STAKE OUT ALL PROPOSED IMPROVEMENTS FOR THE APPROVAL OF THE OWNER AND THE CIVIL ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE IMPROVEMENTS.
3. ALL EXISTING PAVEMENTS, CURBING, BERM, WALKWAYS, SIGNS, ETC. WITHIN THE WORK AREA SHALL BE REMOVED PRIOR TO ANY NEW CONSTRUCTION AND PROPERLY DISPOSED OF OFF-SITE.
4. ALL DIMENSIONS SHOWN ARE TO THE EDGE OF PAVEMENT/FACE OF CURBING, FACE OF WALL OR BUILDING OR WETLAND. ALL LINES ARE PERPENDICULAR TO OR PARALLEL TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
5. WHERE NEW PAVEMENT OR WALKWAYS MEET EXISTING PAVEMENT OR WALKWAYS THE CONTRACTOR SHALL SAW CUT EDGE OF EXISTING PAVEMENT OR WALKWAY AND INSTALL THE NEW PAVEMENT OR WALKWAY TO MEET THE LINE AND GRADE OF EXISTING PAVEMENT OR WALKWAY.
6. ALL NEW CURBING SHALL BE BITUMINOUS CONCRETE BERM CONFORMING TO THE DETAIL SHOWN ON THESE PLANS.
7. ALL PROPOSED REGULAR PARKING SPACES FOR THE PROJECT SHALL BE 10 FEET WIDE BY 18 FEET LONG AND CONTAIN 180 S.F.
8. ALL PROPOSED HANDICAPPED PARKING SPACES SHALL BE 10 FEET WIDE BY 18 FEET LONG WITH AN 8 FOOT ACCESS AISLE BETWEEN THE SPACES. EACH HANDICAPPED PARKING SPACE SHALL HAVE A 4 INCH WIDE PAINTED WHITE STRIPE ON EACH SIDE OF THE SPACE AND A PAINTED HANDICAPPED SYMBOL (WHITE WHEEL CHAIR ON BLUE BACKGROUND) ON THE PAVEMENT WITHIN THE SPACES NEAR THE DRIVEWAY END OF THE SPACE. EACH HANDICAPPED SPACE SHALL HAVE A HANDICAPPED PARKING SIGN AT THE END OF THE SPACE. SIGNS SHALL BE CONSISTENT WITH THE MASSACHUSETTS AAB REGULATIONS.
9. THE HANDICAPPED SPACE ACCESS AISLE AND THE MAIN BUILDING ACCESS AISLE SHALL BE SURROUNDED BY A 4" PAINTED WHITE STRIPE AND SHALL HAVE 4: WIDE GORE MARKS STRIPED WITHIN THE SPACE TO INDICATE NO PARKING.
10. ALL VEHICULAR SURFACES AND DRIVEWAYS SHALL BE PAVED WITH BITUMINOUS CONCRETE PAVEMENT. ALL PROPOSED WALKWAYS SHALL BE CONCRETE UNLESS OTHERWISE NOTED.
11. FOR THE BUILDING ARCHITECTURE AND PROPOSED LANDSCAPING AND SITE IMPROVEMENTS, SEE PLANS BY THE PROJECT ARCHITECT.

DES. BY:	WAJ
DR. BY:	WAJ
CKD. BY:	RGC/WAJ
APPD. BY:	RGC
JOB NO.:	23120
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DATE:	AUG. 31, 2023
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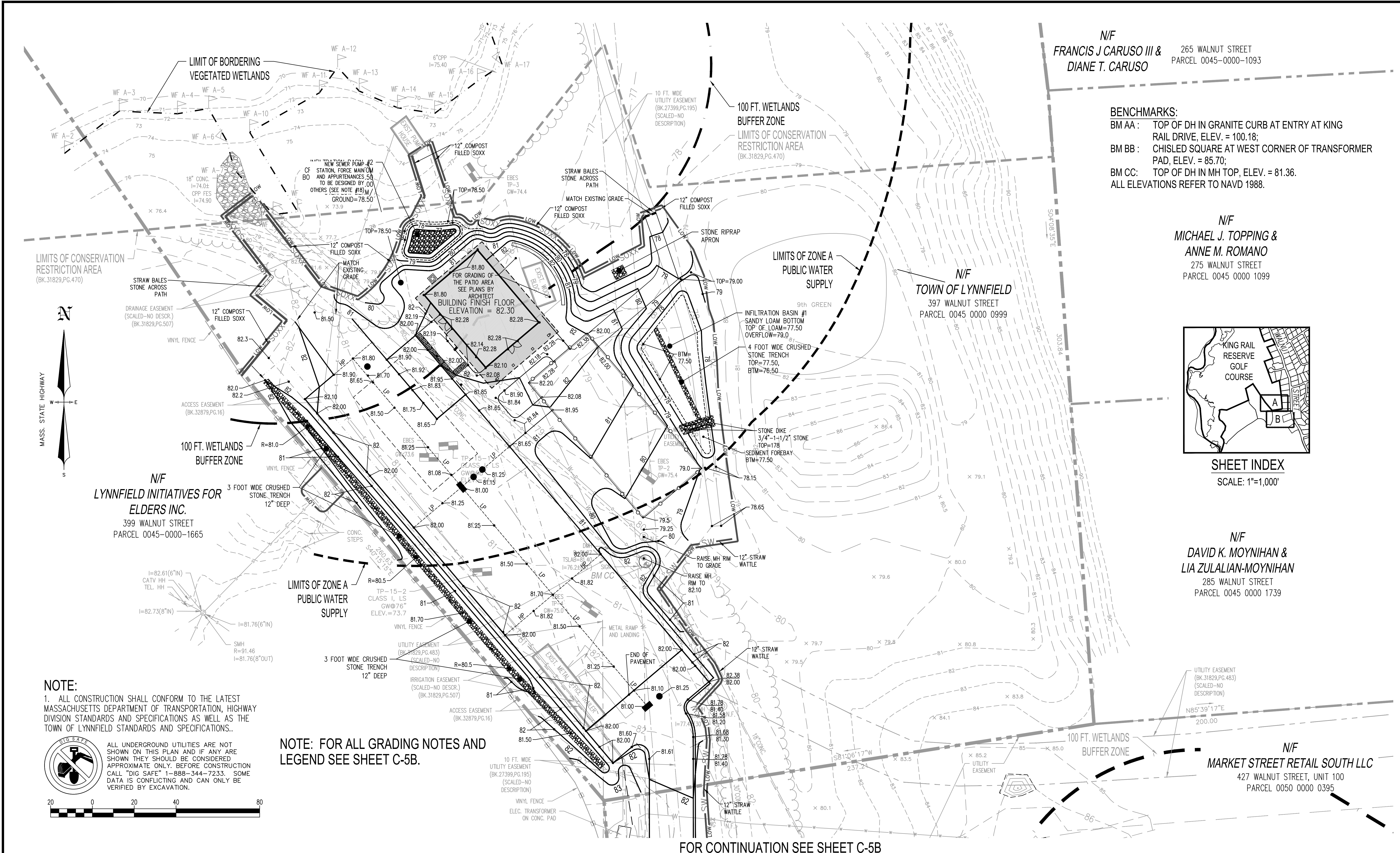
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TEL: (781) 334-9500

**SITE LAYOUT AND MATERIALS PLAN**  
**KING RAIL RESERVE GOLF COURSE CLUBHOUSE**  
**397 WALNUT STREET aka 1 KING RAIL DRIVE**  
**LYNNFIELD, MASSACHUSETTS**

SHEET  
**C-4B**

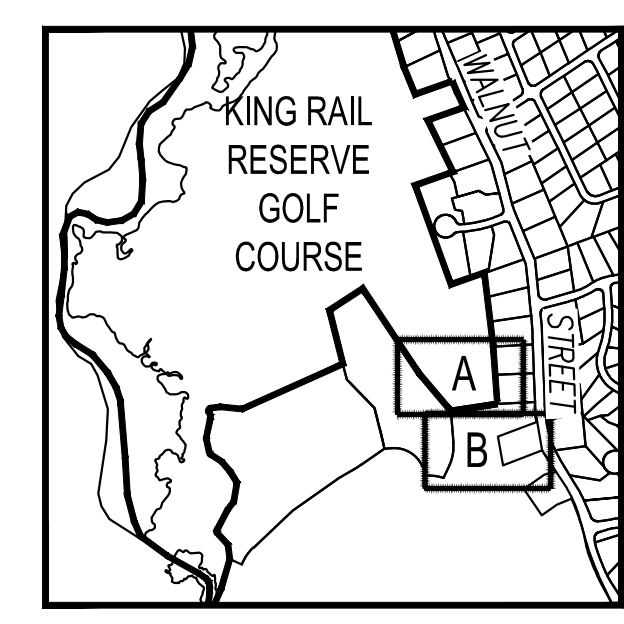


N/F  
FRANCIS J. CARUSO III &  
DIANE T. CARUSO  
265 WALNUT STREET  
PARCEL 0045-0000-1093

**BENCHMARKS:**  
 BM AA : TOP OF DH IN GRANITE CURB AT ENTRY AT KING  
 RAIL DRIVE, ELEV. = 100.18;  
 BM BB : CHISLED SQUARE AT WEST CORNER OF TRANSFORMER  
 PAD, ELEV. = 85.70;  
 BM CC : TOP OF DH IN MH TOP, ELEV. = 81.36.  
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N/F  
MICHAEL J. TOPPING &  
ANNE M. ROMANO  
275 WALNUT STREET  
PARCEL 0045 0000 1099

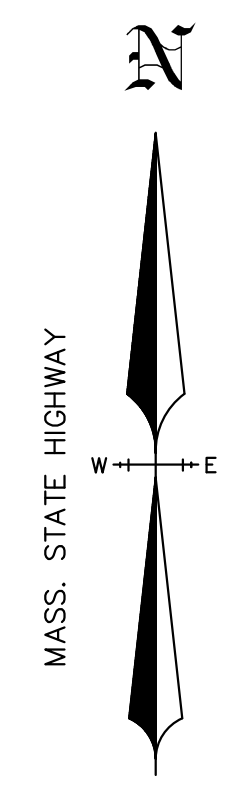
N/F  
TOWN OF LYNNFIELD  
397 WALNUT STREET  
PARCEL 0045 0000 0999



**SHEET INDEX**  
SCALE: 1"=1,000'

N/F  
DAVID K. MOYNIHAN &  
LIA ZULALIAN-MOYNIHAN  
285 WALNUT STREET  
PARCEL 0045 0000 1739

N/F  
MARKET STREET RETAIL SOUTH LLC  
427 WALNUT STREET, UNIT 100  
PARCEL 0050 0000 0395



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FOR CONTINUATION SEE SHEET C-5B

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RICHARD G. CUTTS  
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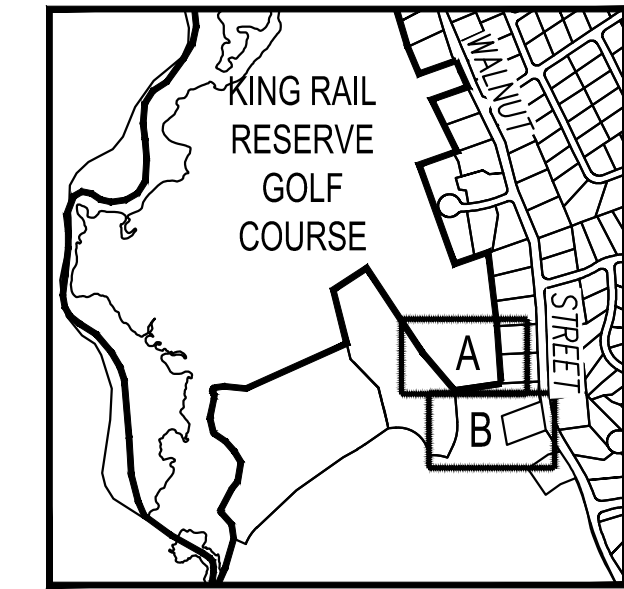
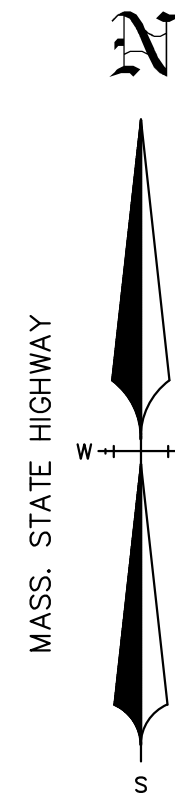
**SITE GRADING PLAN**  
 KING RAIL RESERVE GOLF COURSE CLUBHOUSE  
 397 WALNUT STREET aka 1 KING RAIL DRIVE  
 LYNNFIELD, MASSACHUSETTS

SHEET  
**C-5A**



FOR CONTINUATION SEE SHEET C-5A

N/F  
LYNNFIELD INITIATIVES FOR  
ELDERS INC.  
399 WALNUT STREET  
PARCEL 0045-0000-1665



SHEET INDEX  
SCALE: 1"=1,000'

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- ALL ELEVATIONS REFER TO NAVD 1988.

**GRADING LEGEND:**

- 80 EXISTING GROUND CONTOUR
- 80 PROPOSED CONTOUR
- 188.00 PROPOSED NEW SPOT GRADE
- 82.38 PROPOSED NEW TOP CURB/BTM CURB GRADE

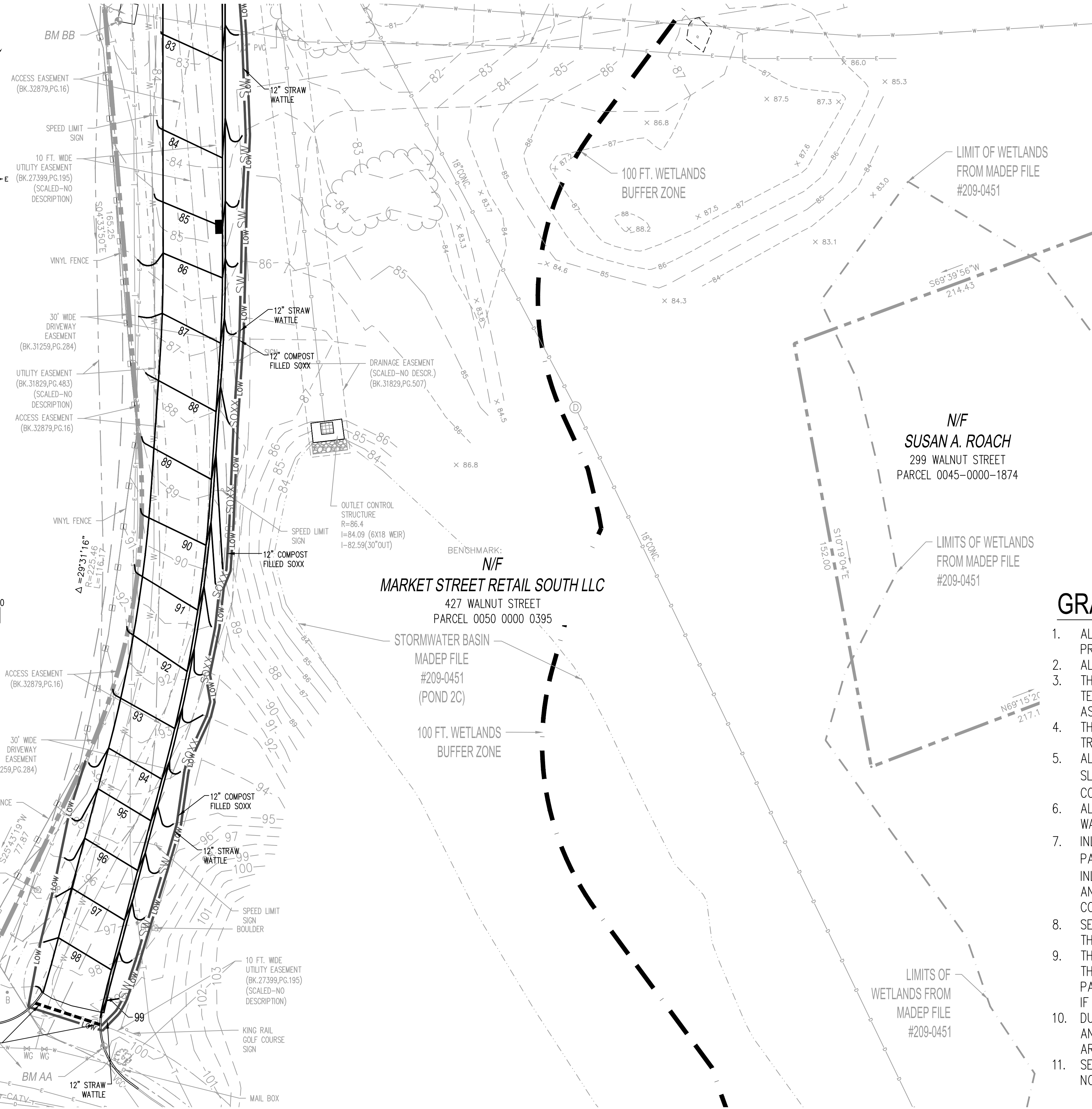
**GRADING NOTES:**

1. ALL FIELD ADJUSTMENTS TO BE APPROVED BY THE OWNER AND THE CIVIL ENGINEER PRIOR TO COMMENCING WITH THE WORK.
2. ALL TREES TO BE SAVED SHALL BE SURROUNDED BY TREE PROTECTION FENCING.
3. THE CONTRACTOR SHALL CONSULT WITH THE OWNER REGARDING THE PLACEMENT OF THE TEMPORARY 6 FT. HIGH CHAIN LINK FENCE WITH ADEQUATELY SIZED GATES POSITIONED AS DETERMINED BY THE OWNER AND THE TOWN OF LYNNFIELD FIRE DEPARTMENT.
4. THE CONTRACTOR SHALL LOAM AND SEED ALL AREAS NOT NOTED TO RECEIVE OTHER TREATMENT.
5. ALL PROPOSED GRADES SHALL BLEND SMOOTHLY WITH EXISTING GRADES. THE MAXIMUM SLOPE SHALL BE 2:1 TO MEET EXISTING GRADE. SLOPE STABILIZATION (EROSION CONTROL MATTING) IS REQUIRED ON ALL SLOPES 3:1 OR STEEPER.
6. ALL SPOT ELEVATIONS SHOWN ARE FINISHED GROUND, FINISHED PAVEMENT OR FINISHED WALKWAY GRADES UNLESS OTHERWISE NOTED.
7. INLET PROTECTION (SILT SACKS SUPPLEMENTED WITH STAKED STRAW BALES IN NON PAVED AREAS) SHALL BE PROVIDED FOR THE DRAINAGE SYSTEM (ALL EXISTING AND NEW INLETS) WITHIN THE LIMIT OF WORK OR WITHIN 100 FEET OF THE LIMIT OF WORK LINE AND THIS INLET PROTECTION SHALL BE MAINTAINED UNTIL ALL WORK HAS BEEN COMPLETED AND AREAS HAVE BEEN PAVED AND VEGETATION HAS BEEN ESTABLISHED.
8. SET ALL CONCRETE WALKWAYS AND PADS AT ALL BUILDING DOORS DOWN 1/4" LOWER THAN INTERIOR FINISHED FLOOR ELEVATION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING CONSTRUCTION. THE ONLY ACCEPTABLE MEANS OF DUST CONTROL ARE WATERING AND SWEEPING. PAVED SURFACES WILL BE SWEEPED WEEKLY DURING CONSTRUCTION OR MORE FREQUENTLY IF NEEDED.
10. DURING CONSTRUCTION CATCH BASINS SHOULD BE INSPECTED MONTHLY AND CLEANED IN ANTICIPATION OF THE WINTER SEASON IN NOVEMBER AND AT THE SAME TIME THE ROADS ARE SWEEPED IN THE SPRING.
11. SEE THE SITE DEMOLITION, PREPARATION AND EROSION CONTROL PLANS FOR ADDITIONAL NOTES AND REQUIREMENTS.

**NOTE:**

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION STANDARDS AND SPECIFICATIONS AS WELL AS THE TOWN OF LYNNFIELD STANDARDS AND SPECIFICATIONS..

ALL UNDERGROUND UTILITIES ARE NOT SHOWN ON THIS PLAN AND IF ANY ARE SHOWN THEY SHOULD BE CONSIDERED APPROXIMATE ONLY. BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.

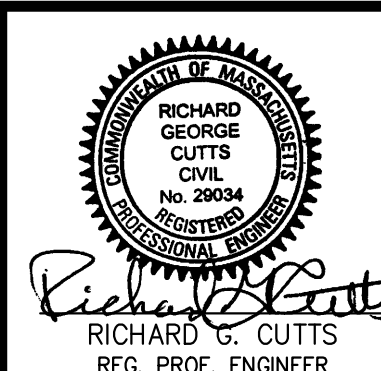


N/F  
LYNNFIELD INITIATIVES FOR  
ELDERS INC.  
399 WALNUT STREET  
PARCEL 0045-0000-1665

KING RAIL  
DRIVE  
(PRIVATE -  
VARIABLE WIDTH)

DES. BY:	WAJ
DR. BY:	WAJ
CKD. BY:	RGC/WAJ
APPD. BY:	RGC
JOB NO.:	23120
SCALE:	1" = 20'
DATE:	AUG. 31, 2023
DATE:	8/31/2023
BY:	WAJ
REV#:	1

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REVISIONS	



**LINDEN ENGINEERING PARTNERS LLC**

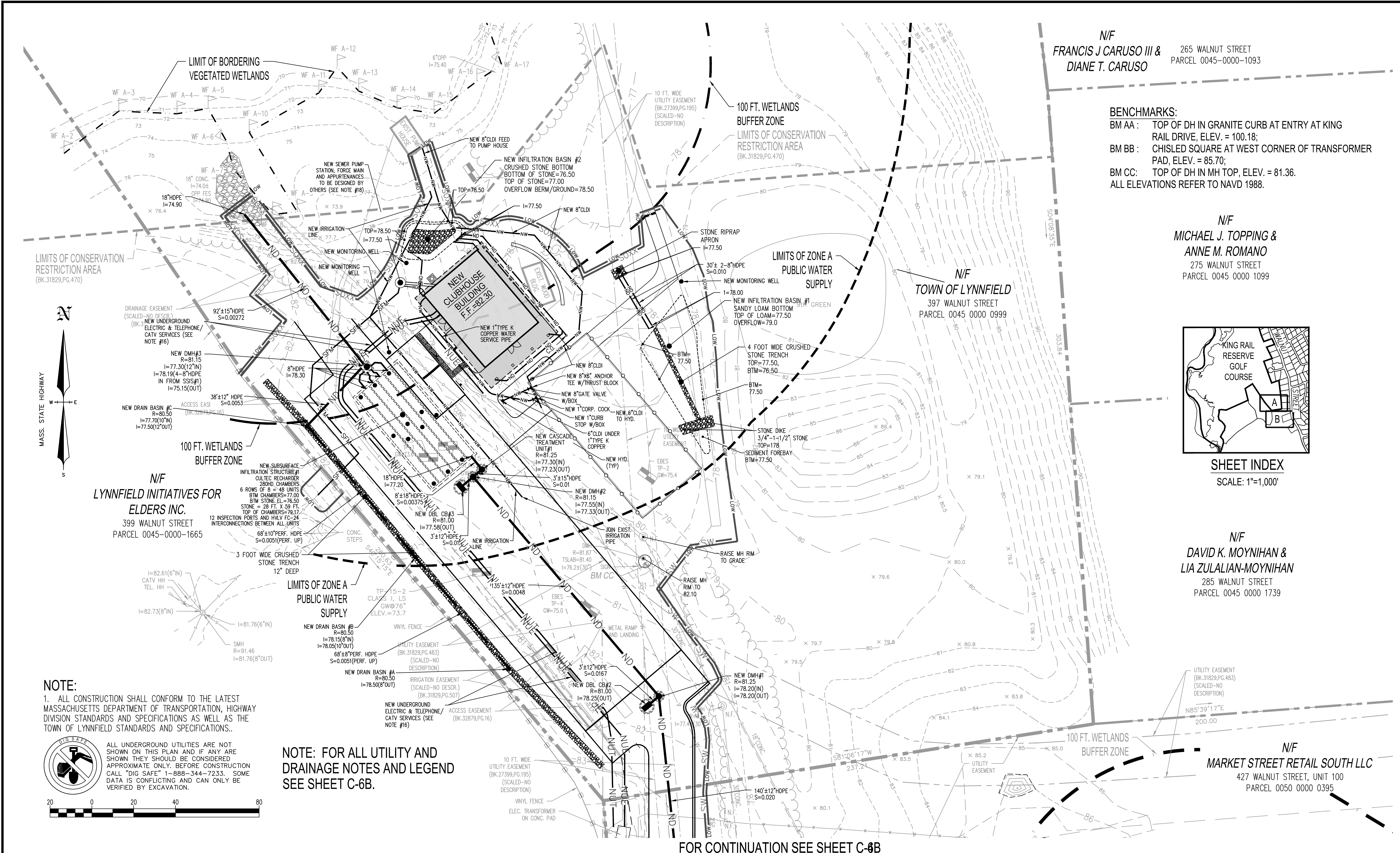
18 Henderson Road  
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Civil - Environmental Engineering including  
Storm water, Wastewater, Water Supply,  
Highway & Infrastructure Design, Land  
Planning, Land Subdivision, Site Design,  
Environmental Permitting, Wetlands  
Permitting & Land Development Permitting

PREPARED FOR:  
**TOWN OF LYNNFIELD, MA**  
DEPARTMENT OF PUBLIC WORKS  
TOWN HALL, 55 SUMMER STREET  
LYNNFIELD, MASSACHUSETTS 01940  
TEL: (781) 334-9500

**SITE GRADING PLAN**  
KING RAIL RESERVE GOLF COURSE CLUBHOUSE  
397 WALNUT STREET aka 1 KING RAIL DRIVE  
LYNNFIELD, MASSACHUSETTS

SHEET  
**C-5B**

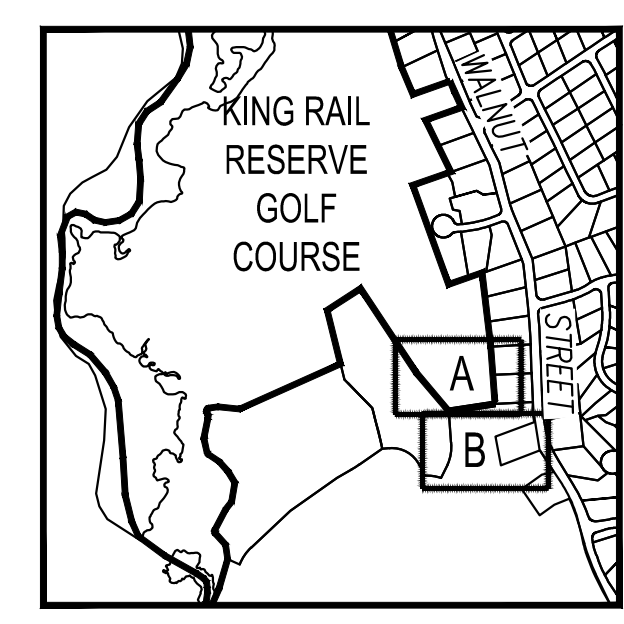


N/F  
**FRANCIS J. CARUSO III & DIANE T. CARUSO**  
 265 WALNUT STREET  
 PARCEL 0045-0000-1093

**BENCHMARKS:**  
 BM AA : TOP OF DH IN GRANITE CURB AT ENTRY AT KING RAIL DRIVE, ELEV. = 100.18;  
 BM BB : CHISLED SQUARE AT WEST CORNER OF TRANSFORMER PAD, ELEV. = 85.70;  
 BM CC : TOP OF DH IN MH TOP, ELEV. = 81.36.  
 ALL ELEVATIONS REFER TO NAVD 1988.

N/F  
**MICHAEL J. TOPPING & ANNE M. ROMANO**  
 275 WALNUT STREET  
 PARCEL 0045 0000 1099

N/F  
**TOWN OF LYNNFIELD**  
 397 WALNUT STREET  
 PARCEL 0045 0000 0999



**SHEET INDEX**  
 SCALE: 1"=1,000'

N/F  
**DAVID K. MOYNIHAN & LIA ZULALIAN-MOYNIHAN**  
 285 WALNUT STREET  
 PARCEL 0045 0000 1739

N/F  
**MARKET STREET RETAIL SOUTH LLC**  
 427 WALNUT STREET, UNIT 100  
 PARCEL 0050 0000 0395

**NOTE:**  
 1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION STANDARDS AND SPECIFICATIONS AS WELL AS THE TOWN OF LYNNFIELD STANDARDS AND SPECIFICATIONS.



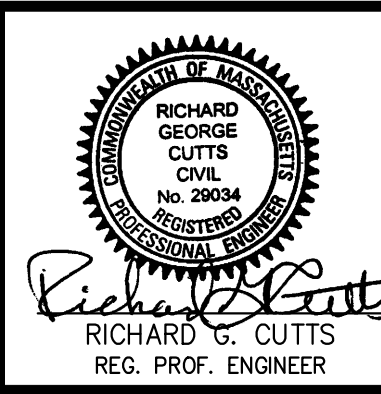
ALL UNDERGROUND UTILITIES ARE NOT SHOWN ON THIS PLAN AND IF ANY ARE SHOWN THEY SHOULD BE CONSIDERED APPROXIMATE ONLY. BEFORE CONSTRUCTION CALL "DIG SAFE" 1-888-344-7233. SOME DATA IS CONFLICTING AND CAN ONLY BE VERIFIED BY EXCAVATION.

**NOTE: FOR ALL UTILITY AND DRAINAGE NOTES AND LEGEND SEE SHEET C-6B.**

FOR CONTINUATION SEE SHEET C-6B

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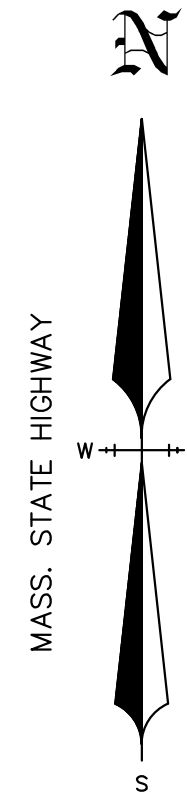
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**SITE UTILITY AND DRAINAGE PLAN**  
 KING RAIL RESERVE GOLF COURSE CLUBHOUSE  
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 LYNNFIELD, MASSACHUSETTS

**SHEET C-6A**


FOR CONTINUATION SEE SHEET C-6A

N/F  
LYNNFIELD INITIATIVES FOR  
ELDERS INC.  
399 WALNUT STREET  
PARCEL 0045-0000-1665



**NOTE:**

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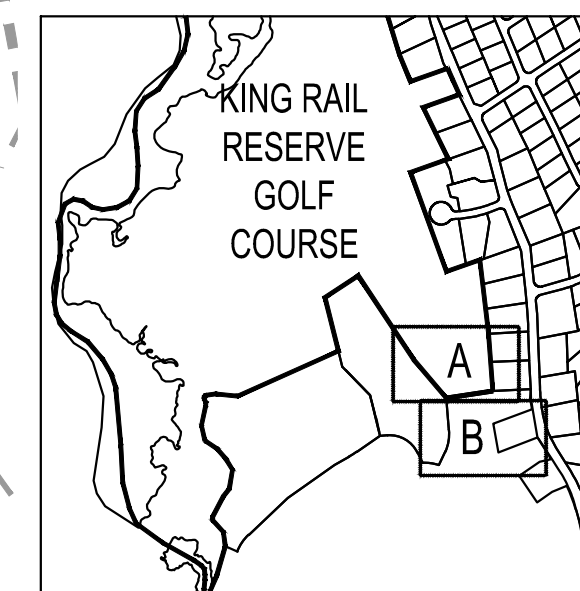


**DRAINAGE AND UTILITY LEGEND:**

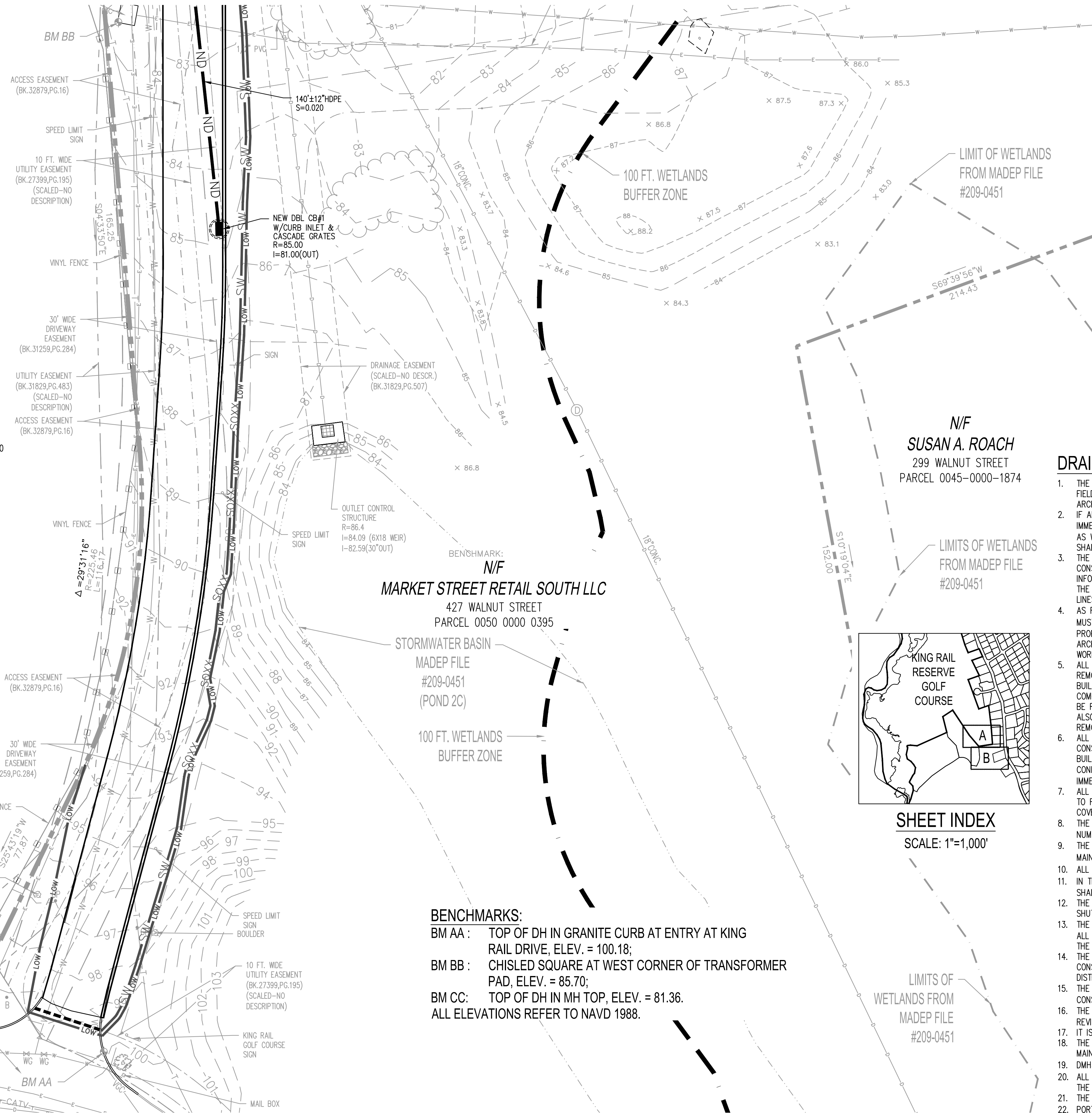
- DMH ● SMH NEW SEWER/DRAIN MANHOLE
- CB NEW CATCH BASIN
- CB NEW DOUBLE CATCH BASIN
- NEW INLINE DRAIN
- ⊕ GV NEW GATE VALVE W/BOX TO GRADE
- ⊕ HYD NEW FIRE HYDRANT
- 8" CLDI NEW WATER LINE
- 8" PVC S = 0.0200 NEW SANITARY SEWER LINE
- 12" RCP S = 0.0050 NEW STORM DRAIN LINE
- NUT — NEW TELEPHONE LINE
- NUE — NEW ELECTRIC LINE

**DRAINAGE AND UTILITY NOTES:**

1. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE CIVIL ENGINEER IN WRITING OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS PRIOR TO AND DURING THE EXECUTION OF THE WORK. ALL FIELD ADJUSTMENTS SHALL BE APPROVED BY THE ARCHITECT AND CIVIL ENGINEER PRIOR TO CONSTRUCTION OF THE AFFECTED WORK.
2. IF ANY EXISTING UTILITY LINE OR SERVICE IS DAMAGED BY THE CONTRACTOR DURING THE PROGRESS OF THE WORK IT SHALL BE IMMEDIATELY REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE TO THE SATISFACTION OF ARCHITECT AND CIVIL ENGINEER AS WELL AS THE RELEVANT UTILITY COMPANY. UTILITY SERVICE TO ALL EXISTING BUILDINGS ON AND ADJACENT TO THE PROJECT SHALL BE MAINTAINED AT ALL TIMES.
3. THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON THE PROPERTY. ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THESE PLANS. THE INFORMATION SHOWN ON THESE PLANS IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES AND THE LYNNFIELD WATER DISTRICT RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THESE LINES.
4. AS REQUIRED BY MASSACHUSETTS GENERAL LAWS, CHAPTER 82, SECTION 40 AND CHAPTER 164, SECTION 76(d), THE CONTRACTOR MUST CALL "DIG SAFE", TELEPHONE NO. 1-888-344-7233, AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION OR WORK ON THE PROPERTY IN ORDER TO HAVE ALL EXISTING UTILITY LINES MARKED OUT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT AND CIVIL ENGINEER IN WRITING OF ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS PRIOR TO AND DURING WORK.
5. ALL EXISTING PAVEMENT, UTILITY STRUCTURES, LIGHT POLES, SIGNS, ETC. WITHIN THE PROPOSED WORK AREA WILL HAVE TO BE REMOVED. UTILITY STRUCTURES, PIPES AND CONDUITS WITHIN THE AREA ENCLOSED BY A LINE 10 FEET OUTSIDE THE PROPOSED BUILDING WILL NEED TO BE COMPLETELY EXCAVATED AND REMOVED. ACCEPTABLE BACKFILL AND METHODS OF PLACEMENT AND COMPACTION MUST BE USED WITHIN THIS AREA. UTILITY STRUCTURES IN OTHER AREAS OF THE SITE THAT ARE NOT TO REMAIN SHALL ALSO NEED TO BE REMOVED. OTHER PIPES AND CONDUITS MAY REMAIN IF PLUGGED WITH CONCRETE AFTER THE STRUCTURES ARE REMOVED.
6. ALL PROPOSED BUILDING UTILITY CONNECTIONS SHOWN ON THESE PLANS ARE TO BE CONSIDERED SCHEMATIC. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONSULT WITH THE BUILDING CONTRACTOR AND THE UTILITY COMPANIES AND COORDINATE THE BUILDING CONNECTIONS MAKING MINOR FIELD ADJUSTMENTS IF NECESSARY. IF MAJOR DISCREPANCIES ARE DISCOVERED BETWEEN THE CONNECTIONS SHOWN ON THESE PLANS AND THE FINAL BUILDING MECHANICAL/ELECTRICAL/PLUMBING PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND CIVIL ENGINEER IN WRITING FOR DIRECTION ON HOW TO PROCEED.
7. ALL UTILITY COVERS FOR STRUCTURES LOCATED WITHIN THE PROJECT LIMITS WHICH ARE NEW OR ARE TO REMAIN SHALL BE ADJUSTED TO FINISH GRADE. UTILITY COVERS INCLUDE BUT ARE NOT LIMITED TO, CATCH BASINS FRAMES AND GRATES, MANHOLE FRAMES AND COVERS, GATE VALVE COVERS, CURB STOPS, HAND HOLES, ETC.
8. THE MINIMUM DRAIN AND SEWER MANHOLE DIAMETER SHALL BE 4'. LARGER DIAMETER MANHOLES MAY BE REQUIRED DUE TO THE NUMBER, SIZE AND LOCATION OF PIPING.
9. THE MINIMUM COVER FOR ALL WATER MAINS AND SERVICES SHALL BE 5'-0". THERE ARE UTILITY CROSSINGS THAT REQUIRE WATER MAINS TO BE SET DEEPER THAN 5'-0".
10. ALL PROPOSED CATCH BASINS SHALL HAVE 4' DEEP SUMP AND SHALL BE FITTED WITH HOODS.
11. IN THE EVENT THAT CATCH BASIN OR MANHOLE INVERTS ARE LESS THAN 4'-0" BELOW PROPOSED RIM ELEVATION THE CONTRACTOR SHALL USE A FLAT TOP SLAB AS OPPOSED TO A CONE RISER.
12. THE CONTRACTOR SHALL CONFIRM THAT EXISTING ABANDONED UNDERGROUND UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE SHUT OFF AND ARE NO LONGER IN USE.
13. THE CONTRACTOR SHALL SUPPLY AND INSTALL SILT SACKS (SUPPLEMENTED WITH STAKED STRAW BALES IN NON-PAVED AREAS) IN ALL EXISTING AND NEW CATCH BASINS WITHIN THE LIMIT OF WORK OR WITHIN 100 FEET OF THE LIMIT OF WORK LINE AND MAINTAIN THE SILT SACKS AS SPECIFIED.
14. THE CONSTRUCTION OF THE WATER, SEWER AND DRAINAGE SYSTEMS SHALL CONFORM TO THE TOWN OF LYNNFIELD STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS AS WELL AS THE STANDARD SPECIFICATIONS AND DETAILS OF THE LYNNFIELD WATER DISTRICT FOR WATER WORK.
15. THE CONSTRUCTION OF ALL ELECTRIC, AND TELEPHONE/COMMUNICATIONS/CABLE TV SYSTEMS SHALL CONFORM TO THE STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS OF THE RESPECTIVE UTILITY COMPANIES.
16. THE ELECTRIC AND TELEPHONE/COMMUNICATIONS/CABLE TV UTILITY LINES AND EQUIPMENT SHOWN ON THESE PLANS IS SUBJECT TO REVISION BASED ON THE RESPECTIVE UTILITY COMPANIES FINAL ENGINEERING DESIGN FOR THESE SERVICES.
17. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN DRAINAGE ONSITE DURING ALL PHASES OF CONSTRUCTION.
18. THE PROPOSED SEWAGE PUMP STATION, GRAVITY SEWER, VENTS, ELECTRICAL AND COMMUNICATIONS CONNECTIONS AND SEWER FORCE MAIN ARE TO BE DESIGNED AND SPECIFIED BY OTHERS.
19. DMH#3 SHALL BE A 4 FOOT (ID) SQUARE PRECAST CONCRETE STRUCTURE AS MANUFACTURED BY SHEA CONCRETE, WILMINGTON, MA.
20. ALL ROOF DRAIN PIPING IS 4" HDPE, SUBDRAIN PIPING IS 5" PVC. ROOF DRAIN PIPE INVERTS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR, MINIMUM SLOPE = 1%.
21. THE PIPE TYPE AND SIZING FOR THE NEW IRRIGATION LINE IS TO BE DETERMINED BY THE IRRIGATION CONTRACTOR.
22. PORTIONS OF THE EXISTING ON SITE LAWN IRRIGATION SYSTEM (PIPING, IRRIGATION HEADS AND WIRING) DISTURBED BY THE CONSTRUCTION SHALL BE REINSTALLED AND/OR REPAIRED.



**SHEET INDEX**  
SCALE: 1"=1,000'



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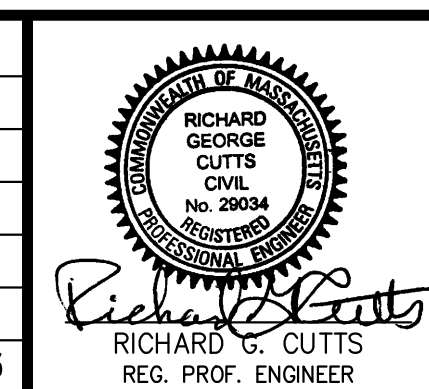
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MARKET STREET RETAIL SOUTH LLC  
427 WALNUT STREET  
PARCEL 0050 0000 0395

N/F  
SUSAN A. ROACH  
299 WALNUT STREET  
PARCEL 0045-0000-1874

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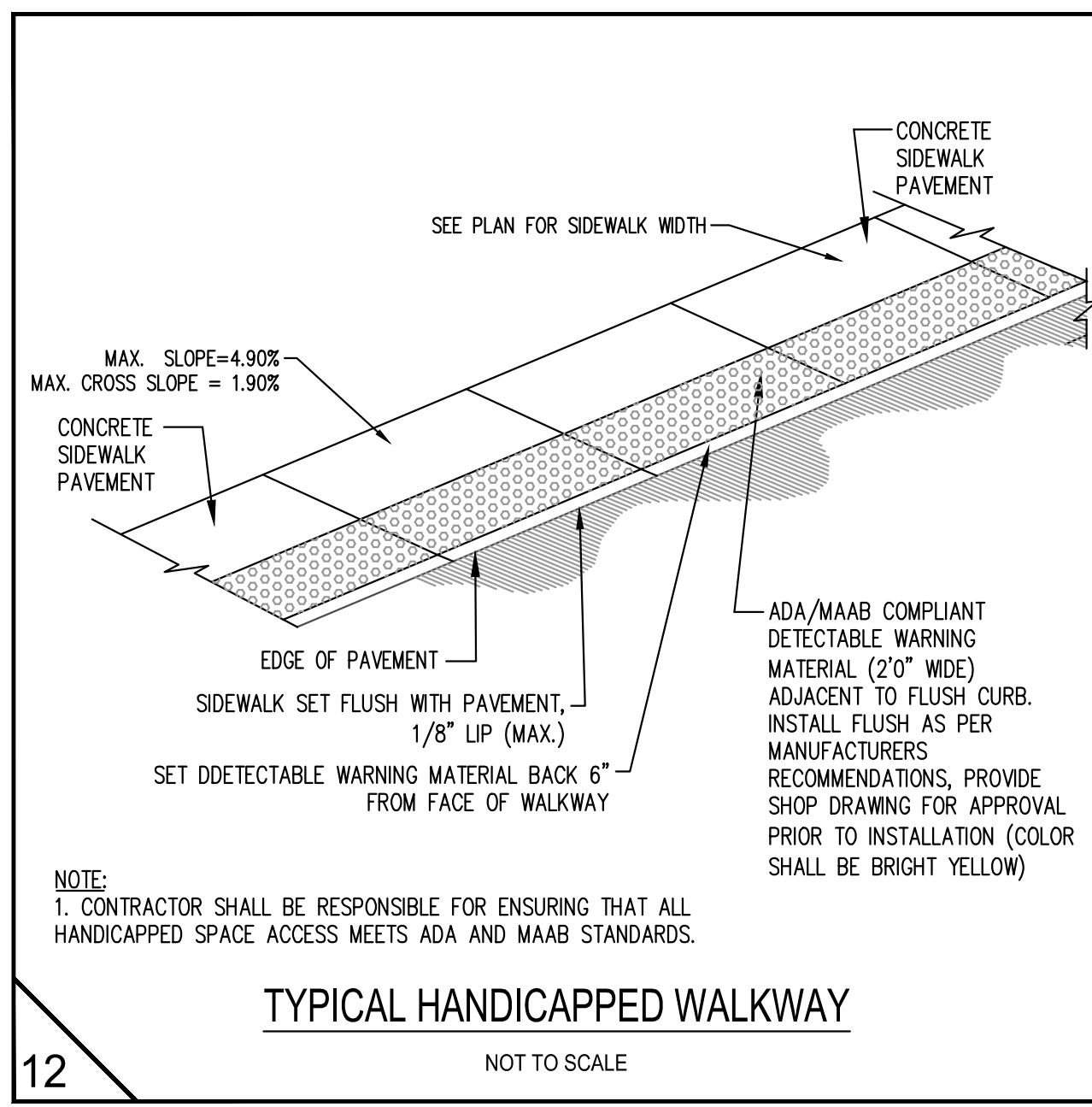
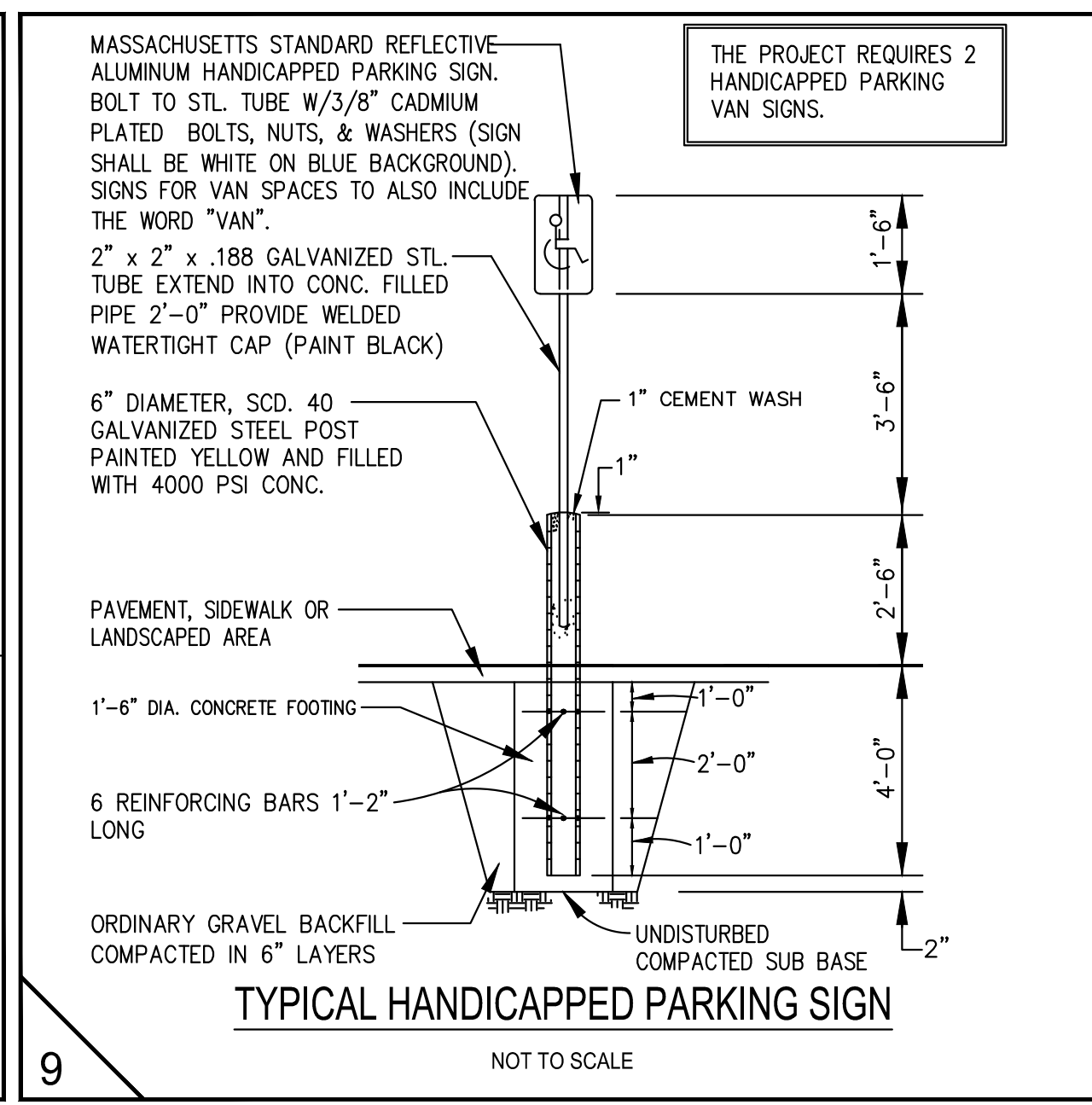
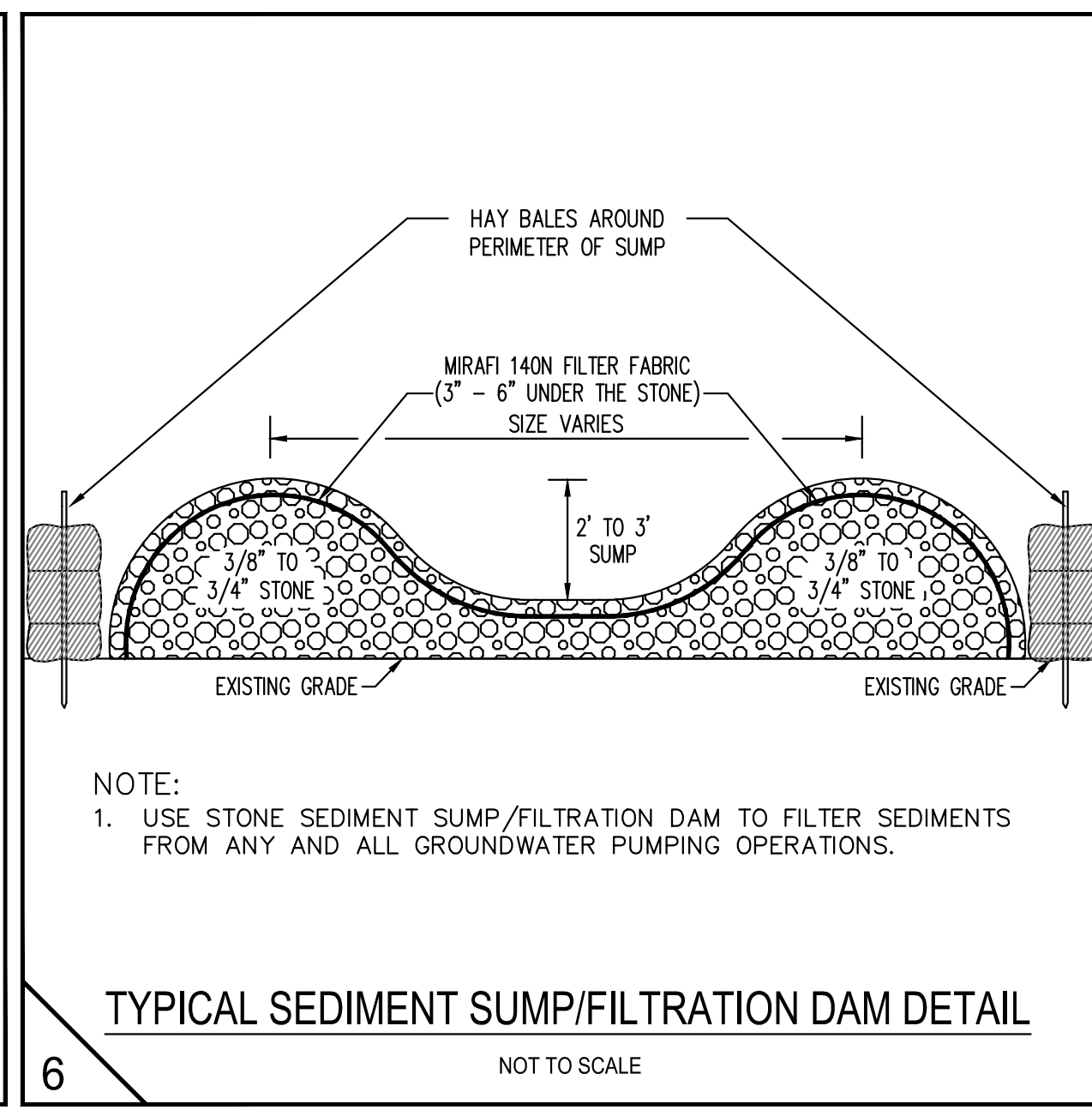
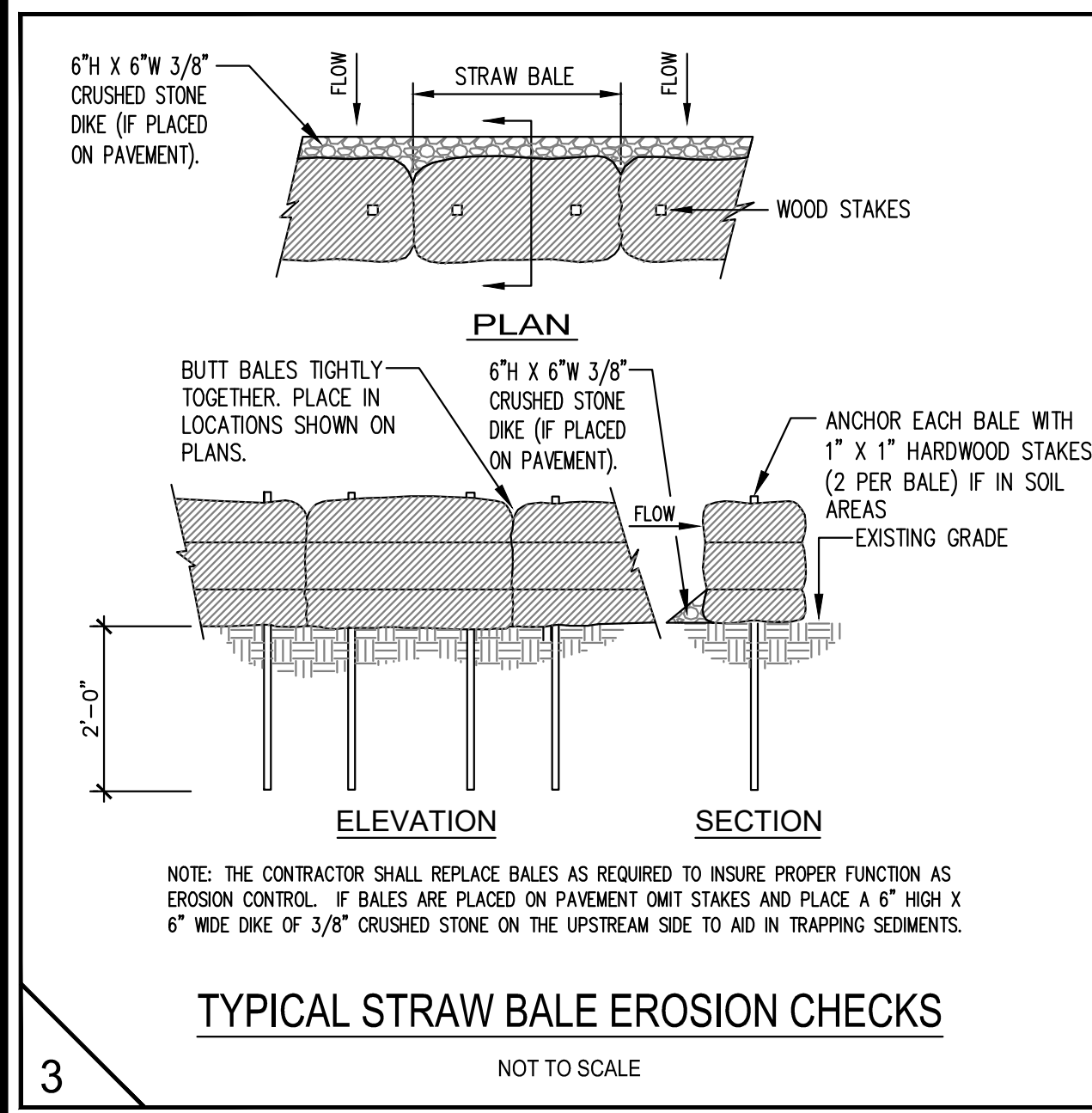
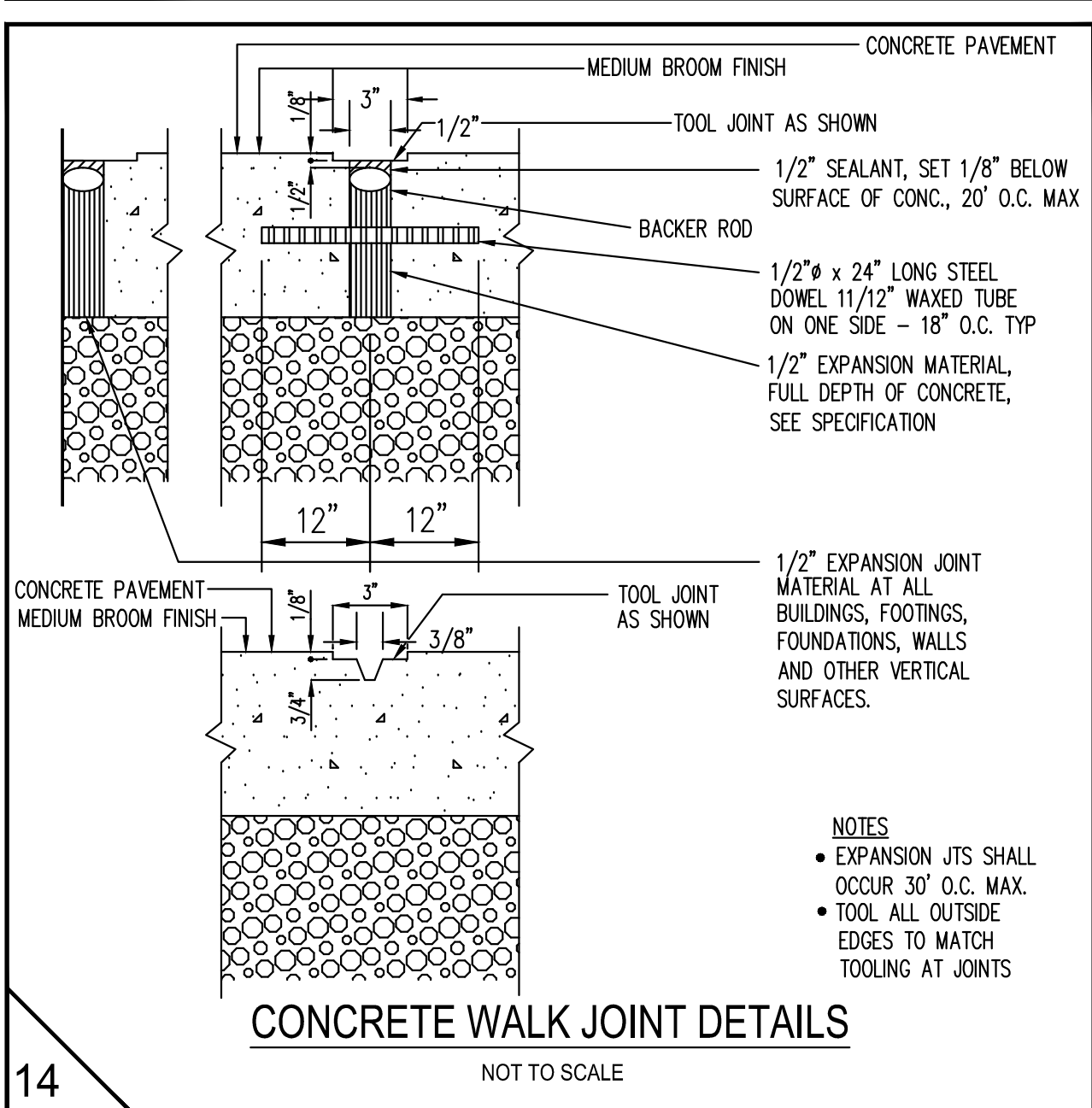
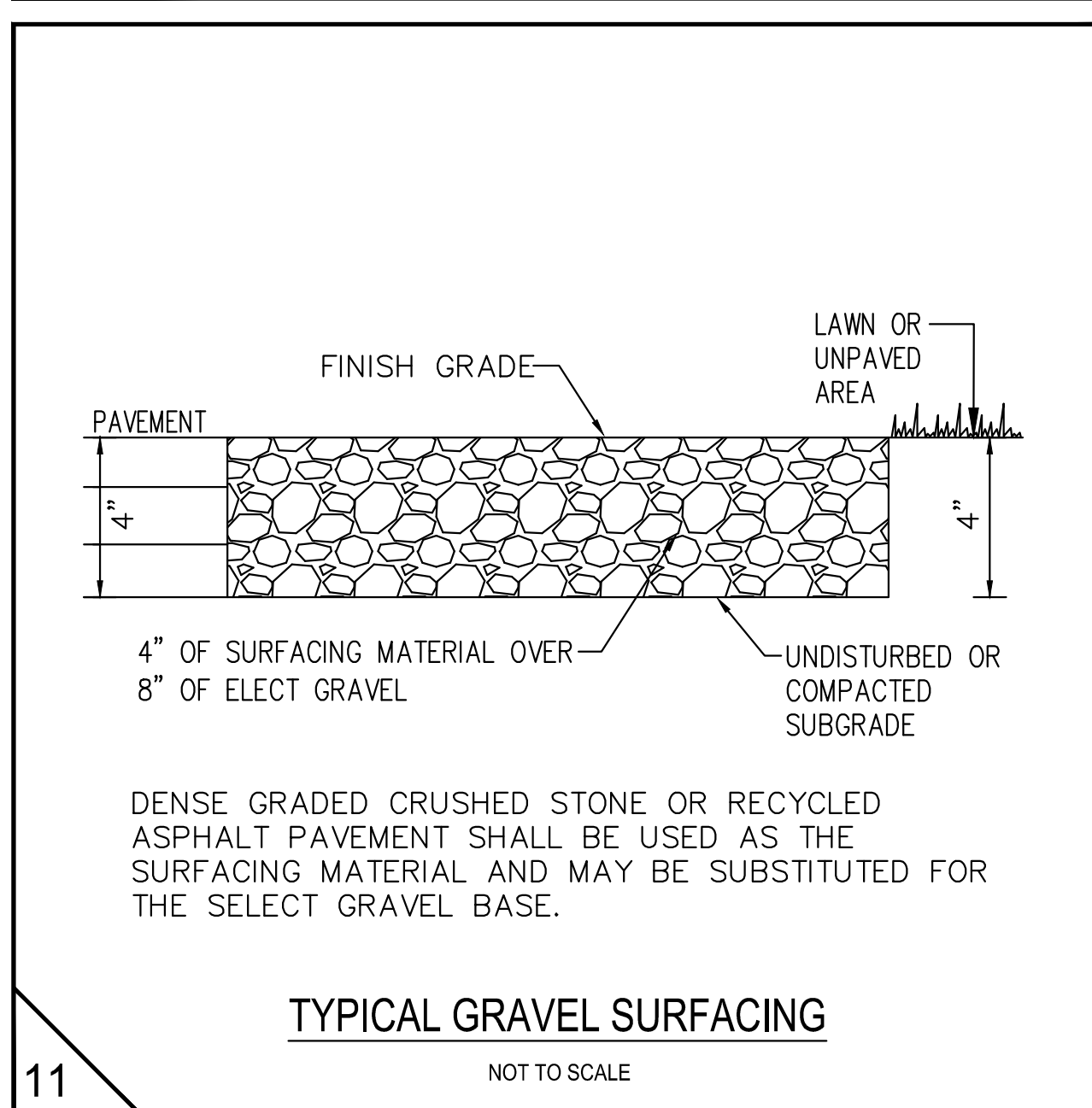
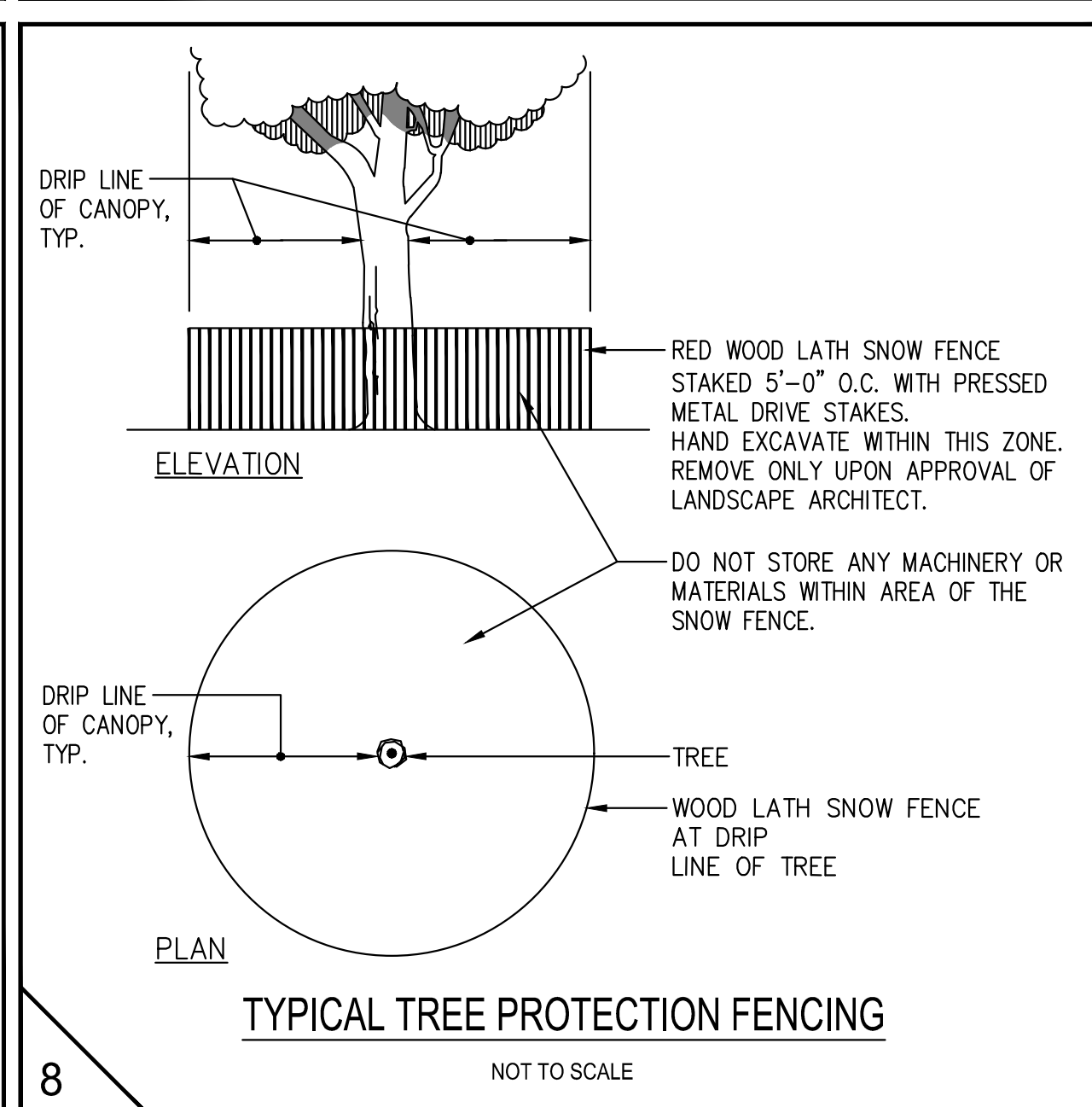
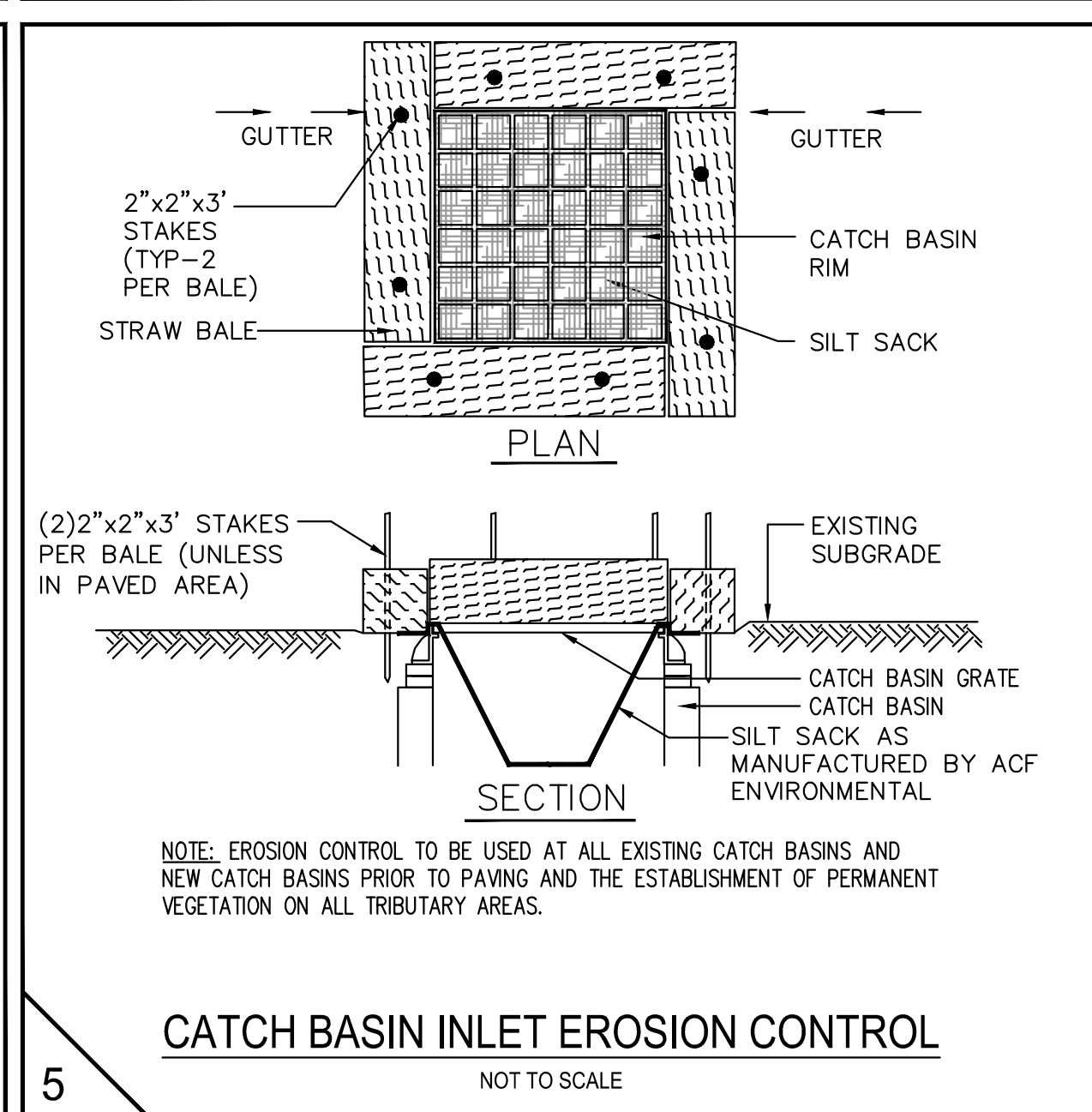
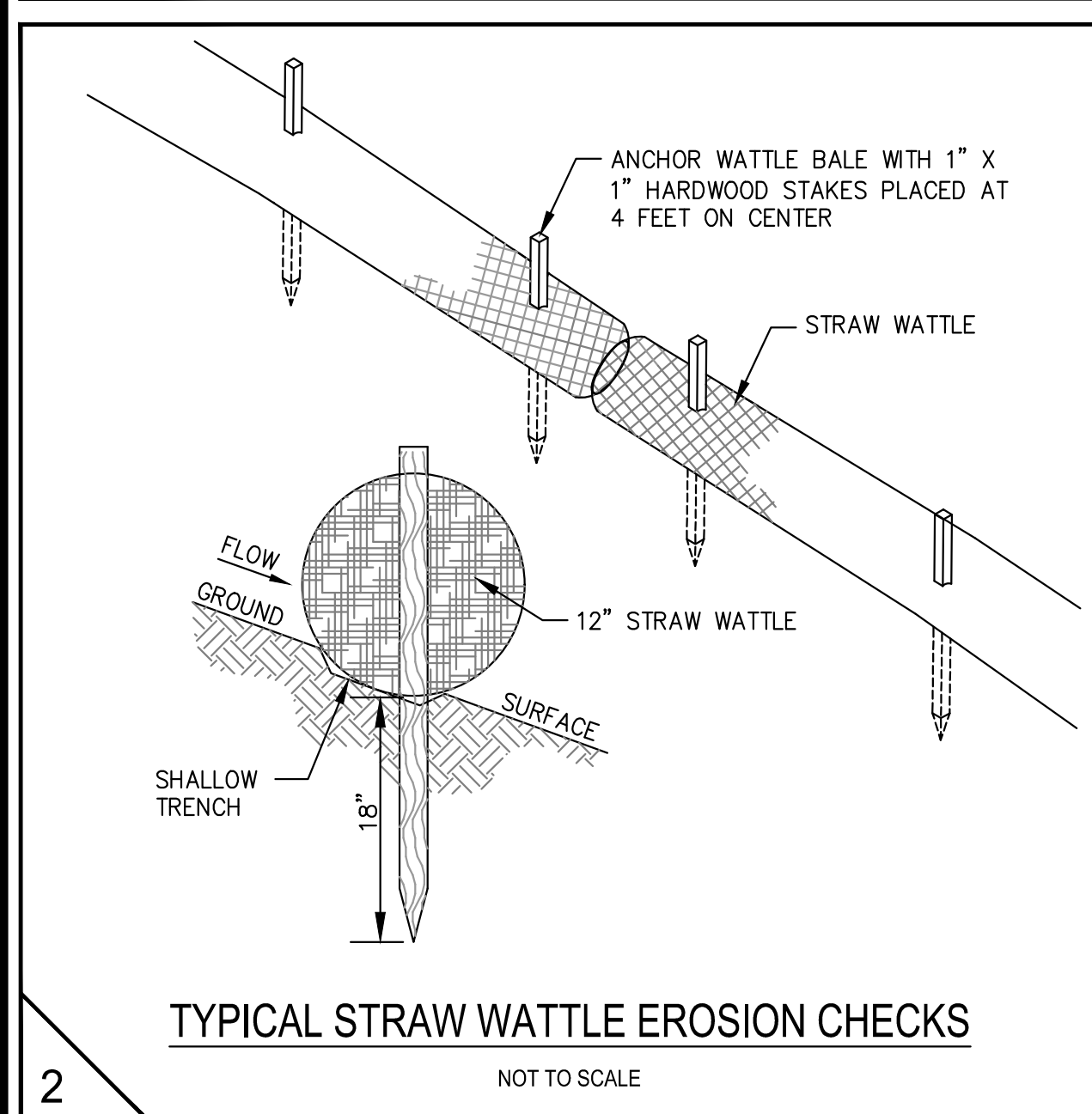
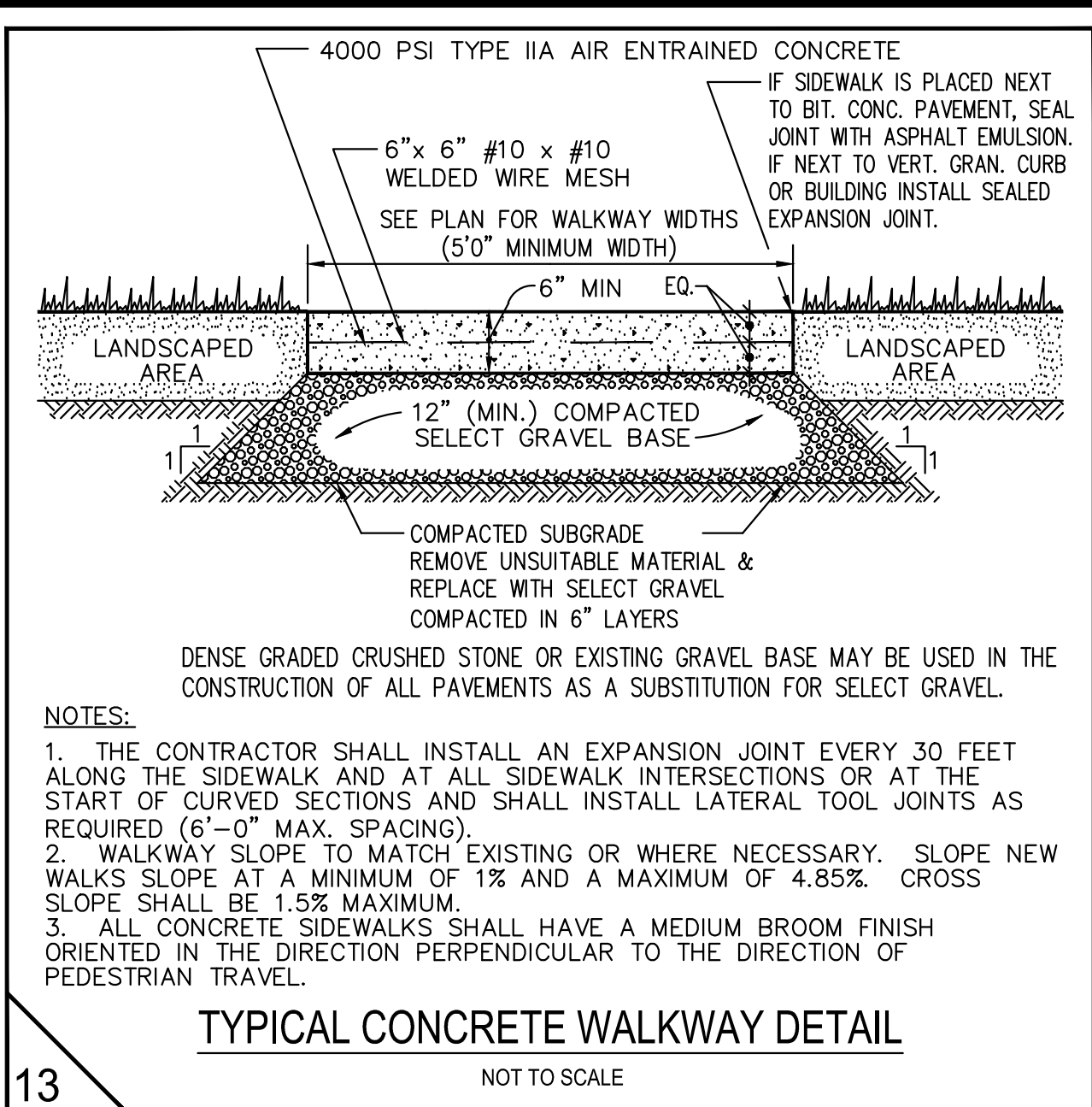
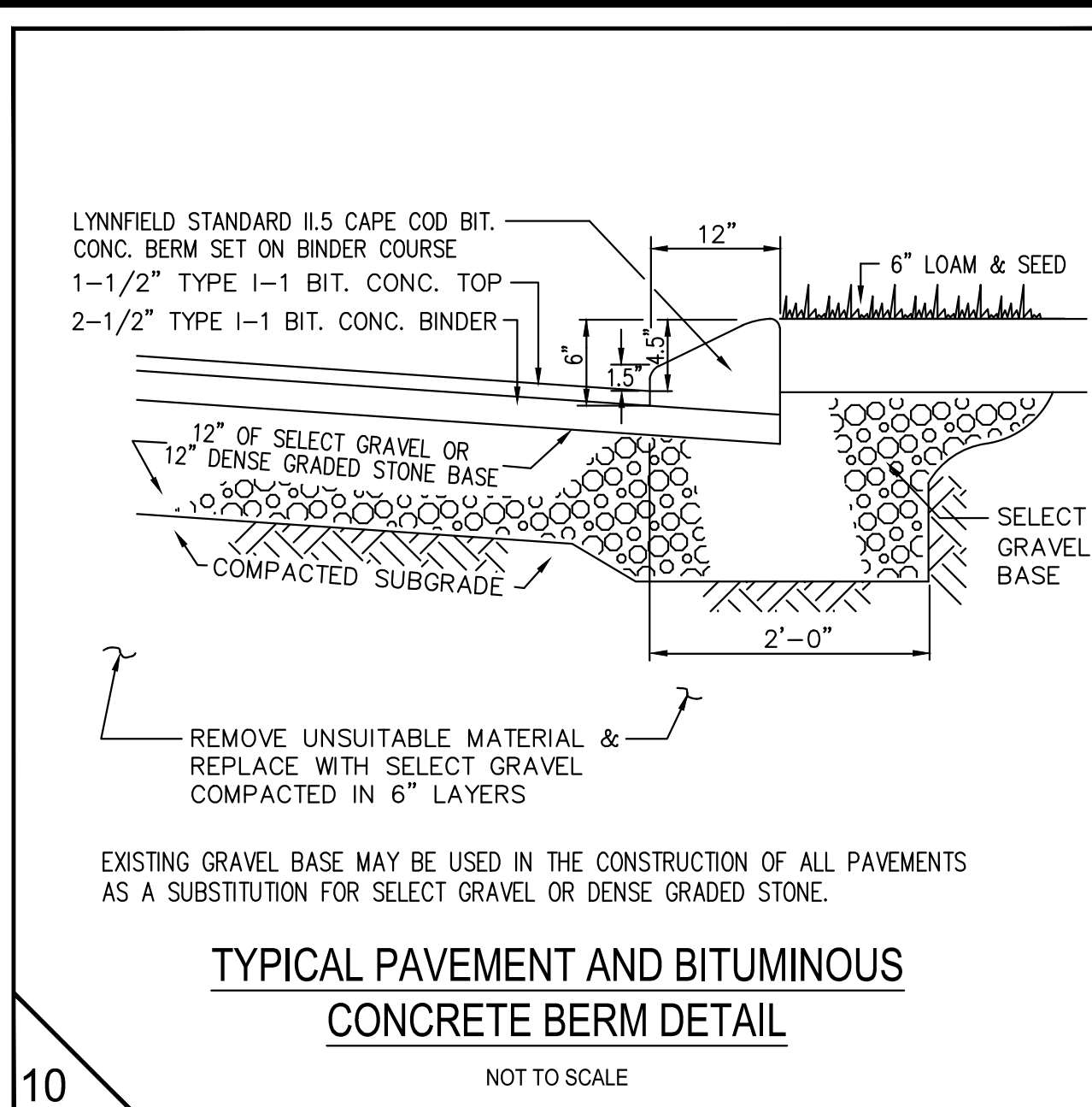
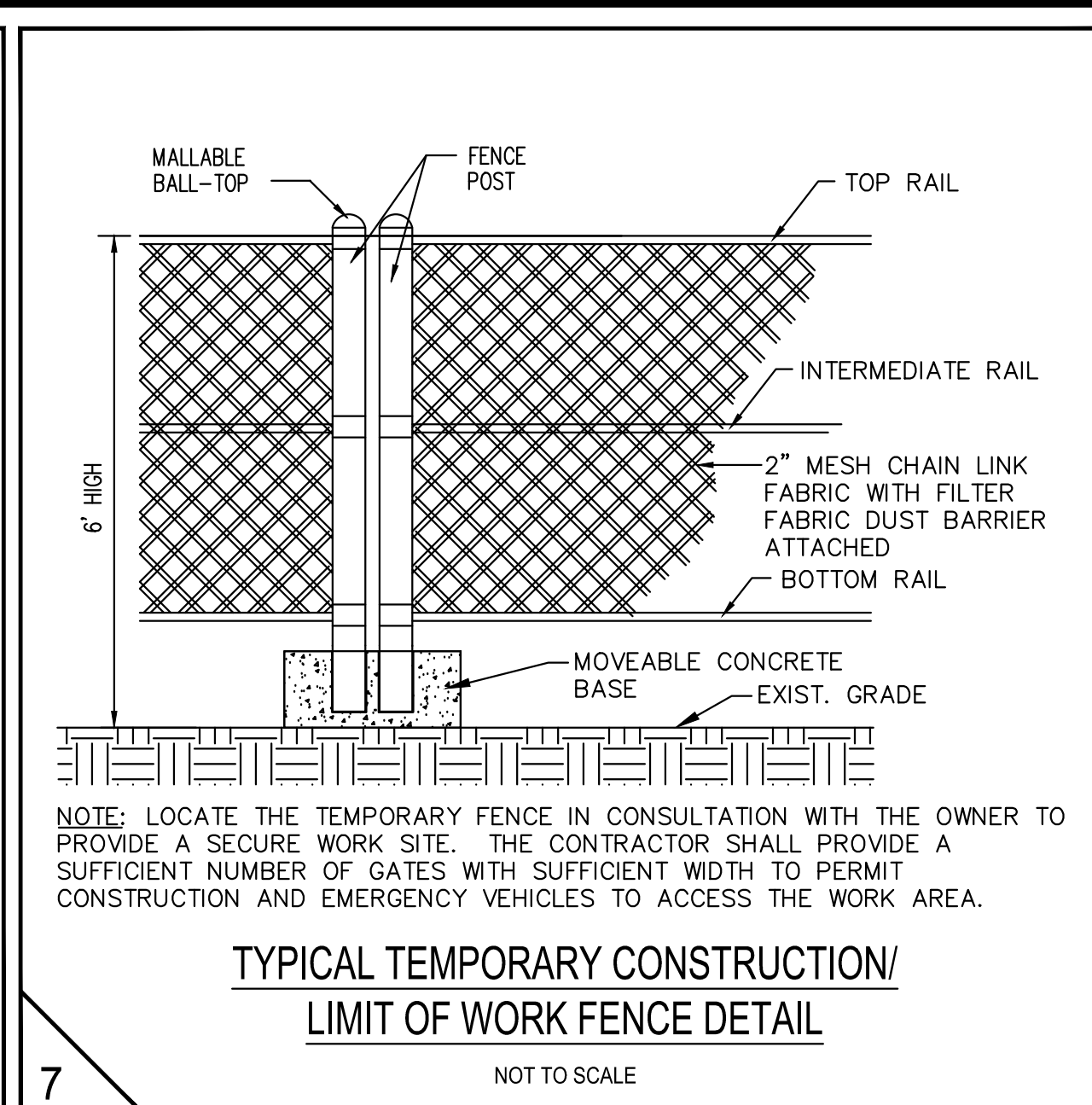
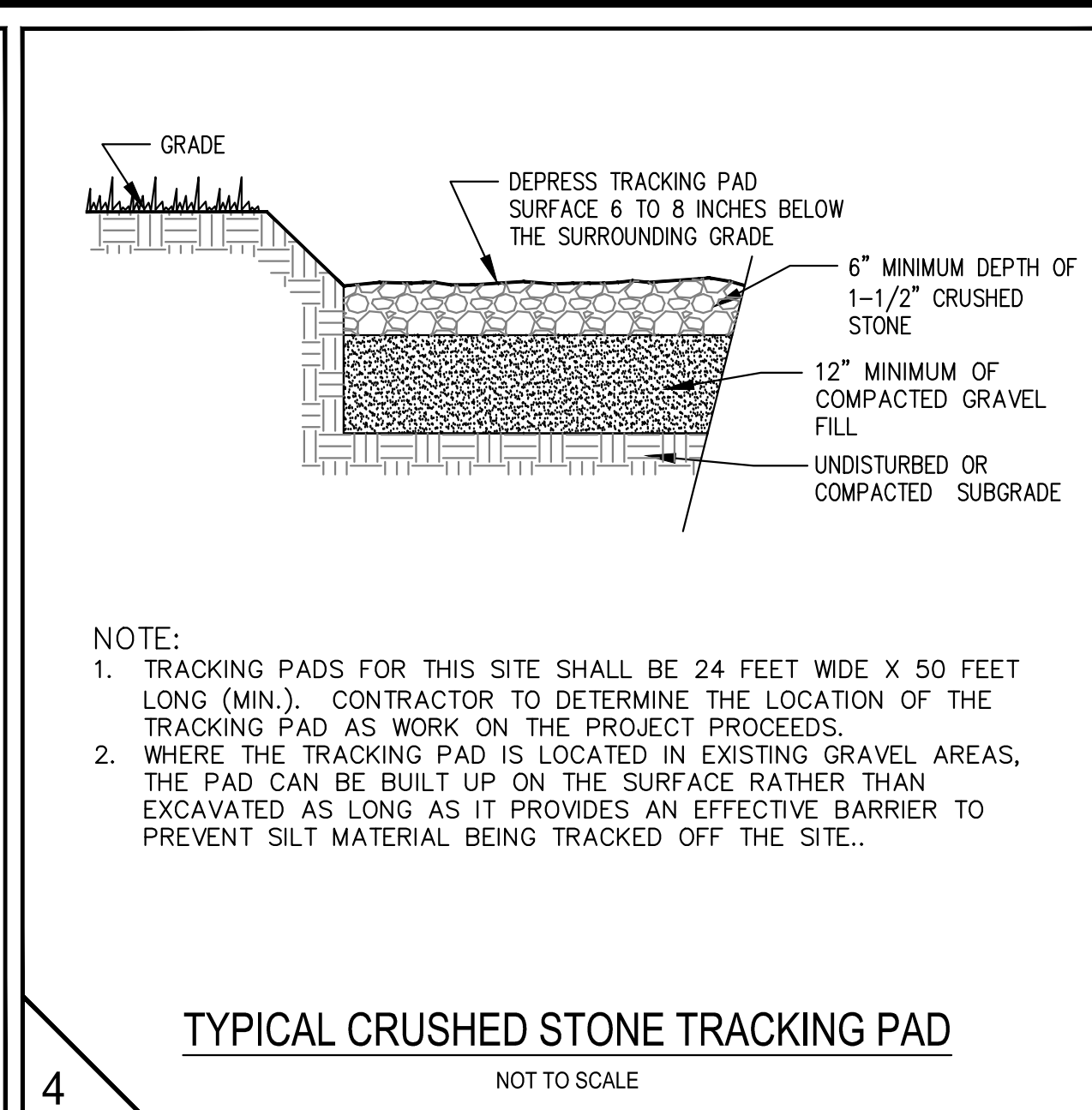
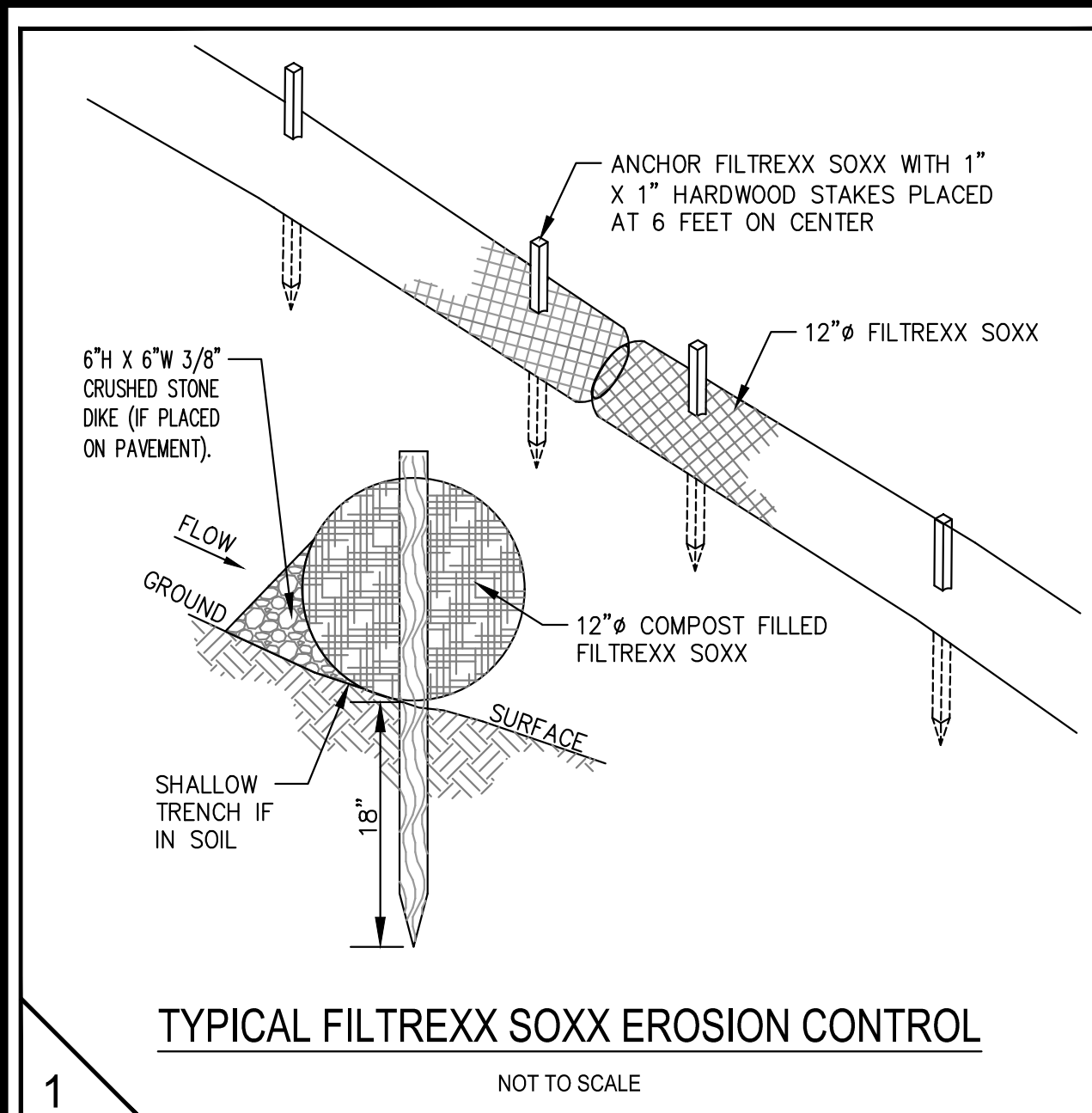
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**SITE UTILITY AND DRAINAGE PLAN**  
 KING RAIL RESERVE GOLF COURSE CLUBHOUSE  
 397 WALNUT STREET aka 1 KING RAIL DRIVE  
 LYNNFIELD, MASSACHUSETTS

SHEET  
**C-6B**



NOTES:

- ALL SITE CONSTRUCTION WORK SHALL CONFORM TO THE TOWN OF LYNNFIELD, MA REQUIREMENTS AND SPECIFICATIONS, LATEST EDITION AS WELL AS THE MADOT-HIGHWAY DIVISION STANDARDS AND SPECIFICATIONS, LATEST EDITION AND THE PROJECT SPECIFICATIONS.
- IF THERE IS A CONFLICT BETWEEN THE ABOVE REQUIREMENTS THE CONTRACTOR SHALL REQUEST AN INTERPERTATION AND DIRECTION FROM THE CIVIL ENGINEER.

**DIG SAFE**

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**RICHARD GEORGE CUTTS CIVIL**  
No. 20034  
REG. PROF. ENGINEER

*Richard G. Cutts*

**LINDEN ENGINEERING PARTNERS LLC**

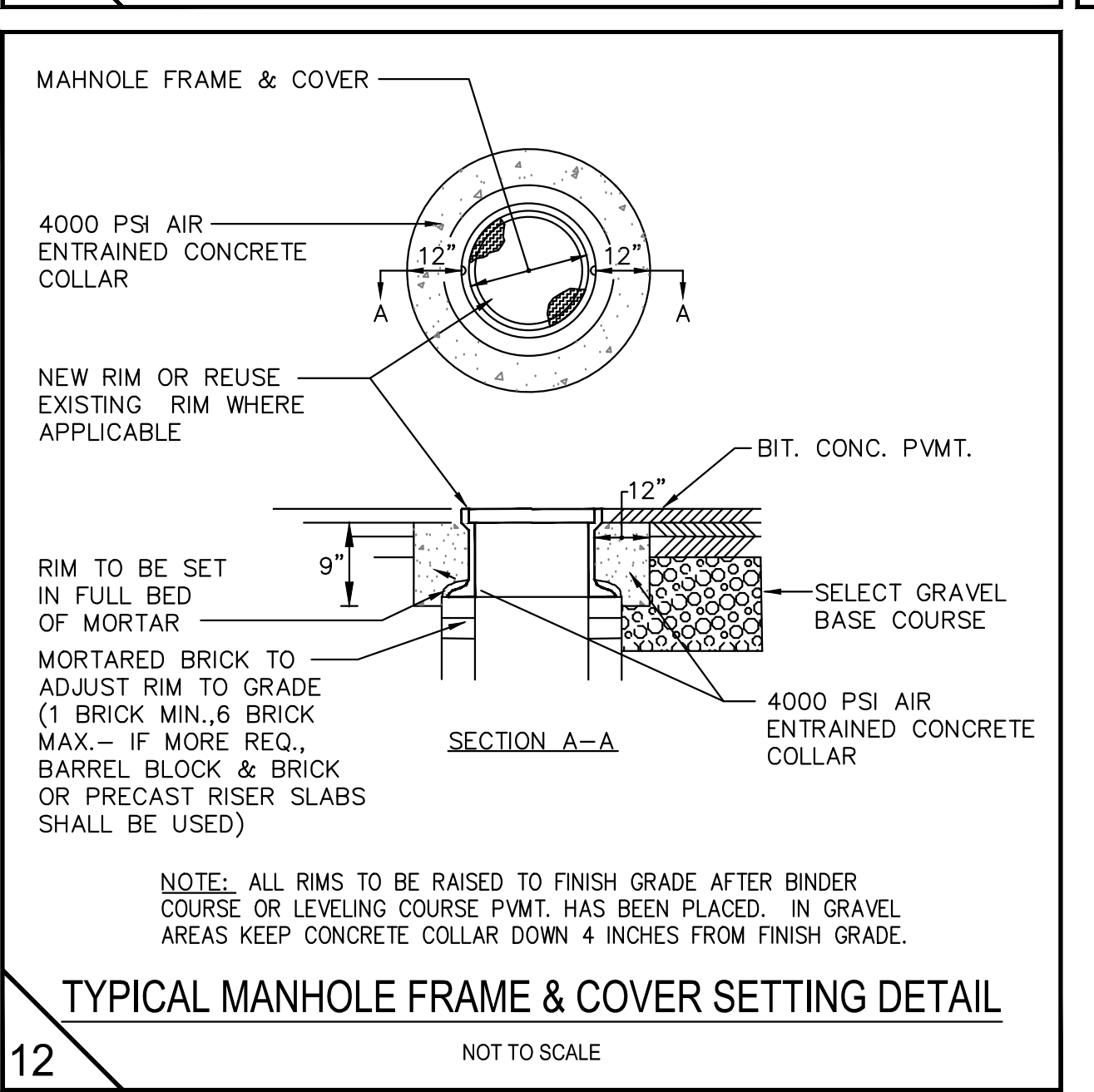
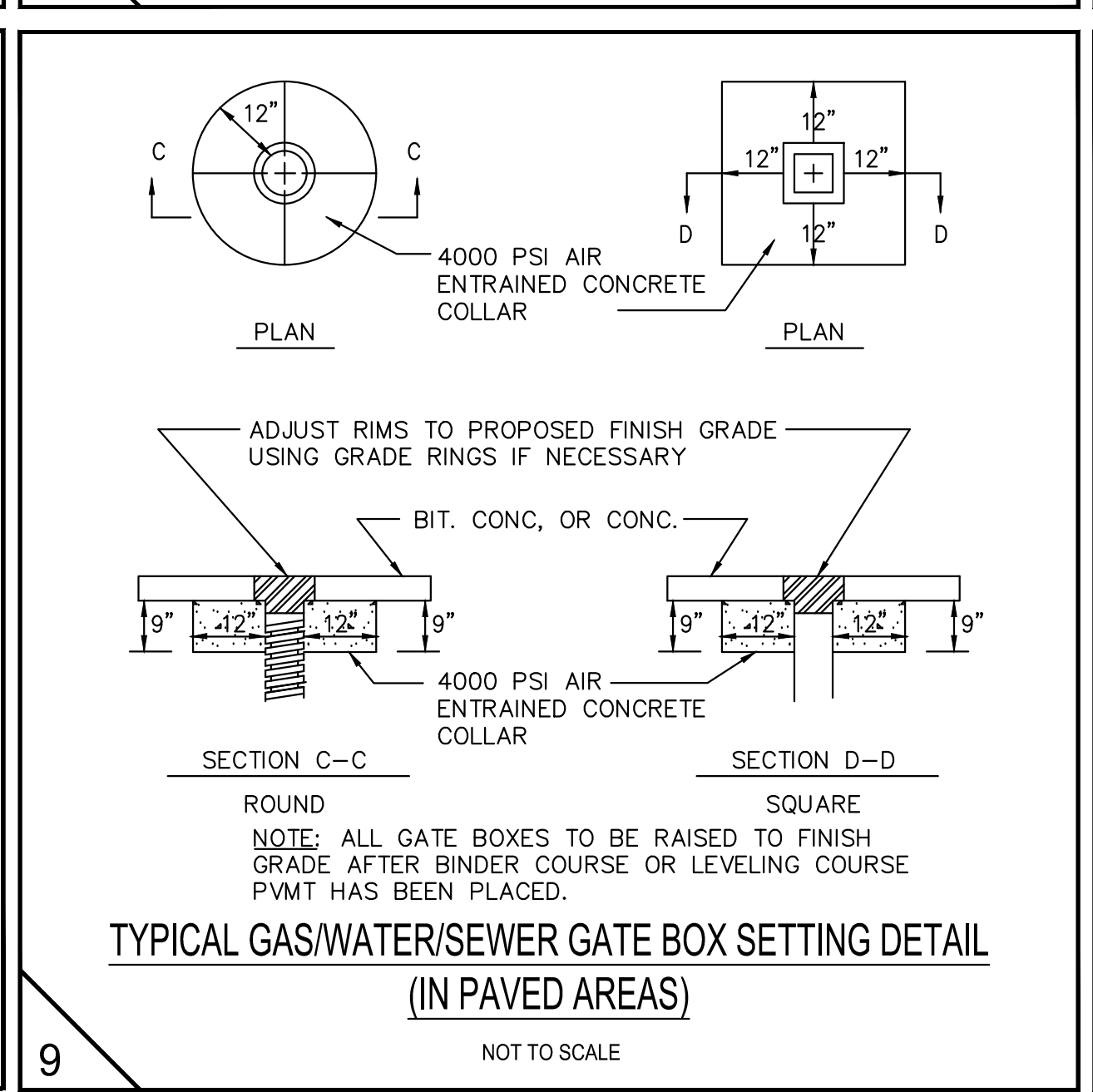
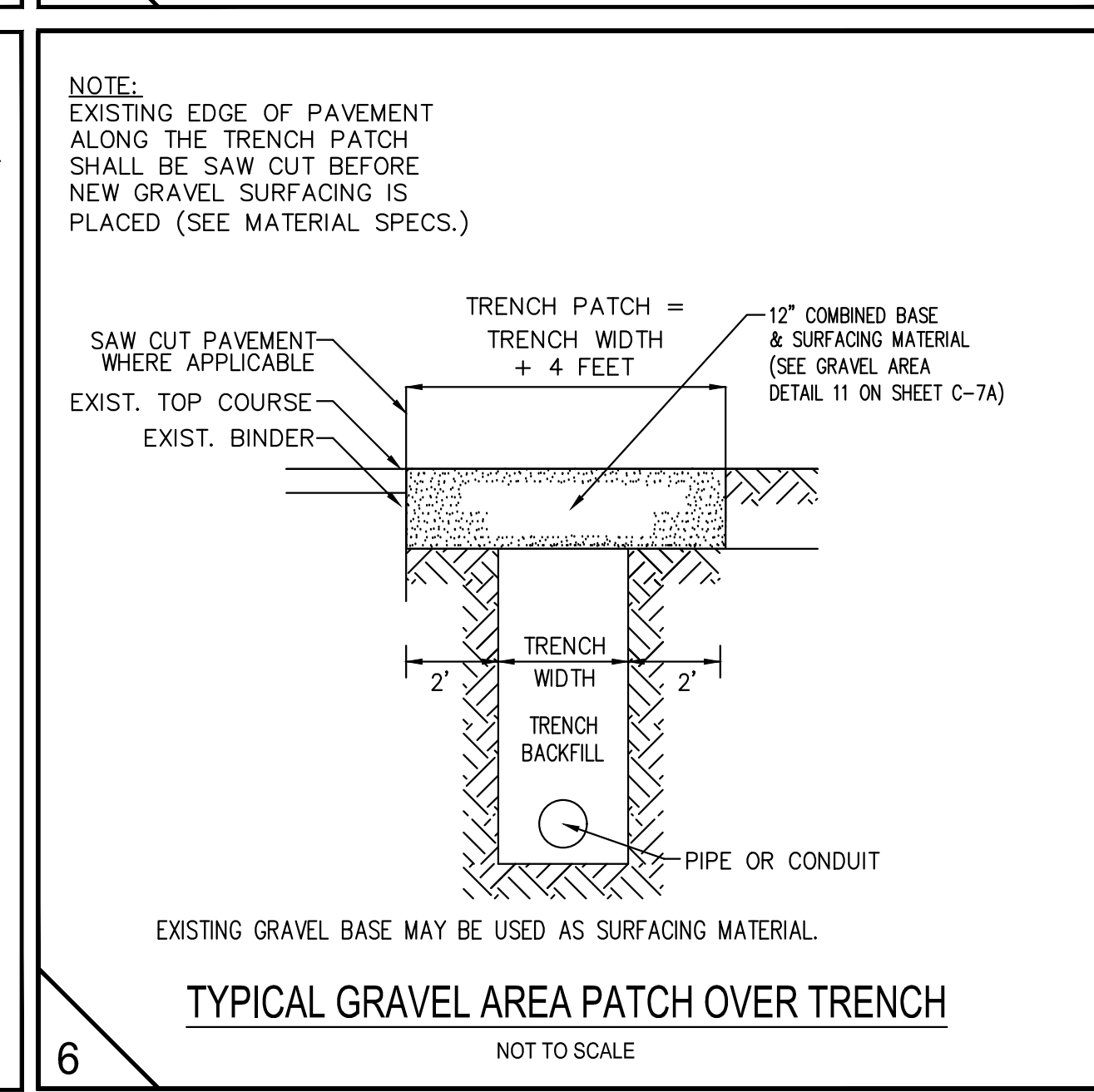
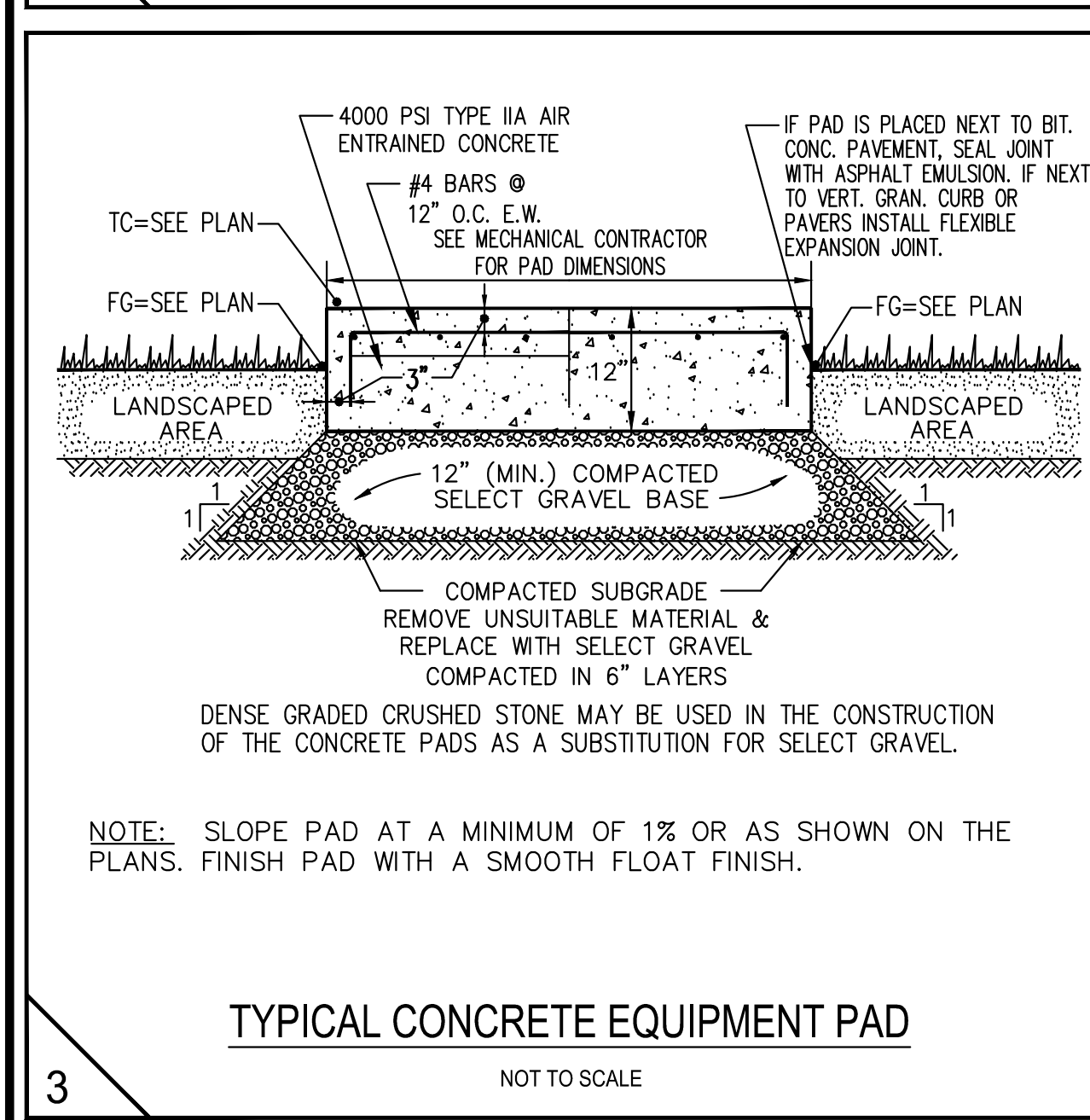
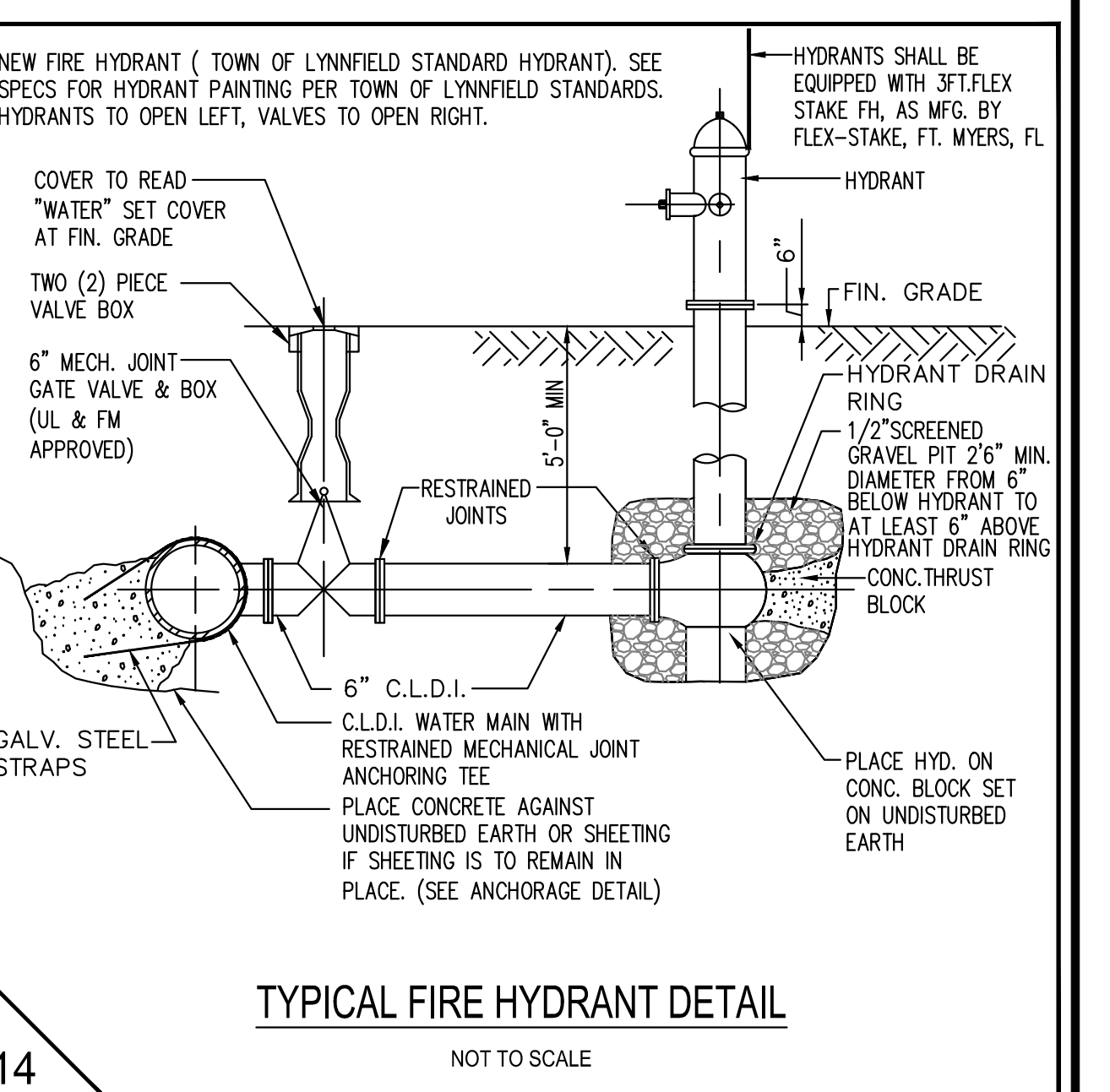
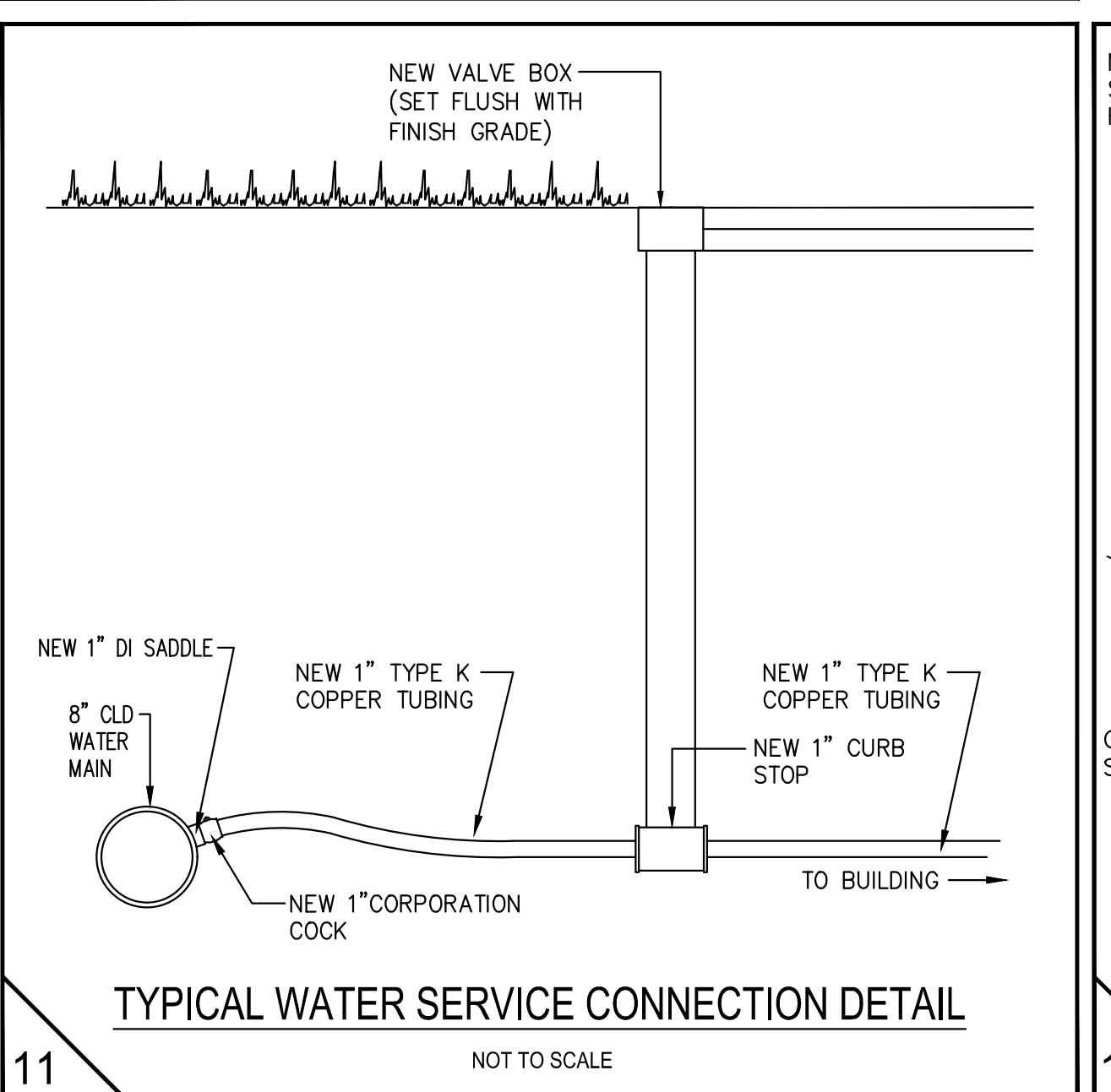
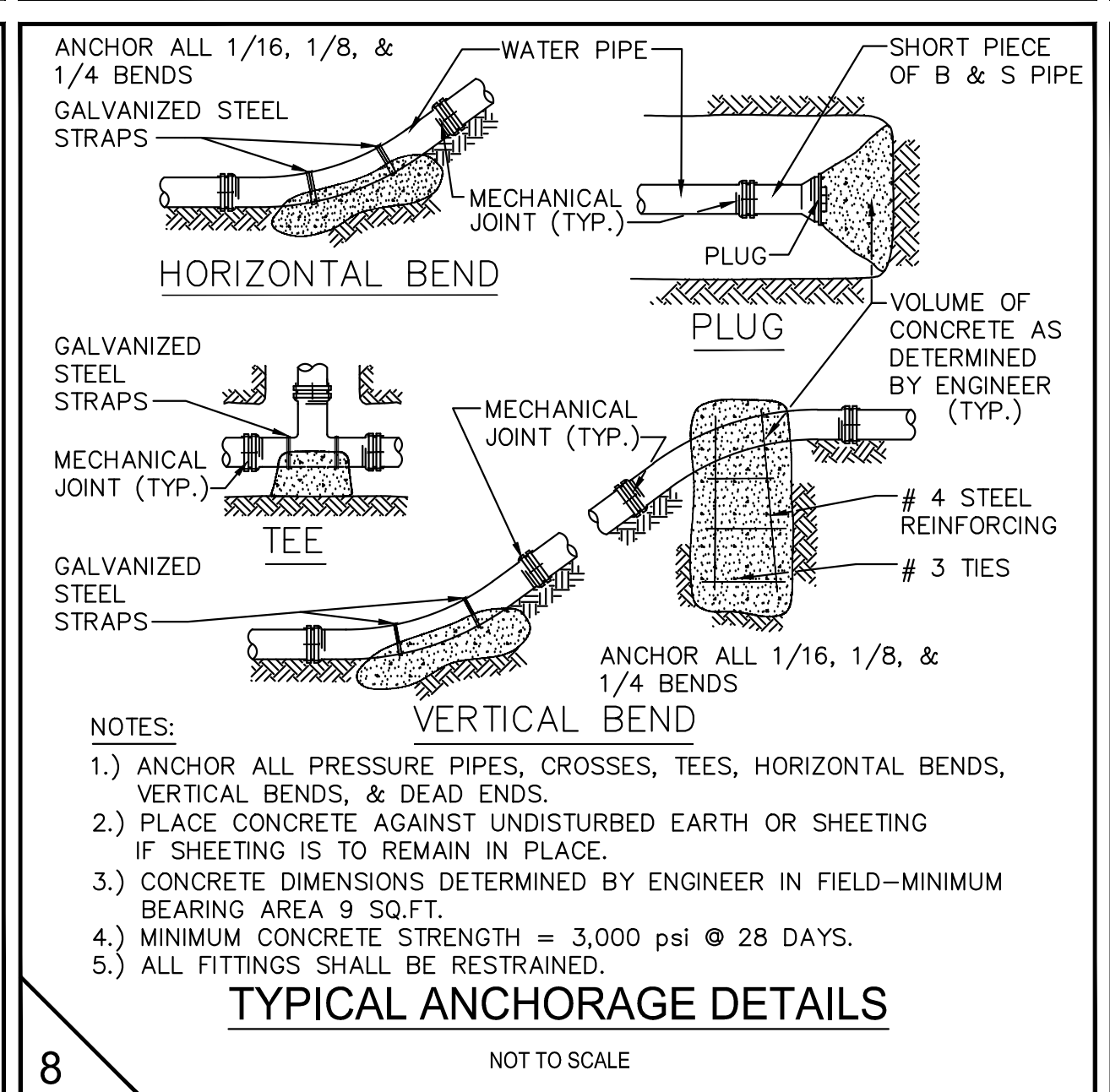
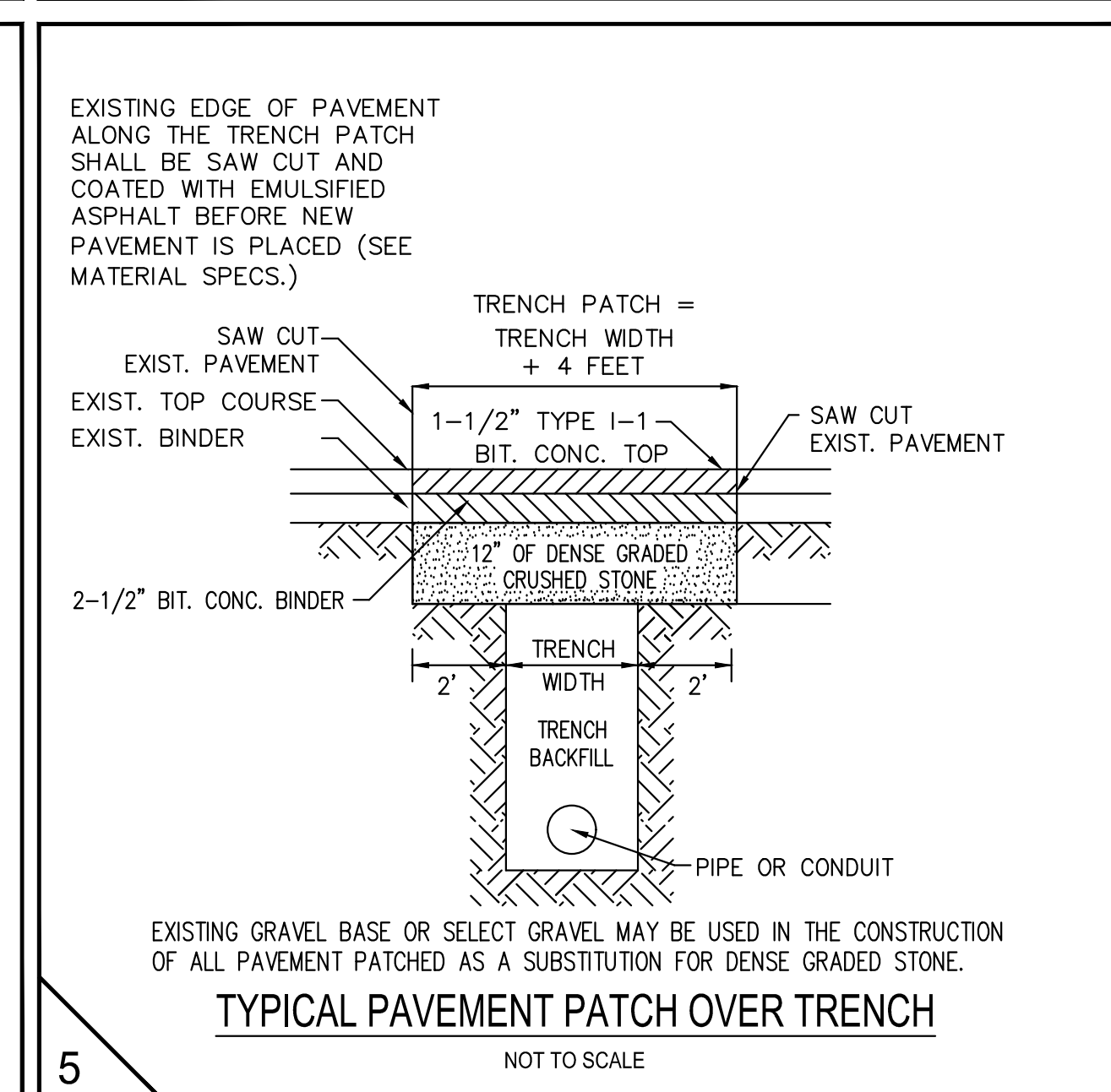
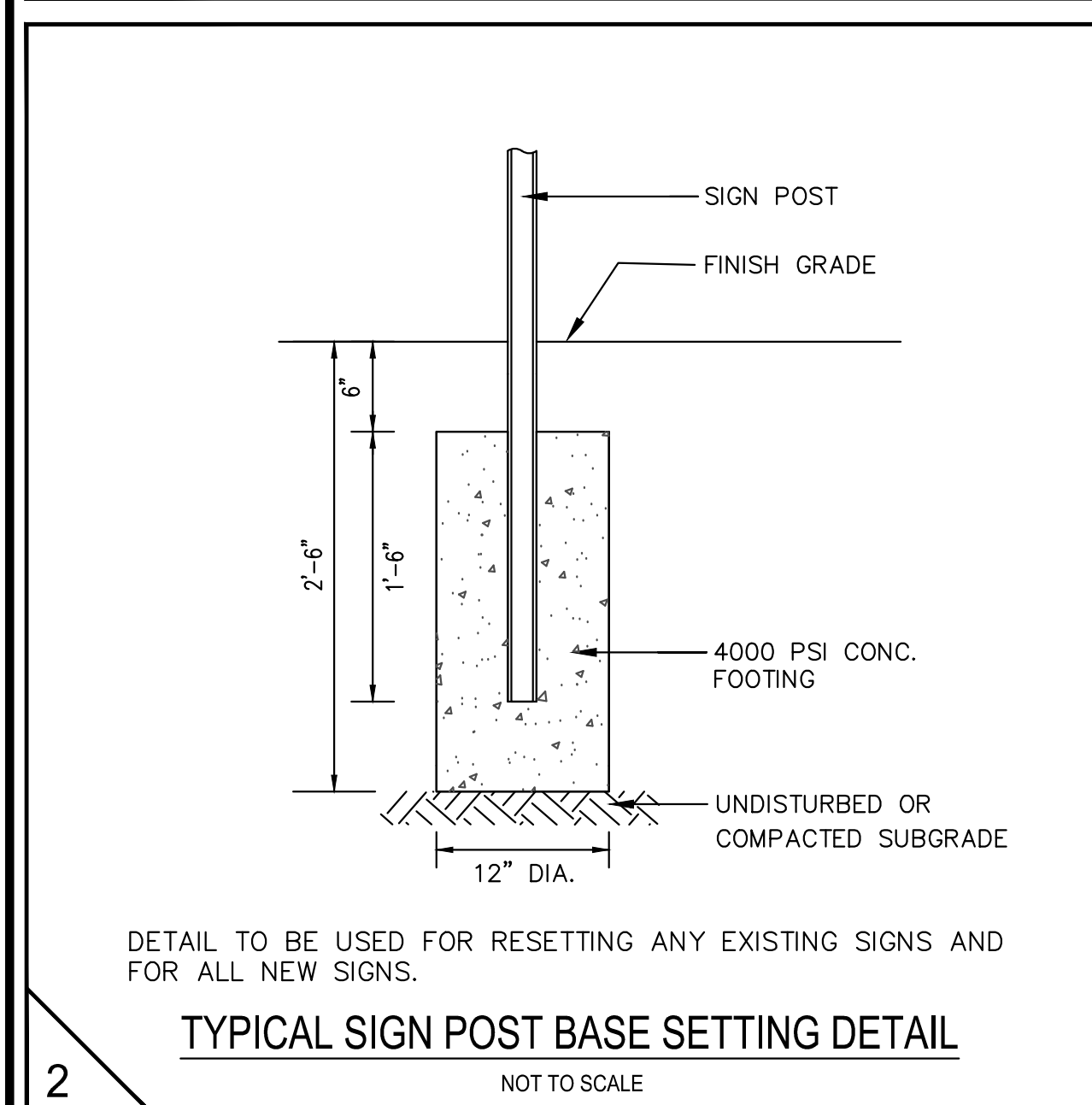
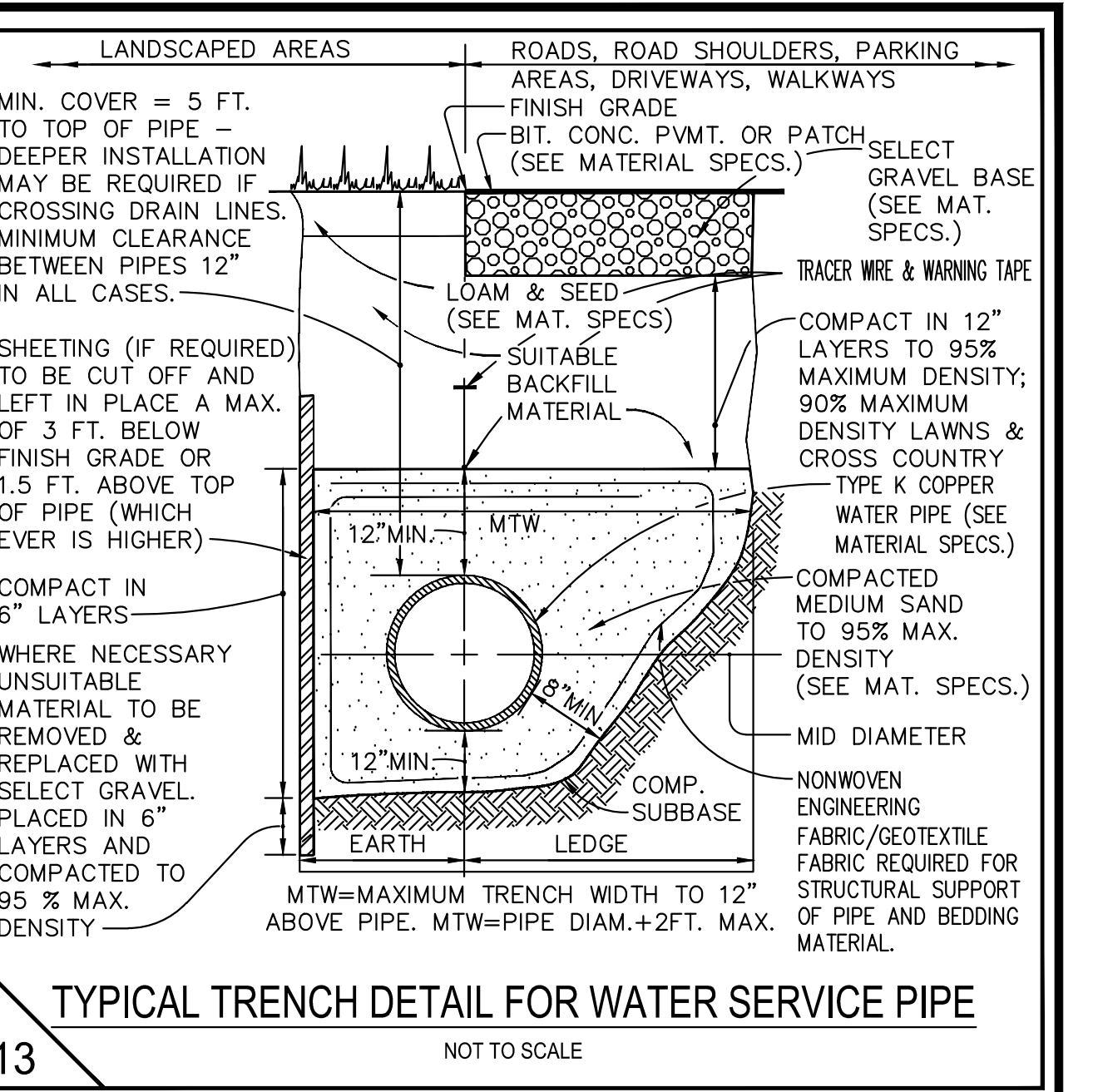
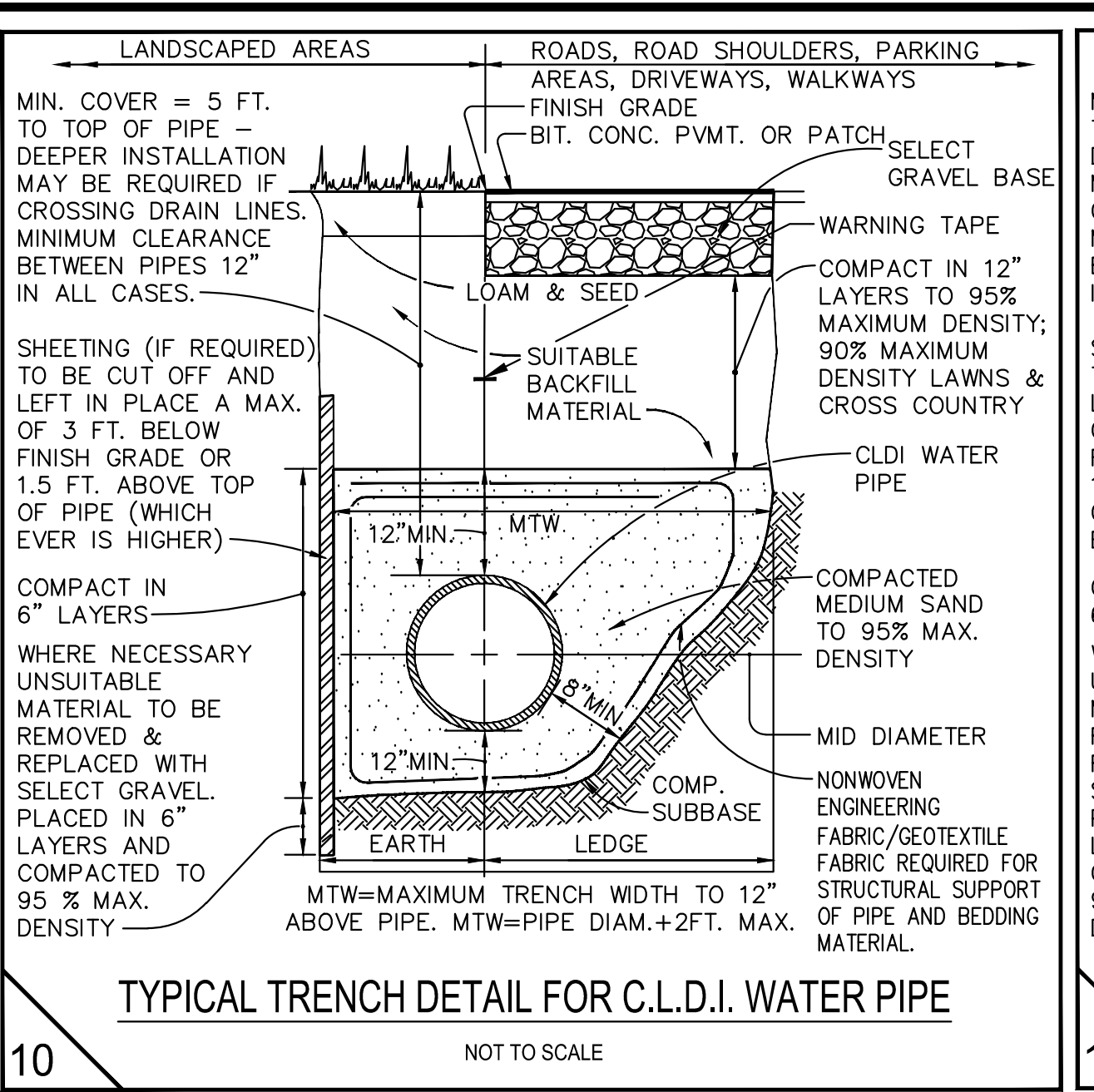
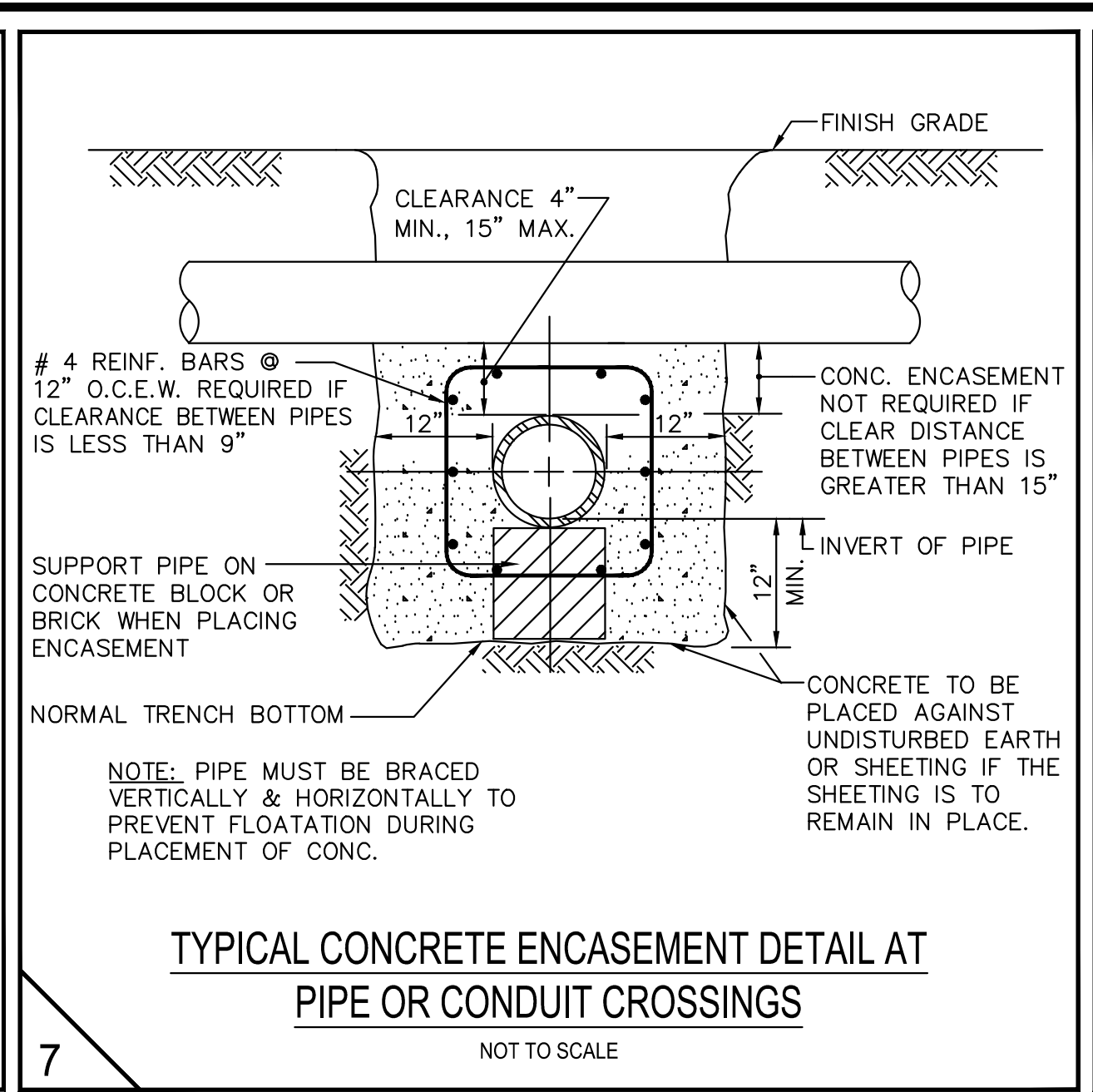
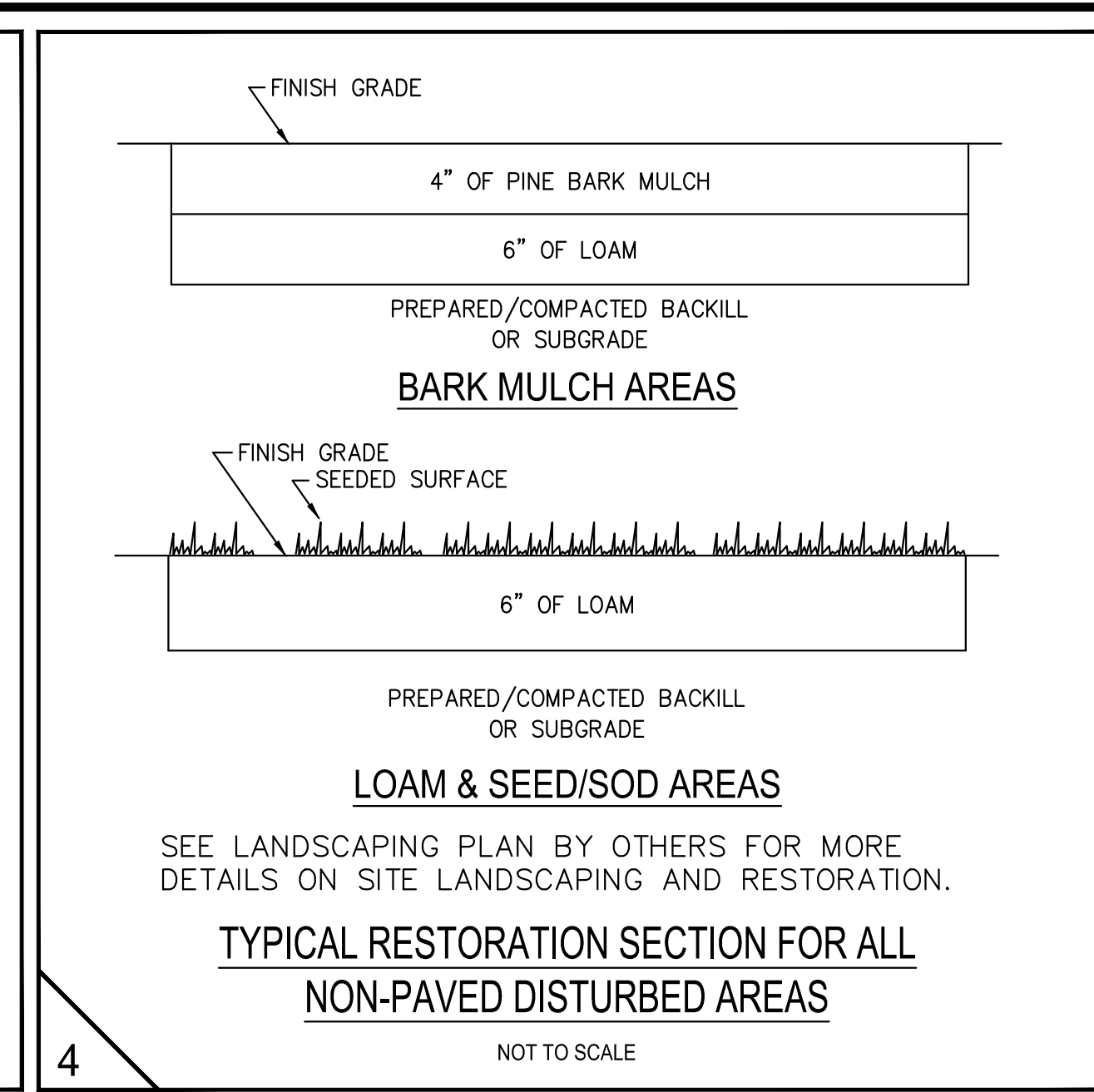
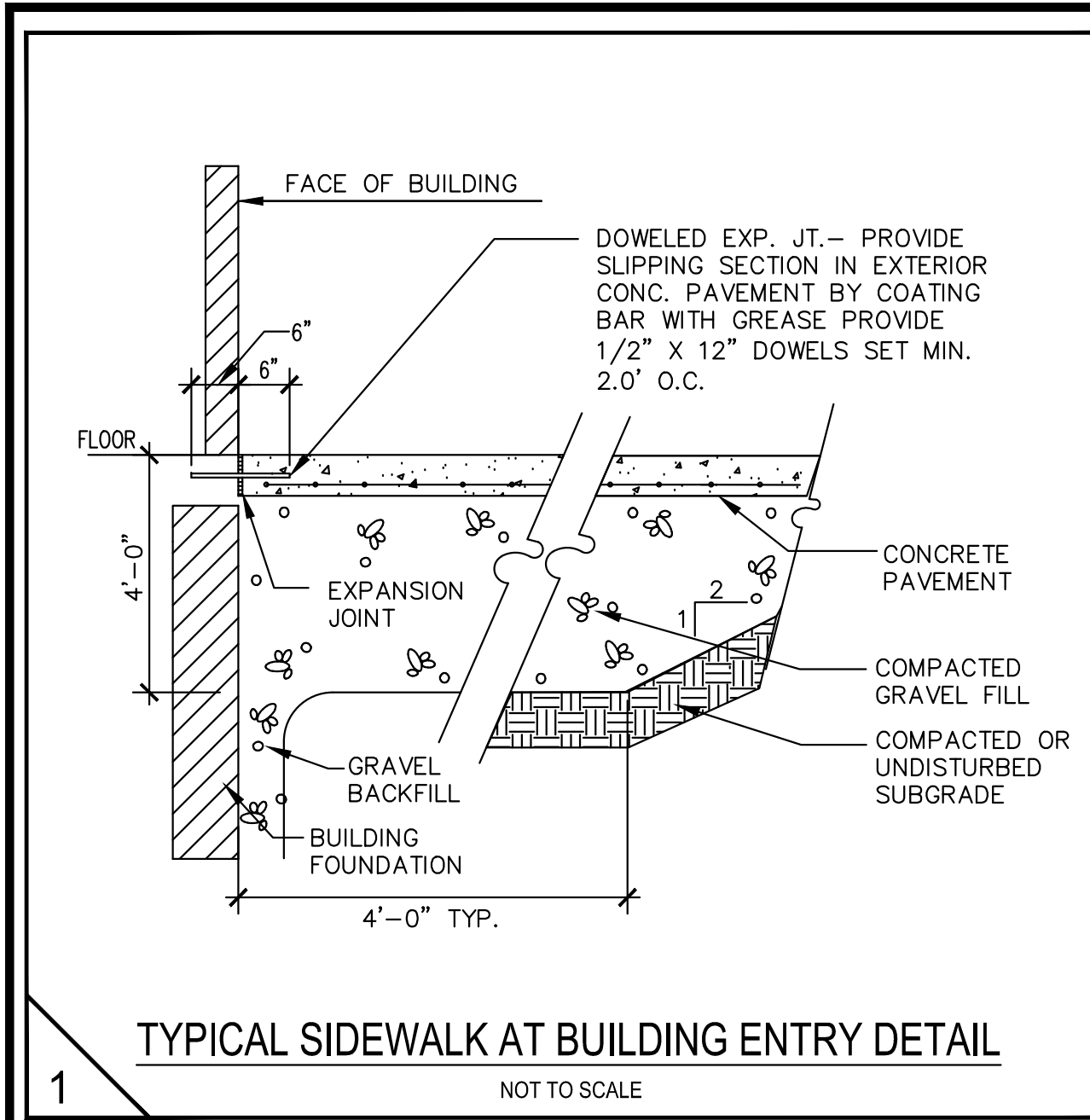
18 Henderson Road  
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Civil - Environmental Engineering including Stormwater, Wastewater, Water Supply, Highway & Infrastructure Design, Land Planning, Land Subdivision, Site Design, Environmental Permitting, Wetlands Permitting & Land Development Permitting

PREPARED FOR:  
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DEPARTMENT OF PUBLIC WORKS  
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LYNNFIELD, MASSACHUSETTS 01940  
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**SITE CONSTRUCTION DETAILS**  
KING RAIL RESERVE GOLF COURSE CLUBHOUSE  
397 WALNUT STREET aka 1 KING RAIL DRIVE  
LYNNFIELD, MASSACHUSETTS

SHEET  
**C-7A**



**NOTES:**

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DES. BY:	WAJ
DR. BY:	WAJ
CKD. BY:	RGC/WAJ
APPD. BY:	RGC
JOB NO.:	23120
SCALE:	NONE
DATE:	AUG. 31, 2023

**RICHARD G. CUTTS**  
REG. PROF. ENGINEER  
No. 20034

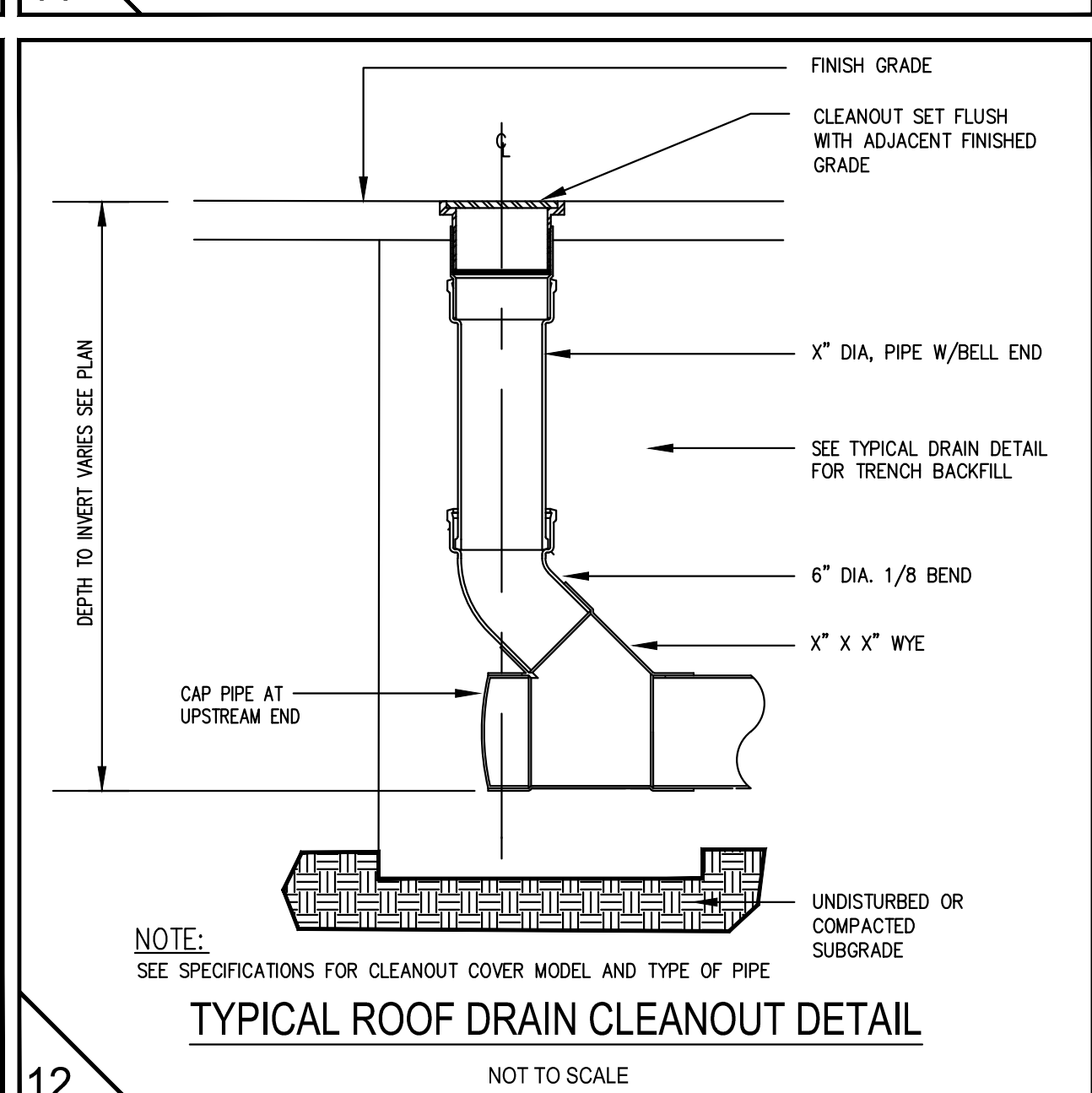
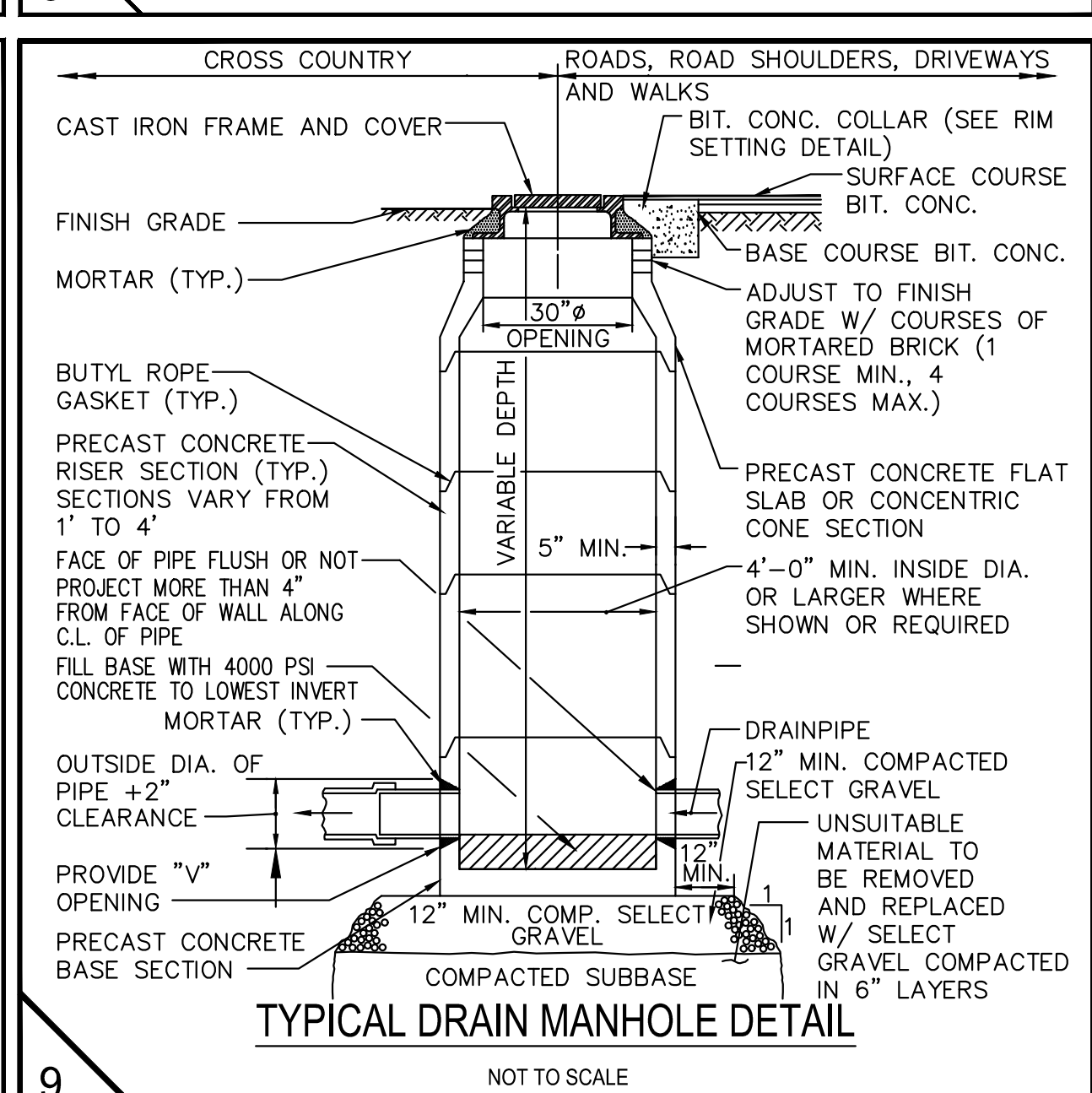
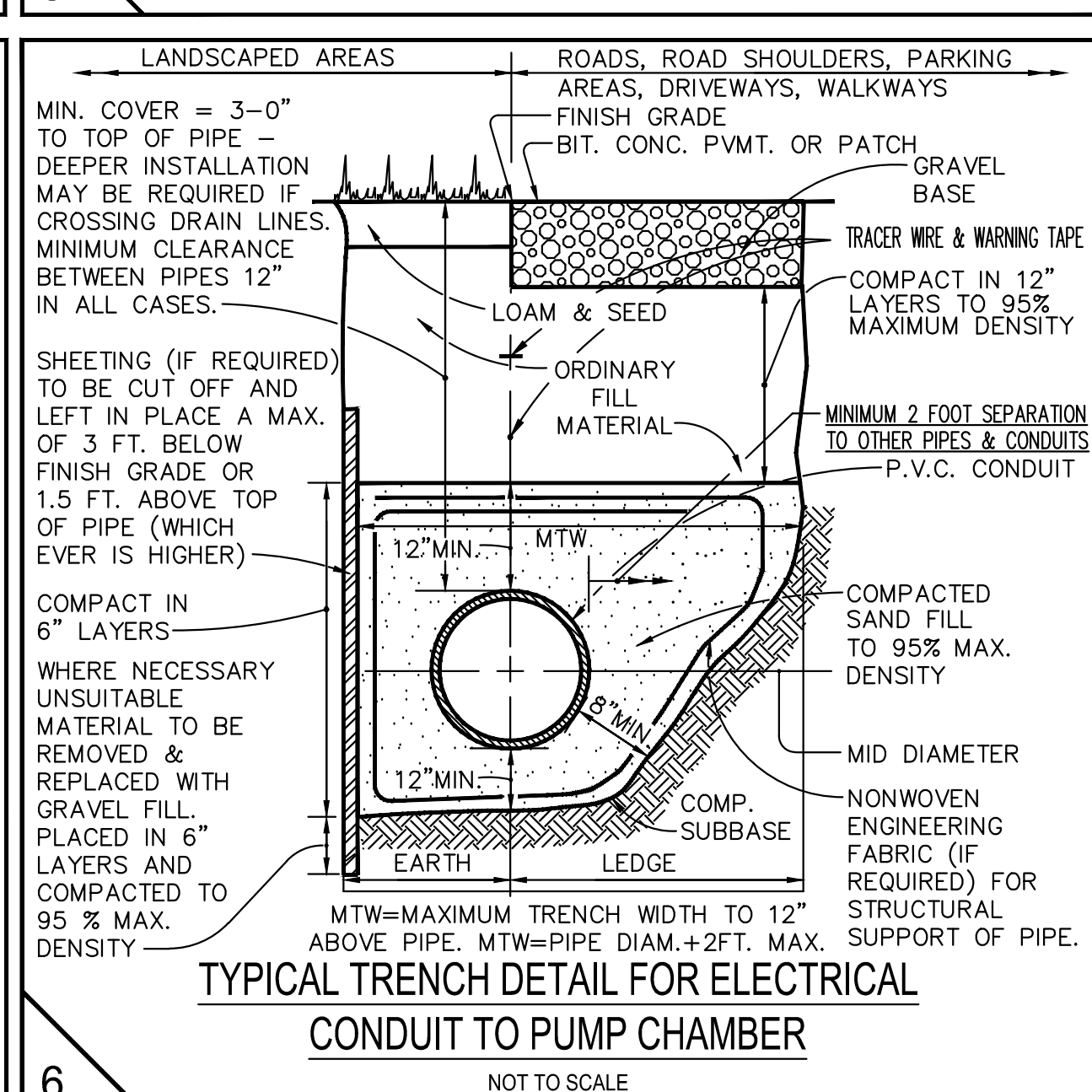
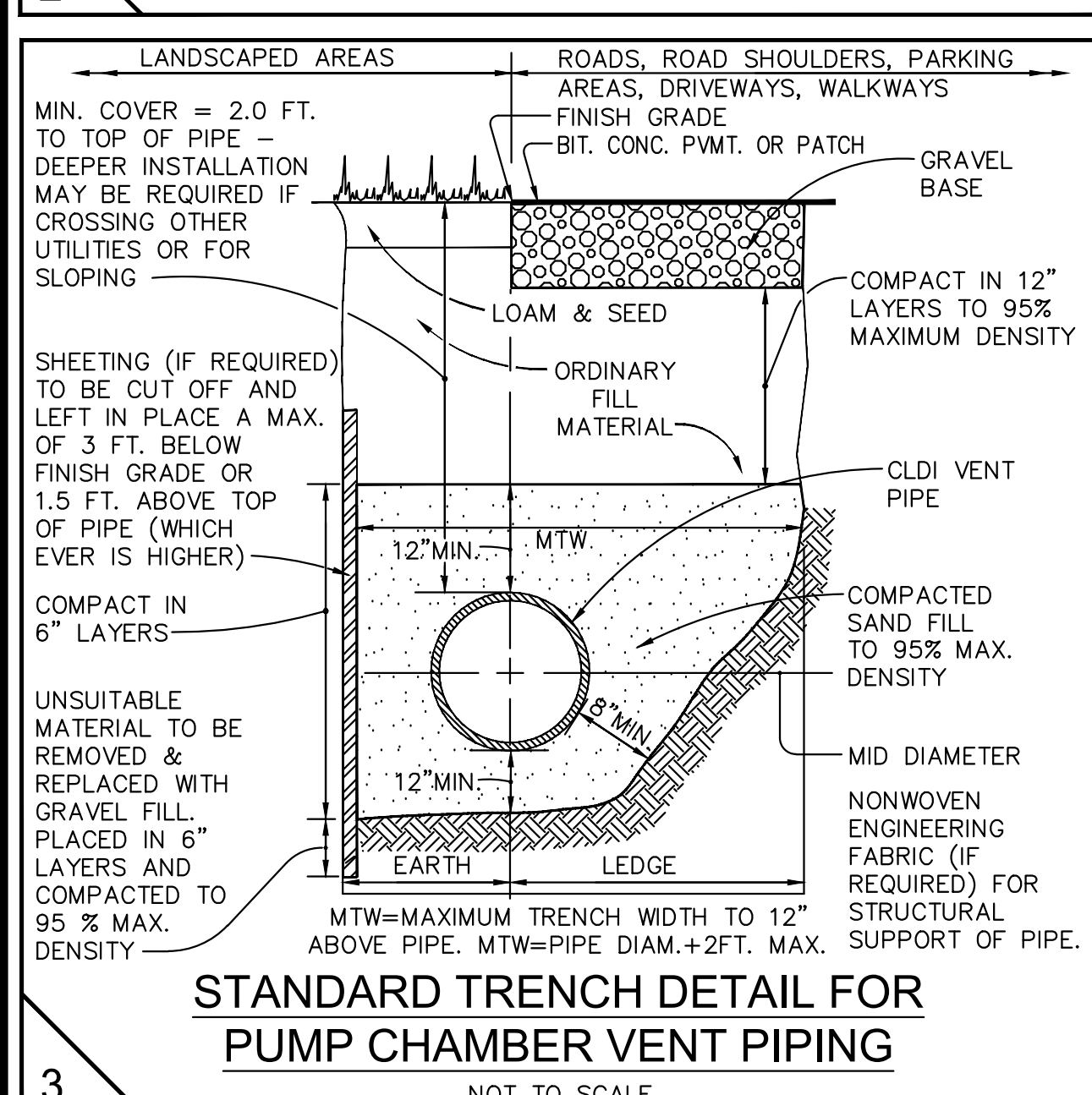
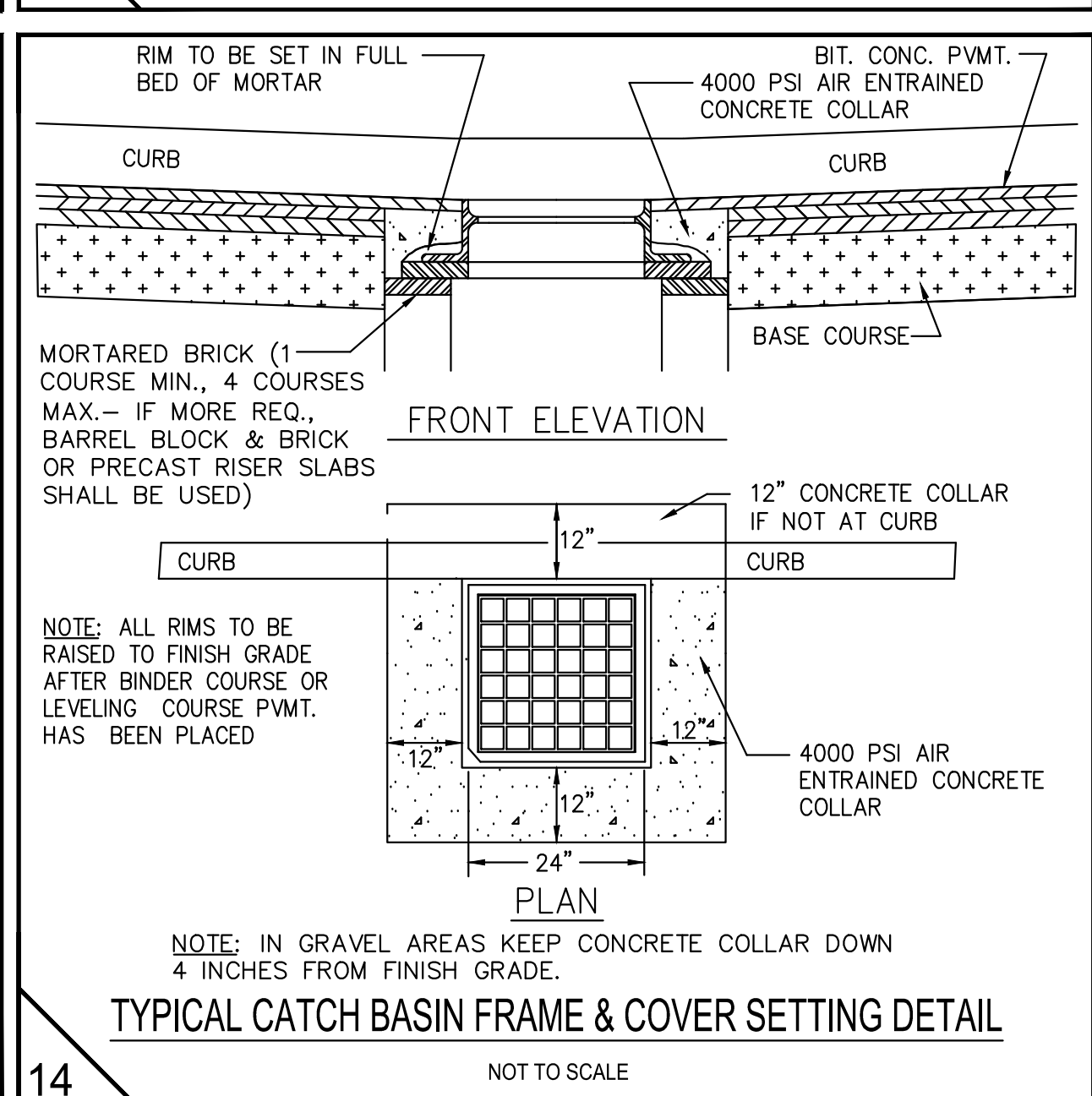
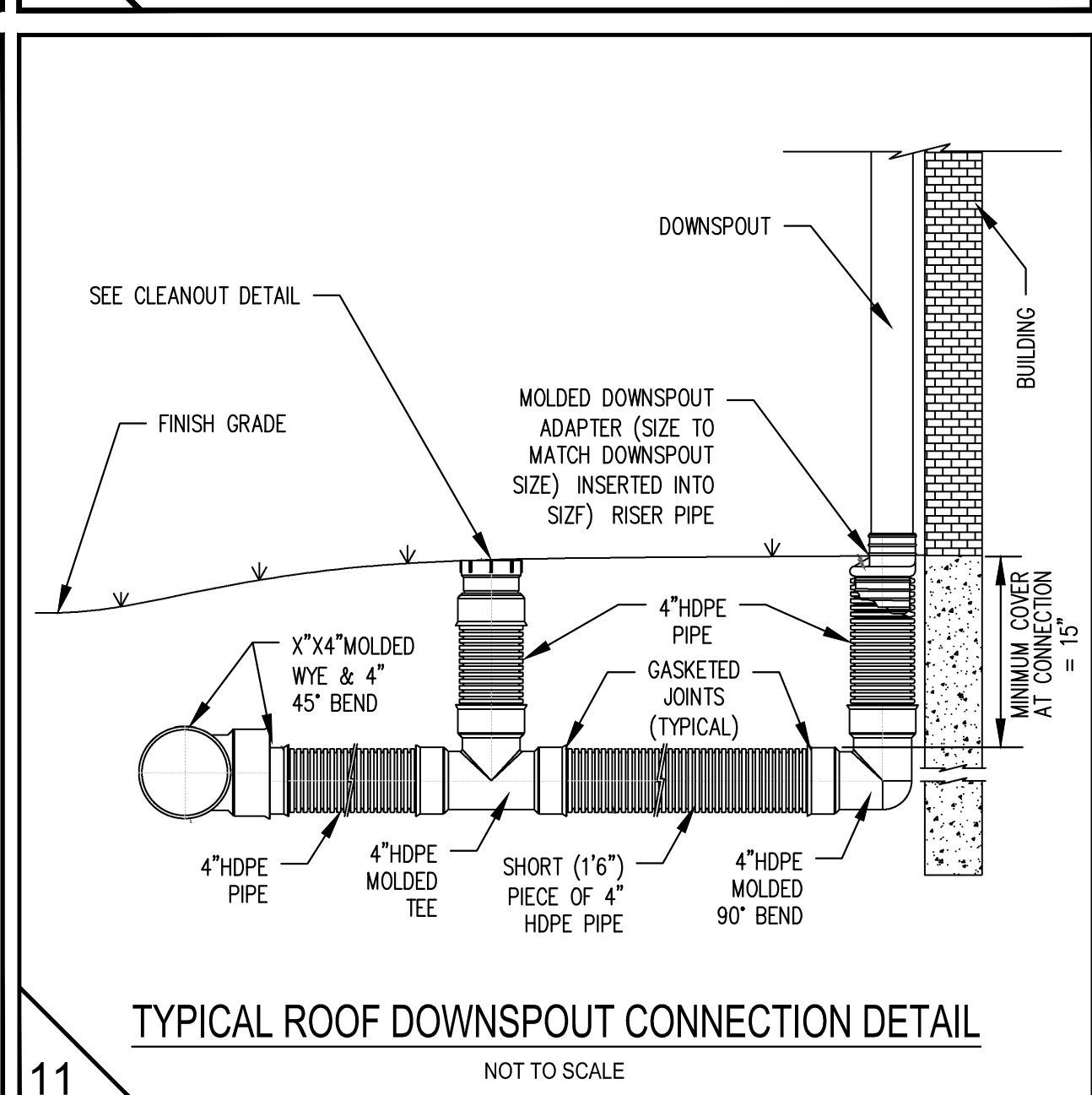
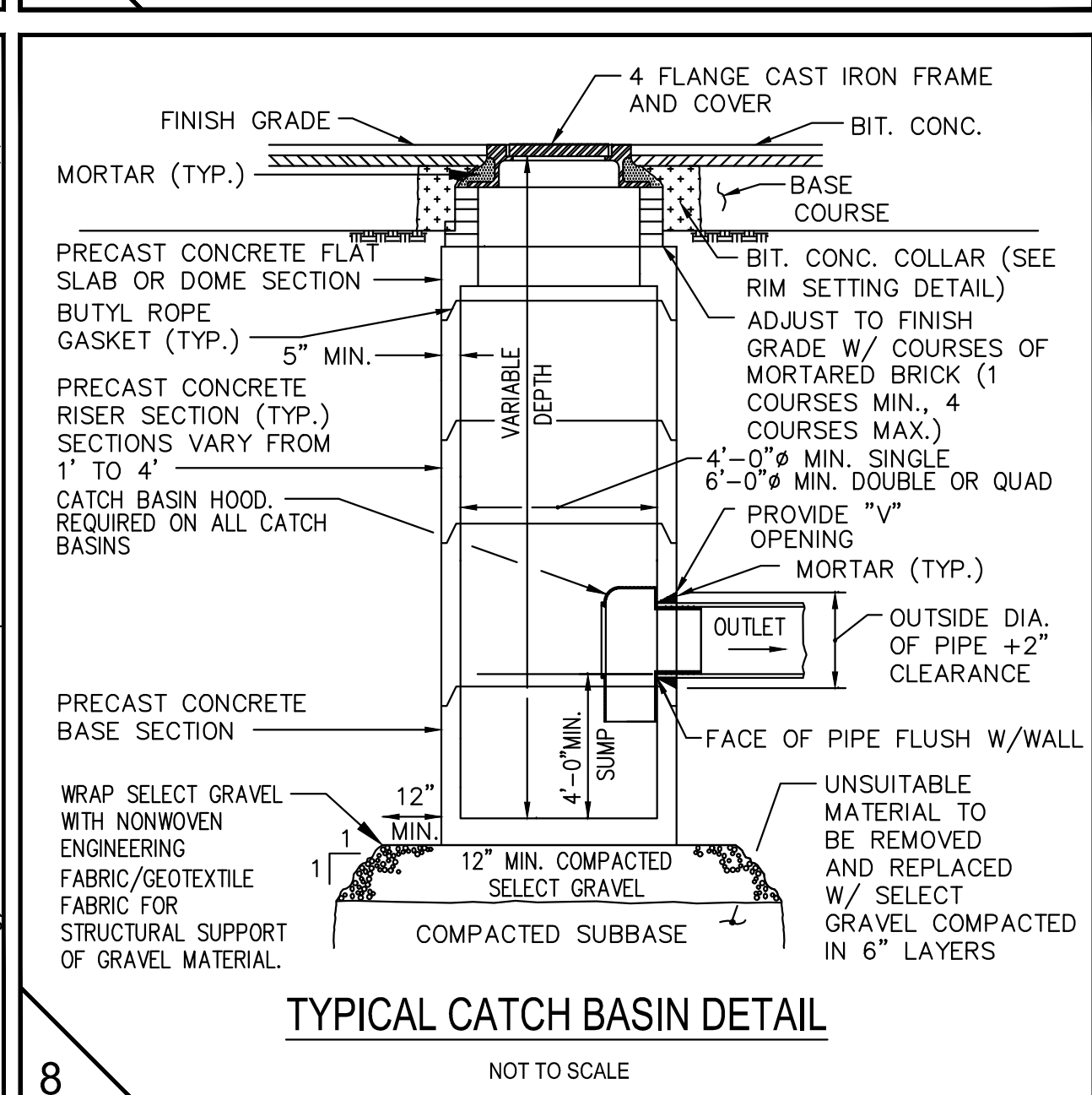
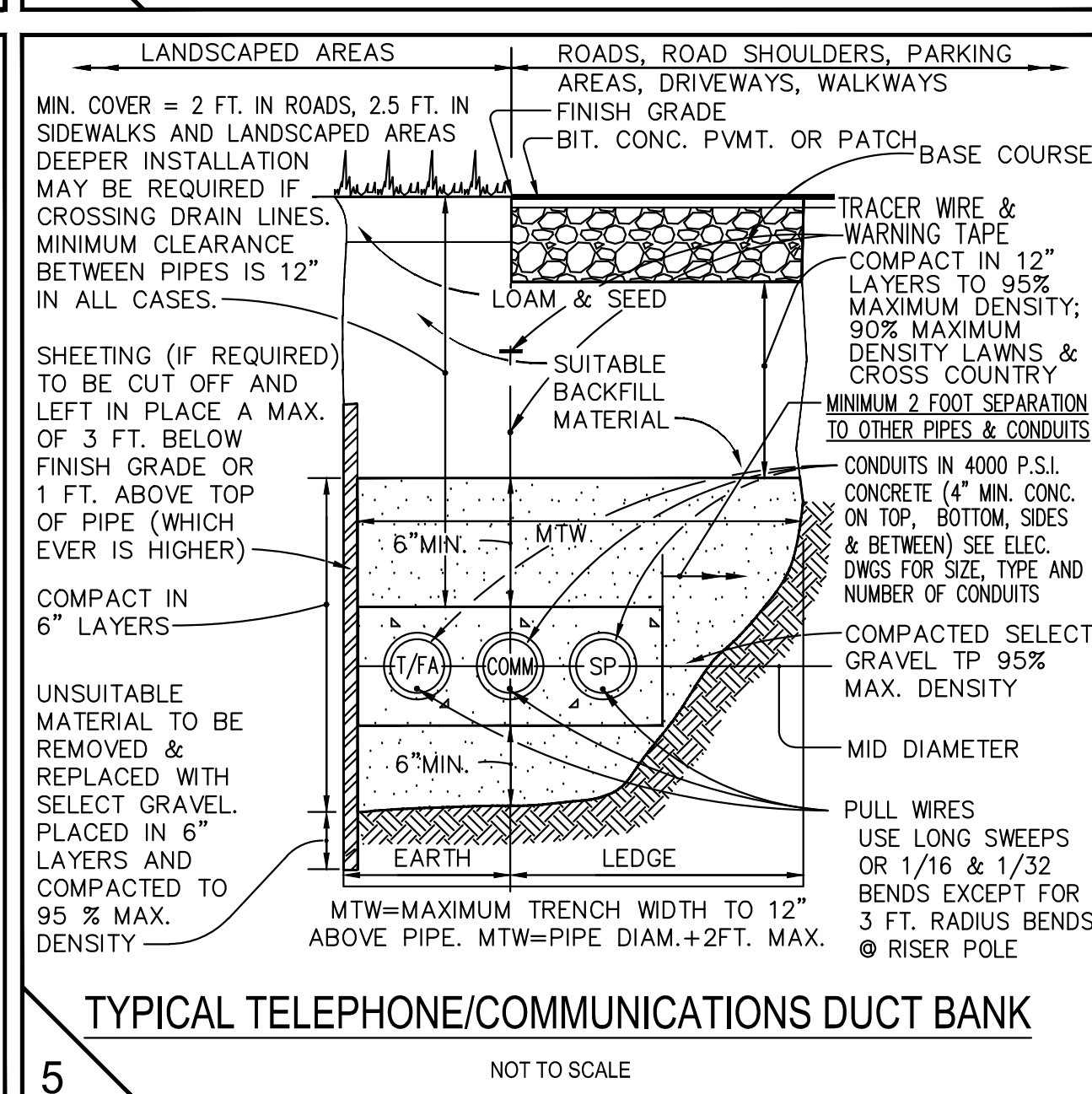
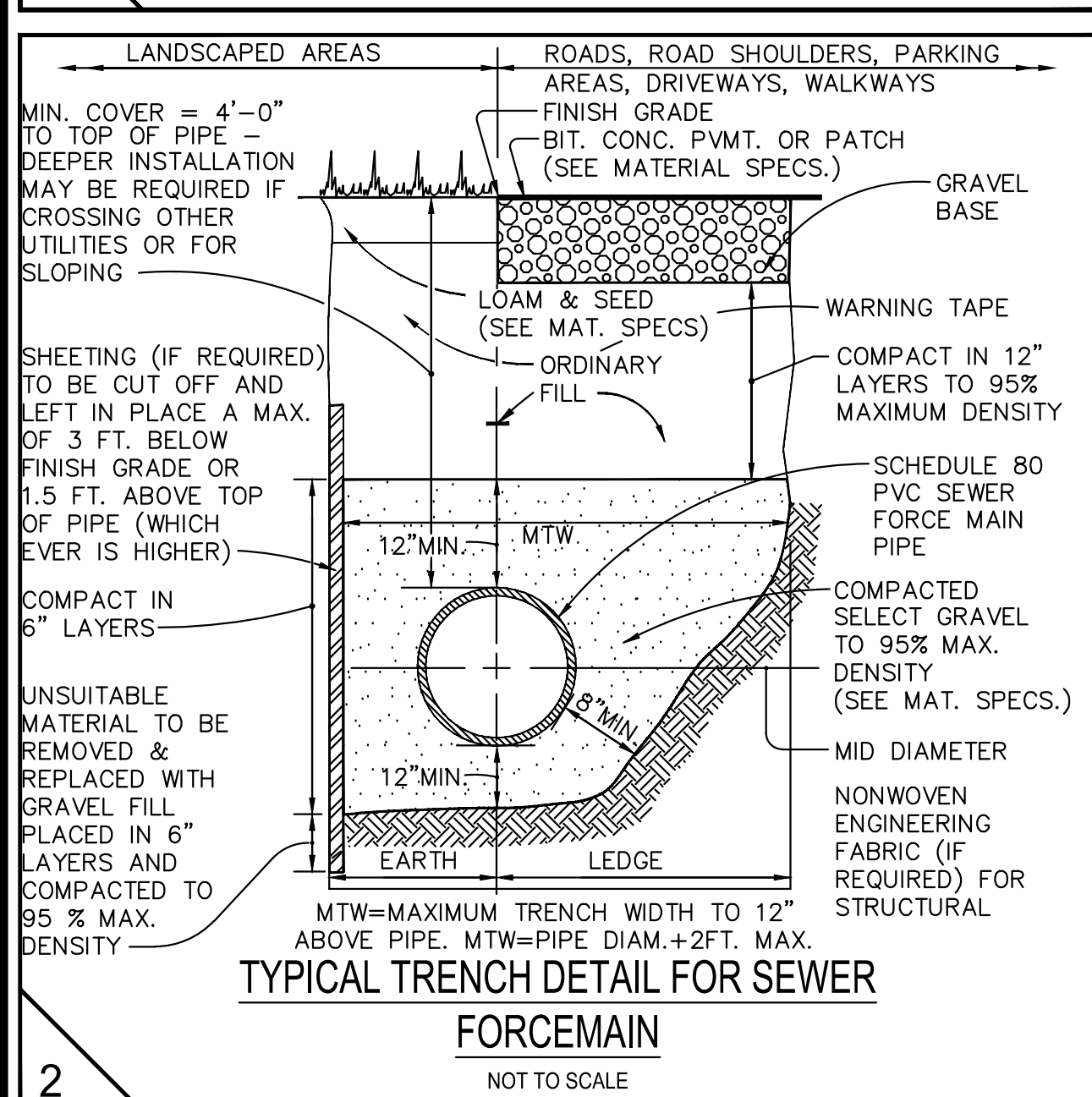
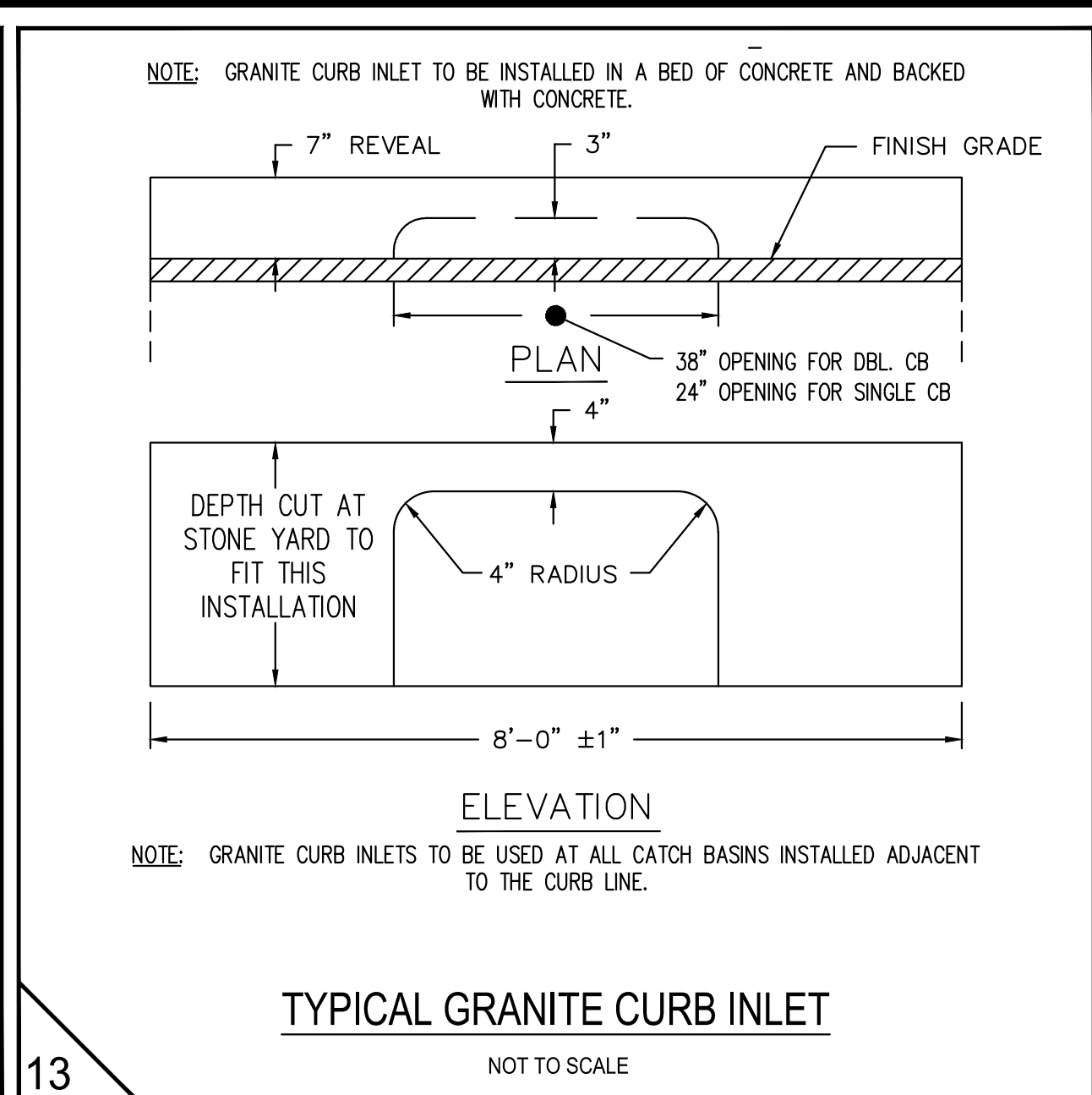
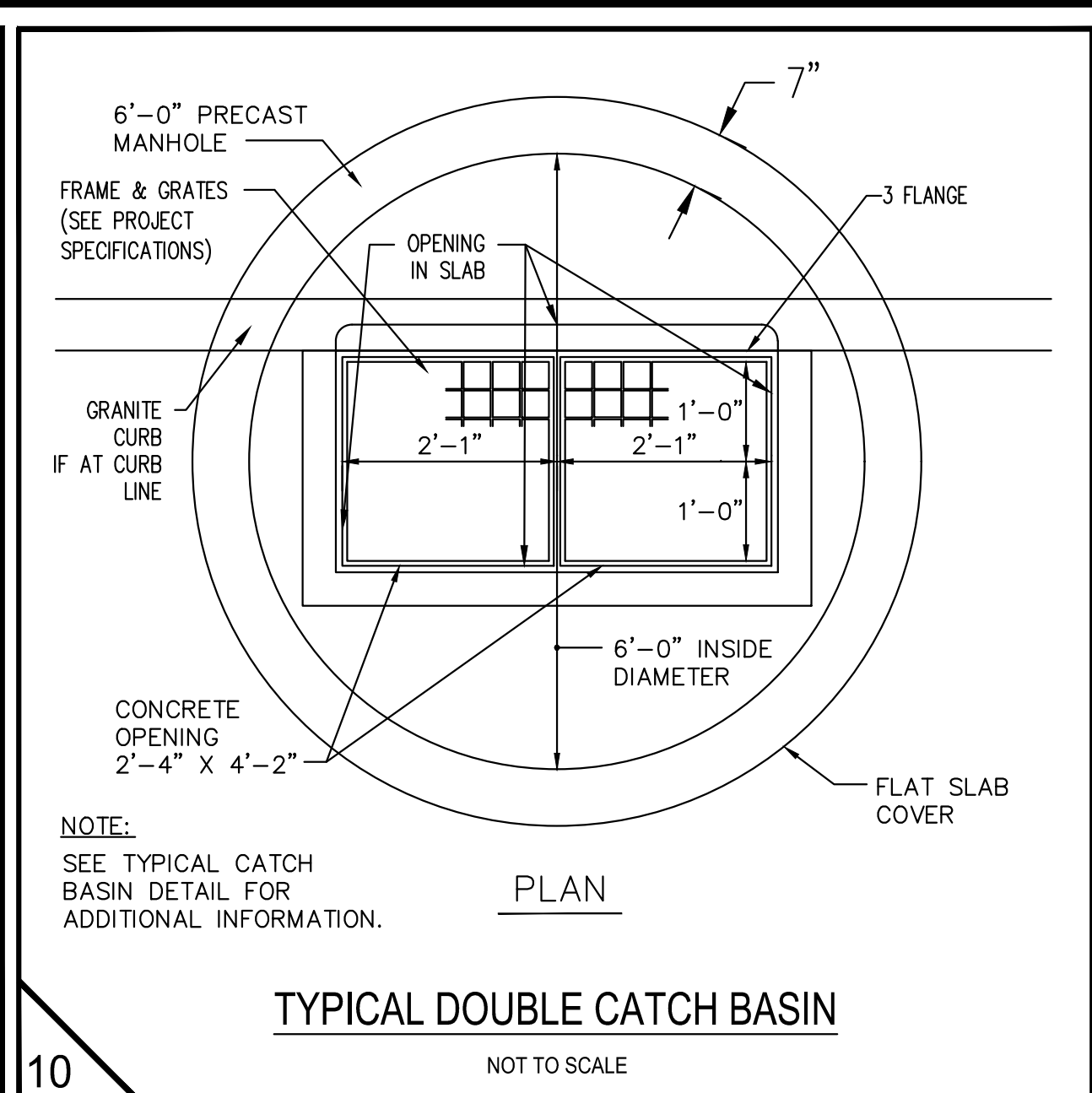
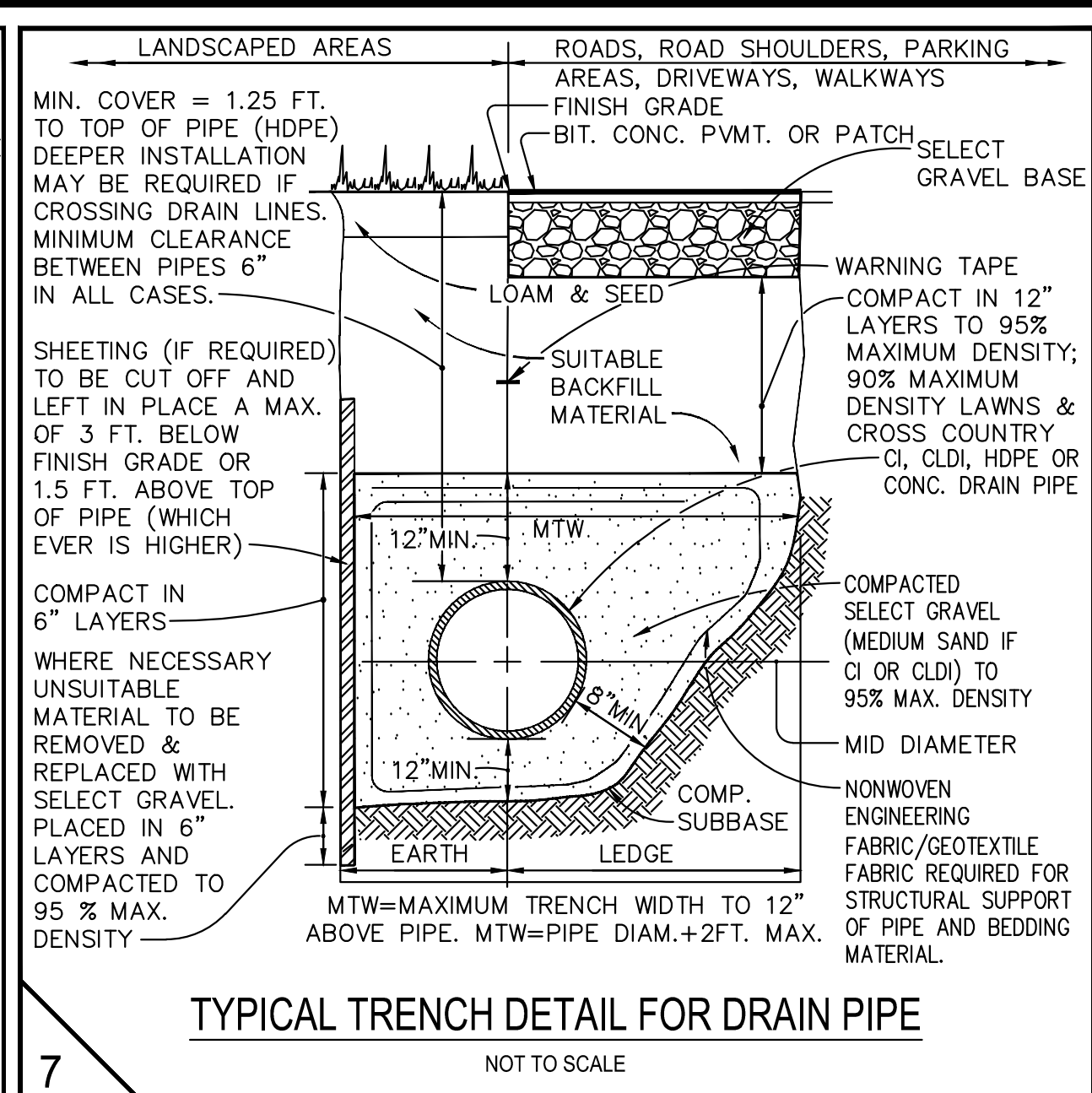
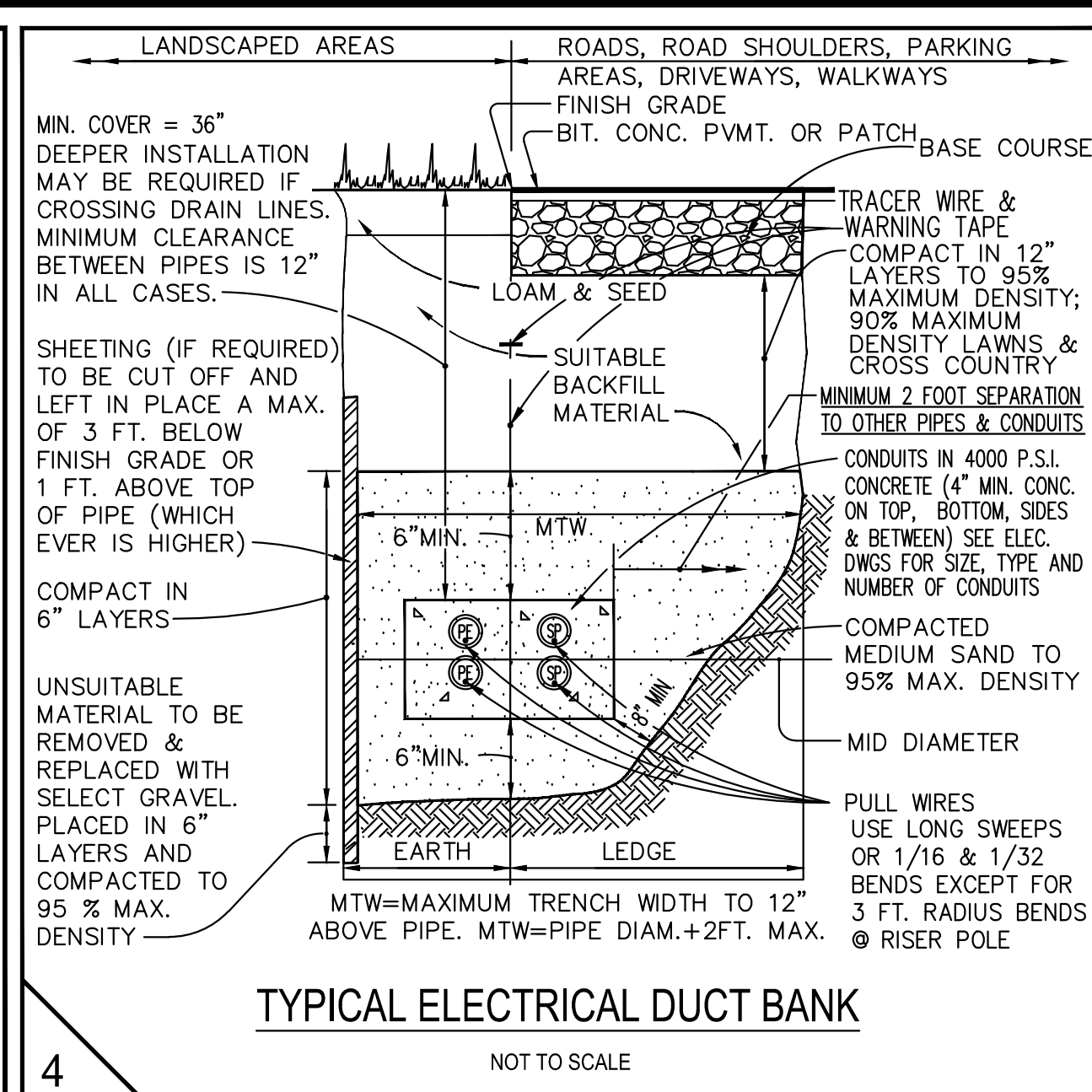
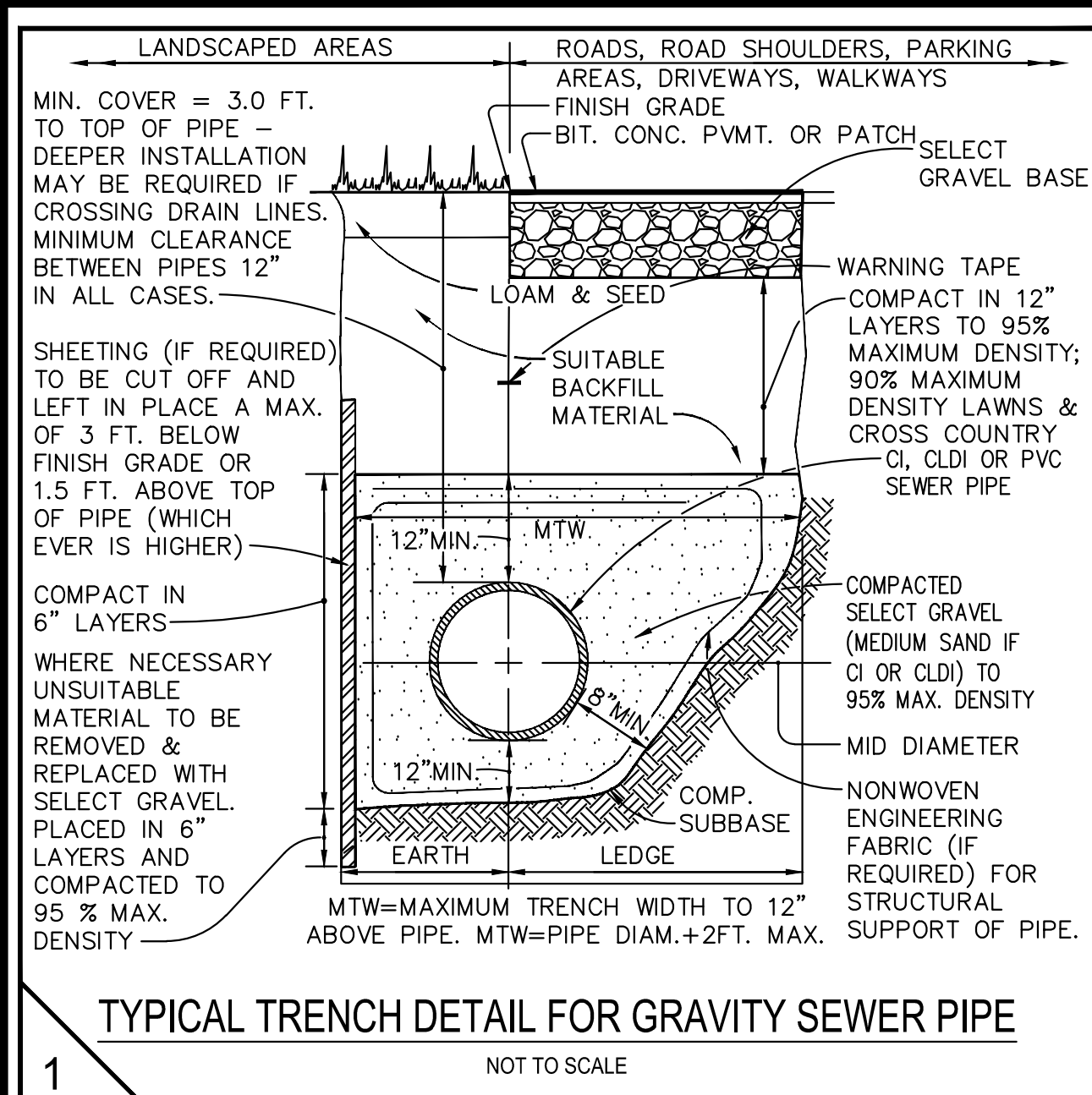
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SHEET  
**C-7B**



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REG. PROF. ENGINEER

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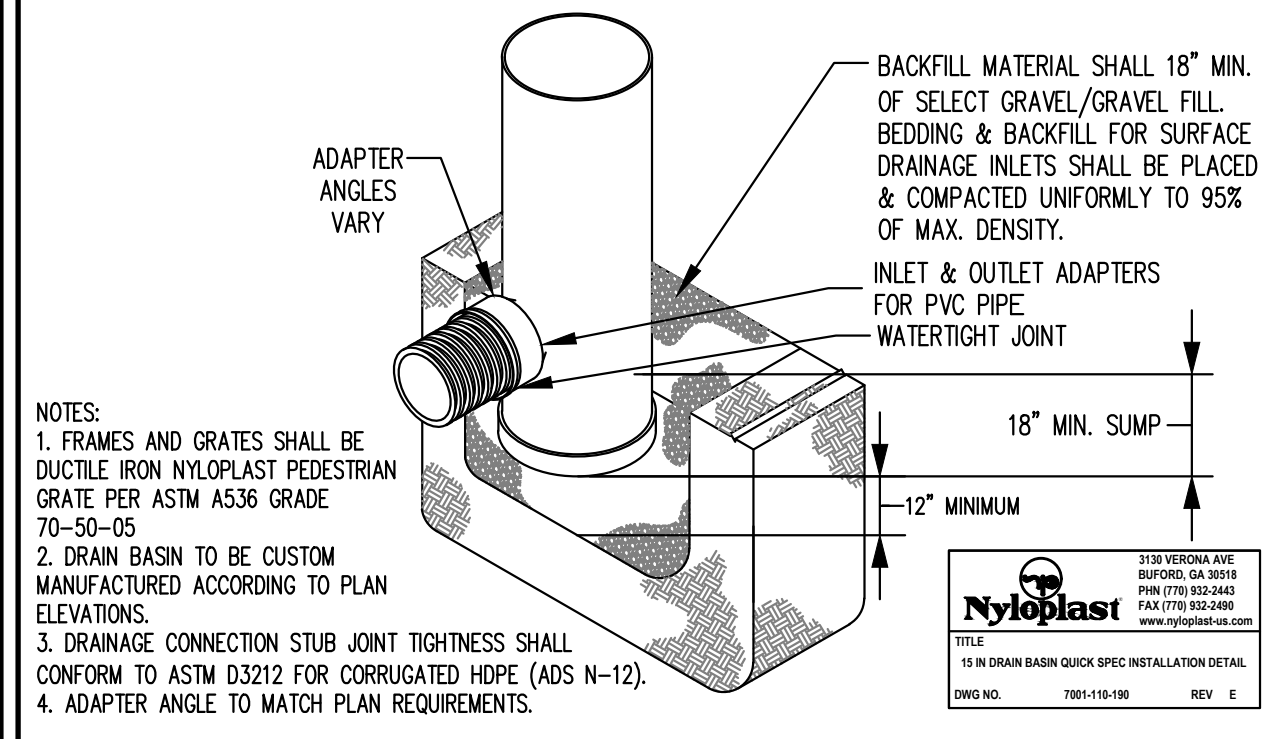
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**SHEET C-7C**

**\*\*SEE GRATE DETAIL BELOW**



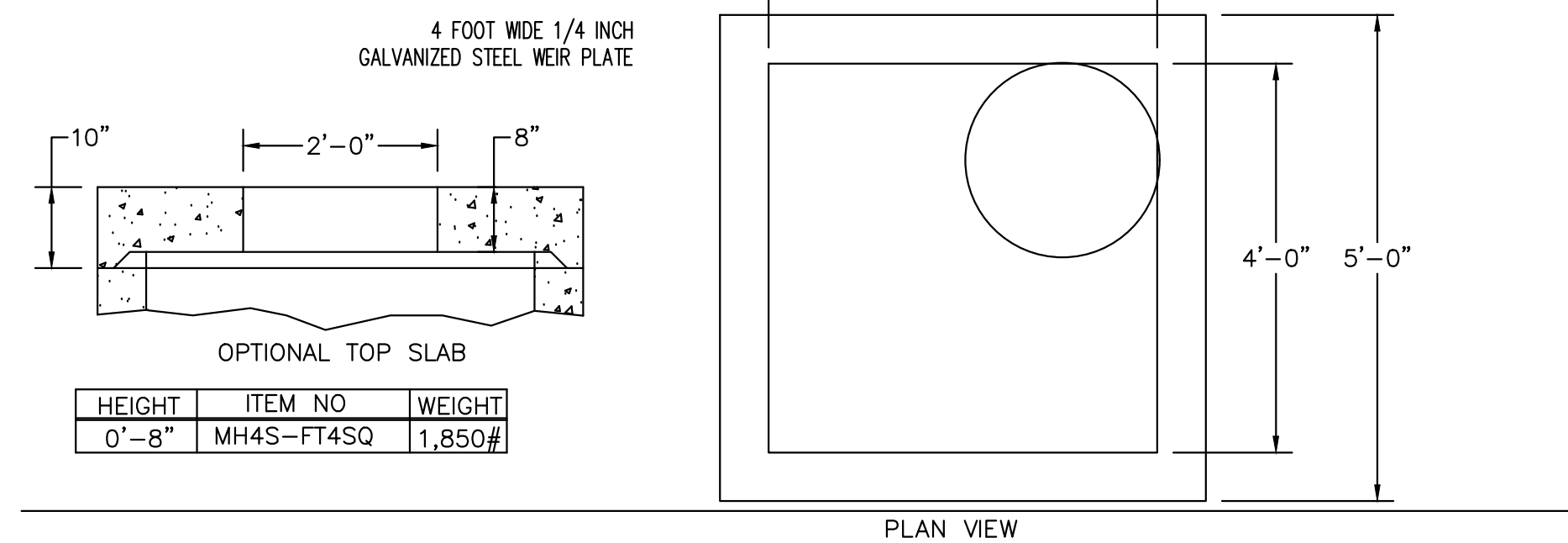
- NOTES:  
 1. FRAMES AND GRATES SHALL BE DUCTILE IRON NYLOPLAST PEDESTRIAN GRATE PER ASTM A536 GRADE 70-50-05  
 2. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN ELEVATIONS.  
 3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12).  
 4. ADAPTER ANGLE TO MATCH PLAN REQUIREMENTS.



**TYPICAL NYLOPLAST 15" DRAIN BASIN DETAIL**  
NOT TO SCALE

1

PLACE STANDARD DRAIN MANHOLE FRAME AND COVER OVER 24" OPENING IN TOP SLAB.



HEIGHT	ITEM NO	WEIGHT
0'-8"	MH4S-FT4SQ	1,850#

HEIGHT	ITEM NO	WEIGHT
1'-0"	MH4S-12T4SQ	3,182#
2'-0"	MH4S-24T4SQ	4,514#
3'-0"	MH4S-36T4SQ	5,846#
4'-0"	MH4S-48T4SQ	7,178#

HEIGHT	ITEM NO	WEIGHT
1'-0"	MH4S-12CS4SQ	1,332#
2'-0"	MH4S-24CS4SQ	2,664#
3'-0"	MH4S-36CS4SQ	3,996#
4'-0"	MH4S-48CS4SQ	5,328#

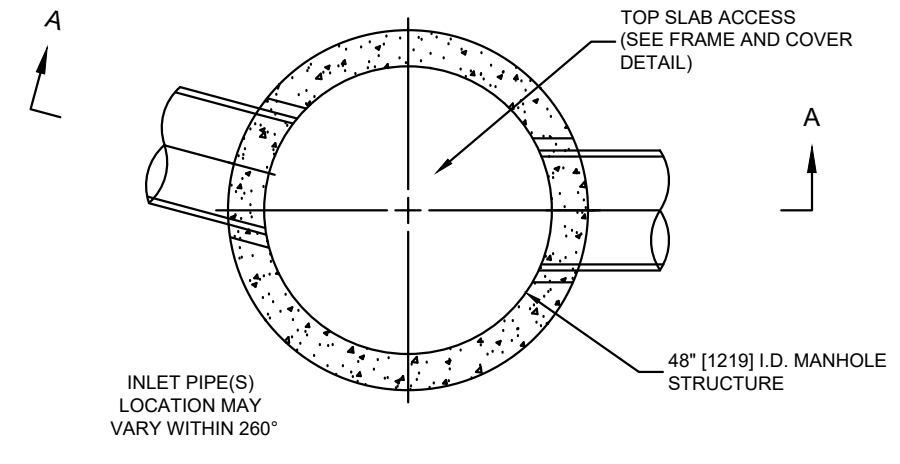
HEIGHT	ITEM NO	WEIGHT
2'-0"	MH4S-24S4SQ	4,514#
3'-0"	MH4S-36S4SQ	5,846#
4'-0"	MH4S-48S4SQ	7,178#
5'-0"	MH4S-60S4SQ	8,510#

- NOTES:  
 1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.  
 2. DESIGN LOADING PER AASHTO HS-20, 1 TO 5 FEET COVER.  
 3. MANHOLE DESIGN SPECS CONFORM TO ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."

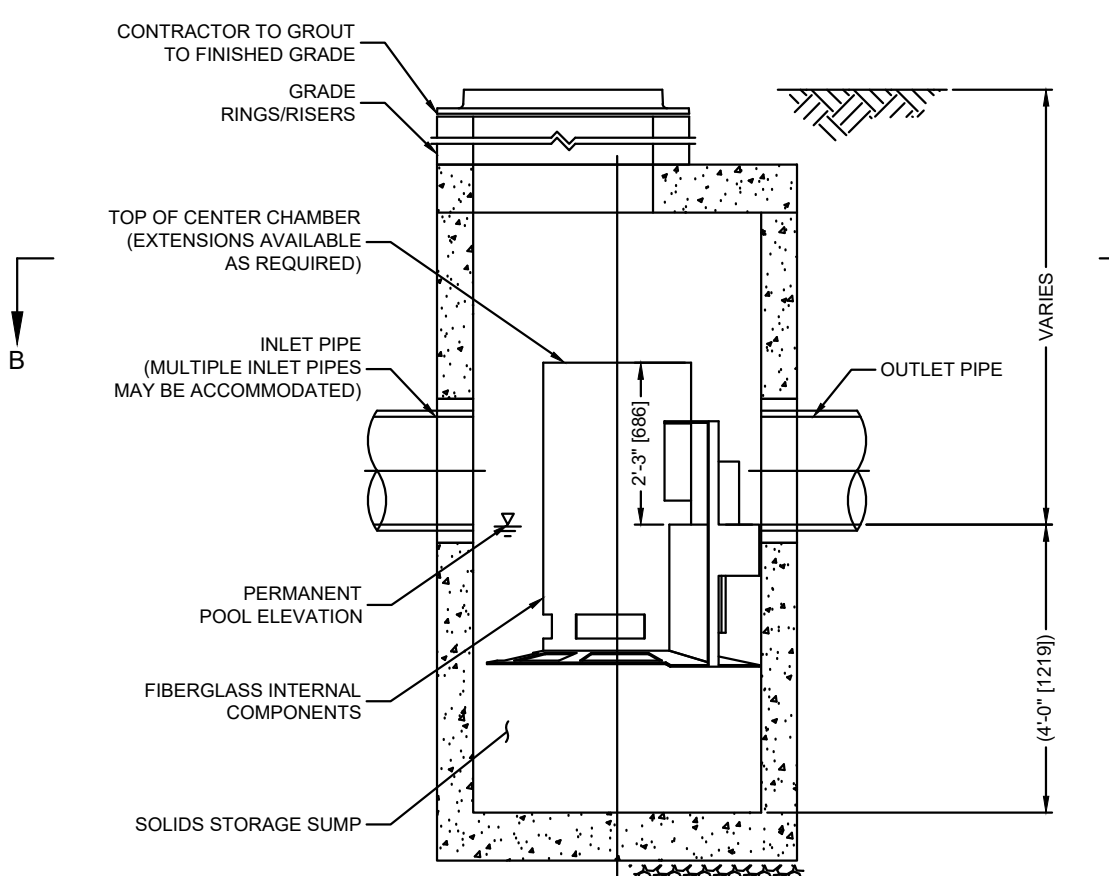
SEE TYPICAL CATCH BASIN/DRAIN MANHOLE FOR BEDDING AND OTHER DETAILS

**TYPICAL SQUARE DRAIN MANHOLE**  
NOT TO SCALE

4



**PLAN VIEW B-B**  
NOT TO SCALE



**ELEVATION A-A**  
NOT TO SCALE

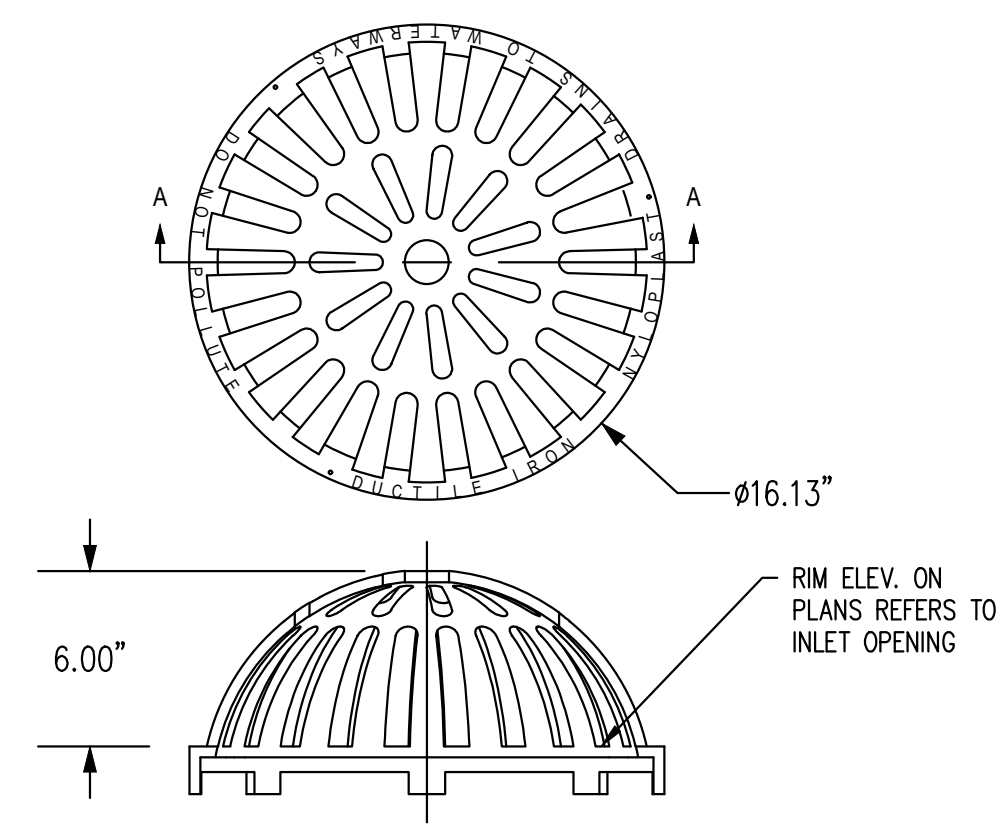
SEE TYPICAL CATCH BASIN/DRAIN MANHOLE FOR BEDDING OF CS-4 UNIT (12" OF COMPACTED SELECT GRAVEL)

**TYPICAL CASCADE CS-4 STORMWATER TREATMENT UNIT DETAIL**  
NOT TO SCALE

7

**FRAME AND COVER**  
(DIAMETER VARIES)  
NOT TO SCALE

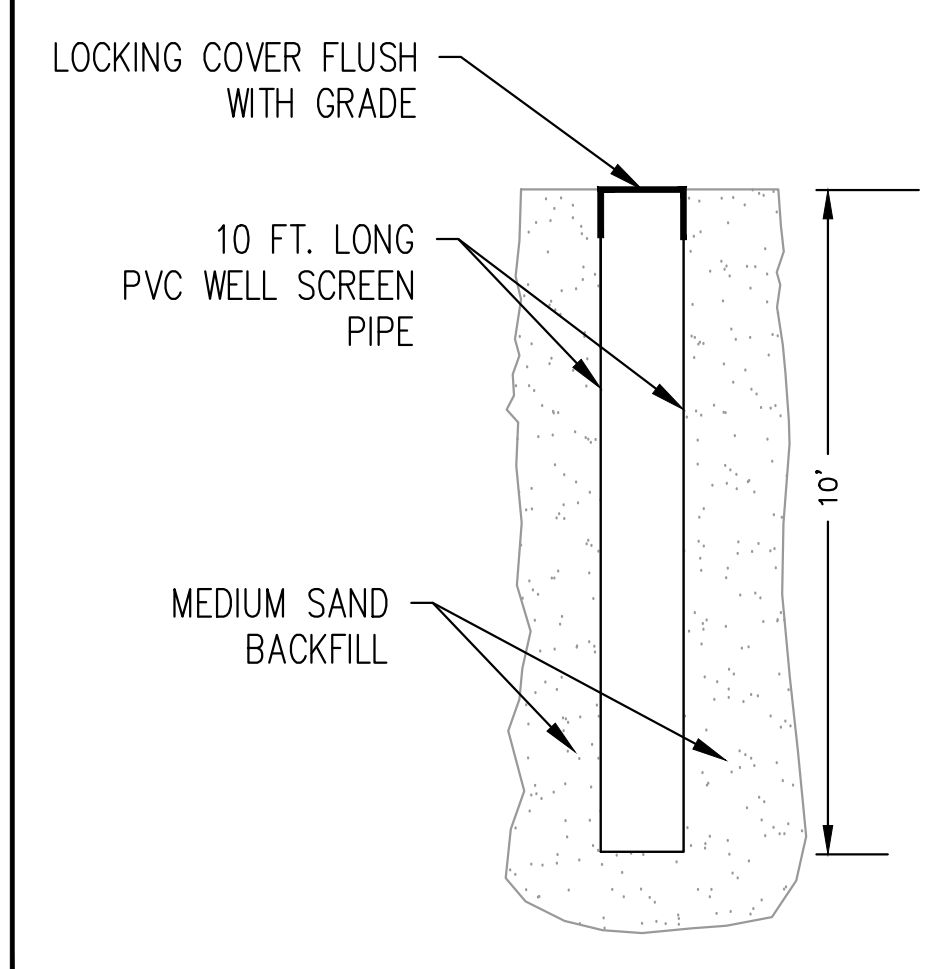
- GENERAL NOTES:  
 1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.  
 2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE: www.conteches.com  
 3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.  
 4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO H20 LOAD RATING, ASSUMING EARTH COVER OF 9'-2" (B10), AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.  
 5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.  
 6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS (mm).  
 INSTALLATION NOTES:  
 A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.  
 B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.  
 C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.  
 D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.  
 E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



**TYPICAL DRAIN BASIN GRATE DETAIL**  
NOT TO SCALE

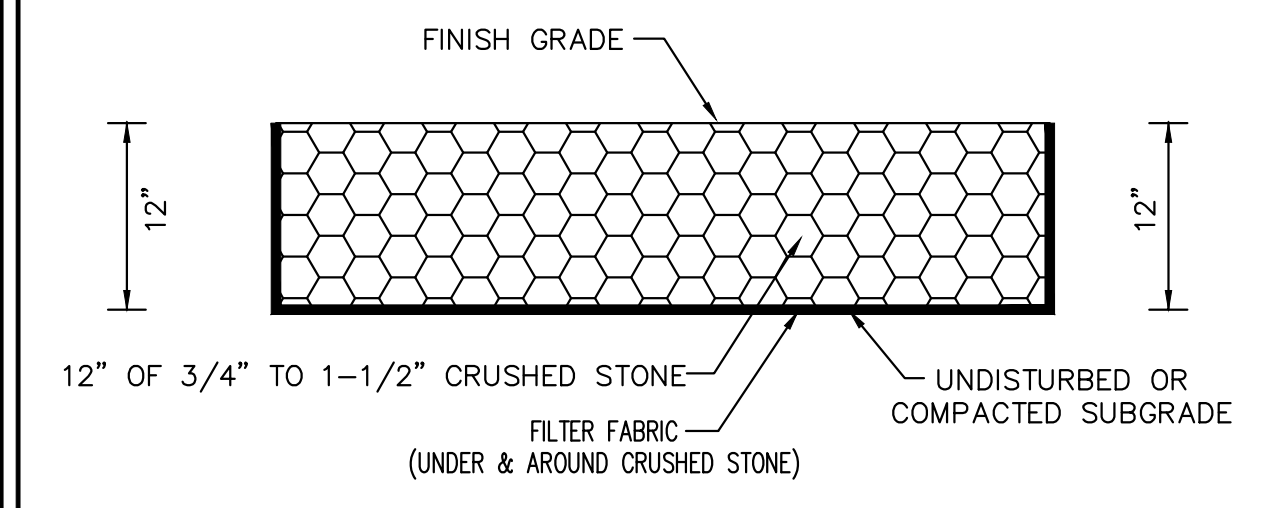
2

DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY. DIMENSIONS ARE IN INCHES. QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05. PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT. LOCKING DEVICE AVAILABLE UPON REQUEST.



**TYPICAL CRUSHED STONE TRENCH**  
NOT TO SCALE

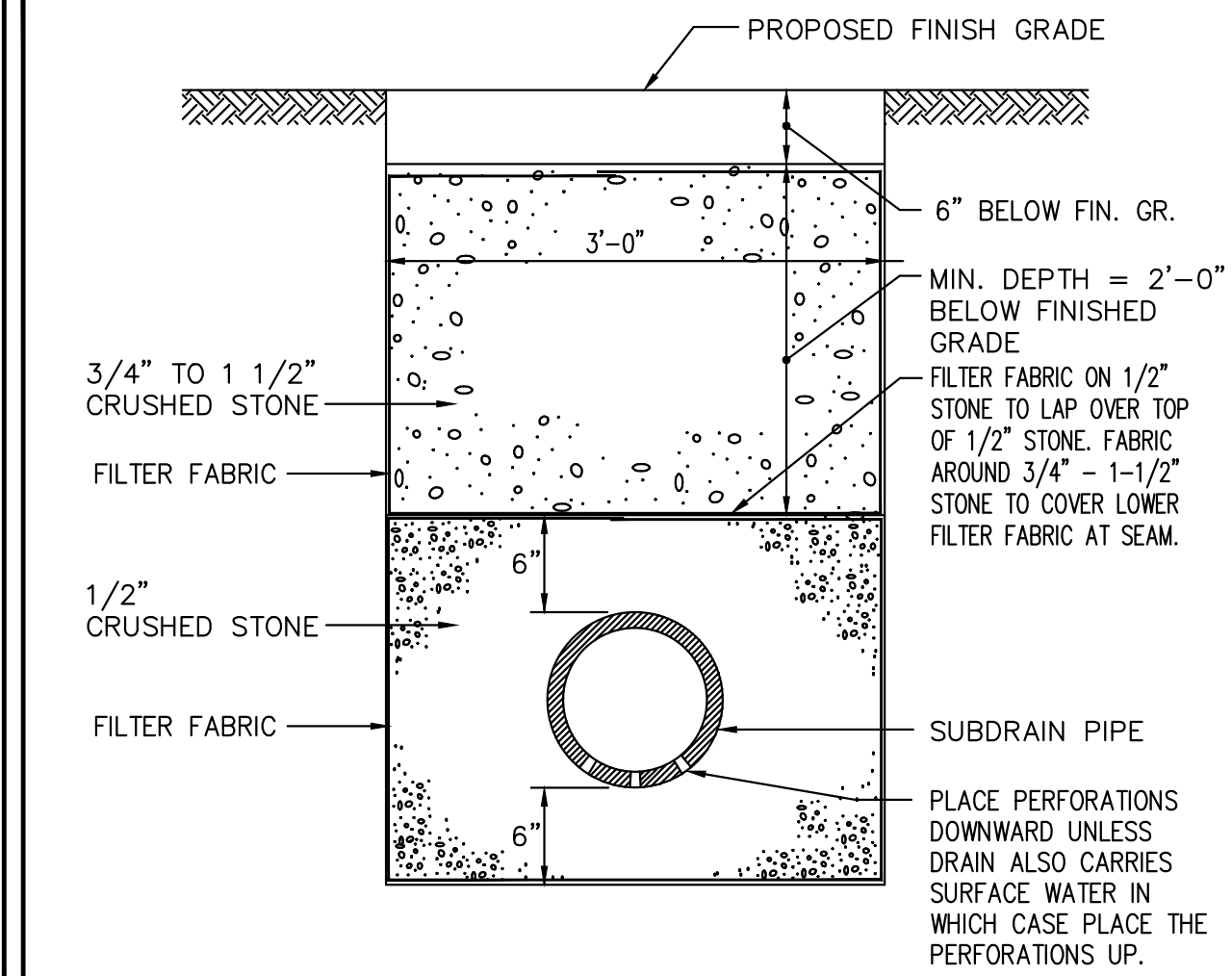
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**TYPICAL CRUSHED STONE TRENCH**  
NOT TO SCALE

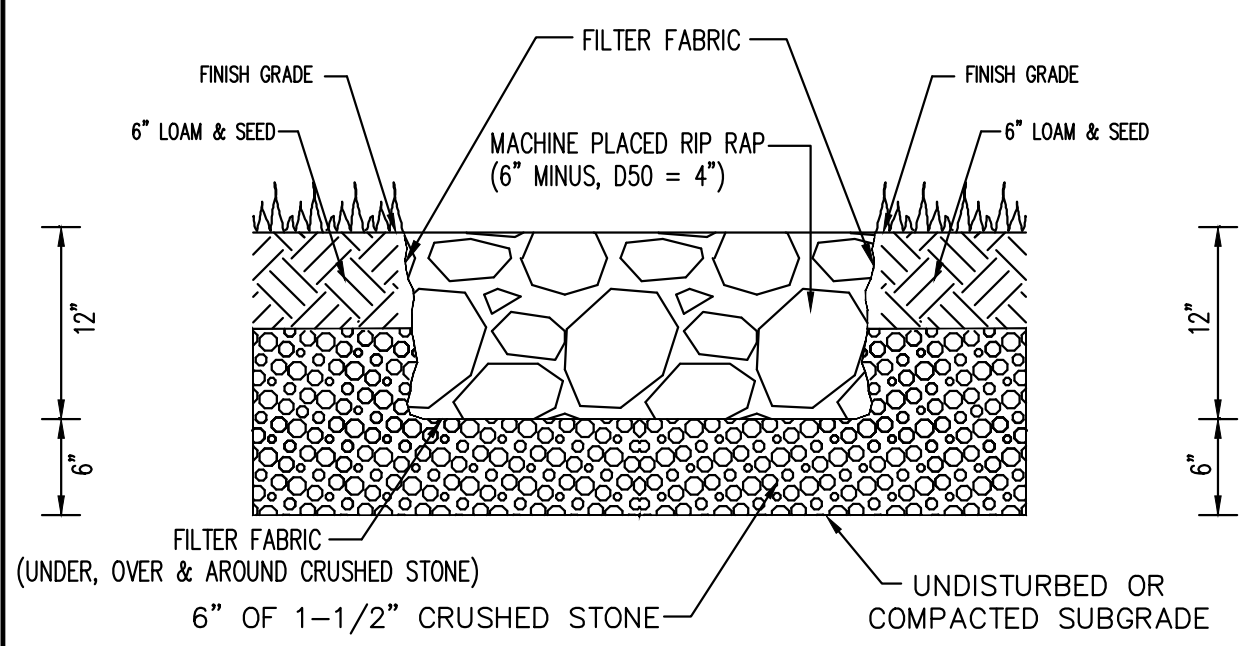
3

- NOTES:  
 1. SEE PLAN FOR TRENCH WIDTH.  
 2. ALL STONE SHALL BE WASHED STONE.



**TYPICAL SUBDRAIN DETAIL**  
NOT TO SCALE

6



**TYPICAL STONE RIPRAP DETAIL**  
NOT TO SCALE

8

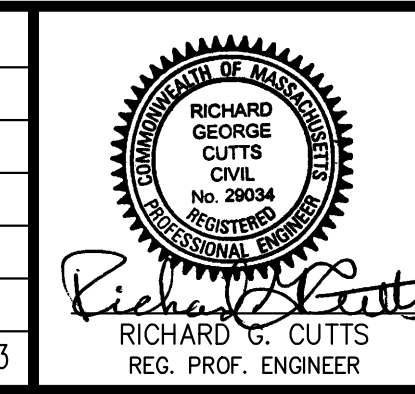
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ISSUED FOR NOI FILING
REVISIONS



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 LYNNFIELD, MASSACHUSETTS

SHEET  
**C-7D**

## NOTES AND SPECIFICATIONS

### IMPORTANT NOTES:

- THE KING RAIL GOLF COURSE PROPERTY IS OWNED BY THE TOWN OF LYNNFIELD BY VIRTUE OF A DEED FROM MARKET STREET AT LYNNFIELD DEVELOPMENT LLC DATED OCTOBER 9, 2012 AND RECORDED AT THE ESSEX COUNTY REGISTRY OF DEEDS, SOUTHERN DISTRICT (ESRD) IN BOOK 32117, PAGE 59. THE LAND IS SHOWN ON THE TOWN OF LYNNFIELD ASSESSOR'S MAP 045 AS PARCEL 099 WITH AN ADDRESS OF 397 WALNUT STREET (ALSO KNOWN AS 1 KING RAIL DRIVE). THE LAND IS ALSO SHOWN AS LOT 1 ON PLAN RECORDED IN PLAN BOOK 437 AS PLAN 37 RECORDED AT THE ESRD AND CONTAINS 103± ACRES OF LAND ACCORDING TO SAID PLAN.
- IN ADDITION TO THE EASEMENTS SHOWN ON THIS PLAN, THE ENTIRETY OF LOT 1 IS SUBJECT TO AN EASEMENT FOR WATER WITHDRAWAL, SET FORTH IN ESRD BOOK 31829, PAGE 507 AND ANY OTHER EASEMENTS OF RECORD OR OTHERWISE.
- THE PROPERTY LINES, EASEMENTS, GROUND CONTOURS, EXISTING CONDITIONS AND UTILITY INFORMATION SHOWN ON THIS PLAN WERE COMPILED FROM PREVIOUS PLANS OF THE PROPERTY PREPARED BY STANTEC, INC. (MARKET STREET PROJECT), WILLIAMS AND SPARGUES, INC. (2015 CLUBHOUSE PROJECT), BSC (2017 CLUBHOUSE PROJECT AMENDMENT) AND EAGLEBROOK ENGINEERING AND SURVEY, LLC AS WELL AS A LIMITED ON THE GROUND SURVEY BY LINDEN ENGINEERING PARTNERS, LLC.
- THE PROPERTY LINES SHOWN ON THIS PLAN WERE COMPILED FROM PREVIOUS PLANS BY OTHERS AND ARE NOT THE RESULT OF A COMPLETE PROPERTY LINE SURVEY BY LINDEN ENGINEERING PARTNERS, LLC.
- THE LOCATION OF THE UTILITIES AS SHOWN HEREON HAVE BEEN COMPILED FROM PREVIOUS PLANS OF THE SITE BY OTHERS. UNDERGROUND ELECTRIC LINES AND CONDUITS, TELEPHONE LINES AND CONDUITS, COMMUNICATIONS LINES AND CONDUITS, CABLE TV LINES AND CONDUITS, FIRE ALARM LINES AND CONDUITS, GAS MAINS AND SERVICES, SANITARY SEWER MAINS AND SERVICES, SURFACE DRAINAGE MAINS AND SERVICES AND WATER MAINS AND SERVICES (IF ANY) AND IRRIGATION LINES MAY NOT BE SHOWN ON THIS PLAN AND IF SHOWN THEIR LOCATIONS AND ELEVATIONS SHOULD BE CONSIDERED ONLY APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ON THE PROPERTY. LINDEN ENGINEERING PARTNERS, LLC MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED AND FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE THE INFORMATION SHOWN ON THESE PLANS IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. ANY PERSON PERFORMING WORK ON OR ADJACENT TO THE SITE SHALL CALL 811 OR 1-888-344-7233 (1-888-DIGSAFE) "DIG SAFE" AS REQUIRED BY THE MASSACHUSETTS GENERAL LAWS SECTION 40 AND CHAPTER 82, SECTION 76(D) AT LEAST 72 HOURS PRIOR TO PERFORMING ANY EXCAVATION IN ORDER TO HAVE THE UTILITIES WITHIN THE WORK AREA MARKED OUT. PRIOR TO PLANNING ANY NEW UTILITY CONNECTIONS, THE PROJECT PUBLIC UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED TO VERIFY THE SIZE AND LOCATIONS OF THEIR EXISTING FACILITIES.
- AFTER THE UTILITIES HAVE BEEN MARKED OUT BY DIG SAFE, THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PRIVATE UTILITY LOCATING COMPANY OR COMPANIES TO MARK OUT ALL UNDERGROUND UTILITY LINES WITHIN THE LIMIT OF WORK AND THE PORTION OF THE ABUTTING PROPERTY WHERE THE SEWER CONNECTION IS TO BE MADE. THE LINES TO BE LOCATED INCLUDE WATER LINES, DRAIN LINES, TELEPHONE LINES, CABLE TV LINES, ELECTRIC LINES AND IRRIGATION LINES. THESE LINES SHALL BE CLEARLY MARKED OUT ON THE GROUND AND LOCATED ON A PLAN WHICH SHALL BE PROVIDED TO THE OWNER AND THE CIVIL ENGINEER.
- THE LIMITS OF BORDERING VEGETATED WETLANDS AT THE NORTHERLY END OF THE PROJECT AREA (WETLAND FLAGS 2 THROUGH 17) WERE FLAGGED IN THE FIELD BY PATRICK SEEKAMP, PWS, CWS OF SEEKAMP ENVIRONMENTAL CONSULTANTS, INC., KINGSTON, NH ON JULY 12, 2023 AND THE FLAGS WERE FIELD LOCATED BY OUR FIRM. THE WETLAND LIMITS SHOWN ON THE ABUTTING PROPERTY TO THE SOUTHEAST OF THE PROJECT AREA WERE TAKEN FROM THE PLANS APPROVED AS PART OF MADEP WETLAND FILE #209-0451.
- THE LIMITS OF BORDERING LAND SUBJECT TO FLOODING WERE PREPARED FROM THE 100 YEAR FLOOD ELEVATION SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANELS #25009C-393F AND 25009C-394F WITH AN EFFECTIVE DATE OF JULY 3, 2012.
- ZONE A FOR THE PUBLIC WATER SUPPLY WAS TAKEN FROM THE MASSMAPPER WEB SITE.
- NO TREES WERE LOCATED AS PART OF THIS SURVEY.
- ALL PAVEMENT, UNLESS OTHERWISE NOTED, IS BITUMINOUS CONCRETE.
- IF THESE PLANS ARE UTILIZED FOR EARTHWORK CALCULATIONS THE PERSON PERFORMING THE CALCULATIONS SHOULD BE KNOWLEDGEABLE IN THE STANDARD SURVEYING TOLERANCES AND ACCURACIES INVOLVED IN THE PREPARATION OF A ONE FOOT CONTOUR INTERVAL TOPOGRAPHIC PLAN USING A COMBINATION OF METHODOLOGIES. THIS PLAN HAD BEEN PREPARED SUCH THAT 90% OF THE CONTOURS ARE ACCURATE TO WITHIN 0.5 FEET AND THE REMAINING 10% OF THE CONTOURS ARE ACCURATE TO WITHIN 1 FOOT. 90% OF THE SPOT ELEVATIONS SHOWN ARE ACCURATE TO WITHIN 0.3 FEET AND THE REMAINING 10% ARE ACCURATE TO WITHIN 0.5 FEET. ANYONE USING THESE PLANS SHOULD MAKE APPROPRIATE ALLOWANCES IN THEIR CALCULATIONS OR STUDIES.
- NO VISIBLE ROCK OR LEDGE WAS OBSERVED AT THE SITE, HOWEVER, THESE PLANS SHOULD NOT BE UTILIZED FOR THE CALCULATION OF LEDGE QUANTITIES.
- THE TEST PITS SHOWN ON THIS PLAN ARE FROM PREVIOUS WORK BY OTHERS.
- THE CONTRACTOR SHALL STAKE OUT AND IMPROVEMENTS FOR APPROVAL OF THE OWNER AND THE CIVIL ENGINEER PRIOR TO IMPLEMENTATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE CIVIL ENGINEER IN WRITING OF ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS. ANY FIELD ADJUSTMENTS ARE TO BE APPROVED BY THE OWNER AND THE CIVIL ENGINEER PRIOR TO IMPLEMENTATION.
- GENERAL CONDITIONS
- THESE PLANS AND SPECIFICATIONS ARE INTENDED TO BE EXPLANATORY OF THE WORK TO BE DONE AND OF EACH OTHER. BEFORE EXCAVATION IS BEGUN FOR ANY FOUNDATIONS, SITE IMPROVEMENTS, UTILITIES, ETC., THE CONTRACTOR SHALL VERIFY ALL SLOPES, INVERTS, AND LENGTH OF PIPES OR CONDUIT SHOWN ON THE PLANS. THE CONTRACTOR SHALL ALSO VERIFY CLEARING DISTANCES AT ALL UTILITY CROSSINGS BEFORE EXCAVATION FOR ANY UTILITIES IS BEGUN. SHOULD ANY OMISSIONS, ERRORS, OR DISCREPANCIES APPEAR, THEY SHALL BE IMMEDIATELY REPORTED, IN WRITING, TO THE OWNER AND THE CIVIL ENGINEER FOR CORRECTION AND INTERPRETATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A THOROUGH REVIEW OF THE PLANS, NOTES AND SPECIFICATIONS AND A THOROUGH ON-SITE INSPECTION TO VERIFY THE CONDITION OF THE SITE AND ALL ITEMS OF WORK TO BE DONE PRIOR TO THE SUBMISSION OF HIS OR HER BID. THE CONTRACTOR SHALL MAKE NOTE THAT THESE PLANS DO NOT REFLECT INTERIM CONSTRUCTION MEASURES WHICH MAY BE REQUIRED FOR THE COMPLETION OF THE CONSTRUCTION WORK.
- THE CONTRACTOR SHALL REVIEW EACH AND EVERY PLAN, DETAIL, CONTRACT DOCUMENT AND SPECIFICATION AND CONTACT EACH AND EVERY UTILITY COMPANY TO DETERMINE THE TOTAL SCOPE OF WORK AND ALL REQUIRED COORDINATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF HIS CONSTRUCTION WORK WITH OTHER CONTRACTORS WHO MAY BE WORKING AT THE SITE.
- THE CONTRACTOR SHALL, AT HIS EXPENSE AND PRIOR TO ORDERING ANY UTILITY STRUCTURES OR PIPE, EXCAVATE TEST PITS AT THE LOCATION OF ANY CROSSINGS OF THE PROPOSED UTILITIES OVER OR UNDER EXISTING UTILITIES AND AT ALL LOCATIONS WHERE A CONNECTION IS TO BE MADE TO ANY EXISTING UTILITY. THE RESULTS OF THE TEST PITS SHALL BE RECORDED ON A PLAN WHICH SHALL BE PROVIDED TO THE OWNER AND THE CIVIL ENGINEER. ANY DISCREPANCIES BETWEEN THE ACTUAL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ON THE GROUND AND THE INFORMATION SHOWN ON THESE PLANS SHALL IMMEDIATELY BE REPORTED TO THE OWNER AND THE CIVIL ENGINEER FOR DIRECTION AND REVIEW.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR, PAYING FOR AND OBTAINING ALL NECESSARY BUILDING PERMITS, UTILITY CONNECTION PERMITS, STREET OPENING PERMITS, TRENCHING PERMITS AND ALL ASSOCIATED INSPECTIONAL SERVICES AND FEES.
- THE CONTRACTOR SHALL STRICTLY COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL ENVIRONMENTAL AND SAFETY CODES AS WELL AS THE TOWN OF LYNNFIELD TRENCH SAFETY REGULATIONS IN THE CONSTRUCTION OF THIS PROJECT (O.S.H.A., E.P.A., M.D.E.P., ETC.).
- THE CONSTRUCTION WORK OF THIS PROJECT WILL BE SUBJECT TO AN ORDER OF CONDITIONS TO BE ISSUED BY THE TOWN OF LYNNFIELD CONSERVATION COMMISSION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL OF THE CONDITIONS IN THE ORDER OF CONDITIONS TO BE ISSUED BY THE TOWN OF LYNNFIELD CONSERVATION COMMISSION
- THE CONTRACTOR WILL BE RESPONSIBLE FOR APPLYING FOR, PAYING FOR AND OBTAINING ALL NECESSARY TRENCH, STREET OPENING, WATER AND OTHER PERMITS.

- THE CONTRACTOR SHALL OBTAIN COPIES OF ANY PERMITS AND APPROVALS THAT HAVE BEEN ISSUED AND FURNISH TO THE CONSTRUCTION MANAGER OR THE OWNER OR HIS REVIEW PRIOR TO SUBMITTING HIS BID FOR THE WORK. THE CONTRACTOR SHALL CONFORM WITH ALL GENERAL OR SPECIAL CONDITIONS OR REQUIREMENTS OF THE PERMITS AND APPROVALS. THE CONTRACTOR IS CAUTIONED THAT THE PERMITS AND APPROVALS MAY CONTAIN CONDITIONS OR REQUIREMENTS THAT CONTROL THE CONSTRUCTION PROCESS OR COVER WORK NOT SHOWN ON THESE PLANS. ANY SUCH WORK REQUIRED BY A PERMIT OR APPROVAL WHETHER SHOWN ON THESE PLANS OR NOT SHALL BE CONSIDERED THE CONTRACTOR'S RESPONSIBILITY AND NO ADDITIONAL COMPENSATION WILL BE MADE. IF THE CONTRACTOR DETERMINES THAT ANY NECESSARY PERMITS HAVE NOT BEEN OBTAINED HE SHALL IMMEDIATELY INFORM THE CIVIL ENGINEER AND THE OWNER, IN WRITING, OF THE DEFICIENCY.
- PRIOR TO CONDUCTING ANY EARTH DISTURBANCE ON THE SITE, THE CONTRACTOR SHALL FILE A NOTIFICATION INTENT FOR COVERAGE. THE USER CONSTRUCTION GENERAL PERMIT AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) TO BE IMPLEMENTED DURING CONSTRUCTION. NO EARTH DISTURBANCE SHALL OCCUR UNTIL THE USEPA AUTHORIZATION CERTIFICATION IS COMPLETED.
- ALL APPROPRIATE FEDERAL, STATE AND LOCAL AGENCIES, THE TOWN OF LYNNFIELD TOWN ENGINEER AND WATER DEPARTMENT AND THE AS WELL AS THE TOWN OF LYNNFIELD CONSERVATION COMMISSION AND ALL UTILITY COMPANIES SHALL BE NOTIFIED, IN WRITING, BY CERTIFIED MAIL – RETURN RECEIPT REQUESTED, AT LEAST THREE (3) BUSINESS DAYS PRIOR TO COMMENCING WITH ANY CONSTRUCTION ACTIVITY WITHIN THEIR JURISDICTION. COPIES OF SUCH WRITTEN NOTICE SHALL BE PROVIDED TO THE CIVIL ENGINEER.
- ALL PROPOSED CONSTRUCTION SHALL CONFORM TO ANY APPLICABLE TOWN OF LYNNFIELD STANDARDS AND SPECIFICATIONS AS WELL AS THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DESIGN STANDARDS, LATEST EDITION, THE NATIONAL ELECTRIC CODE, AND THE COMMONWEALTH OF MASSACHUSETTS STATE BUILDING CODE, THE COMMONWEALTH OF MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS, THE COMMONWEALTH OF MASSACHUSETTS PLUMBING CODE AND THE COMMONWEALTH OF MASSACHUSETTS WIRING CODE. WHEN THERE IS A CONFLICT BETWEEN ANY OF THESE STANDARDS AND THE SPECIFICATIONS ON THESE PLANS THE CONTRACTOR SHALL REQUEST AN INTERPRETATION OF THE APPLICABLE STANDARD FROM THE OWNER AND THE CIVIL ENGINEER.
- THE CONTRACTOR SHALL COMPLY WITH INDUSTRY STANDARDS EXCEPT WHEN MORE RESTRICTIVE TOLERANCES ARE SPECIFIED HEREIN OR THE SPECIFIED REQUIREMENTS INDICATE MORE RIGID STANDARDS OR MORE PRECISE WORKMANSHIP IS NECESSARY. THE CONTRACTOR SHALL PERFORM WORK BY PERSONS QUALIFIED TO PRODUCE WORKMANSHIP OF SPECIFIED QUALITY.
- THE INSTALLER(S) OF ANY DRAIN, WATER OR GAS PIPE SHALL BE LICENSED AND BONDED FOR PIPE INSTALLATION IN THE TOWN OF LYNNFIELD AND FOR WATER WORK, THE LYNNFIELD WATER DISTRICT. ALL ELECTRICAL WORK, IF ANY, SHALL BE BY A MASSACHUSETTS LICENSED ELECTRICIAN.
- THE CONTRACTOR SHALL PROVIDE DETAILED, TO SCALE, SHOP DRAWINGS OR CATALOG INFORMATION FOR ALL PRODUCTS TO BE USED ON THE PROJECT. THE CONTRACTOR SHALL NOT ORDER ANY MATERIALS OR UTILITY STRUCTURES UNTIL HE HAS RECEIVED THE WRITTEN APPROVAL OF THE SCHEMATICS, EQUIPMENT LISTS, CATALOG INFORMATION OR SHOP DRAWING FROM OWNER AND THE CIVIL ENGINEER.
- ACTIVE UTILITIES EXISTING ON THE SITE AND WORK AREAS SHALL BE CAREFULLY PROTECTED FROM DAMAGE AND RELOCATED, REROUTED OR REMOVED AS REQUIRED BY THE WORK. WHEN AN ACTIVE UTILITY LINE IS EXPOSED DURING CONSTRUCTION, ITS LOCATION AND ELEVATION SHALL BE PLOTTED ON THE RECORD DRAWINGS AS DESCRIBED IN THIS SECTION AND THE OWNER, CIVIL ENGINEER AND THE UTILITY OWNER NOTIFIED IN WRITING.
- INACTIVE OR ABANDONED UTILITIES ENCOUNTERED DURING CONSTRUCTION OPERATIONS SHALL BE REMOVED IF WITHIN A BUILDING AREA OR IF NECESSARY TO ACCOMMODATE THE NEW WORK OR GROUDED, PLUGGED OR CAPPED IF LOCATED ELSEWHERE ON THE SITE. THE LOCATION OF SUCH UTILITIES SHALL BE NOTED ON THE RECORD DRAWINGS AND REPORTED IN WRITING TO THE OWNER AND THE CIVIL ENGINEER.
- IF ANY UNFORSEEN CIRCUMSTANCES ARE ENCOUNTERED, SUCH AS DISCOVERING UNCHARTED UNDERGROUND STRUCTURES OR UTILITIES OR ON UNANTICIPATED GEOTECHNICAL CONDITIONS, THEN THE CONTRACTOR SHALL IMMEDIATELY CONSULT WITH THE OWNER AND THE CIVIL ENGINEER PRIOR TO PROCEEDING.
- THE CONTRACTOR SHALL NOT ORDER ANY MATERIALS OR UTILITY STRUCTURES UNTIL HE HAS RECEIVED THE WRITTEN APPROVAL OF THE SCHEMATICS, EQUIPMENT LISTS, CATALOG INFORMATION OR SHOP DRAWING FROM CIVIL ENGINEER.
- ALTERNATE MANUFACTURERS FOR MATERIAL SHOWN ON THESE PLANS MAY BE USED ONLY UPON WRITTEN APPROVAL BY CIVIL ENGINEER AND THE OWNER. ALTERNATE MANUFACTURERS WILL NOT BE APPROVED IF THE USE OF THEIR EQUIPMENT REQUIRES ANY DESIGN CHANGES. WHERE THE MATERIAL SPECIFICATIONS SPECIFY DIFFERENT MANUFACTURERS, THE CONTRACTOR SHALL CONSULT WITH THE CIVIL ENGINEER AS TO THEIR PREFERENCE OF MANUFACTURER BEFORE ORDERING ANY MATERIALS.
- IF, AFTER APPROVAL, ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE OWNER AND THE CIVIL ENGINEER AS WELL AS THE APPROVING AUTHORITIES SHALL BE NOTIFIED IN WRITING BEFORE CONSTRUCTION SHALL PROCEED. ANY ALTERATIONS TO THE PROPOSED WORK MADE IN THE FIELD DURING CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE OWNER AND THE CIVIL ENGINEER.
- THE CONTRACTOR AND RECORDED ON REPRODUCIBLE AS-BUILT DRAWINGS BY THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE CAUSED BY HIS/HER OPERATIONS WHETHER INSIDE OR OUTSIDE OF THE LIMITS OF WORK. IF ANY EXISTING UTILITY OR SITE IMPROVEMENT IS DAMAGED BY THE CONTRACTOR DURING THE PROGRESS OF THE WORK IT SHALL BE IMMEDIATELY REPAIRED OR REPLACED AT THE CONTRACTOR'S SOLE EXPENSE TO THE SATISFACTION OF CIVIL ENGINEER.
- ALL UTILITY CASTINGS FOR NEW UTILITIES AND EXISTING UTILITIES TO REMAIN ARE TO BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL PAVING OR WALKWAY INSTALLATION, PLANTING, LOAMING AND SODDING.
- UPON COMPLETION OF THE CONTRACTOR'S WORK ON ANY SECTION OF THE PROJECT AND AGAIN AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL CLEAN UP THE AREA AND REMOVE ALL WASTE, EXCESS MATERIAL, RUBBISH, ETC. TO THE SATISFACTION OF OWNER AND THE CIVIL ENGINEER. ALL SURFACES SHALL BE LEFT "BROOM CLEAN". THE CONTRACTOR SHALL INFORM OWNER AND THE CIVIL ENGINEER OF THE PLANNING OF THE DESTROYED AND DESTROYED ALL MATERIALS TO BE REMOVED FROM THE SITE FOR THEIR APPROVAL PRIOR TO ANY ACTUAL REMOVAL OF MATERIALS. THE CONTRACTOR SHALL INCLUDE A WRITTEN STATEMENT TO THE OWNER AND THE CIVIL ENGINEER THAT ALL NECESSARY PERMITS FOR THE DISPOSAL AREA HAVE BEEN OBTAINED AND THAT THE PERMITS ARE IN FULL FORCE AND EFFECT.
- UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL PREPARE A COMPLETE AS-BUILT PACKAGE INCLUDING AS-BUILT PLANS, DETAILS AND ELEVATIONS OF ALL INSTALLED PIPE AND STRUCTURES. THE AS-BUILT PLAN AND SUBMITTAL SHALL MEET ALL OF THE REQUIREMENTS OF THE TOWN OF LYNNFIELD CONSERVATION COMMISSION.
- SITE PREPARATION/SILTATION CONTROL SPECIFICATIONS
- THE FIRST ITEM OF WORK TO BE PERFORMED IS FOR THE CONTRACTOR TO MARK OR STAKE THE LIMITS OF WORK IN THE FIELD FOR REVIEW BY THE OWNER AND THE CIVIL ENGINEER.
- AFTER THE LIMIT OF WORK HAS BEEN STAKED, THE CONTRACTOR SHALL INSTALL THE EROSION CONTROLS IN THE LOCATIONS SHOWN ON THE PLANS.
- THE NEXT ITEM OF WORK TO BE PERFORMED SHALL BE THE INSTALLATION OF THE TEMPORARY CHAIN LINK LIMIT OF WORK FENCE AND GATES IN ACCORDANCE WITH THE DETAILS SHOWN ON THESE PLANS. THE FENCE SHALL BE OF THE TYPE AND SIZE INDICATED ON THE DETAIL ON THESE PLANS. THE LOCATION OF THE FENCE AND GATES SHALL BE DETERMINED WITH THE OWNER AND THE TOWN OF LYNNFIELD FIRE DEPARTMENT.
- SILT/SLOTTED CONTROL DEVICES AS MANUFACTURED BY ACF ENVIRONMENTAL, INC., 2831 CARDWELL DRIVE, RICHMOND, VIRGINIA 23234, TEL: 800-448-3636, FAX: 804-743-7779 SHALL BE USED AT ALL EXISTING CATCH BASINS AS NOTED ON THE PLANS AND ON ALL NEW CATCH BASINS UPON THEIR INSTALLATION. THE SILT SACKS SHALL BE INSTALLED AS DIRECTED BY THE MANUFACTURER AND SHALL BE MAINTAINED UNTIL PERMANENT VEGETATIVE COVER OR PAVEMENT IS ESTABLISHED.
- THE CONTRACTOR SHALL INSTALL THE CRUSHED STONE TRACKING PAD IN A LOCATION TO BE MUTUALLY DETERMINED BY THE CONTRACTOR AND THE OWNER PRIOR TO ANY DEMOLITION ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROLS AND FOR PROVIDING ADDITIONAL EROSION CONTROLS THROUGHOUT THE CONSTRUCTION IN ACCORDANCE WITH THE USEPA CONSTRUCTION GENERAL PERMIT AND THE SWPPP, AS NECESSARY TO RETAIN ALL SOIL WITHIN THE WORK AREA AND AS NECESSARY TO PREVENT ANY SILTATION OF ANY AREAS OUTSIDE THE ACTUAL WORK AREA. RUNOFF FROM THE SITE IS TRIBUTARY TO THE CITY OF LYNN DRINKING WATER SUPPLY. ALL SUCH ADDITIONAL EROSION CONTROLS ARE PART OF THE WORK OF THE PROJECT AND NO ADDITIONAL COMPENSATION SHALL BE DUE TO THE CONTRACTOR FOR SUCH WORK.
- THE CONTRACTOR SHALL PROVIDE STREET SWEEPING OF KING RAIL DRIVE AND THE PAVED PORTION OF THE ON-SITE PARKING AREA (AFTER INSTALLATION) AS NEEDED.
- THE CONTRACTOR SHALL PROVIDE CONTINUOUS DUST CONTROL ON A 7 DAY A WEEK BASIS THROUGHOUT THE WORK. WATERING SHALL BE THE ONLY ACCEPTABLE METHOD OF DUST CONTROL.

- UPON COMPLETION OF PAVING AND THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON ALL DISTURBED AREAS, THE CONTRACTOR SHALL REQUEST PERMISSION FROM THE OWNER AND THE CIVIL ENGINEER TO REMOVE ALL SILTATION CONTROL DEVICES FROM THE SITE. THE FINAL REMOVAL OF ALL SILTATION CONTROL DEVICES IS PART OF THE WORK TO BE COMPLETED UNDER THIS CONTRACT.
- IF ANY SILTATION OCCURS OUTSIDE THE LIMITS OF WORK AS A RESULT OF THE CONTRACTOR'S OPERATIONS THE CONTRACTOR SHALL, AT HIS SOLE EXPENSE, RESTORE SUCH AREAS TO THEIR PRE-EXISTING CONDITION BY REMOVING ALL SILT AND RESTORING THE VEGETATION. ANY SUCH RESTORATION WORK SHALL BE PERFORMED IMMEDIATELY AND SHALL BE TO THE SATISFACTION OF THE OWNER AND THE CIVIL ENGINEER.
- DEMOLITION/CLEARING/SITE PREPARATION SPECIFICATIONS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A THOROUGH ON SITE INSPECTION TO VERIFY THE EXISTING CONDITION OF THE SITE AND ALL ITEMS TO BE REMOVED PRIOR TO SUBMITTING HIS OR HER BID AND AGAIN BEFORE COMMENCING WITH DEMOLITION WORK.
- ALTHOUGH CERTAIN ITEMS MAY BE NOTED ON THE DRAWINGS FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COMPLETION OF ALL SITE CLEARING, TREE AND VEGETATION REMOVAL AND DEMOLITION WORK NECESSARY TO COMPLETE THE PROJECT.
- REMOVE ONLY THOSE AREAS OR ITEMS NOTED ON THE DRAWING OR AS DIRECTED BY THE OWNER. IF, IN THE OPINION OF THE CONTRACTOR, IT IS NECESSARY TO REMOVE ADDITIONAL ITEMS NOT NOTED ON THIS DRAWING FOR REMOVAL THE CONTRACTOR SHALL CONSULT WITH THE CIVIL ENGINEER AND THE OWNER PRIOR TO REMOVING SUCH ITEMS.
- THE CONTRACTOR PROTECT ALL TREES WITHIN THE LIMIT OF WORK THAT ARE DESIGNATED BY THE OWNER TO REMAIN
- THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL MATERIALS RESULTING FROM THE DEMOLITION OPERATIONS, EXCEPT THOSE ITEMS SPECIFIED TO BE STOCKPILED AND/OR REUSED.
- THE CONTRACTOR SHALL SAW CUT THE EDGE OF THE EXISTING BITUMINOUS CONCRETE PAVEMENT AT ALL POINTS WHERE ANY NEW BITUMINOUS CONCRETE PAVEMENT OR PAVEMENT PATCH IS TO JOIN THE EXISTING WORK. THE CUT LINE SHALL BE AT LEAST 2 FEET BACK FROM THE EXISTING EDGE OF PAVEMENT OR THE PROPOSED JOINT LOCATION.
- ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THE PLANS FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COMPLETION OF ALL DEMOLITION WORK NECESSARY TO COMPLETE THE PROJECT.
- ANY DAMAGE TO ITEMS NOT SCHEDULED FOR REMOVAL SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AND THE CIVIL ENGINEER AT THE CONTRACTOR'S SOLE EXPENSE. THE STANDARDS FOR REPLACEMENT WORK SHALL BE THE SAME AS FOR NEW WORK.
- EARTHWORK & UTILITY TRENCHING SPECIFICATIONS
- SELECT GRAVEL (ALSO REFERRED TO AS GRAVEL OR GRAVEL FILL) SHALL CONSIST OF HARD, DURABLE STONE AND COARSE SAND, BANKRUN OR BLENDED PRACTICALLY FREE FROM LOAM AND CLAY, SURFACE COATINGS OR DELETERIOUS MATERIALS, UNIFORMLY BLENDED, UNIFORMLY GRADED AND CONTAINING NO STONE HAVING ANY DIMENSION GREATER THAN TWO (2) INCHES. WHEN SPREAD AND ROLLED IT SHALL FORM A FIRM FOUNDATION. THE GRADING OF THE MATERIAL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS AS WELL AS THE REQUIREMENTS OF THE COMMONWEALTH OF MASSACHUSETTS STANDARD SPECIFICATION M1.03.0:

	PERCENT PASSING (BY WEIGHT)
1. PASSING 2 INCH SIEVE	100
2. PASSING 1 INCH SIEVE	50 – 85
3. PASSING NO. 4 SIEVE	40 – 75
4. PASSING NO. 10 SIEVE	30 – 60
5. PASSING NO. 40 SIEVE	10 – 35
6. PASSING NO. 100 SIEVE	5 – 20*
7. PASSING NO. 200 SIEVE	2 – 8

\*THE AMOUNT PASSING THE NO. 100 SIEVE SHOULD BE BETWEEN FORTY PERCENT (40%) AND SEVENTY PERCENT (70%) OF THAT AMOUNT PASSING THAT NO. 40 SIEVE.
- DENSE GRADED CRUSHED STONE FOR PAVING BASE: COARSE AGGREGATE SHALL CONSIST OF HARD, DURABLE PARTICLES OF FRAGMENTS OF STONE. MATERIALS THAT BREAK UP WHEN ALTERNATELY FROZEN AND THAWED OR WETTED AND DRIED SHALL NOT BE USED. COARSE AGGREGATE SHALL HAVE A PERCENTAGE OF WEAR, BY THE LOS AND TEST, OF NOT MORE THAN 45. THE AGGREGATE SHALL CONSIST OF ONE CRUSHED ROCK OR DENSE GRADED CRUSHED STONE MATERIAL SHALL BE A MANUFACTURED PRODUCT RESULTING FROM THE CRUSHING OF SOLID ROCK. NATURAL SANDS AND GRAVELS CONFORMING TO THE SEVE ANALYSIS LISTED BELOW WILL NOT BE ACCEPTABLE. THE COMPOSITE MATERIAL SHALL BE FREE FROM CLAY, LOAM OR OTHER PLASTIC MATERIAL, AND SHALL CONFORM TO THE FOLLOWING GRADING REQUIREMENTS:

	PERCENT PASSING (BY WEIGHT)
1. PASSING 2 INCH SIEVE	100
2. PASSING 1-1/2 INCH SIEVE	70 – 100
3. PASSING 3/4 INCH SIEVE	50 – 85
4. PASSING NO. 4 SIEVE	30 – 55
5. PASSING NO. 50 SIEVE	8 – 24
6. PASSING NO. 200 SIEVE	3 – 10

CRUSHED CRUSHED STONE MAY BE SUBSTITUTED FOR SELECT GRAVEL UNDER ALL PAVEMENTS AT THE CONTRACTOR'S OPTION.
- CRUSHED STONE FOR GENERAL USE SHALL CONSIST OF HARD DURABLE STONE UNIFORMLY BLENDED IN ACCORDANCE WITH THE LATEST ASTM SPECIFICATION C-33 SIZE NUMBER 67 AND THE FOLLOWING GRADING:

	PERCENT PASSING (BY WEIGHT)
3/4 INCH CRUSHED STONE:	
1. PASSING 1 INCH SIEVE	100
2. PASSING 3/4 INCH SIEVE	85 – 100
3. PASSING 3/8 INCH SIEVE	20 – 50
4. PASSING NO. 4 SIEVE	0 – 15
5. PASSING NO. 8 SIEVE	0 – 5
6. PASSING NO. 200 SIEVE	<0.2
- SUITABLE/ORDINARY FILL: WELL-GRADED, NATURAL, INORGANIC SOIL APPROVED BY THE CIVIL ENGINEER AND MEETING THE FOLLOWING REQUIREMENTS:
  - IT SHALL BE FREE OF ORGANIC OR OTHER NEAR OR COMPRESSIBLE MATERIALS, OF FROZEN MATERIALS, AND OF STONES LARGER THAN EIGHT INCHES OR 2/3 LOOSE LIFT THICKNESS, WHICHEVER IS SMALLER IN DIMENSION. IT SHALL NOT CONTAIN GRANITE BLOCK, CONCRETE, MASONRY RUBBLE, ROOTS, STUMPS, DEBRIS, TRASH, ORGANIC MATERIAL OR OTHER SIMILAR MATERIALS.
  - IT SHALL BE OF SUCH NATURE AND CHARACTER THAT IT CAN BE COMPACTED TO THE SPECIFIED DENSITIES, WITHOUT EXCESSIVE WEAVING OR INSTABILITY AS JUDGED BY THE SOILS REPRESENTATIVE.
- TOPSOIL AND THE ZONE DIRECTLY BELOW THE TOPSOIL INDICATED ON THE TEST PITS AS (SUBSOIL) OR FOUND ON THE SITE AS SUBSOIL SHALL NOT BE CONSIDERED ORDINARY FILL NOR SHALL TOPSOIL OR SUBSOIL BE STOCKPILED ON THE SITE AS USE FOR ORDINARY FILL. WHERE SUBSOIL IS ENCOUNTERED, IT SHALL BE STRIPPED SEPARATELY FROM THE TOPSOIL AND THE GRANULAR MATERIAL DIRECTLY BENEATH THE SUBSOIL. THIS EXCAVATED MATERIAL SHALL ONLY BE UTILIZED IN LAWN AREAS OR LANDSCAPE MOUND AREAS AND SHALL BE PLACED IN THESE AREAS AT DISTANCES AWAY FROM ADJACENT SITE IMPROVEMENTS AS SPECIFIED HEREIN OR AS DIRECTED BY THE OWNER AND THE CIVIL ENGINEER.
  - IT SHALL HAVE A MINIMUM DRY DENSITY OF NOT LESS THAN 15 POUNDS PER CUBIC FOOT.
  - MATERIAL FROM EXCAVATIONS ON THE SITE MAY BE USED AS ORDINARY FILL IF IT MEETS THE ABOVE REQUIREMENTS.
- LOAM SHALL CONSIST OF A FERTILE, FRAGILE, NATURAL TOPSOIL TYPICAL OF THE LOCALITY, WITHOUT ADMIXTURE OF SUBSOIL, REFUSE OR OTHER FOREIGN MATERIALS CONFORMING TO ALL OF THE REQUIREMENTS OF THE COMMONWEALTH OF MASSACHUSETTS STANDARD SPECIFICATION M1.05.0. ALL LOAM SHALL BE TESTED BY A QUALIFIED LABORATORY FOR PH, SOLUBLE SALTS, PHOSPHORUS, POTASSIUM, CALCIUM AND ACIDITY PRIOR TO USING THE MATERIAL ON THE SITE. SANDY LOAM FOR THE INFILTRATION BASIN BOTTOM SHALL BE A MIXTURE OF 50% SAND AND 50% LOAM AND SHALL HAVE A PERMITTIVITY OF 2.41 INCHES/HOUR.
- ENGINEERING FIBER SHALL BE MIRAFI 140X OR APPROVED EQUAL.
- UNSUITABLE MATERIAL WHICH IS CLASSIFIED AS (UNSUITABLE) SHALL BE MATERIAL HAVING AT LEAST ONE OF THE FOLLOWING PROPERTIES:
  - MATERIAL WITH A MAXIMUM UNIT DRY WEIGHT PER CUBIC FOOT LESS THAN 90 LBS., AS DETERMINED BY ASTM D1557.
  - MATERIAL CONTAINING VISIBLE ORGANIC MATTER, TOPSOIL, ORGANIC SILT, PEAT, CONSTRUCTION DEBRIS, ROOTS OR STUMPS.
  - MATERIAL WHICH HAS A LIQUID LIMIT GREATER THAN 55 WHEN TESTED IN ACCORDANCE WITH ASTM D1557.
  - MATERIAL DESIGNATED UNSUITABLE IN THE FIELD BY THE OWNER AND THE CIVIL ENGINEER.
- THE CONTRACTOR SHALL, AT HIS SOLE EXPENSE, OBTAIN TWO (2) SAMPLES OF EACH TYPE OF EARTH MATERIALS AND AGGREGATES TO BE USED ON THE PROJECT AND HAVE THESE SAMPLES TESTED AT A MASSACHUSETTS CERTIFIED TESTING LABORATORY FOR CONFORMANCE WITH THESE SPECIFICATIONS. NOTE THAT AGGREGATE TESTING REQUIRES A WASHED SIEVE ANALYSIS. THE SAMPLE RESULTS SHALL BE SUBMITTED TO THE CIVIL ENGINEER FOR APPROVAL.

- THE CONTRACTOR SHALL REMOVE ALL STUMPS, ROOTS, ORGANIC MATTER, ORGANIC SOILS, TOPSOIL AND SUBSOIL AND ANY UNSUITABLE MATERIAL WITHIN THE LIMITS OF WORK.
- ONLY SUITABLE FILL OR SELECT GRAVEL MATERIAL SHALL BE USED TO BRING THE SITE TO PROPOSED SUBGRADE PRIOR TO PLACING THE SELECT GRAVEL BASE.
- ALL FILL, BACKFILL AND BEDDING MATERIALS AND PAVEMENT BASE MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM STANDARD PROCTOR DENSITY, AS DETERMINED BY AASHTO T-99 USING METHODS APPROVED BY THE OWNER AND THE CIVIL ENGINEER (PUDDING AND JETTING OF TRENCHES WILL NOT BE ALLOWED). THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TESTING LABORATORY TO PERFORM IN PLACE DENSITY TESTS THROUGHOUT THE PROJECT. COPIES OF ALL TEST RESULTS SHALL BE SENT BY THE CONTRACTOR IMMEDIATELY UPON RECEIPT TO THE OWNER AND THE CIVIL ENGINEER.
- BLASTING FOR REMOVAL OF LEDGE OR SOLID ROCK, IF NECESSARY, SHALL BE PERFORMED BY A QUALIFIED AND LICENSED BLASTER IN CONFORMANCE WITH THE REQUIREMENTS OF THE TOWN OF LYNNFIELD AND THE COMMONWEALTH OF MASSACHUSETTS. ALL BLASTED MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE.
- THE CONTRACTOR SHALL NOT EXCAVATE TO FULL DEPTH WHEN FREEZING TEMPERATURES MAY BE EXPECTED, UNLESS HIS WORK CAN BE COMPLETED IMMEDIATELY AFTER THE EXCAVATION HAS BEEN COMPLETED. THE CONTRACTOR SHALL PROTECT THE EXCAVATION FROM FROST IF HIS WORK IS DELAYED. FROZEN MATERIAL SHALL NOT BE PLACED AS FILL OR BACKFILL.
- THE FINAL RIM FOR ALL UTILITY PIPES, STRUCTURES AND FOUNDATIONS SHALL BE KEPT IN A DRY CONDITION DURING THE INSTALLATION OF THE UTILITY, STRUCTURE OR FOUNDATION. NO UTILITY PIPES (EXCEPT FOR SURFACE DRAIN LINES WITH SUITABLE SILTATION CONTROL DEVICES INSTALLED) MAY BE USED AS A MEANS OF DEWATERING THE EXCAVATION. SUITABLE DEWATERING PUMPS SHALL BE USED TO MAINTAIN THE EXCAVATION IN A DRY CONDITION UNTIL THE PLACEMENT OF BACKFILL IS COMPLETED.
- ANY EXCESS EXCAVATED MATERIAL NOT USED FOR SITE BACKFILL AND GRADING SHALL BE REMOVED FROM THE SITE TO A LEGALLY APPROVED OFF-SITE DISPOSAL AREA.
- GENERAL UTILITY SPECIFICATIONS
- ALL PIPE USED ON THIS PROJECT SHALL BE NEW AND SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AS SPECIFIED ON THE DETAILS, IN THE NOTES AND ON THE PLANS. NO DEFECTIVE PIPE, JOINTS OR FITTINGS SHALL BE INSTALLED. PIPE AND FITTINGS SHALL BE JOINED IN ACCORDANCE WITH THE LATEST DETAILED INSTRUCTIONS OF THE MANUFACTURER. THE EXCAVATION FOR ALL UTILITY PIPES, STRUCTURES AND FOUNDATIONS SHALL BE KEPT IN A DRY CONDITION DURING THE INSTALLATION OF THE UTILITY, STRUCTURE OR FOUNDATION. SUITABLE DEWATERING PUMPS SHALL BE USED TO MAINTAIN THE EXCAVATION IN A DRY CONDITION UNTIL THE PLACEMENT OF BACKFILL IS COMPLETED. ALL DEWATERING WATER MUST BE DIRECTED TO TEMPORARY DEWATERING/SEDIMENTATION PUMPS TO BE CONSTRUCTED ON THE SITE BY THE CONTRACTOR AS PART OF THE EXCAVATION WORK PRIOR TO BEING DISCHARGED. UPON COMPLETION OF THE DEWATERING OPERATIONS, ALL DEWATERING/SEDIMENTATION PUMPS SHALL BE REMOVED BY THE CONTRACTOR AND THE CONTRACTOR SHALL FULLY RESTORE THE AREA TO ITS PRE-CONSTRUCTION CONDITION OR TO ITS PROPOSED CONDITION.
- THE FINAL RIM ELEVATIONS OF ALL DRAINAGE AND OTHER UTILITY STRUCTURES SHALL BE FLUSH WITH THE FINAL SURROUNDING GRADES SO AS NOT TO CREATE A TRIP EDGE. ALL RIMS IN AREAS TO BE PAVED SHALL BE ADJUSTED TO FINAL GRADE AFTER THE BINDER COURSE PAVING HAS BEEN COMPLETED AND SET IN CONCRETE AND BEFORE THE FINAL COURSE PAVING HAS BEGUN.
- ALL UTILITY CASTINGS ARE TO BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL PAVING OR WALKWAY INSTALLATION, PLANTING, LOAMING AND SODDING. IN PAVED AREAS THE CASTINGS SHALL BE SET IN CONCRETE AFTER BEING ADJUSTED TO FINAL GRADE. THE TOP OF ALL CONCRETE COLLARS SHALL BE LEVEL WITH THE BINDER COURSE PAVEMENT GRADE.
- WATER SYSTEM SPECIFICATIONS
- ALL WORK ON THE WATER SYSTEM SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS OF THE LYNNFIELD WATER DISTRICT DISTRIBUTION SYSTEM:
  - CEMENT-LINED CLASS 52 DUCTILE IRON PIPE IN ACCORDANCE WITH AWWA C151.
  - WATER MAINS SHALL BE DISINFECTED AND TESTED IN ACCORDANCE WITH THE LATEST VERSION OF AWWA C601, AND MASSEPP REQUIREMENTS.
  - PRESSURE TESTING SHALL BE IN ACCORDANCE WITH LATEST VERSION OF AWWA C600.
  - FITTINGS: MECHANICAL J-OINT DUCTILE ION WITH MECHANICAL JOINT ENDS IN ACCORDANCE WITH AWWA C110 OR C153.
  - WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 5- FEET OF COVER.
  - WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 6-INCHES OF COMPACTED GRAVEL UNDER AND TO THE SIDES OF THE PIPE, AND 12-INCHES OVER THE TOP OF THE PIPE.
  - VALVES SHALL BE RESILIENT SEAT DUCTILE IRON GATE VALVES MEETING THE REQUIREMENTS OF AWWA C509, WITH 200 PSI WORKING PRESSURE, MECHANICAL JOINT ENDS, AND STAINLESS-STEEL NUTS AND BOLTS. VALVES SHALL OPEN COUNTERCLOCKWISE (LEFT).
  - VALVE BOXES SHALL BE CAST IRON, ADJUSTABLE SLIDING, HEAVY PATTERN TYPE, WITH A 7-1/4-INCH COVER, WITH WATER STAMPED ON THE COVER.
  - BOXES SHALL BE PROVIDED WITH A STROGAMOD MUD PLUG WITH A PLASTIC HANDLE.
  - HYDRANTS SHALL CONFORM TO AWWA C502, WITH A 5-1/4-INCH MAIN VALVE AND 6-INCH INLET, AND BE WATEROUS PAGER ONLY, ALPHA STYLE.
  - HYDRANTS SHALL HAVE A 4-1/2-INCH PUMPER AND TWO 2-1/2-INCH HOSE CONNECTIONS, WITH NST THREADS.
  - HYDRANTS SHALL OPEN COUNTERCLOCKWISE (LEFT).
  - A FLAT STONE OR CONCRETE BLOCK SHALL BE INSTALLED UNDER THE HYDRANT.
  - THE BREAK-AWAY FLANGE SHALL BE APPROXIMATELY 4-INCHES ABOVE FINISHED GRADE.
  - IN ADDITION TO MECHANICAL RESTRAINT, A CONCRETE THRUST BLOCK SHALL BE INSTALLED BEHIND THE HYDRANT AGAINST UNDISTURBED EARTH.
  - A MINIMUM OF 2 CUBIC YARDS OF CRUSHED STONE SHALL BE INSTALLED TO AT LEAST 6-INCHES ABOVE THE DRAIN HOLES.
  - HYDRANTS SHALL BE PAINTED IN ACCORDANCE WITH DISTRICT STANDARDS AND SHALL BE PROVIDED WITH A FIBERGLASS SNOW FLAG WITH SPRING.
  - COUPLINGS SHALL BE RESTRAINED ROMAC ALPHA STYLE.
  - APPROPRIATELY SIZED CONCRETE THRUST BLOCKS SHALL BE PROVIDED WHERE MECHANICAL RESTRAINT CANNOT BE PROVIDED.
  - ALL PIPES, FITTINGS, VALVES, HYDRANTS, COUPLINGS, AND OTHER APPURTENANCES SHALL BC MECHANICALLY RESTRAINED.
- WATER SERVICES
- WATER SERVICES SHALL BE TYPE K COPPER TUBING IN ACCORDANCE WITH ASTM B88, WITH A MINIMUM SIZE OF 1-INCH.
- SERVICES SHALL BE DIRECT TAPPED TO THE WATER MAIN. TAPS SHALL BE INSTALLED ON THE MAIN AT AN ANGLE OF 30-DEGREES TO 45-DEGREES TO HORIZONTAL.
- SERVICES SHALL BE INSTALLED IN A MINIMUM 6-INCH SAND BEDDING ALL AROUND.
- CORPORATION STOPS SHALL BE BRASS IN ACCORDANCE WITH AWWA C800, LOW-LEAD ALLOY, AS MANUFACTURED BY RED HEAD CO., OR MUELLER CO.
- CURB STOPS SHALL BE BRASS IN ACCORDANCE WITH AWWA C800, LOW-LEAD ALLOY, INVERTED KEY STYLE, NO DRAIN, OPEN COUNTERCLOCKWISE, AS MANUFACTURED BY RED HEAD CO. OR MUELLER CO.
- CURB STOPS SHALL BE INSTALLED ON A BRICK, CONCRETE BLOCK OR FLAT STONE.
- CURB BOXES SHALL BE CAST IRON, SLIDING EIRE TYPE, MINIMUM SHAFT SIZE OF 1-INCH, WITH A BRASS PENTAGONAL NUT AND THE WORD "WATER" CAST IN THE LID, AS MANUFACTURED BY MUELLER CO. BOXES SHALL BE EQUIPPED WITH A PLUG COVER AND 30- INCH STATIONARY EXTENSION ROD WITH PINNED CONNECTION TO THE CURB STOP.
- WATER SERVICES SHALL BE INSTALLED WITH A MINIMUM OF 5- FEET O1 COVER.

### MISCELLANEOUS

- SHOP DRAWINGS FOR ALL SYSTEM COMPONENTS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- EQUIPMENT AND MATERIALS NOT INCLUDED IN THE ABOVE SPECIFICATIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DISTRICT.
- ALL EQUIPMENT AND MATERIALS SHALL BE AMERICAN MADE.
- TYPICAL CONSTRUCTION DETAILS FOR WATER MAINS, WATER SERVICES, HYDRANTS, VALVES AND OTHER APPURTENANCES SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE DISTRICT.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LYNNFIELD WATER DISTRICT AND MASSEPP UNLESS OTHERWISE SPECIFIED.
- PROTECT ALL EXISTING UTILITIES OR SERVICES SHALL BE BACKFILLED BEFORE REVIEW BY A REPRESENTATIVE OF THE LYNNFIELD WATER DISTRICT.
- AS-BUILT PLANS SHALL BE SUBMITTED TO THE DISTRICT IN ELECTRONIC FORMAT, AS WELL AS ONE SET OF REPRODUCIBLE PLANS. THESE WILL INCLUDE TIES TO VALVES, CURB BOXES, AND SERVICE CORPORATIONS.

### SANITARY SEWER SYSTEM:

- THE PROPOSED SEWAGE PUMP STATION, GRAVITY SEWER, VENTS, ELECTRICAL AND COMMUNICATIONS CONNECTIONS AND SEWER FORCE MAIN ARE TO BE DESIGNED AND SPECIFIED BY OTHERS.

### ELECTRICAL SYSTEM SPECIFICATIONS:

- THE ELECTRICAL SERVICES AND SYSTEMS SHOWN ON THESE PLANS ARE SCHEMATIC ONLY. THE ELECTRICAL SYSTEMS AND SERVICES ARE TO BE DESIGNED BY THE ELECTRIC UTILITY COMPANY. THE CONTRACTOR SHALL CONSULT WITH THE ELECTRIC UTILITY COMPANY REGARDING THE EXACT LOCATION AND DESIGN OF THE ELECTRICAL SYSTEM AND SERVICES
- THE CONTRACTOR SHALL PROVIDE ALL TRENCHING, BEDDING, BACKFILLING, TRACER WIRE AND WARNING TAPE FOR THE NEW ELECTRICAL SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF HIS WORK WITH THE ELECTRIC COMPANY AND THE ELECTRICIAN.
- TELEPHONE/CATV SYSTEM SPECIFICATIONS
- THE TELEPHONE AND CATV SERVICES AND SYSTEMS SHOWN ON THESE PLANS ARE SCHEMATIC ONLY. THE TELEPHONE AND CATV SYSTEMS AND SERVICES ARE TO BE DESIGNED BY THE RESPECTIVE SERVICE PROVIDERS. THE CONTRACTOR SHALL CONSULT WITH THE SERVICE PROVIDERS REGARDING THE EXACT LOCATION AND DESIGN OF THESE SYSTEMS AND SERVICES.
- THE CONTRACTOR SHALL PROVIDE ALL TRENCHING, BEDDING, BACKFILLING, TRACER WIRE AND WARNING TAPE FOR THE NEW TELEPHONE AND CATV SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF HIS WORK WITH THE SERVICE PROVIDERS ELECTRICIAN.

### STORMWATER DRAINAGE SYSTEM SPECIFICATIONS:

- ALL DRAINAGE PIPE SHALL BE HDPE DUCTILE WALL N-12 PIPING AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, HILLARD, OH. PIPE SHALL BE SUPPLIED WITH WATERTIGHT GASKETED COUPLINGS.
- ALL SUBDRAIN PIPE SHALL BE PERFORATED HDPE PIPE.
- CATCH BASINS AND DRAIN MANHOLES SHALL BE REINFORCED PRECAST CONCRETE BASE, RISER, AND CONCENTRIC CONE SECTIONS OR FLAT SLAB TOP SECTIONS CONFORMING TO THE LATEST ASTM SPECIFICATION C-478. JOINTS BETWEEN SECTIONS SHALL BE MADE WITH BUTYL ROE CONFORMING TO THE LATEST ASTM SPECIFICATION C-443. PIPE INLETS AND OUTLETS SHALL BE JOINED TO THE BASE USING MORTAR.
- THE SQUARE DRAIN MANHOLE SHALL BE A 4 FOOT SQUARE (INTERIOR MEASURE) PRECAST CONCRETE MANHOLE AS MANUFACTURED BY SHEA CONCRETE PRODUCTS, WILMINGTON, MA.
- DRAIN MANHOLE FRAMES AND COVERS SHALL BE THE TOWN OF LYNNFIELD STANDARD CAST IRON HEAVY DUTY FRAMES AND COVERS AS MANUFACTURED BY EAST JORDAN IRON WORKS. DRAIN MANHOLE COVERS SHALL READ "DRAIN".
- CATCH BASIN FRAMES AND GRATES SHALL BE THE TOWN OF LYNNFIELD STANDARD CAST IRON FRAMES AND GRATES, EAST JORDAN IRON WORKS. THREE FLANGE FRAMES SHALL BE PROVIDED AT ALL CURB INLETS, FOUR FLANGE ELSEWHERE. CATCH BASIN #1 REQUIRES CASCADE GRATES.
- CATCH BASIN TRAPS SHALL BE INSTALLED ON ALL CATCH BASINS. CATCH BASIN TRAPS SHALL BE AS MANUFACTURED BY NEENAH FOUNDARY COMPANY, CATALOGUE NO. R-3701 OR APPROVED EQUAL AND SHALL BE SIZED BASED ON THE OUTLET PIPE OF THE CATCH BASIN.
- THE CASCADE STORMWATER TREATMENT UNIT SHALL BE MODEL CS-4 AS MANUFACTURED BY CONTECH ENGINEERED SOLUTIONS, SCRABOROUGH, ME.
- THE CULTEC UNDERGROUND STORAGE UNITS SHALL BE AS MANUFACTURED BY CULTEC, BROOKFIELD, CONNECTICUT/STORMURGO. UNITS TO BE INSTALLED WITH INSPECTION PORTS WHERE SHOWN ON THE DRAWINGS AND ALL UNITS SHALL BE INSTALLED WITH HVLV FC-24.
- INTERCONNECTIONS BETWEEN ALL UNITS. A COMPLETE SUBMITTAL SHALL BE PROVIDED OF THE SYSTEM FOR REVIEW AND APPROVAL BY THE CIVIL ENGINEER PRIOR TO ORDERING THE UNITS.

### PAVING AND CURBING SPECIFICATIONS:

- IMMEDIATELY FOLLOWING THE INSTALLATION OF ANY UNDERGROUND LINES IN PAVED AREAS THE EXISTING PAVEMENT SHALL BE SAW CUT BACK TWENTY-FOUR (24") INCHES BACK FROM EACH EDGE OF TRENCH AS SHOWN ON THE TYPICAL DETAILS AND THE TRENCH AREA SHALL BE EXCAVATED TO THE REQUIRED DEPTH TO PERMIT THE INSTALLATION OF THE SELECT GRAVEL OR DENISE GRADE STONE BASE AND PAVEMENT. THE TRENCH PATCH AREAS SHALL BE BROUGHT TO SUBGRADE ELEVATION AND GRADED WITH TWELVE (12") INCHES (MINIMUM) OF SELECT GRAVEL OR DENISE GRADED STONE. THE SUBBASE AND SELECT GRAVEL OR DENISE GRADED STONE BASE SHALL BE PLACED IN TWO (2) SIX (6") INCH LIFTS AND SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM MODIFIED PROCTOR DENSITY, AS DETERMINED BY AASHTO T-180 USING METHODS APPROVED BY THE OWNER AND THE CIVIL ENGINEER (PUDDING AND JETTING OF TRENCHES WILL NOT BE ALLOWED).
- THE PAVEMENT SURFACE OF THE PERMANENT PAVEMENT PATCH SHALL BE TYPE 1 BITUMINOUS CONCRETE AND SHALL CONFORM TO MASSACHUSETTS DOT – HIGHWAY DIVISION STANDARD SPECIFICATION M3 AND SHALL CONSIST OF A TWO AND ONE-HALF (2-1/2") INCH (ROLLED DIMENSION) BITUMINOUS CONCRETE BINDER COURSE, A ONE AND ONE-HALF (1-1/2") INCH (ROLLED DIMENSION) BITUMINOUS CONCRETE TOP COURSE. BITUMINOUS CONCRETE SHALL BE APPLIED IN ACCORDANCE WITH MASSACHUSETTS HIGHWAY DEPARTMENT STANDARDS AND THE TOWN OF LYNNFIELD. THE EDGES OF THE EXISTING PAVEMENT SHALL BE GIVEN



**CONCRETE SPECIFICATIONS FOR SITE WORK**

97. THE CONTRACTOR SHALL REMOVE ALL ORGANIC SOILS AND ANY UNSUITABLE MATERIAL FROM AN AREA ONE (1) FOOT BEYOND THE LIMITS OF THE CONCRETE WALKS PRIOR TO PLACING THE SELECT GRAVEL BASE. THE PREPARED SUBGRADE SHALL BE GRADED, PROOF-ROLLED AND COMPACTED PRIOR TO THE PLACEMENT OF ANY SELECT GRAVEL.

98. ALL CONCRETE WORK SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE FOLLOWING STANDARDS: (A) ASTM: AMERICAN SOCIETY FOR TESTING MATERIALS, 1916 RACE STREET, PHILADELPHIA, PA, 19103, USA AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS IN BUILDING CODES"; (B) ACI: AMERICAN CONCRETE INSTITUTE, P.O. BOX 19150, REDFORD STATION, DETROIT, MI 48219; (C) CRSI: CONCRETE REINFORCING STEEL INSTITUTE, 180 NORTH LASALLE STREET, CHICAGO, IL 60601.

99. ALL CONCRETE WORK SHALL BE HOMOGENEOUS CONCRETE HAVING REQUIRED STRENGTH, DURABILITY AND WEATHERING RESISTANCE, WITHOUT PLANES OF WEAKNESS, AND OTHER STRUCTURAL DEFECTS, AND FREE OF PRONOUNCED HONEYCOMBS, AIR POCKETS, VOIDS, PROJECTIONS, OFFSETS OF PLANE, AND OTHER DEFACEMENTS ON EXPOSED SURFACES.

100. ALL CONCRETE FOR WALKS AND OTHER USES ON THE PROJECT SHALL BE TYPE II-A, 4000 PSI AIR ENTRAINED, TRANSIT MIXED CONCRETE WITH 5% ENTRAINED AIR. THE MAXIMUM SLUMP OF THE CONCRETE SHALL BE 3 INCHES FOR SLABS. THE CONCRETE PRODUCER SHALL COMPLY WITH THE REQUIREMENTS OF ACI 613 "RECOMMENDED PRACTICE FOR SELECTING PROPORTIONS FOR CONCRETE," AND ASTM C94 FOR READY MIXED CONCRETE. ADMIXTURES CAUSING ACCELERATED SETTING OF CEMENT IN CONCRETE SUCH AS CALCIUM CHLORIDE SHALL NOT BE USED.

101. FILLER STRIPS FOR EXPANSION JOINTS SHALL BE NON-EXTRUDING TYPE, ASTM D1751.

102. ALL FORMWORK SHALL BE IN ACCORDANCE WITH ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK", FORMS FOR THE SLAB MAY BE OF COMMON LUMBER.

103. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. ONLY FLAT SHEETS WILL BE PERMITTED, NOT ROLLED. SUPPORT WELDED WIRE FABRIC ON APPROVED SUPPORTS SUCH AS "MESHUPS" BY LOTEK INC. (1-800-535-8375). CLEARANCES FOR REINFORCING SHALL BE 2 INCHES.

104. THE CONTRACTOR SHALL DEPOSIT CONCRETE ONLY AFTER REMOVAL OF ALL WATER, DIRT, AND FOREIGN MATTER FROM FORMS, AND AFTER CHECKING OF FORMS, SLEEVES, INSERTS AND REINFORCING FOR PROPER LOCATION. ALL CONCRETE SHALL BE PLACED AS CLOSE TO FINAL POSITION AS IS POSSIBLE. DO NOT CONCRETE DROP MORE THAN 18 INCHES FROM END OF CHUTE OR CONVEYANCE TO FINAL LOCATION OF CONCRETE. THE CONTRACTOR SHALL PLACE CONCRETE ONLY BY THOSE METHODS AND ARRANGEMENTS OF EQUIPMENT WHICH COMPLY WITH PARTS V AND VI OF ACI 105. CONTROL JOINTS ARE TROWELLED JOINTS IN SLABS AND WALKS. TROWELL JOINT PLACEMENT SHALL BE AS DIRECTED IN THE FIELD.

106. CURING SHALL BE STARTED AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT SURFACE DAMAGE. SURFACES SHALL BE WET CURED FOR AT LEAST FIVE (5) DAYS BY SOAKING, OR USE OF APPROVED CURING COMPOUND. IN COLD WEATHER, ALL CONCRETING SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF ACI 306 "RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING". DO NOT PLACE CONCRETE WITHOUT HEATED ENCLOSURES WHEN AIR TEMPERATURES IS BELOW 32 DEGREES FAHRENHEIT.

107. ALL WALKWAY SURFACES SHALL BE FINISHED WITH A MEDIUM BROOM FINISH.

108. THE CONTRACTOR SHALL NOT REMOVE FORMS OR SHORING UNTIL CONCRETE MEMBERS HAVE ACQUIRED SUFFICIENT STRENGTH. RETAIN FORMS IN PLACE 7 DAYS FOR ALL WALKWAYS. FORMS SHALL BE REMOVED IN A MANNER TO ASSURE THE INTEGRITY AND FINISH OF THE WALKWAY.

109. THE CONTRACTOR SHALL APPLY A WATER BASED SALT SEAL TO ALL NEW CONCRETE WALKWAYS.

**LANDSCAPING & PLANTING SPECIFICATIONS:**

110. FOR ALL LANDSCAPING AND PLANTING SPECIFICATIONS, SEE PLANS BY THE LANDSCAPE ARCHITECT.

**CULTEC RECHARGER 280HD SPECIFICATIONS**

**GENERAL**  
CULTEC RECHARGER 280HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

**CHAMBER PARAMETERS**

1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMMED.
5. THE CHAMBER WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
6. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 280HD SHALL BE 26 INCHES (661 mm) TALL, 47 INCHES (1193 mm) WIDE AND 7 FEET (2.14 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 280HD SHALL BE 7 FEET (2.13 m).
7. MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 21 INCHES (533 mm) HOPE.
8. THE CHAMBER WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. NOMINAL INSIDE DIMENSIONS OF THE SIDE PORTAL SHALL HAVE A WIDTH OF 11.25" (286 mm) AND HEIGHT OF 11.25" (286 mm). THE SIDE PORTAL CAN ACCEPT A MAXIMUM OUTER DIAMETER (O.D.) PIPE SIZE OF 12.0 INCHES (305 mm).
9. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
10. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 280HD CHAMBER WILL BE 6.079 CF (0.172 m³) WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 280HD SHALL BE 42.553 FT³ (UNIT) (1,205 m³) WITHOUT STONE.
11. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT³ (0.025 m³) WITHOUT STONE.
12. THE RECHARGER 280HD CHAMBER WILL SEVENTY-TWO DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
13. THE RECHARGER 280HD CHAMBER SHALL HAVE 15 CORRUGATIONS.
14. THE ENDWALL OF THE CHAMBER, WHEN PRESENT, WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
15. THE RECHARGER 280HD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
16. THE RECHARGER 280HD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 mm) HIGH X 35 INCHES (891 mm) WIDE.
17. THE RECHARGER 280HD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 mm) HIGH X 35 INCHES (891 mm) WIDE.
18. THE RECHARGER 280HD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.
19. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER 280HD AND ACT AS CROSS FEED CONNECTIONS.
20. CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
21. THE CHAMBER WILL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
22. THE LIMITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
23. THE CHAMBER SHALL BE MANUFACTURED IN AN IN ISO 9001:2015 CERTIFIED FACILITY.
24. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S INSTALLATION INSTRUCTIONS.
25. THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED TO MEET THE MATERIAL AND STRUCTURAL REQUIREMENTS OF AASHTO H-10 AND H-20 HIGHWAY LIVE LOADS, WHEN INSTALLED IN ACCORDANCE WITH CULTEC'S INSTALLATION INSTRUCTIONS.
26. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 FEET (3.66 m).

**CULTEC HVLV FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS**

**GENERAL**  
CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER 280HD STORMWATER CHAMBERS.

**CHAMBER PARAMETERS**

1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMMED.
5. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT³ (0.025 m³) WITHOUT STONE.
7. THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
8. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER 280HD CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
9. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S INSTALLATION INSTRUCTIONS.
10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.

**CULTEC NO. 410" NON-WOVEN GEOTEXTILE**  
CULTEC NO. 410" NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONNECTORS AND RECHARGER 280HD STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL INTRUSION INTO THE STONE.

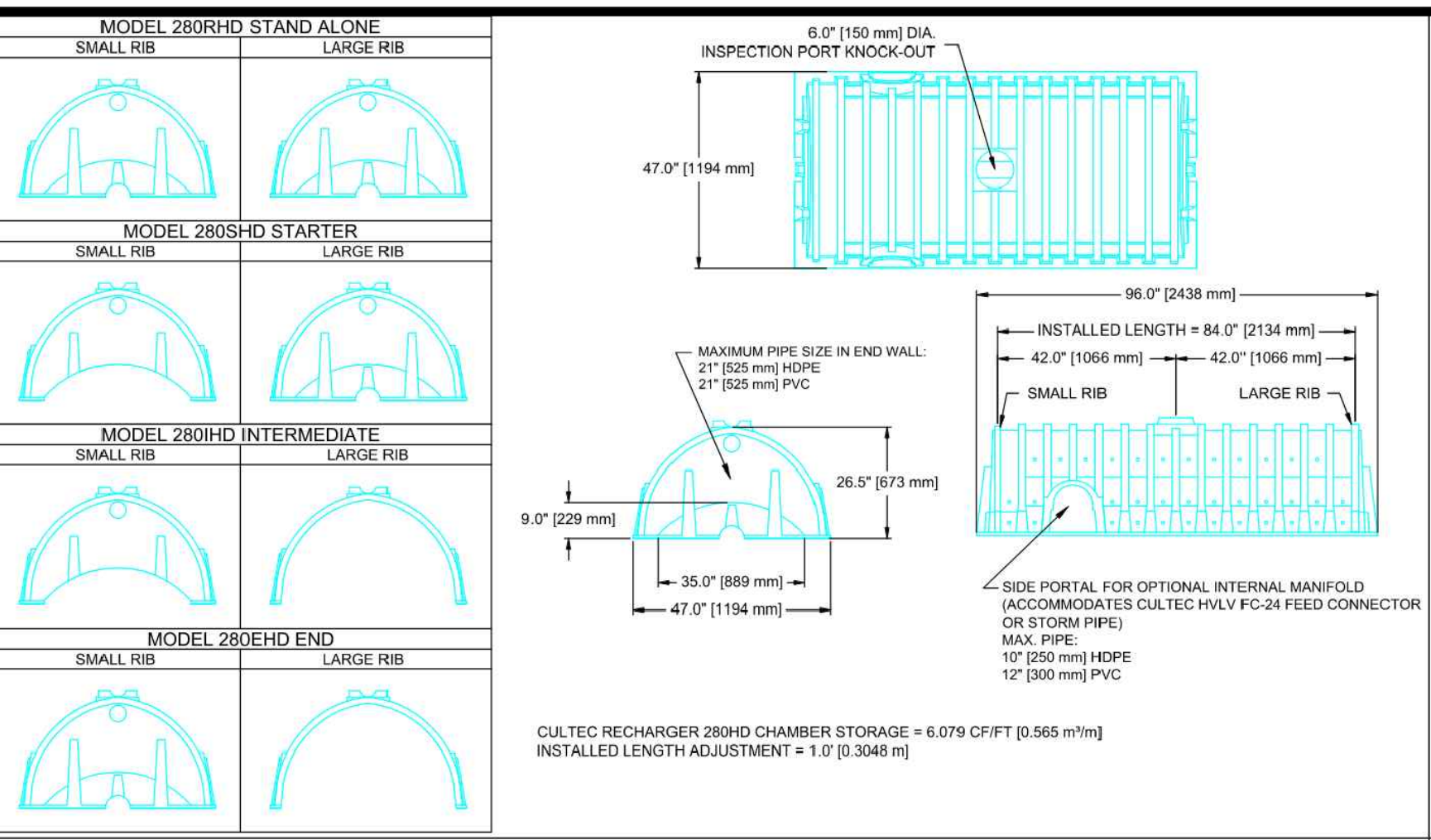
**GEOTEXTILE PARAMETERS**

1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 4.5 OZ/SY (143 G/M).
4. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM D4832 TESTING METHOD.
5. THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK RESISTANCE OF 20% PER ASTM D4832 TESTING METHOD.
6. THE GEOTEXTILE SHALL HAVE A PULLER BURST VALUE OF 225 PSF (1551 KPA) PER ASTM D3776 TESTING METHOD.
7. THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING METHOD.
8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
9. THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4833 TESTING METHOD.
10. THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD.
11. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4991 TESTING METHOD.
12. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SQ (5500 L/MIN/MS) PER ASTM D4991 TESTING METHOD.
13. THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4335 TESTING METHOD.

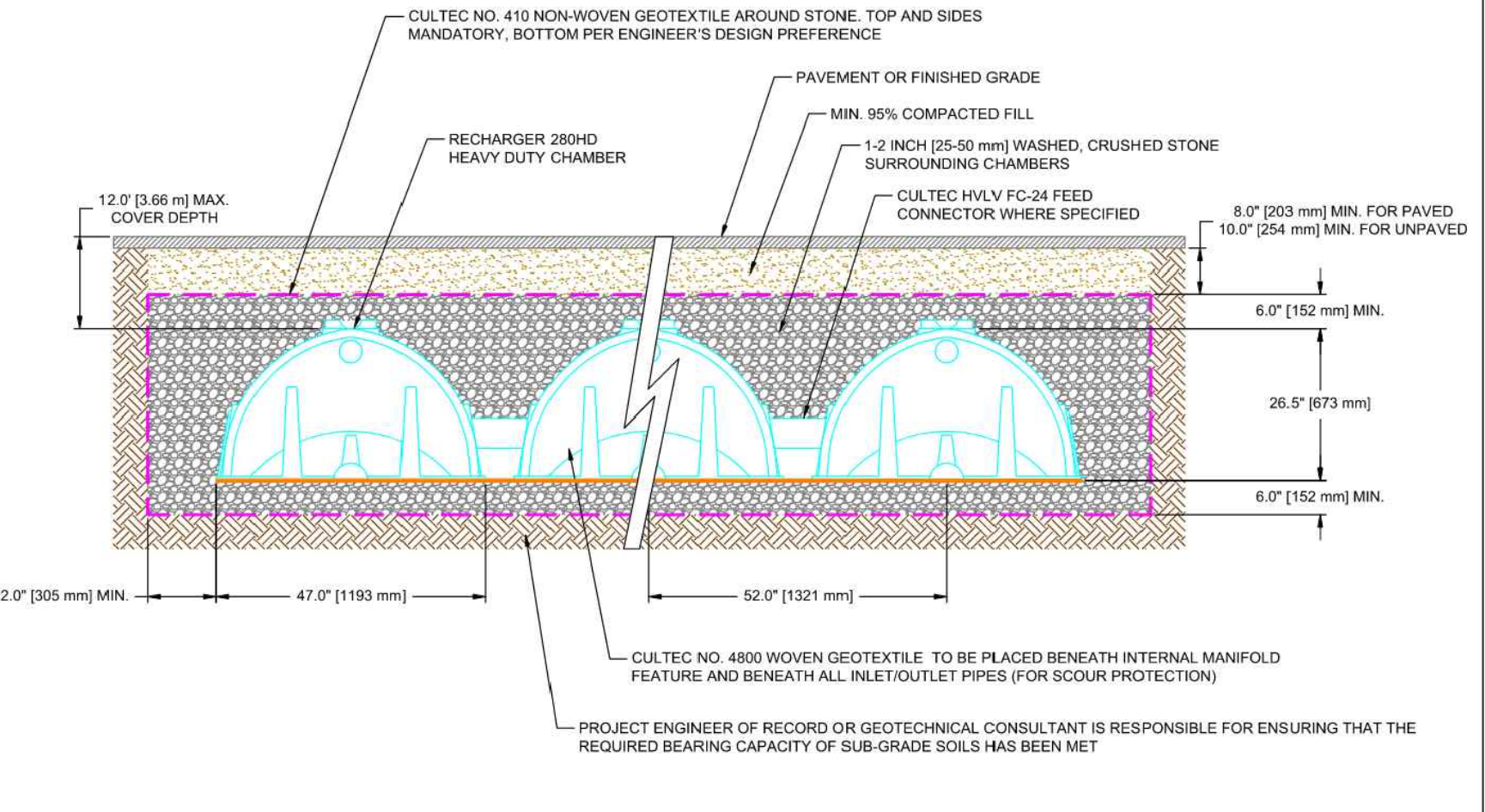
**CULTEC NO. 4800" WOVEN GEOTEXTILE**  
CULTEC NO. 4800" WOVEN GEOTEXTILE IS DESIGNED AS A UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC HANDS OFF FEATURE. IT MAY ALSO BE USED AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR MAINTENANCE.

**GEOTEXTILE PARAMETERS**

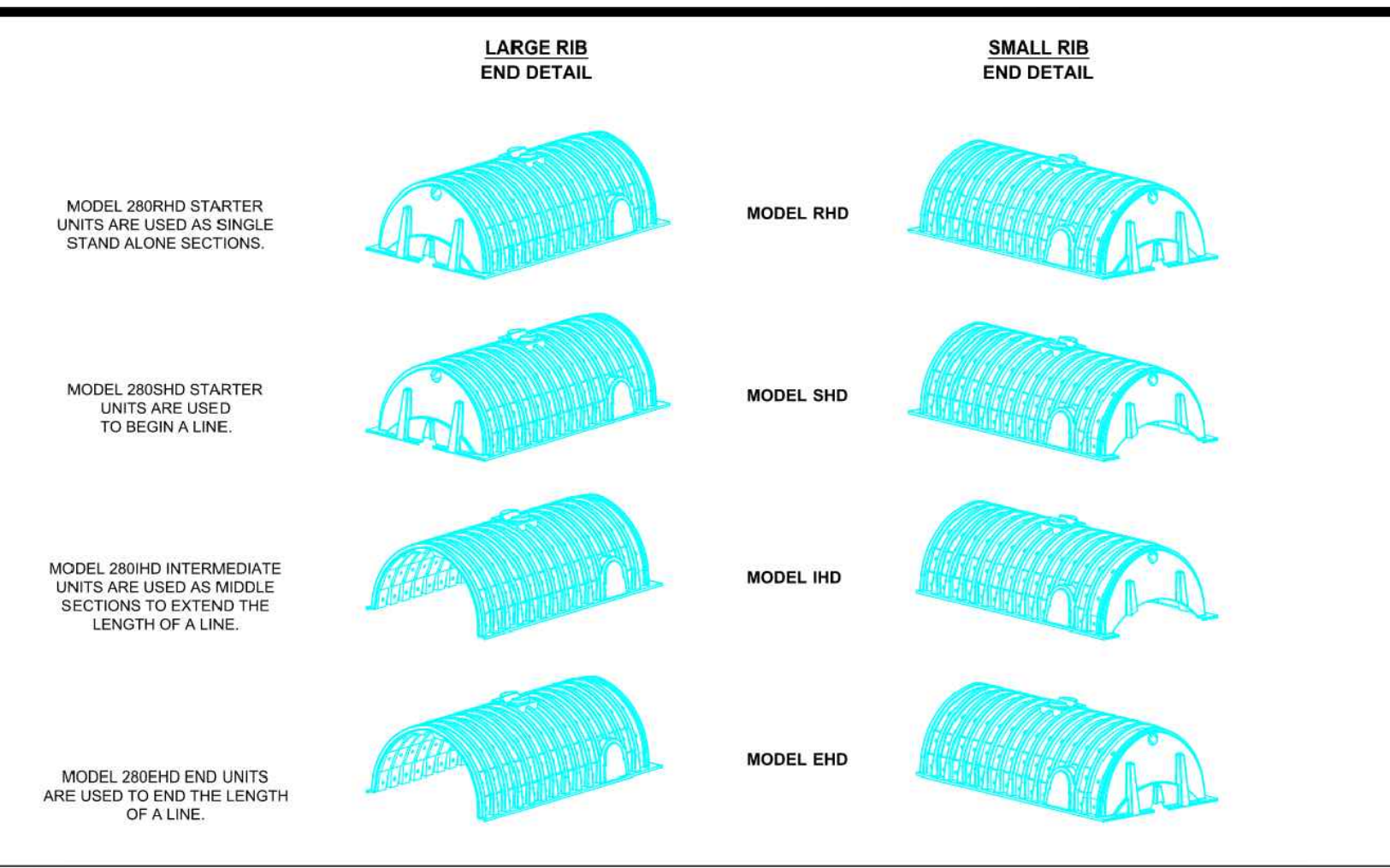
1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4832 TESTING METHOD.
4. THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK RESISTANCE OF 20% PER ASTM D4832 TESTING METHOD.
5. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 5,070 X 5,070 LBS/FT (74 X 74 KN/M) PER ASTM D4832 TESTING METHOD.
6. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 2% STRAIN OF 960 X 1,396 LBS/FT (14 X 16 KN/M) PER ASTM D4555 TESTING METHOD.
7. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 5% STRAIN OF 2,740 X 2,740 LBS/FT (149 X 149 KN/M) PER ASTM D4555 TESTING METHOD.
8. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 10% STRAIN OF 4,800 X 4,800 LBS/FT (70 X 70 KN/M) PER ASTM D4555 TESTING METHOD.
9. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
10. THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4833 TESTING METHOD.
11. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (1.0425 MM) PER ASTM D4751 TESTING METHOD.
12. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4991 TESTING METHOD.
13. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 0.15 GPM/FT² (470 LPM/MS) PER ASTM D4991 TESTING METHOD.
14. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4335 TESTING METHOD.



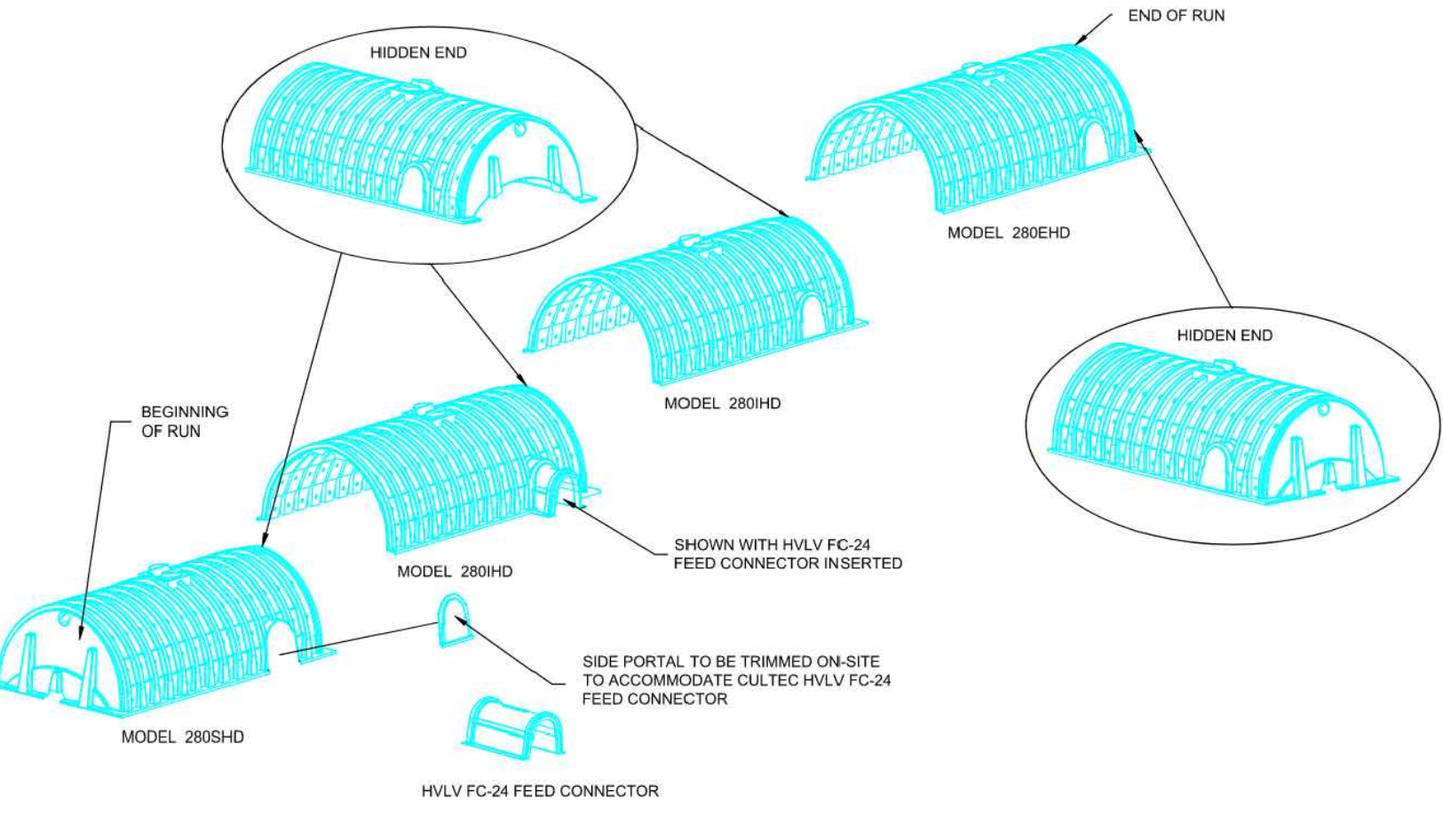
**CULTEC RECHARGER 280HD HEAVY DUTY THREE VIEW**



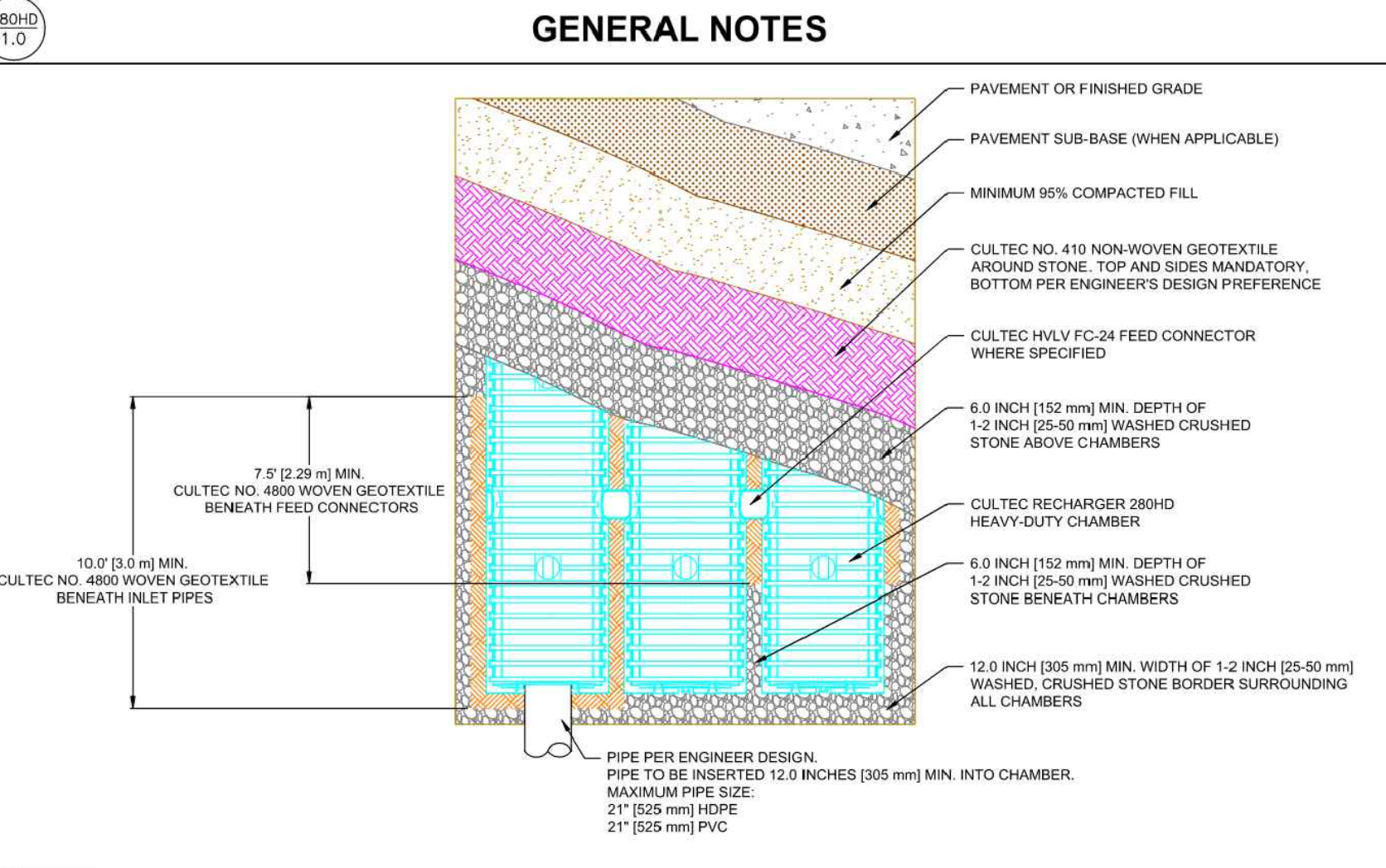
**CULTEC RECHARGER 280HD HEAVY DUTY CROSS SECTION**



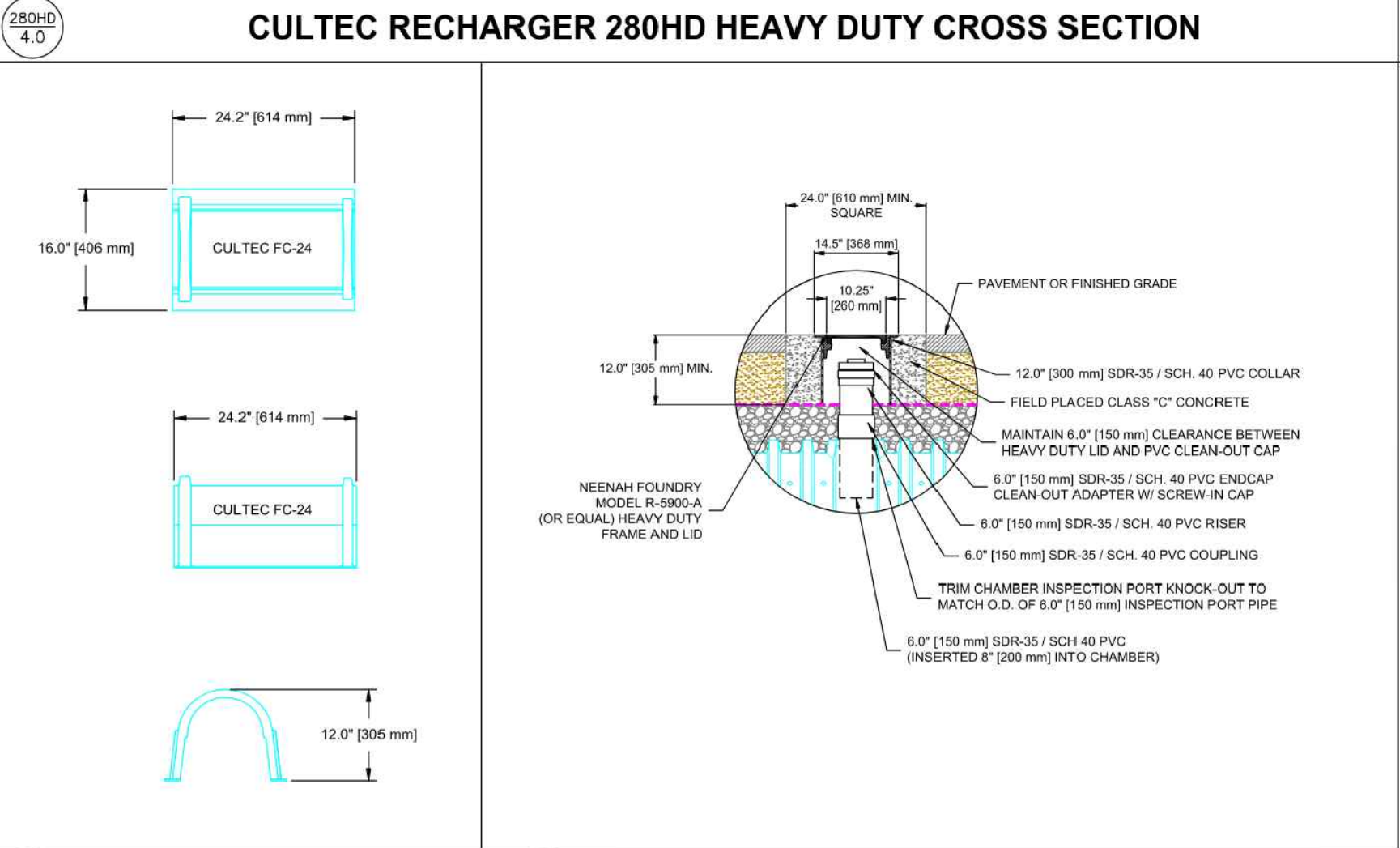
**CULTEC RECHARGER 280HD HEAVY DUTY END DETAIL INFORMATION**



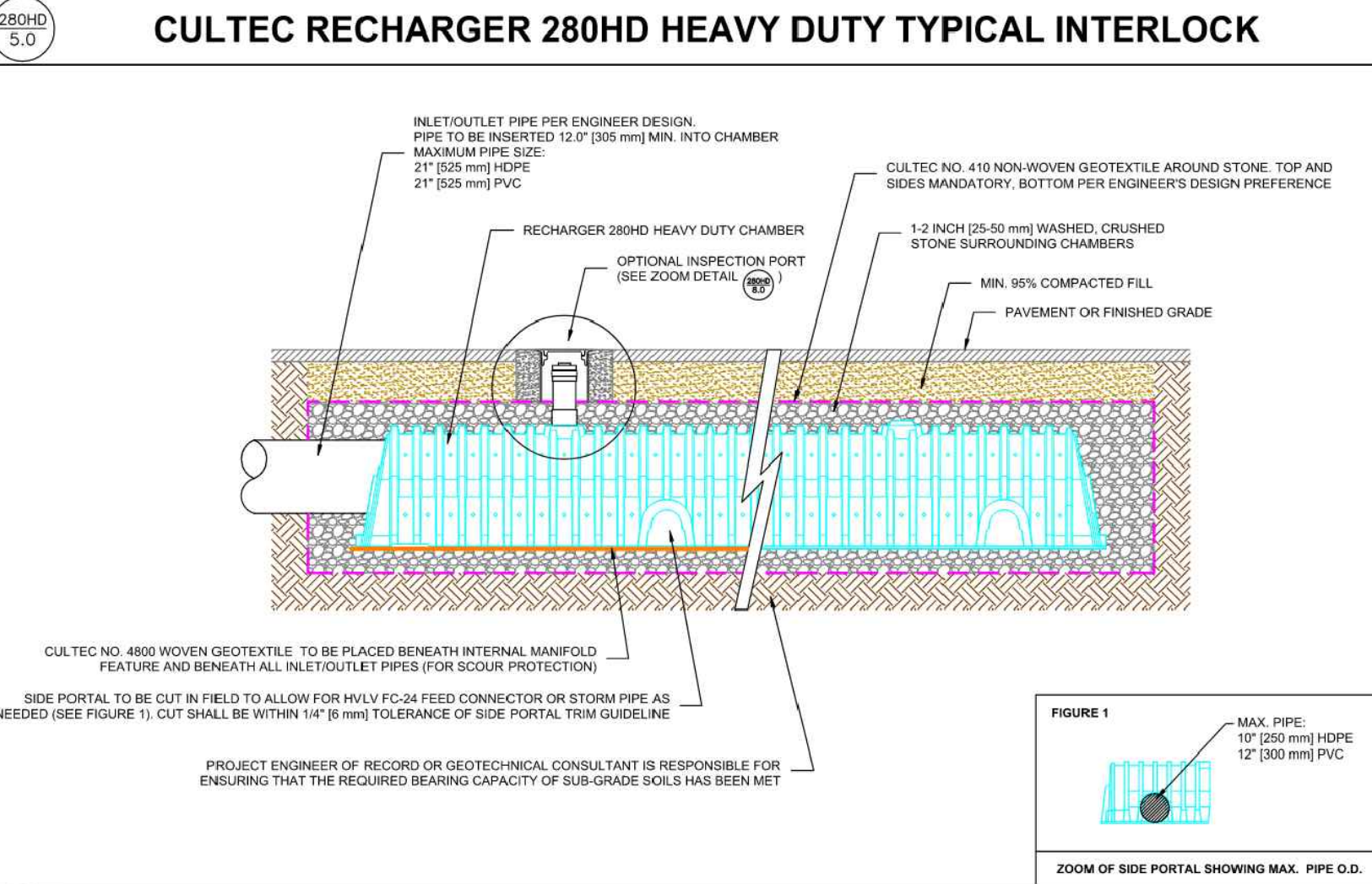
**CULTEC RECHARGER 280HD HEAVY DUTY TYPICAL INTERLOCK**



**GENERAL NOTES**



**CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW**



**CULTEC INTERNAL MANIFOLD - OPTIONAL INSPECTION PORT DETAIL**

**CULTEC, Inc.**  
Subsurface Stormwater Management Systems  
P. O. Box 280  
878 Federal Road  
Brookfield, CT 06804  
www.cultec.com

PH: (203) 775-4416  
PH: (800) 4-CULTEC  
FX: (203) 775-1462  
tech@cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE PROJECT ENGINEER OF RECORD TO ENSURE THAT THE CULTEC SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE PROJECT ENGINEER OF RECORD'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS.

**RECHARGER 280HD  
DETAIL SHEET  
TRAFFIC APPLICATION**

CULTEC STORMWATER CHAMBER	
PROJECT NO:	DATE: 2019
DRAWN BY: CULTEC, INC	CHECKED BY: TECH
SCALE: N.T.S.	SHEET NO: 1 OF 1

DATE	BY	REV#	ISSUED FOR NOI FILING	REVISIONS
8/31/2023	WAJ	1		

**RICHARD C. CUTTS**  
REG. PROF. ENGINEER

**LINDEN ENGINEERING PARTNERS LLC**  
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Tel: (781) 933-3711  
Fax: (781) 287-1277

Civil - Environmental Engineering including Storm water, Wastewater, Water Supply, Highway & Infrastructure Design, Land Planning, Land Subdivision, Site Design, Environmental Permitting, Wetlands Permitting & Land Development Permitting

PREPARED FOR:  
**TOWN OF LYNNFIELD, MA**  
DEPARTMENT OF PUBLIC WORKS  
TOWN HALL, 55 SUMMER STREET  
LYNNFIELD, MASSACHUSETTS 01940  
TEL: (781) 334-9500

**NOTES, SPECIFICATIONS AND DETAILS**  
KING RAIL RESERVE GOLF COURSE CLUBHOUSE  
397 WALNUT STREET aka 1 KING RAIL DRIVE  
LYNNFIELD, MASSACHUSETTS

**SHEET  
C-8B**

**TYPICAL SURFACE INFILTRATION SYSTEM #1 DETAIL**  
SCALE AS NOTED