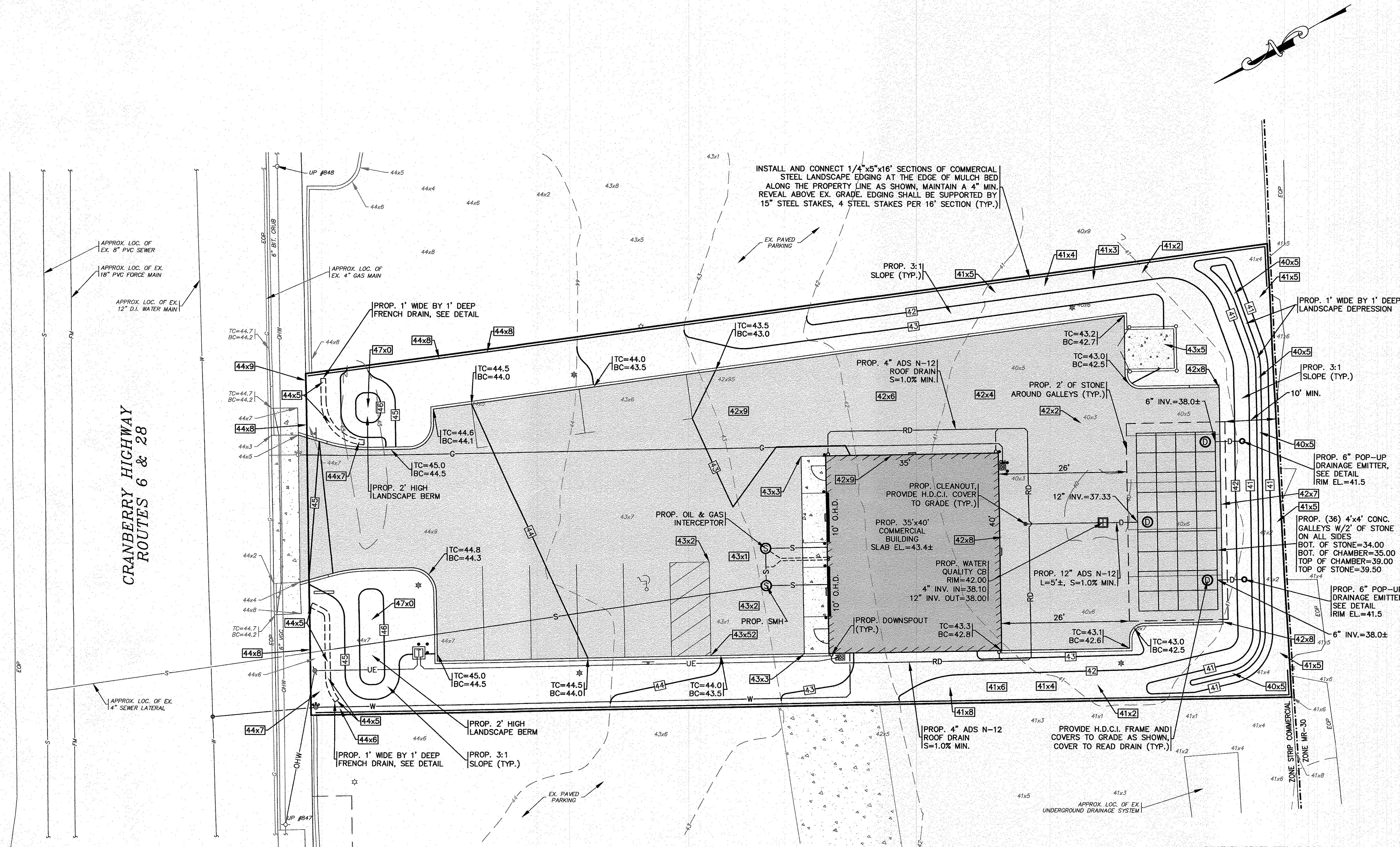


NOTES:

- REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED COMMERCIAL BUILDING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS. CONTRACTOR SHALL CONFIRM SLAB ELEVATION WITH OWNER PRIOR TO CONSTRUCTION.
- ALL PROPOSED WATER QUALITY CATCH BASINS SHALL HAVE A TEMPORARY SILT SACK INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL EMPTY WHEN NEEDED AND REMOVE & DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
- PROPOSED WATER QUALITY CATCH BASIN SHALL BE A FIRST DEFENSE FDHC-3 UNIT FROM HYDRO INTERNATIONAL OR AN APPROVED EQUAL.
- REFER TO ARCHITECTURAL PLANS BY OTHERS FOR FINAL LOCATIONS, SIZES AND COMPLETE CONSTRUCTION DETAILS ON THE PROPOSED DOWNSPOUTS.
- WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 1' BELOW ALL PROPOSED DRAINAGE AND ROOF DRAINAGE PIPES AND 5' MINIMUM BELOW GRADE.
- PROVIDE CLEAN OUTS WITH H.D.C.I. FRAME AND COVER TO GRADE, COVER TO READ 'DRAIN'.
- TEST PITS SHALL BE PERFORMED IN THE AREAS OF THE PROPOSED LEACHING FIELD AND THE DRAINAGE DEPRESSION TO CONFIRM SOIL CONDITIONS PRIOR TO DRAINAGE INSTALLATION. CONTRACTOR SHALL COORDINATE WITH ENGINEER.



INSTALL AND CONNECT 1/4"x5"x16' SECTIONS OF COMMERCIAL STEEL LANDSCAPE EDGING AT THE EDGE OF MULCH BED ALONG THE PROPERTY LINE AS SHOWN, MAINTAIN A 4" MIN. REVEAL ABOVE EX. GRADE. EDGING SHALL BE SUPPORTED BY 15" STEEL STAKES, 4 STEEL STAKES PER 16' SECTION (TYP.)

CRANBERRY HIGHWAY
ROUTES 6 & 28

DRAINAGE & GRADING

SCALE: 1"=10'
0 10 20 40

SANITARY SEWER STRUCTURE SCHEDULE:

STRUCTURE	RIM EL.	INV. (IN)	INV. (OUT)
OIL&GAS INTERCEPTOR	43.1±	40.20	39.87
SEWER MANHOLE	43.2±	(2) 39.80	39.70

PERMIT SET
(NOT FOR CONSTRUCTION)

R:\G\F\DRAWINGS\2022\DRAWINGS\22-9890\KOULOURAS\9890.dwg (9890) SITE PLAN A1-1 REV-1.dwg

DATE: MAY 25, 2023
 DRAWN BY: JMP
 CHECKED BY: WFM
 JOB NO.: 22-9890
 SCALE: 1" = 10'

APPROVED BY: [Signature]

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 TEL: (508) 295-6600 FAX: (508) 295-6634
 E-MAIL: info@gafenginc.com

PREPARED FOR:
PETER KOULOURAS
 3127 CRANBERRY HIGHWAY
 WAREHAM, MA 02571
 P.O. BOX 961

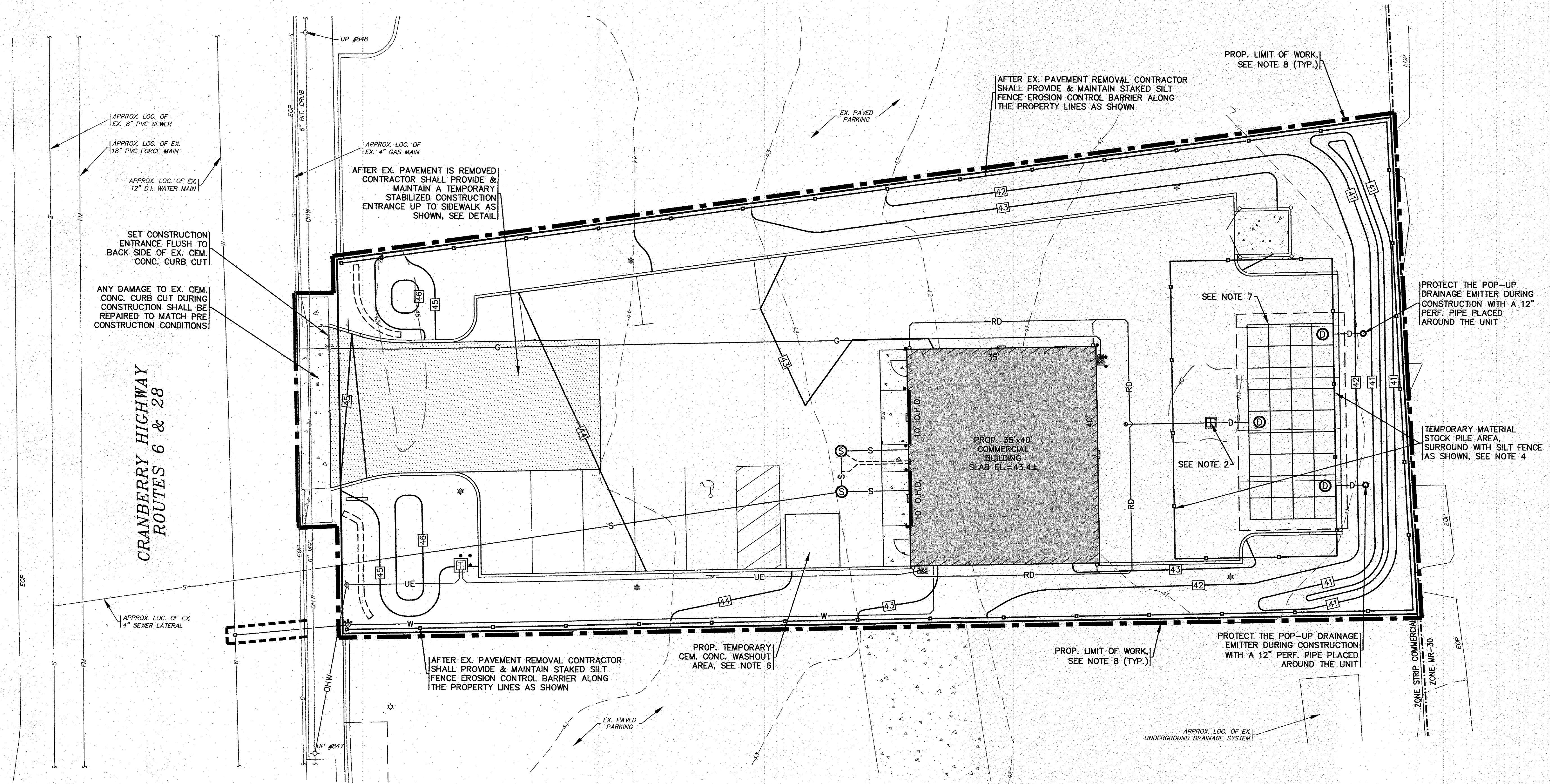
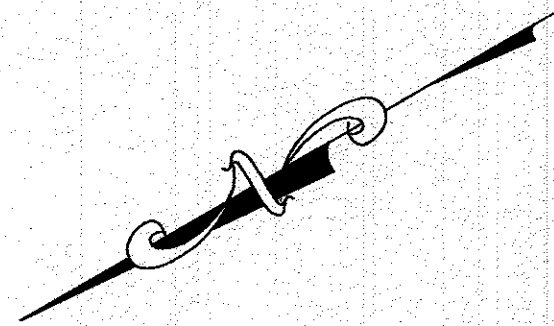
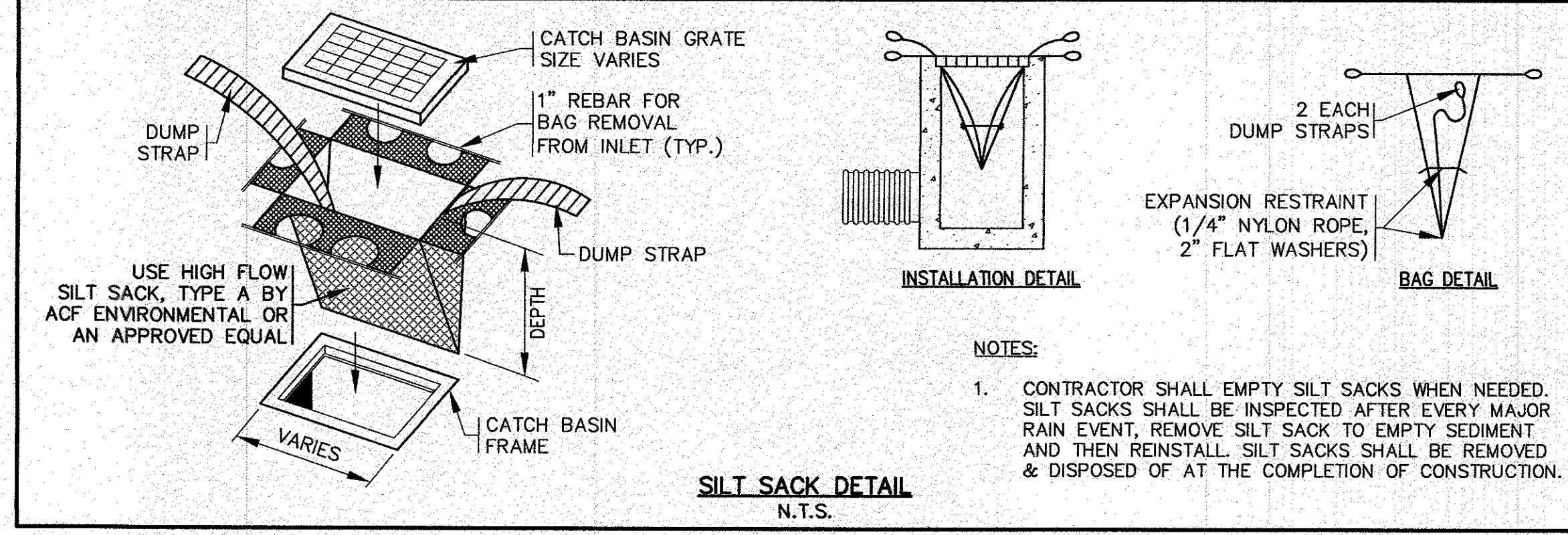
**SITE DEVELOPMENT PLAN
 DRAINAGE & GRADING**

JOB NO.: 22-9890
 DWG. 5 OF 10

REV.	DATE	BY	APPD	DESCRIPTION
1	8/30/23	JMP	WFM	PER PEER REVIEW COMMENTS

NOTES:

- CONTRACTOR SHALL PROVIDE AND MAINTAIN STAKED SILT FENCE EROSION CONTROL BARRIERS WHERE SHOWN ON THE PLAN. SEE DETAIL ON SHEET 10. REFER TO THE COMPLETE SET OF EROSION CONTROL NOTES ON SHEET 2. EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL VEGETATION IS ESTABLISHED.
- THE PROPOSED WATER QUALITY CATCH BASIN SHALL HAVE A TEMPORARY SILT SACK INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL EMPTY WHEN NEEDED AND REMOVE & DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
- THE LOCATION AND ALL DETAILS OF CONTRACTORS STAGING AREA SHALL BE DETERMINED BY THE CONTRACTOR AT TIME OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER ON LOCATION.
- THE FINAL LOCATION OF THE TEMPORARY MATERIAL STOCKPILE AREA SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT TIME OF CONSTRUCTION. THE TEMPORARY MATERIAL STOCKPILE AREA SHALL BE SURROUNDED BY SILT FENCE AT ALL TIMES. ONCE ESTABLISHED THE TEMPORARY STOCKPILE AREA SHALL BE INSPECTED AND APPROVED BY THE SITE ENGINEER.
- CONTRACTOR SHALL SIZE, PROVIDE AND MAINTAIN DEWATERING EQUIPMENT FOR THE CONTROL, COLLECTION AND DISPOSAL OF GROUND WATER WHERE NECESSARY TO COMPLETE THE WORK. FINAL SIZE AND LOCATION FOR DEWATERING EQUIPMENT SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT TIME OF CONSTRUCTION.
- CEMENT CONCRETE WASHOUT AREA SHALL BE A SQUARE OF DOUBLE STAKED HAY BALES WITH SILTATION FENCE AND LINED WITH A 40 MIL. POLYETHYLENE BARRIER, SEE DETAIL. FINAL WASHOUT LOCATION SHALL DETERMINED IN THE FIELD BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER ON LOCATION.
- AT THE COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL INSPECT ALL DRAINAGE STRUCTURES FOR EVIDENCE OF SEDIMENT OR DEBRIS ACCUMULATION. REMOVE AND DISPOSE OF ANY DEBRIS AND SEDIMENT AS REQUIRED.
- THE PROPOSED LIMIT OF WORK LINE IS SHOWN OFFSET IN SOME AREAS FOR PLAN CLARITY.
- ONCE ESTABLISHED ALL EROSION CONTROL MEASURES AND LOCATION OF STOCKPILED MATERIAL SHALL BE INSPECTED AND APPROVED BY THE SITE ENGINEER.
- THE LOCATION AND ALL DETAILS OF THE TEMPORARY CHAIN LINK CONSTRUCTION FENCE SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH OWNER.



EROSION CONTROL PLAN

SCALE: 1"=10'
0 10 20 40

PERMIT SET
(NOT FOR CONSTRUCTION)

DATE: MAY 25, 2023	APPROVED BY:		DATE: 8/30/23	BY: JPM	PER PEER REVIEW COMMENTS:	
DRAWN BY: JPM	APPROVED BY: <i>[Signature]</i>		REV. 1	DATE: 8/30/23	BY: JPM	
CHECKED BY: WFM						
JOB NO.: 22-9890						
SCALE: 1" = 10'						

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SITE DEVELOPMENT PLAN
EROSION CONTROL PLAN
 3127 CRANBERRY HIGHWAY WAREHAM, MA
 PREPARED FOR:
PETER KOULOURAS
 N. FALMOUTH, MA
 P.O. BOX 961

JOB NO.: 22-9890
 DWG. 6 OF 10

PLANTING STANDARDS:

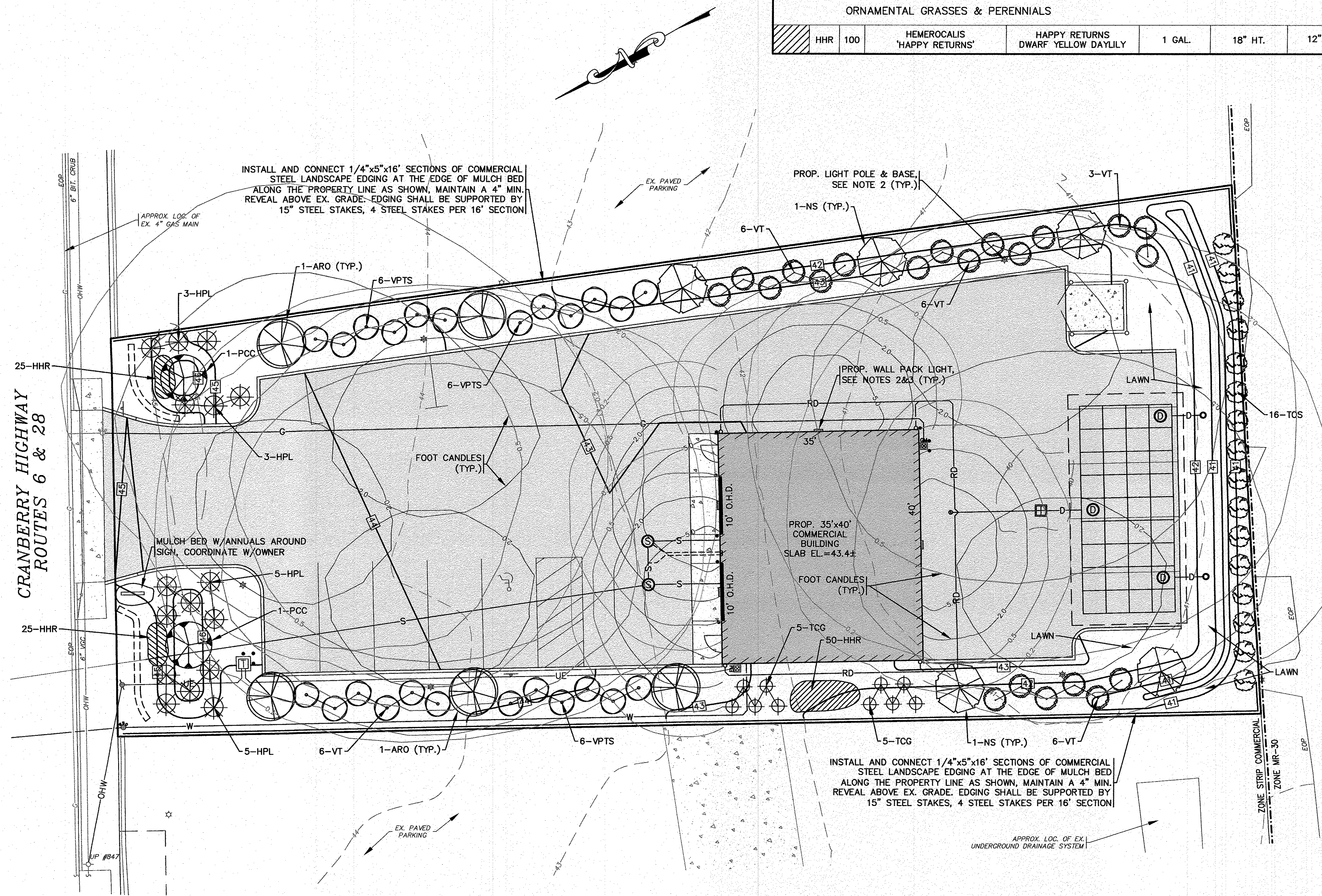
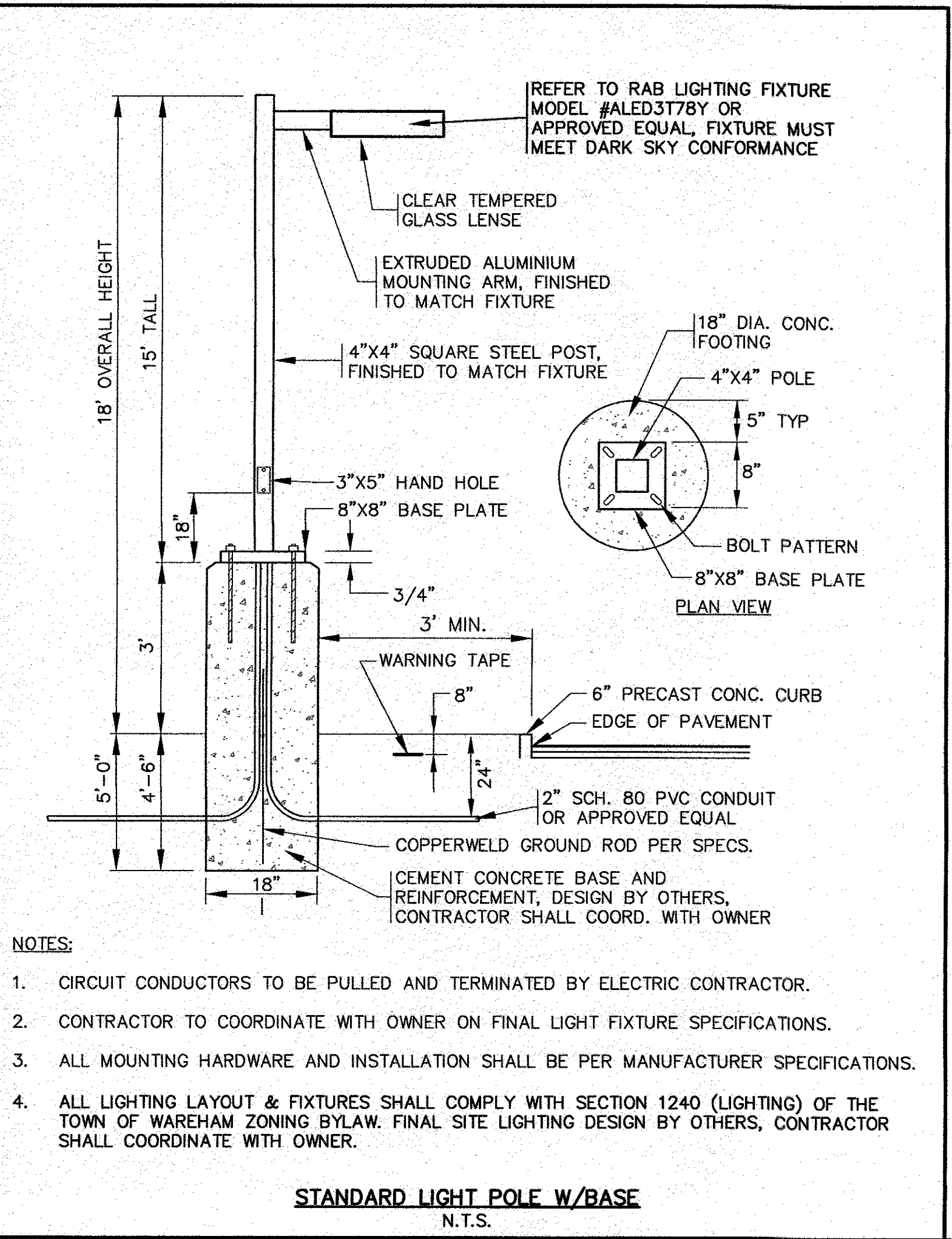
- THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR DIG, BALL, BURLAP, AND TRANSPLANT ALL PLANT MATERIALS LISTED ON THE PLANT SCHEDULE. BARE-ROOT IS TYPICALLY NOT PERMITTED FOR ANY TREE.
- PLANT MATERIALS SHALL CONFORM TO THE REQUIREMENTS DESCRIBED IN THE LATEST EDITION OF AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANTS SHALL BE NURSERY GROWN.
- PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE.
 - CALIPER MEASUREMENTS SHALL BE TAKEN SIX (6) INCHES ABOVE GRADE FOR TREES UNDER FOUR (4) INCHES IN DIAMETER AND TWELVE (12) INCHES ABOVE GRADE FOR TREES FOUR (4) INCHES IN DIAMETER AND LARGER.
 - MINIMUM BRANCHING HEIGHT FOR ALL SHADE TREES SHALL BE SIX (6) FEET.
 - MINIMUM SIZE FOR SHADE TREES SHALL BE TWO AND ONE HALF (2.5) INCHES IN DIAMETER AND TWELVE (12) FEET IN HEIGHT.
 - MINIMUM SIZE FOR EVERGREEN TREES SHALL BE BETWEEN SIX (6) AND EIGHT (8) FEET IN HEIGHT.
 - MINIMUM SIZE FOR SHRUBS SHALL BE THREE (3) FEET IN HEIGHT.
- A PROFESSIONAL HORTICULTURIST/NURSERYMAN SHALL BE CONSULTED TO DETERMINE THE PROPER TIME TO MOVE AND INSTALL PLANT MATERIAL SO THAT DISTRESS TO THE PLANT IS MINIMIZED. PLANTING OF DECIDUOUS MATERIAL MAY BE CONTINUED DURING WINTER MONTHS PROVIDED THERE IS NO FROST IN THE GROUND AND FROST-FREE TOPSOIL PLANTING MIXTURES ARE USED.
- A LANDSCAPE CONTRACTOR SHALL EXCAVATE ALL PLANT PITS, VINE PITS, HEDGE TRENCHES, AND SHRUB BEDS AS FOLLOWS:
 - ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE, WITH VERTICAL SIDES. THE TREE PIT SHALL BE DEEP ENOUGH TO ALLOW ONE-EIGHTH (1/8) OF THE BALL TO BE ABOVE THE EXISTING GRADE. PLANTS SHALL REST ON UNDISTURBED EXISTING SOIL OR WELL COMPACTED BACKFILL ON EVERY SIDE, THE TREE PITS MUST BE A MINIMUM OF 2 TIMES THE ROOT BALL DIAMETER.
 - IF AREAS ARE DESIGNATED AS SHRUB BEDS OR HEDGE TRENCHES, THEY SHALL BE CULTIVATED TO AT LEAST EIGHTEEN (18) INCHES IN DEPTH. AREAS DESIGNATED FOR GROUND COVERS AND VINES SHALL BE CULTIVATED TO AT LEAST TWELVE (12) INCHES IN DEPTH.
- EACH TREE, SHRUB, OR VINE SHALL BE PRUNED IN AN APPROPRIATE MANNER IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE.
- ALL TRENCHES AND SHRUB BEDS SHALL BE EDGED AND CULTIVATED TO THE LINES SHOWN ON THE DRAWING. THE AREAS AROUND ISOLATED PLANTS SHALL BE EDGED AND CULTIVATED TO THE FULL DIAMETER OF THE PIT. SOD THAT HAS BEEN REMOVED AND STACKED SHALL BE USED TO TRIM THE EDGES OF ALL EXCAVATED AREAS TO THE NEAT LINES OF THE PLANT PIT SAUCERS, THE EDGE OF SHRUB AREAS, HEDGE TRENCHES AND VINE POCKETS.
- AFTER CULTIVATION, ALL PLANT BEDS SHALL BE PROVIDED WITH A THREE (3) INCH LAYER OF 3/4"-1" DIA. ROUNDED STONE OVER THE ENTIRE AREA OF THE BED OR SAUCER.
- A TWO (2) YEAR GUARANTEE SHALL BE PROVIDED ON ALL NEW PLANT MATERIAL. IF ANY TREE OR SHRUB DIES WITHIN THIS PERIOD OF TIME, IT SHALL BE REPLACED.
- ALL AREAS THAT ARE NOT LANDSCAPED SHALL BE LOAMED AND SEEDDED.

NOTES:

- REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED COMMERCIAL BUILDING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS. CONTRACTOR SHALL CONFIRM SLAB ELEVATION WITH OWNER PRIOR TO CONSTRUCTION.
- THE LIGHTING LAYOUT AND ALL LIGHT FIXTURES SHALL COMPLY WITH SECTION 1240 (LIGHTING) OF THE TOWN OF WAREHAM ZONING BYLAW. FINAL LIGHTING DESIGN BY OTHERS, CONTRACTOR SHALL COORDINATE WITH OWNER.
- USE RAB WALL PACK LIGHT FIXTURE MODEL #SLIMFC57N/D10 OR AN APPROVED EQUAL. ALL LIGHTING FIXTURES SHALL COMPLY WITH SECTION 1240 (LIGHTING) OF THE TOWN OF WAREHAM ZONING BYLAW.

PLANT LIST						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS	REMARKS
SHRUBS						
HPL	16	HYDRANGEA PANICULATA 'LIME LIGHT'	LIME LIGHT HYDRANGEA	24"-30" HT.	5 GAL.	PLANT 5' O.C.
TCG	10	TAXUS CUSPIDATA 'GREEN WAVE'	GREEN WAVE SPREADING YEW	18"-24" SPR	4 GAL.	PLANT 4' O.C.
TOS	16	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD ARBORVITAE	6'-7' HT.	B & B	PLANT 5' O.C.
VPTS	24	VIBURNUM PLICATUM TOMENTOSUM 'SHASTA'	SHASTA DOUBLEFILE VIBURNUM	36" HT.	5 GAL.	PLANT 5' O.C.
VT	21	VIBURNUM TRILOBUM	AMERICAN CRANBERRYBUSH	3'-4' HT.	B & B	PLANT 5' O.C.
SHADE & ORNAMENTAL TREES						
ARO	5	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL.	B & B	PLANT 35' O.C.
NS	5	NYSSA SYLVATICA	BLACK TUPELO	3" CAL.	B & B	PLANT 35' O.C.
PCC	2	PYRUS CALLERYANA 'CHANTICLEER'	CLEVELAND SELECT CALLERY PEAR	3" CAL.	B & B	PLANT 35' O.C.
ORNAMENTAL GRASSES & PERENNIALS						
HHR	100	HEMEROCALIS 'HAPPY RETURNS'	HAPPY RETURNS DWARF YELLOW DAYLILY	1 GAL.	18" HT.	12" O.C.

DATE: MAY 25, 2023	DRAWN BY: JMP	CHECKED BY: WFM	JOB NO.: 22-9890	SCALE: 1" = 10'
APPROVED BY: [Signature]	APPROVED BY: [Signature]	APPROVED BY: [Signature]	APPROVED BY: [Signature]	APPROVED BY: [Signature]
PER PEER REVIEW COMMENTS	DATE	BY	WFM	APP'D
1	8/30/23	JMP		



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REGISTERED PROFESSIONAL ENGINEER
REGISTERED LAND SURVEYOR

REGISTERED PROFESSIONAL ENGINEER
REGISTERED LAND SURVEYOR

SITE DEVELOPMENT PLAN
LANDSCAPING PLAN

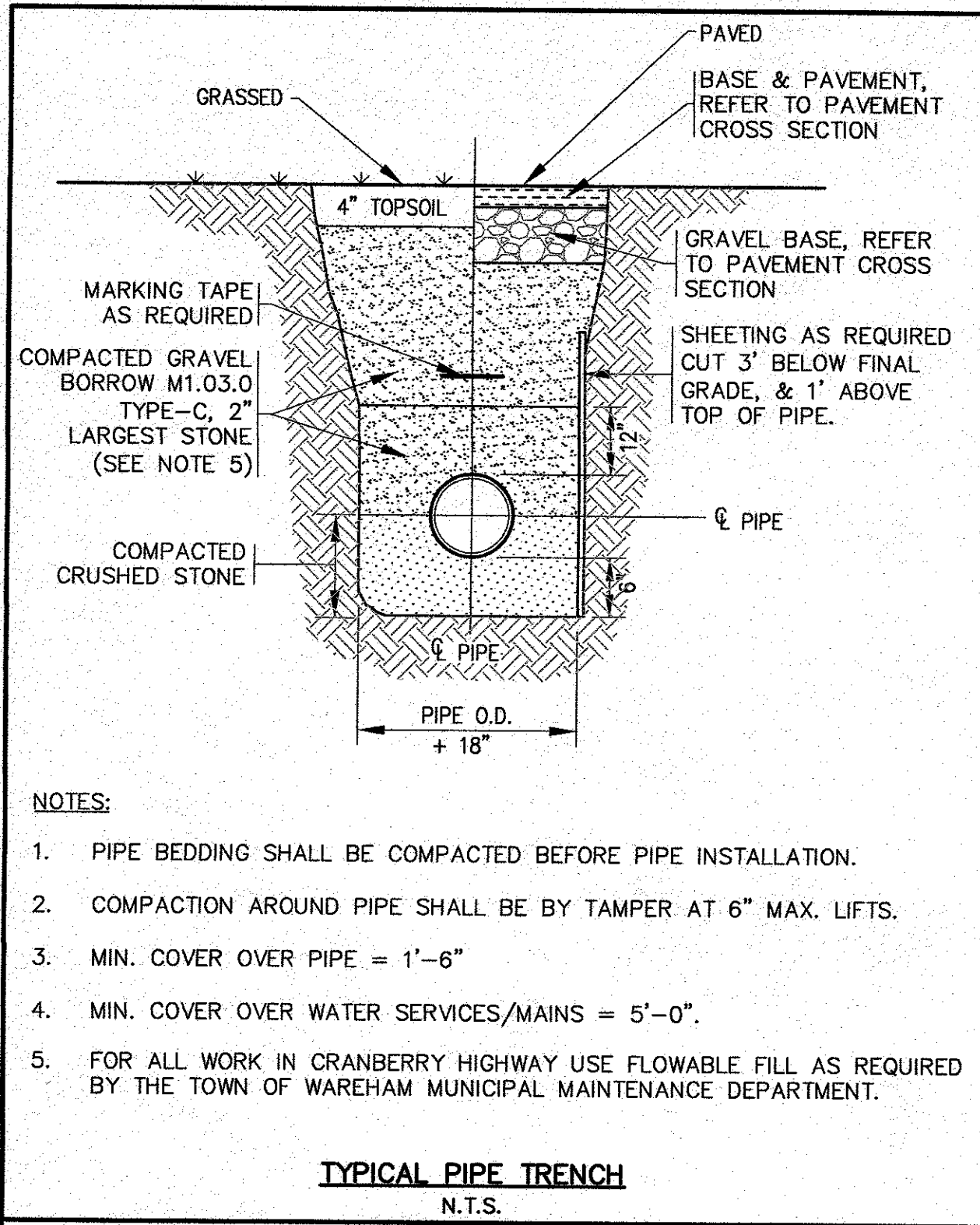
WAREHAM, MA
3127 CRANBERRY HIGHWAY

PREPARED FOR:
PETER KOULOURAS
N. FALMOUTH, MA
P.O. BOX 961

JOB NO.: 22-9890

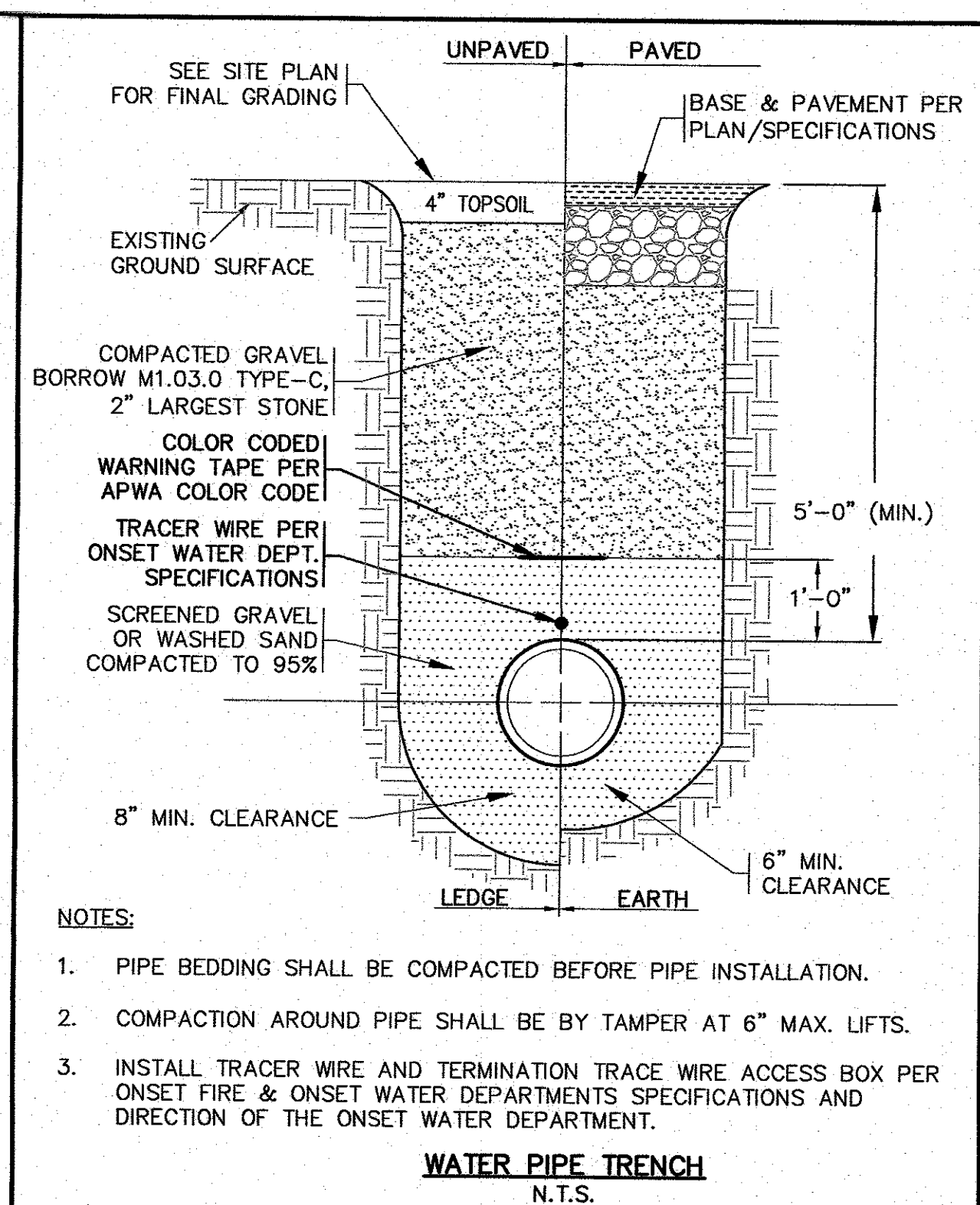
PERMIT SET (NOT FOR CONSTRUCTION)

DWG. 7 OF 10



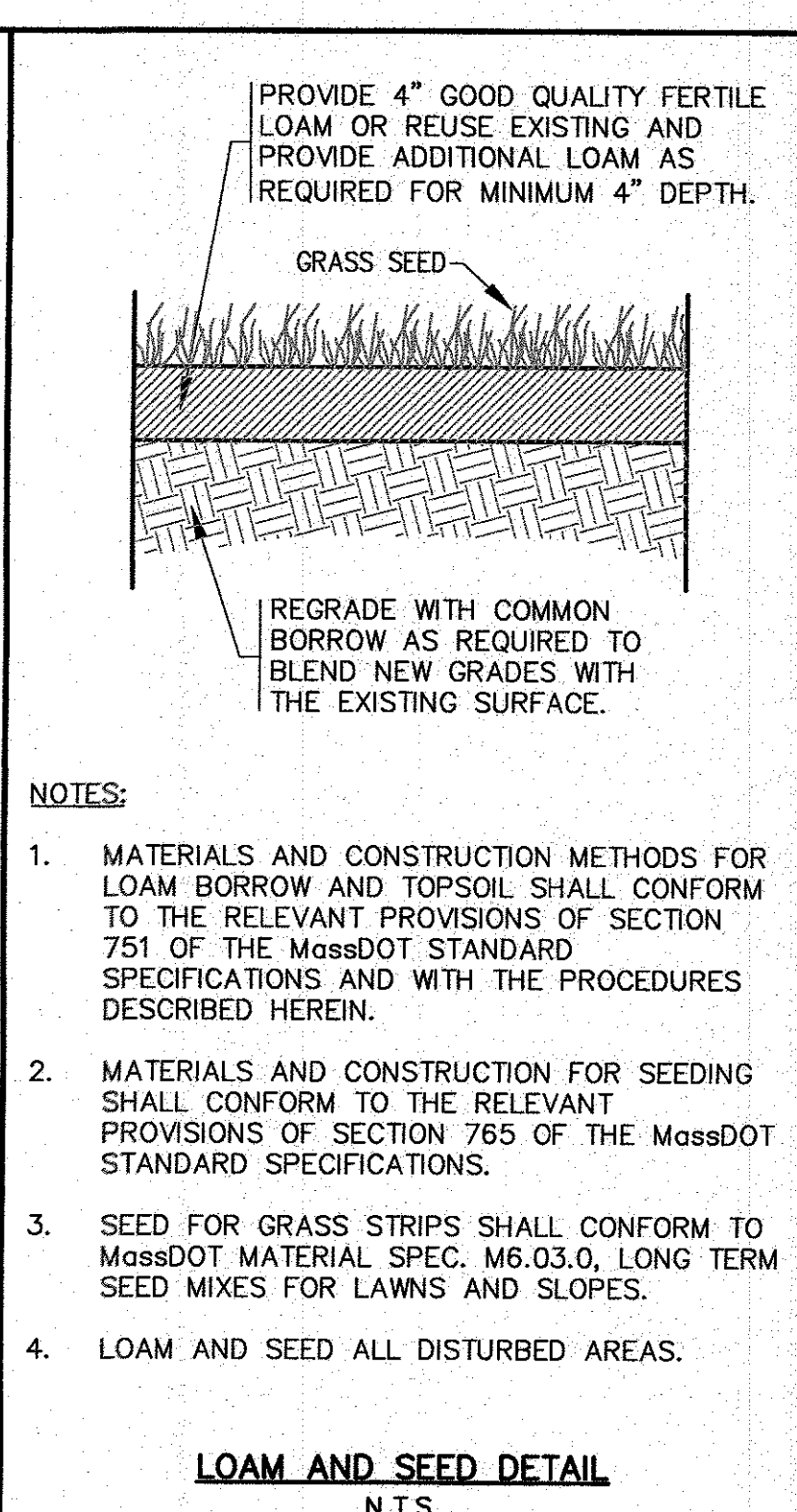
- NOTES:**
- PIPE BEDDING SHALL BE COMPACTED BEFORE PIPE INSTALLATION.
 - COMPACTION AROUND PIPE SHALL BE BY TAMPER AT 6" MAX. LIFTS.
 - MIN. COVER OVER PIPE = 1'-6"
 - MIN. COVER OVER WATER SERVICES/MAINS = 5'-0"
 - FOR ALL WORK IN CRANBERRY HIGHWAY USE FLOWABLE FILL AS REQUIRED BY THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.

TYPICAL PIPE TRENCH
N.T.S.



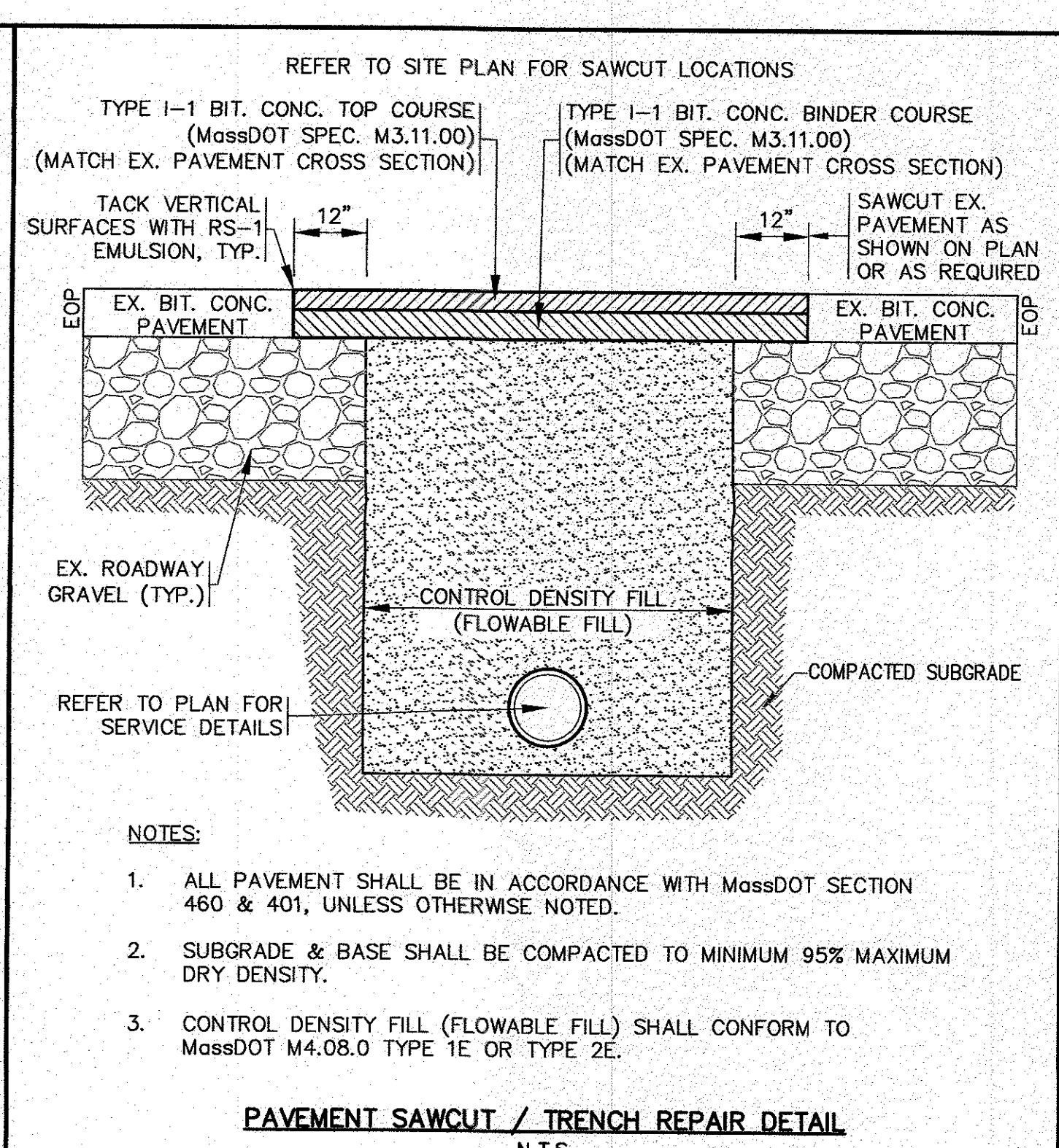
- NOTES:**
- PIPE BEDDING SHALL BE COMPACTED BEFORE PIPE INSTALLATION.
 - COMPACTION AROUND PIPE SHALL BE BY TAMPER AT 6" MAX. LIFTS.
 - INSTALL TRACER WIRE AND TERMINATION TRACE WIRE ACCESS BOX PER ONSET FIRE & ONSET WATER DEPARTMENTS SPECIFICATIONS AND DIRECTION OF THE ONSET WATER DEPARTMENT.

WATER PIPE TRENCH
N.T.S.



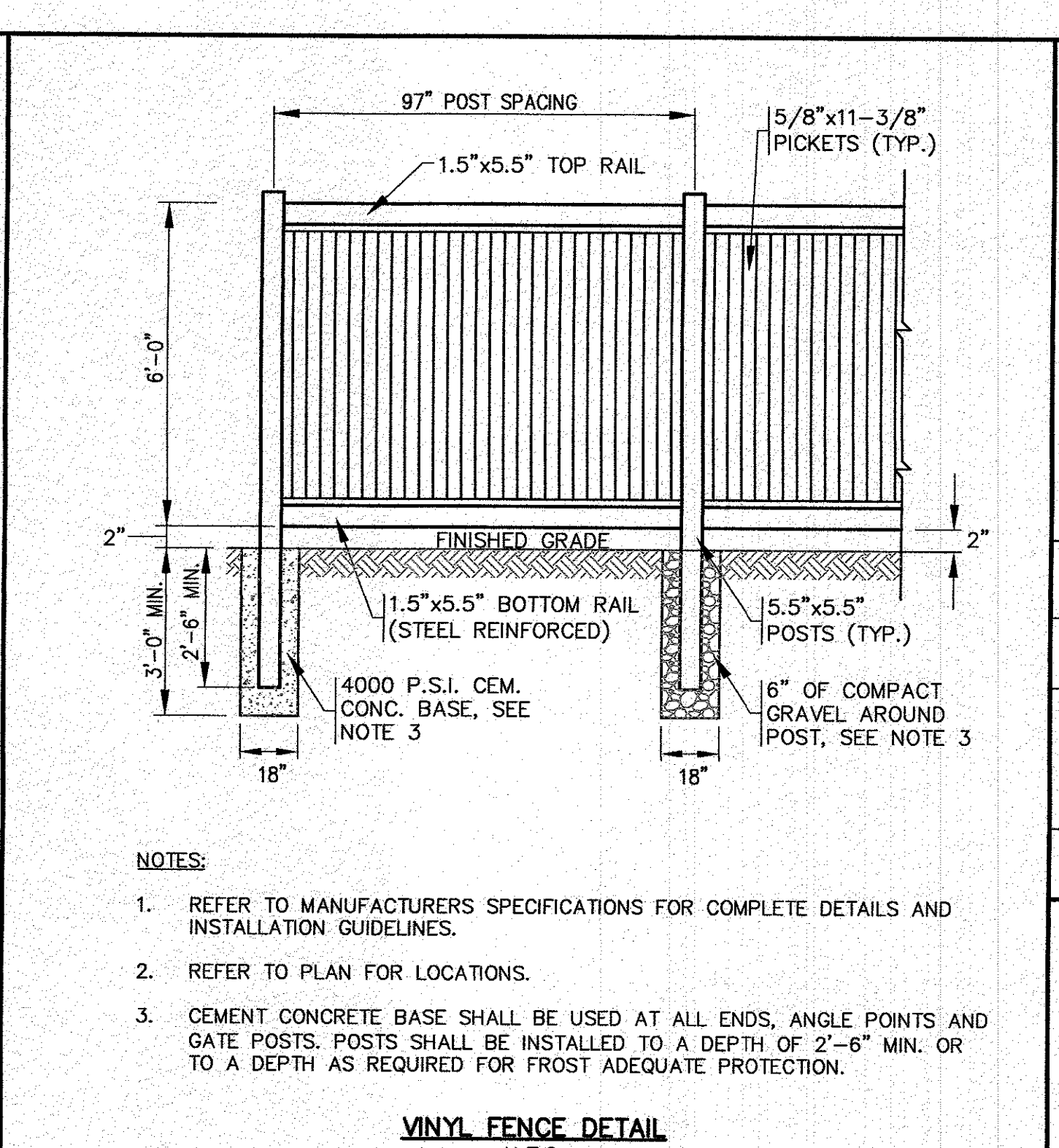
- NOTES:**
- MATERIALS AND CONSTRUCTION METHODS FOR LOAM BORROW AND TOPSOIL SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 751 OF THE MassDOT STANDARD SPECIFICATIONS AND WITH THE PROCEDURES DESCRIBED HEREIN.
 - MATERIALS AND CONSTRUCTION FOR SEEDING SHALL CONFORM TO THE RELEVANT PROVISIONS OF SECTION 765 OF THE MassDOT STANDARD SPECIFICATIONS.
 - SEED FOR GRASS STRIPS SHALL CONFORM TO MassDOT MATERIAL SPEC. M6.03.0, LONG TERM SEED MIXES FOR LAWNS AND SLOPES.
 - LOAM AND SEED ALL DISTURBED AREAS.

LOAM AND SEED DETAIL
N.T.S.



- NOTES:**
- ALL PAVEMENT SHALL BE IN ACCORDANCE WITH MassDOT SECTION 460 & 401, UNLESS OTHERWISE NOTED.
 - SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
 - CONTROL DENSITY FILL (FLOWABLE FILL) SHALL CONFORM TO MassDOT M4.08.0 TYPE 1E OR TYPE 2E.

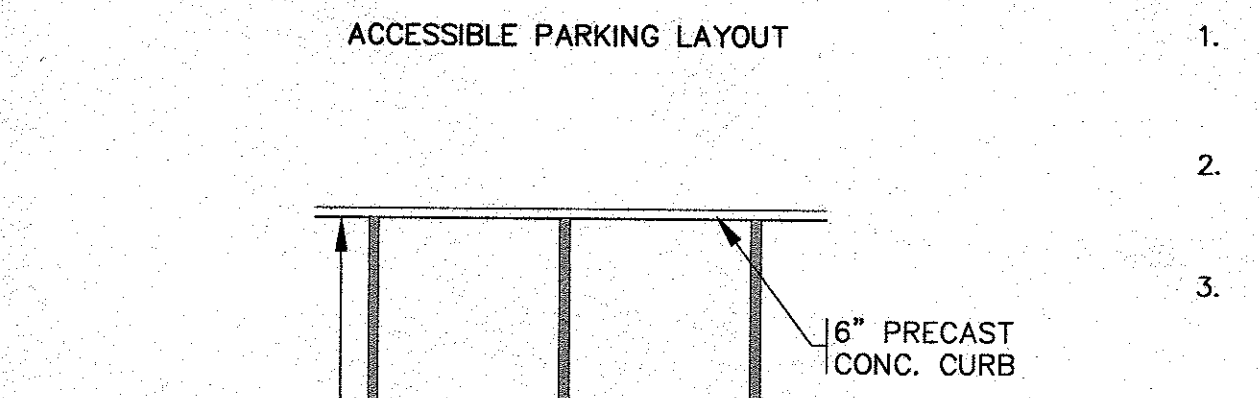
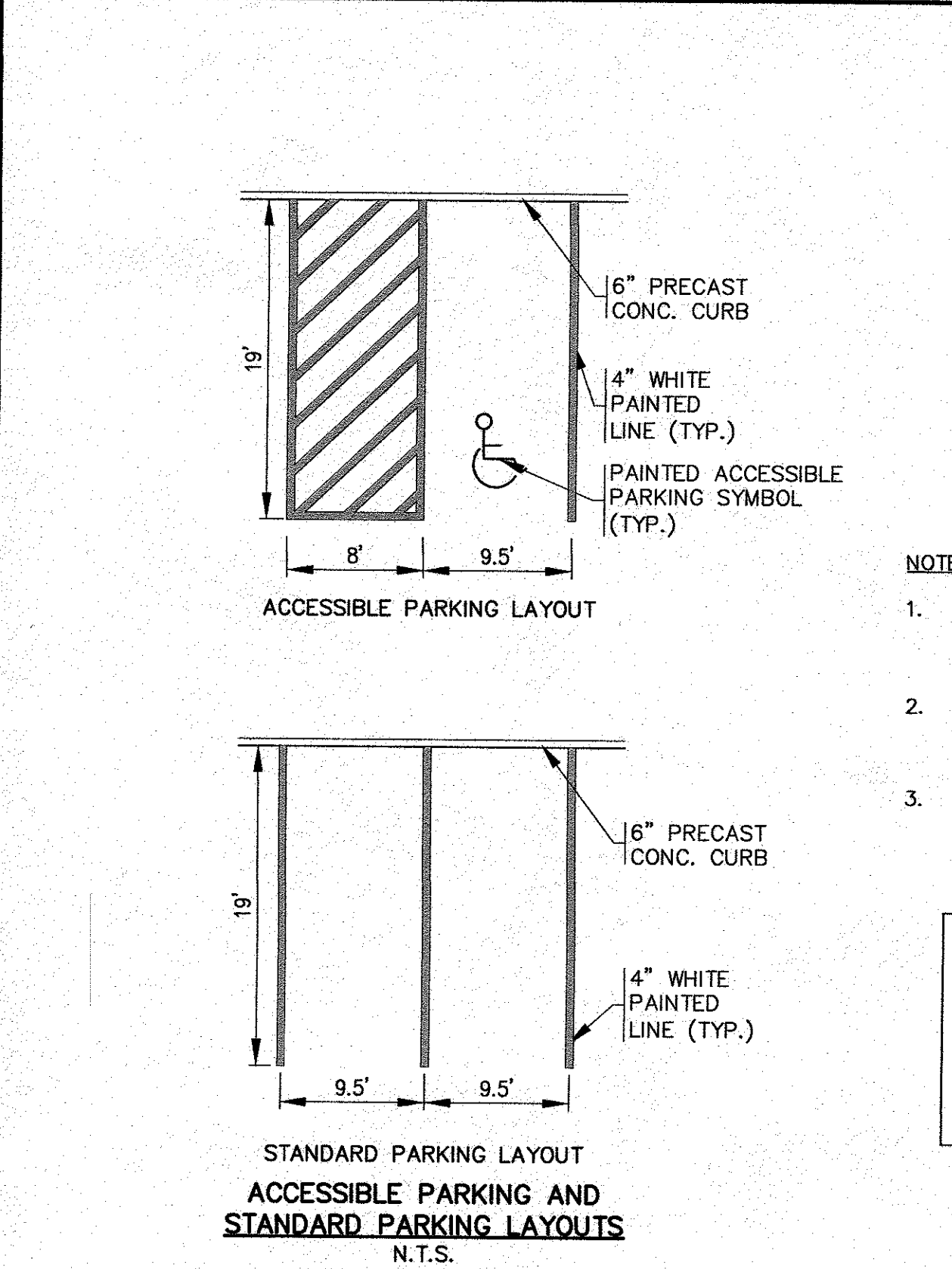
PAVEMENT SAWCUT / TRENCH REPAIR DETAIL
N.T.S.



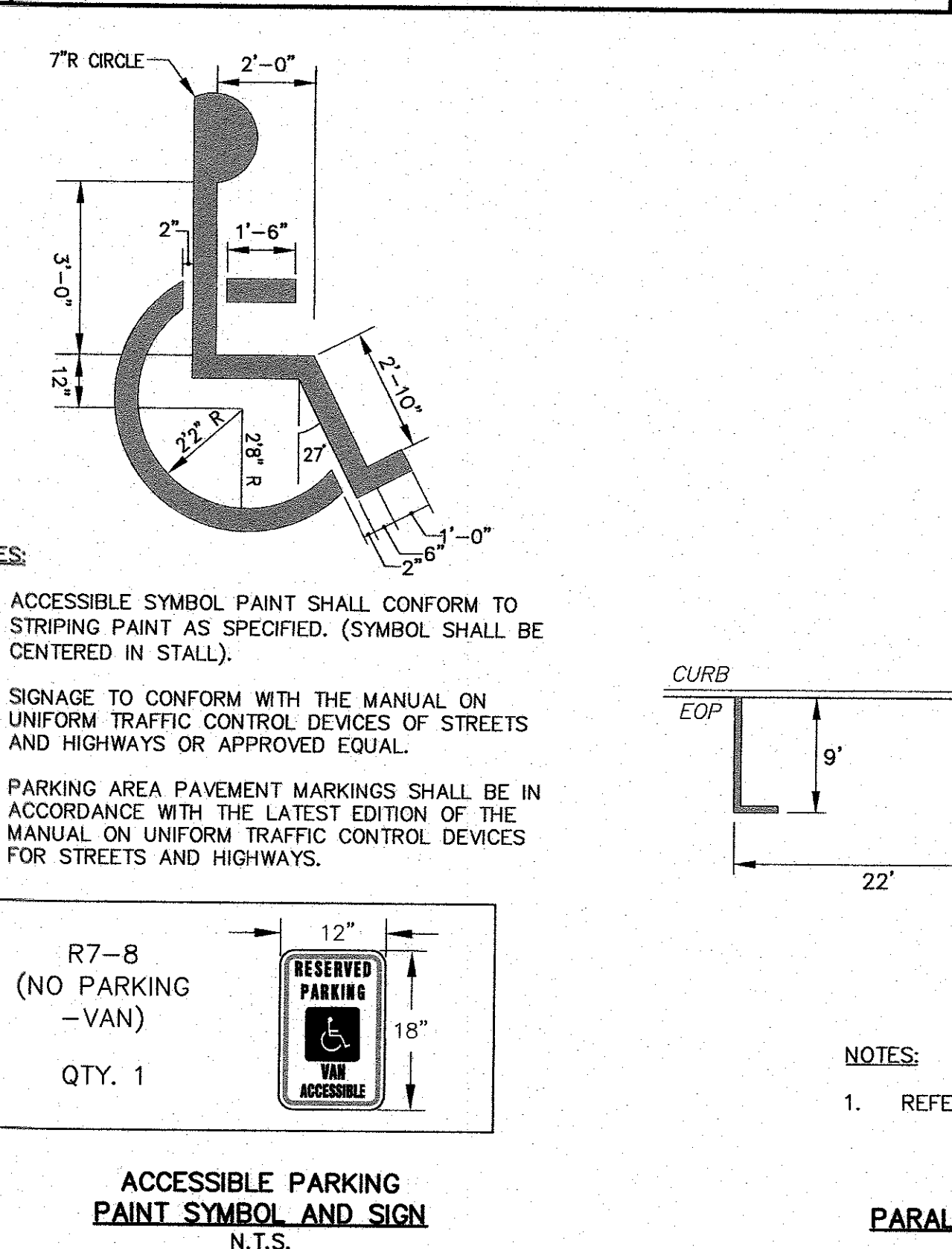
- NOTES:**
- REFER TO MANUFACTURERS SPECIFICATIONS FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES.
 - REFER TO PLAN FOR LOCATIONS.
 - CEMENT CONCRETE BASE SHALL BE USED AT ALL ENDS, ANGLE POINTS AND GATE POSTS. POSTS SHALL BE INSTALLED TO A DEPTH OF 2'-6" MIN. OR TO A DEPTH AS REQUIRED FOR FROST ADEQUATE PROTECTION.

VINYL FENCE DETAIL
N.T.S.

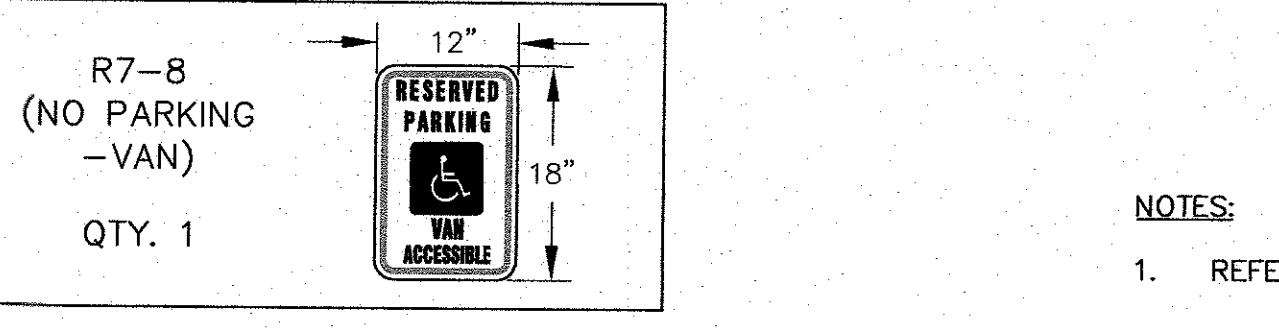
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					1	8/30/23	JWP WFM



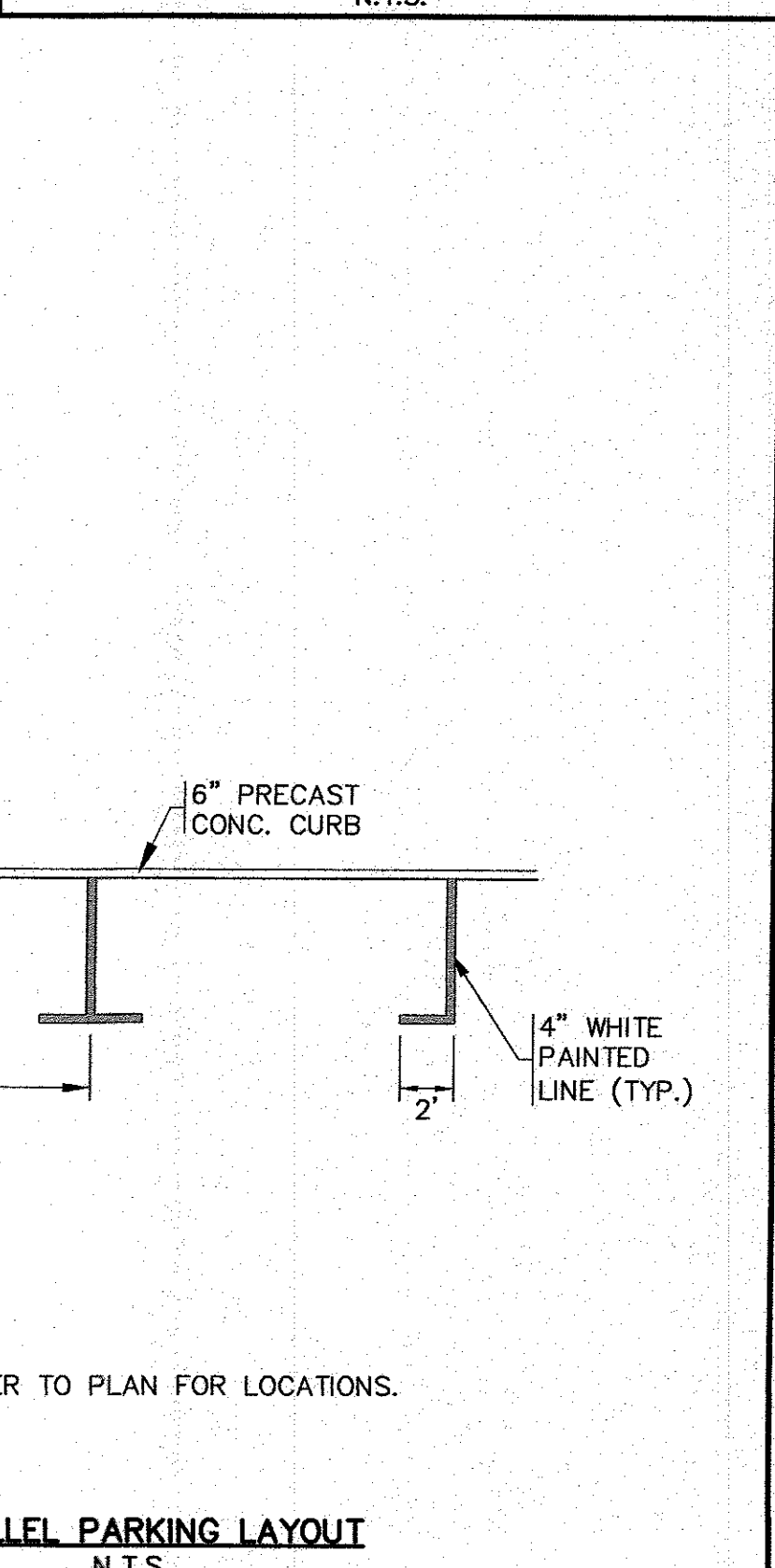
ACCESSIBLE PARKING AND STANDARD PARKING LAYOUTS
N.T.S.



- NOTES:**
- ACCESSIBLE SYMBOL PAINT SHALL CONFORM TO STRIPING PAINT AS SPECIFIED. (SYMBOL SHALL BE CENTERED IN STALL).
 - SIGNAGE TO CONFORM WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OF STREETS AND HIGHWAYS OR APPROVED EQUAL.
 - PARKING AREA PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

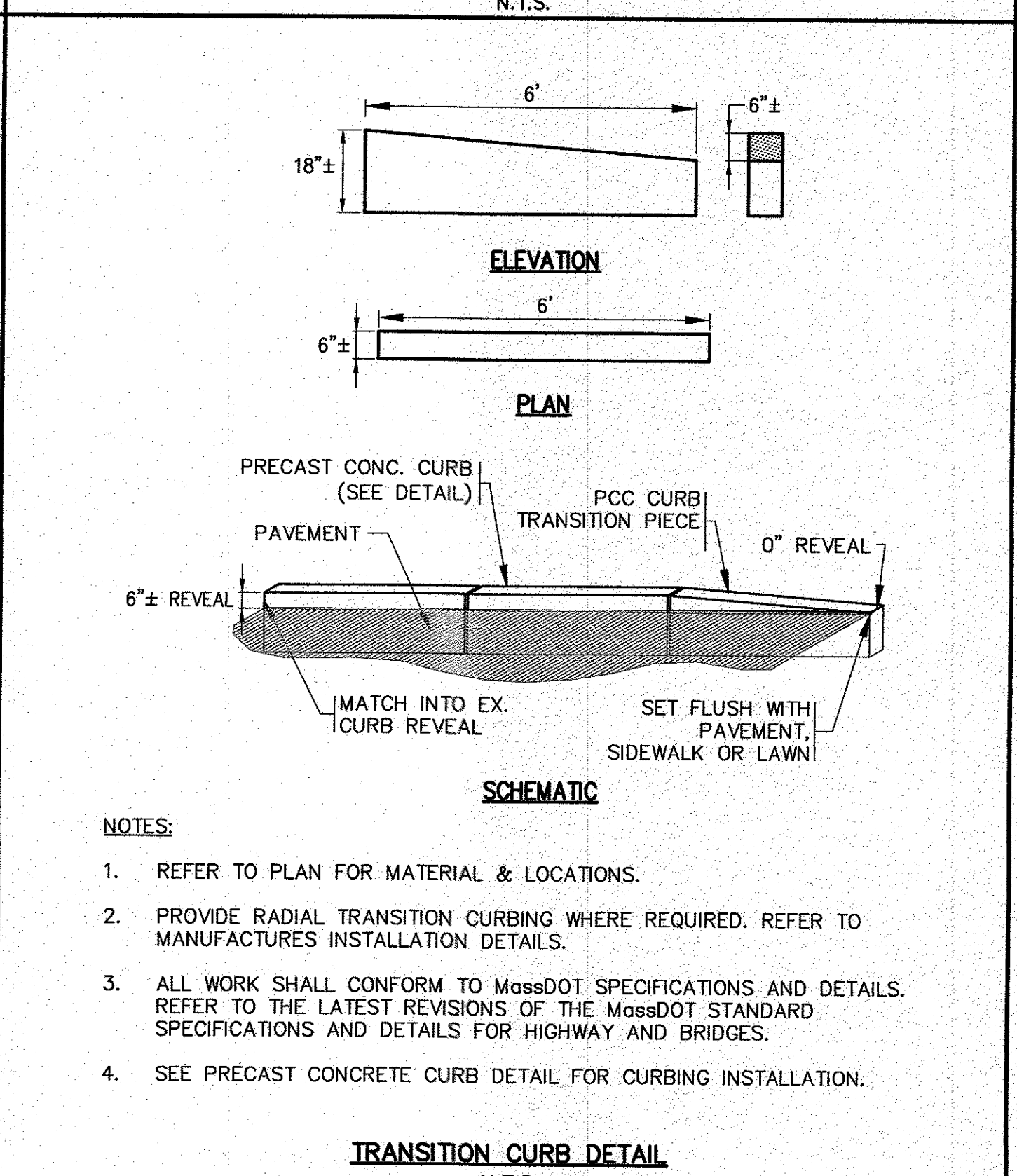


ACCESSIBLE PARKING PAINT SYMBOL AND SIGN
N.T.S.



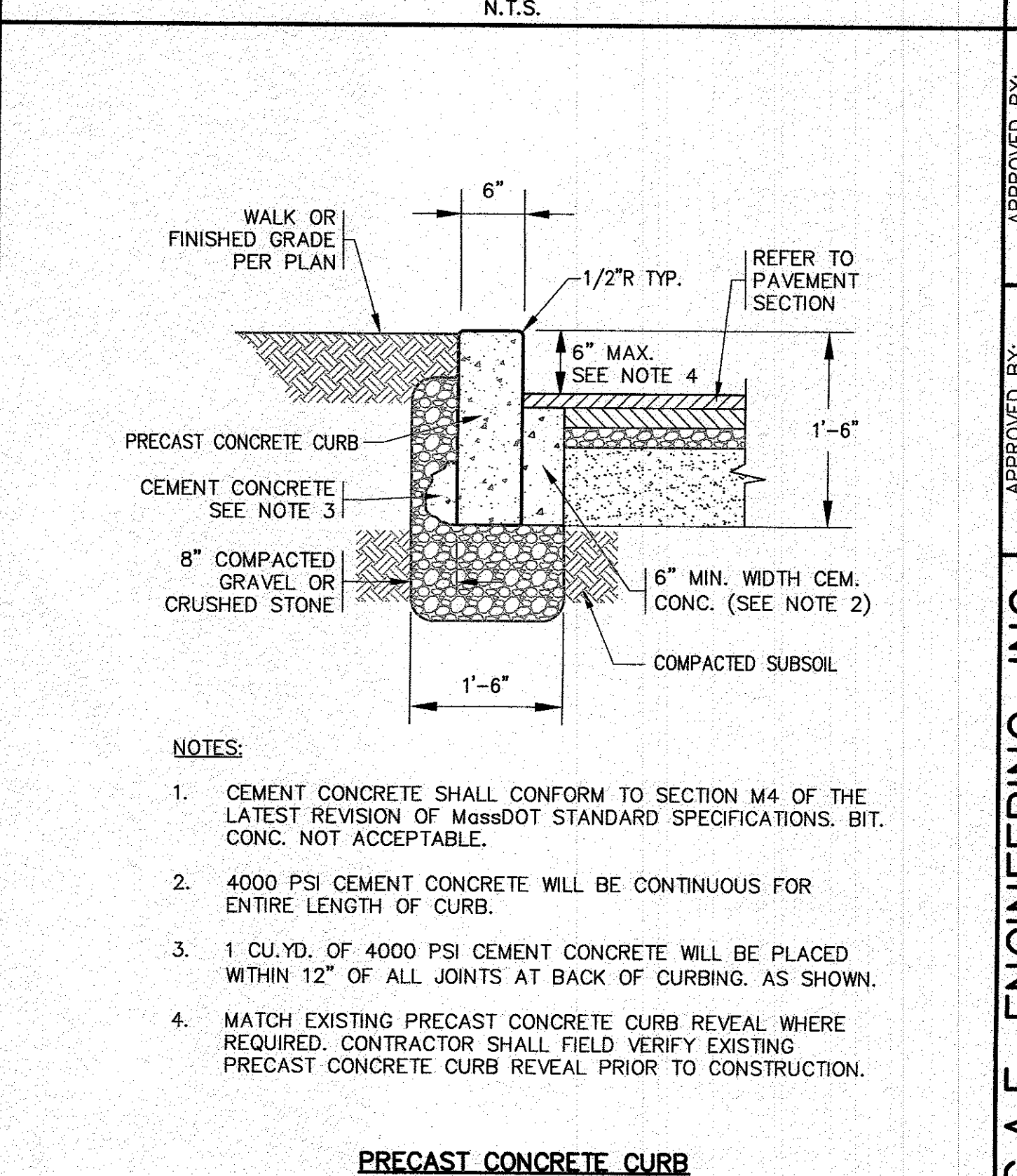
- NOTES:**
- REFER TO PLAN FOR LOCATIONS.

PARALLEL PARKING LAYOUT
N.T.S.



- NOTES:**
- REFER TO PLAN FOR MATERIAL & LOCATIONS.
 - PROVIDE RADIAL TRANSITION CURBING WHERE REQUIRED. REFER TO MANUFACTURERS INSTALLATION DETAILS.
 - ALL WORK SHALL CONFORM TO MassDOT SPECIFICATIONS AND DETAILS. REFER TO THE LATEST REVISIONS OF THE MassDOT STANDARD SPECIFICATIONS AND DETAILS FOR HIGHWAY AND BRIDGES.
 - SEE PRECAST CONCRETE CURB DETAIL FOR CURBING INSTALLATION.

TRANSITION CURB DETAIL
N.T.S.



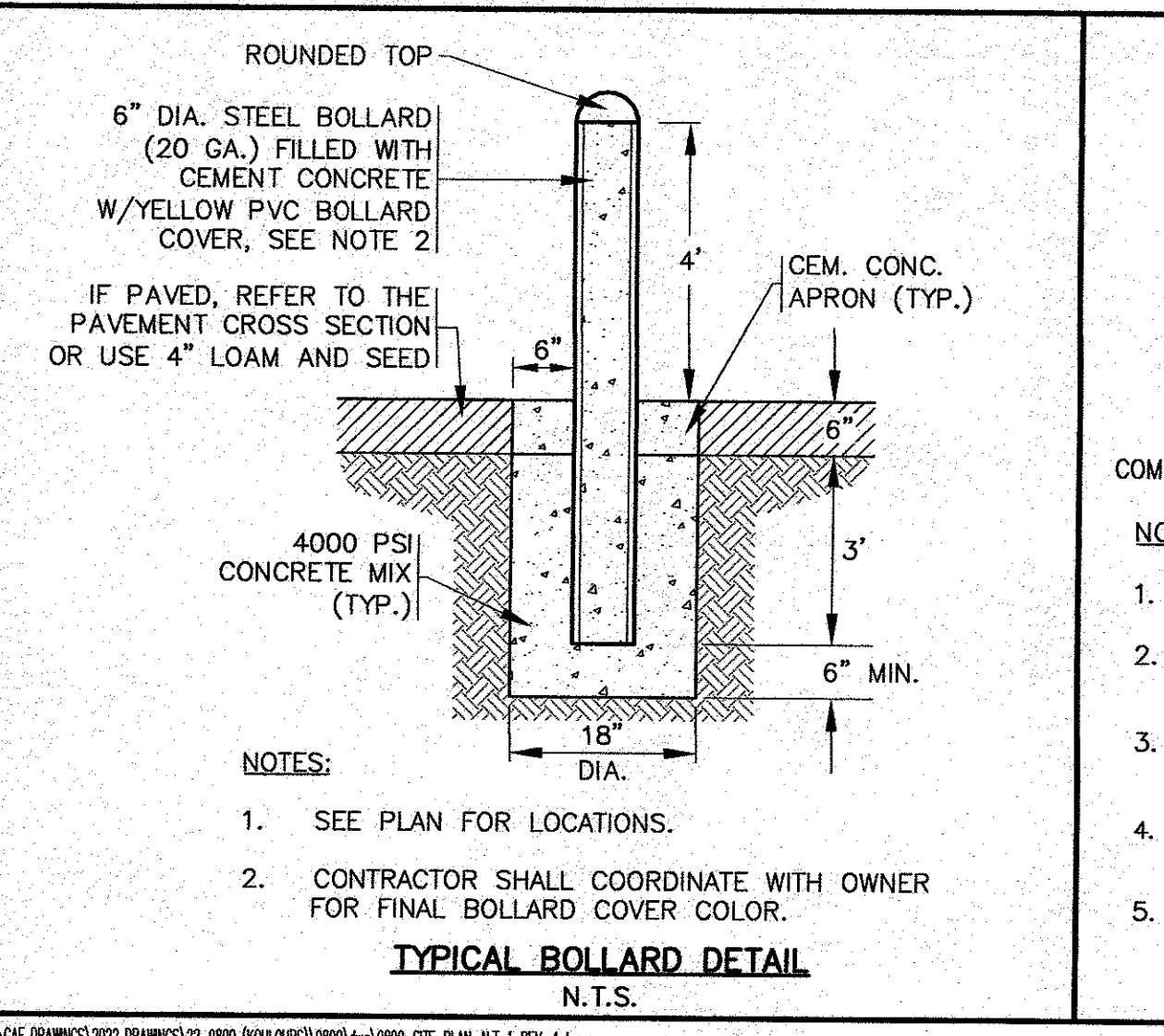
- NOTES:**
- CEMENT CONCRETE SHALL CONFORM TO SECTION M4 OF THE LATEST REVISION OF MassDOT STANDARD SPECIFICATIONS. BIT. CONC. NOT ACCEPTABLE.
 - 4000 PSI CEMENT CONCRETE WILL BE CONTINUOUS FOR ENTIRE LENGTH OF CURB.
 - 1 CU.YD. OF 4000 PSI CEMENT CONCRETE WILL BE PLACED WITHIN 12" OF ALL JOINTS AT BACK OF CURBING. AS SHOWN.
 - MATCH EXISTING PRECAST CONCRETE CURB REVEAL WHERE REQUIRED. CONTRACTOR SHALL FIELD VERIFY EXISTING PRECAST CONCRETE CURB REVEAL PRIOR TO CONSTRUCTION.

PRECAST CONCRETE CURB
N.T.S.

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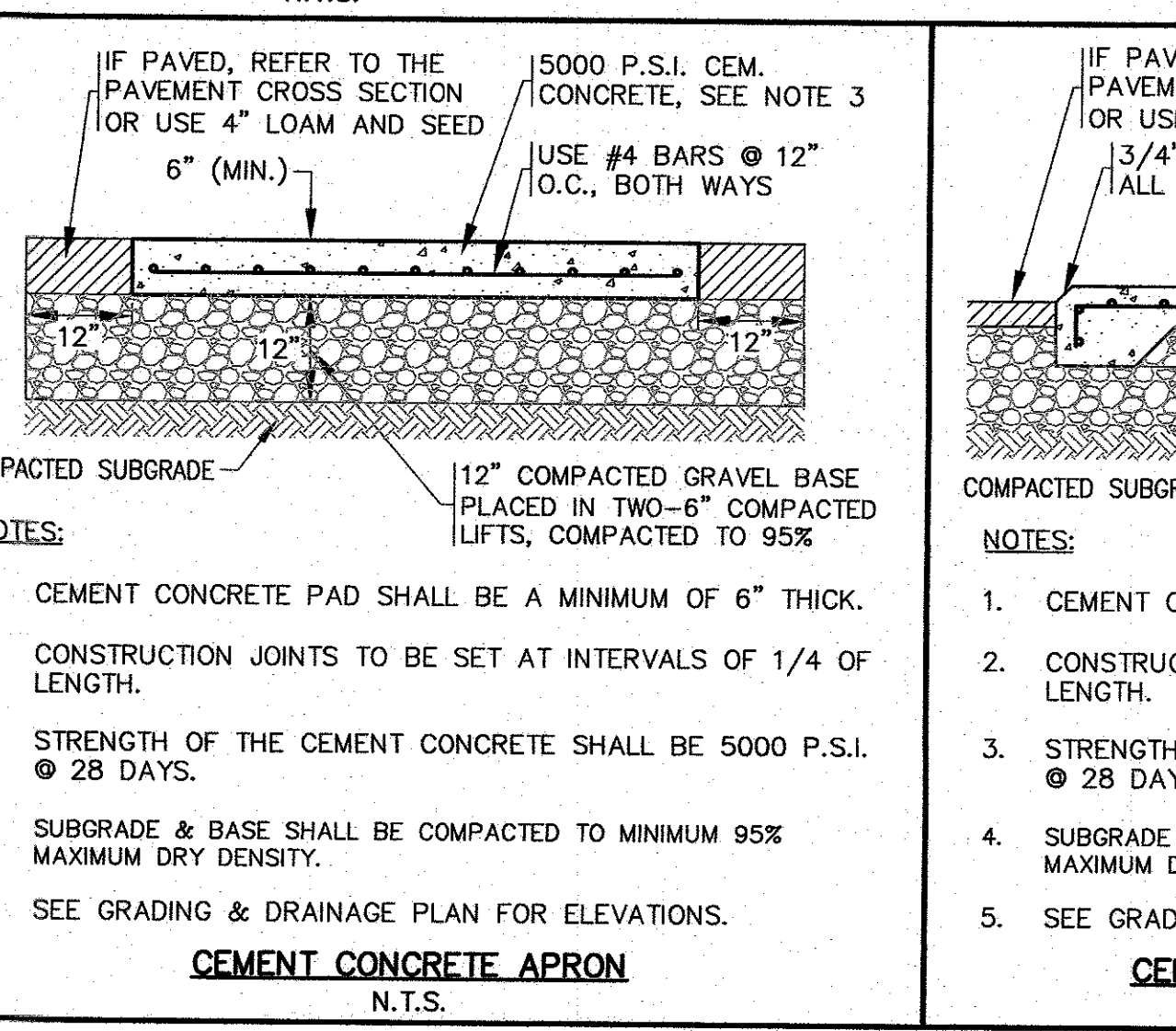
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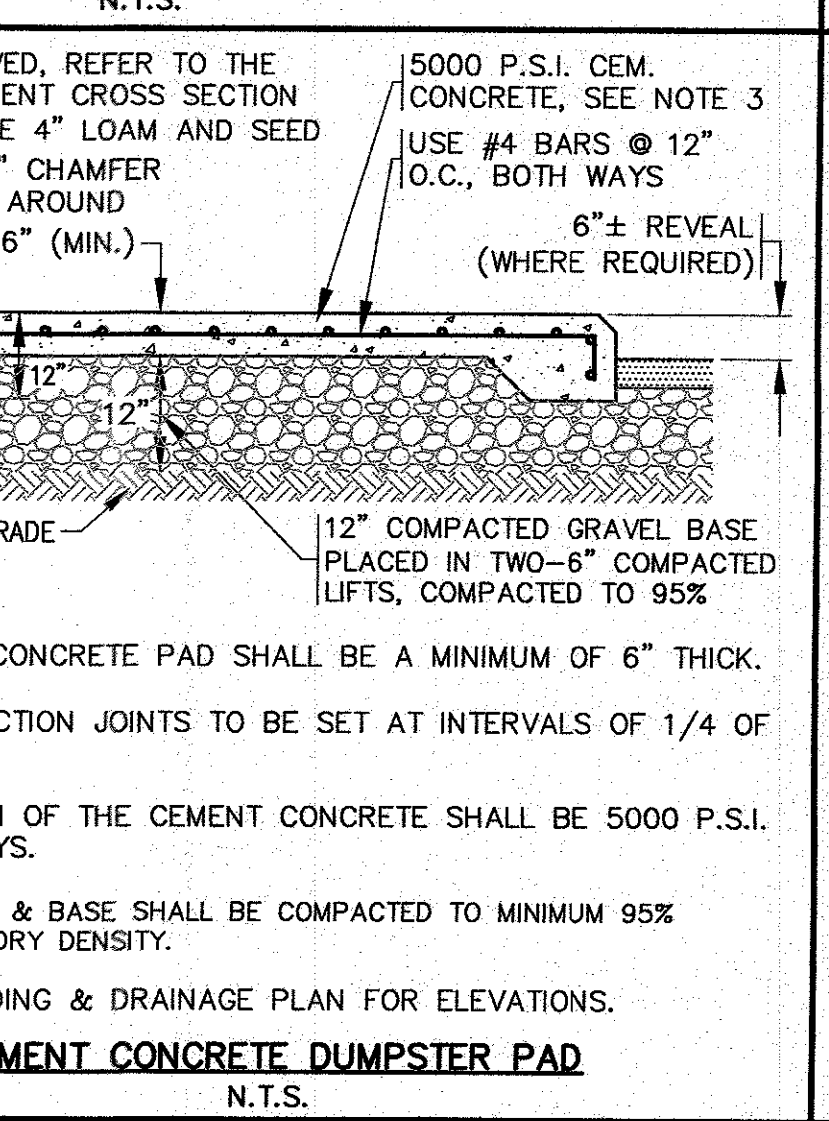
- NOTES:**
- SEE PLAN FOR LOCATIONS.
 - CONTRACTOR SHALL COORDINATE WITH OWNER FOR FINAL BOLLARD COVER COLOR.

TYPICAL BOLLARD DETAIL
N.T.S.



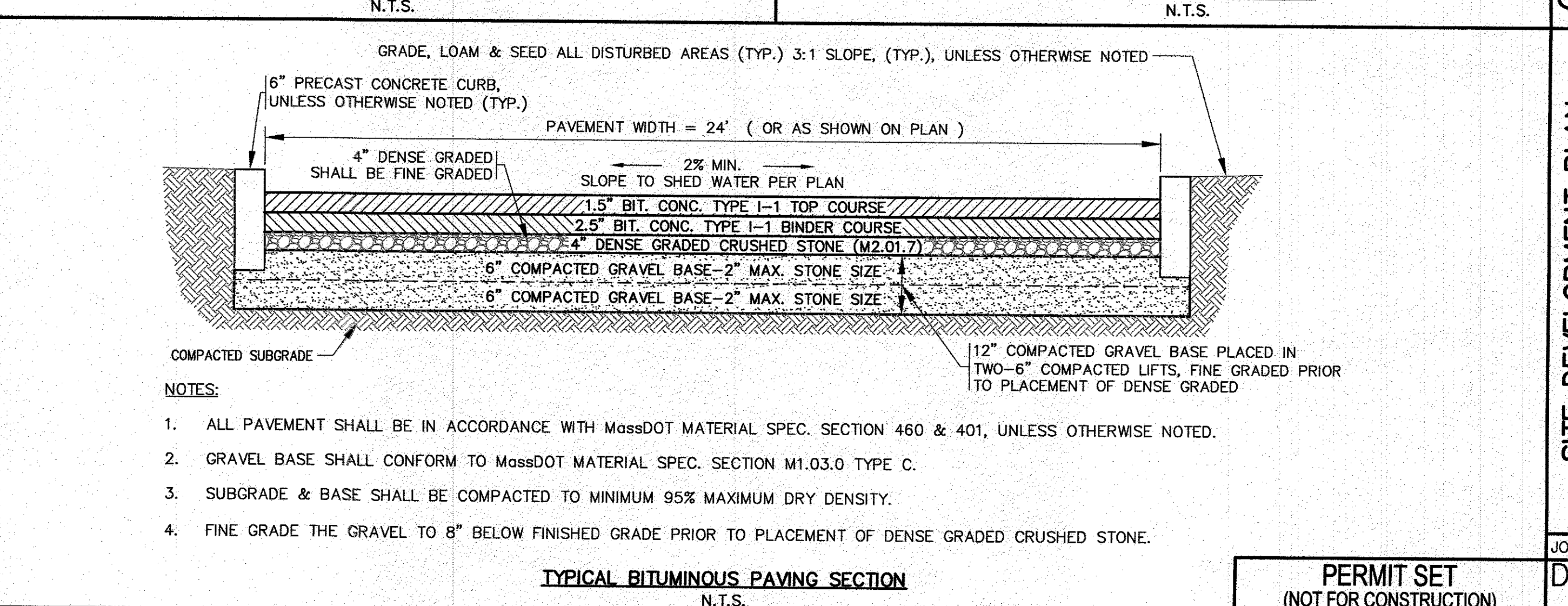
- NOTES:**
- CEMENT CONCRETE PAD SHALL BE A MINIMUM OF 6" THICK.
 - CONSTRUCTION JOINTS TO BE SET AT INTERVALS OF 1/4 OF LENGTH.
 - STRENGTH OF THE CEMENT CONCRETE SHALL BE 5000 P.S.I. @ 28 DAYS.
 - SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
 - SEE GRADING & DRAINAGE PLAN FOR ELEVATIONS.

CEMENT CONCRETE APRON
N.T.S.



- NOTES:**
- CEMENT CONCRETE PAD SHALL BE A MINIMUM OF 6" THICK.
 - CONSTRUCTION JOINTS TO BE SET AT INTERVALS OF 1/4 OF LENGTH.
 - STRENGTH OF THE CEMENT CONCRETE SHALL BE 5000 P.S.I. @ 28 DAYS.
 - SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
 - SEE GRADING & DRAINAGE PLAN FOR ELEVATIONS.

CEMENT CONCRETE DUMPSTER PAD
N.T.S.



- NOTES:**
- ALL PAVEMENT SHALL BE IN ACCORDANCE WITH MassDOT MATERIAL SPEC. SECTION 460 & 401, UNLESS OTHERWISE NOTED.
 - GRAVEL BASE SHALL CONFORM TO MassDOT MATERIAL SPEC. SECTION M1.03.0 TYPE C.
 - SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
 - FINE GRADE THE GRAVEL TO 8" BELOW FINISHED GRADE PRIOR TO PLACEMENT OF DENSE GRADED CRUSHED STONE.

TYPICAL BITUMINOUS PAVING SECTION
N.T.S.

PERMIT SET
(NOT FOR CONSTRUCTION)

SITE DEVELOPMENT PLAN
DETAIL SHEET 1

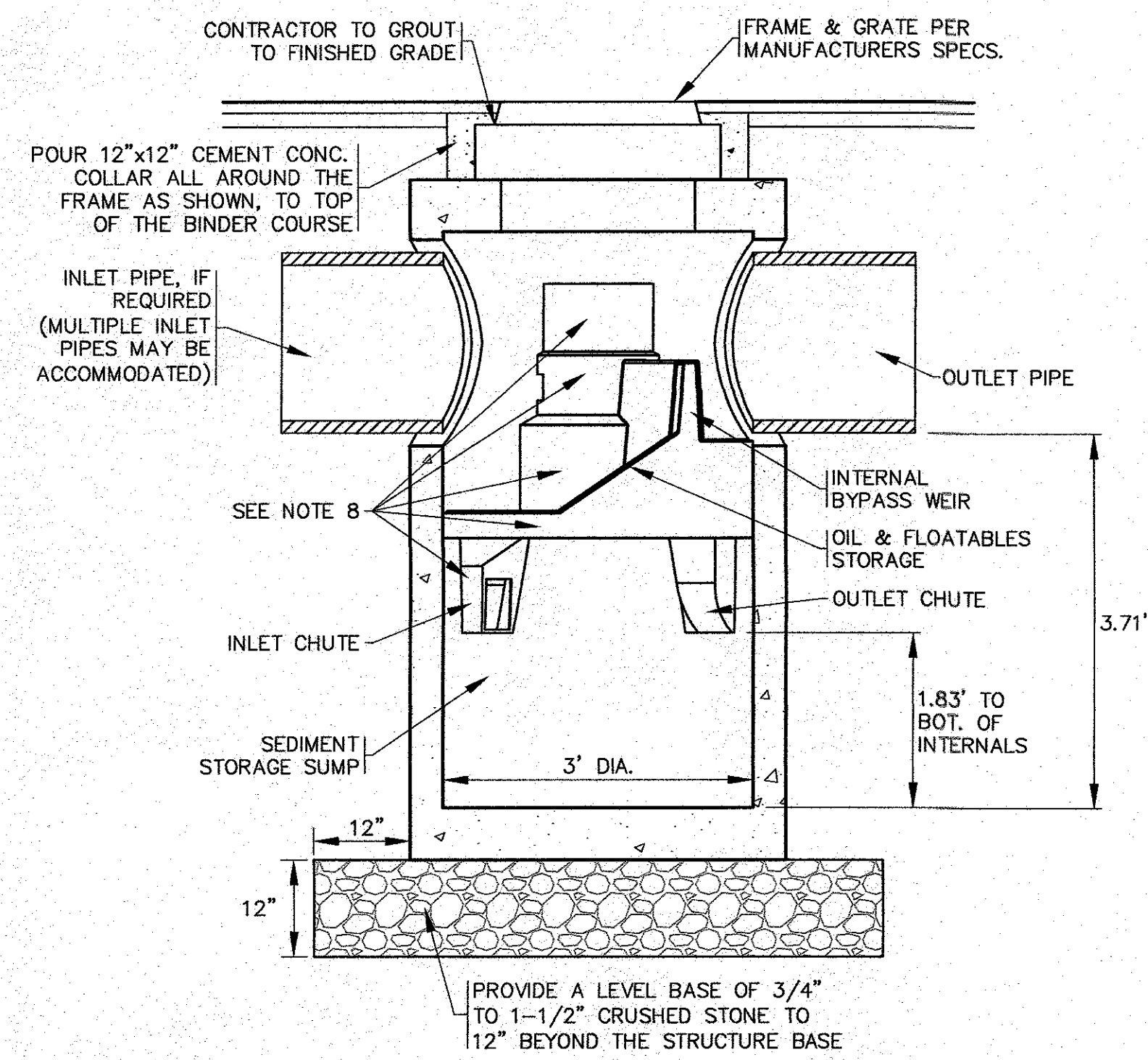
PREPARED FOR:
PETER KOULOURAS
3127 CRANBERRY HIGHWAY
WAREHAM, MA
N. FALMOUTH, MA

JOB NO.: 22-9890

DWG. 8 OF 10

H:\GAF DRAWINGS\2022 DRAWINGS\22-9890 (KOULOURAS)\9890.dwg (8/30/23) SITE PLAN_A1-REV-1.dwg

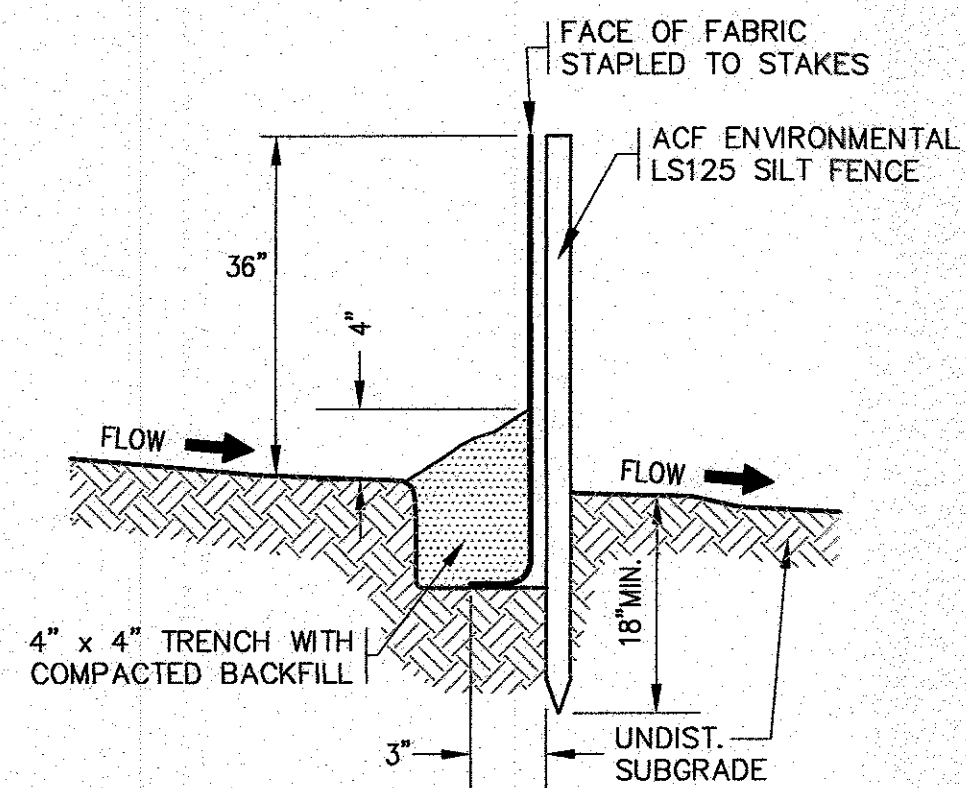
PERMIT SET
(NOT FOR CONSTRUCTION)



NOTE: CONTRACTOR SHALL OBTAIN SHOP DRAWINGS FROM MANUFACTURER PRIOR TO CONSTRUCTION.

FIRST DEFENSE FDHC-3 UNIT (WATER QUALITY CATCH BASIN)
N.T.S.

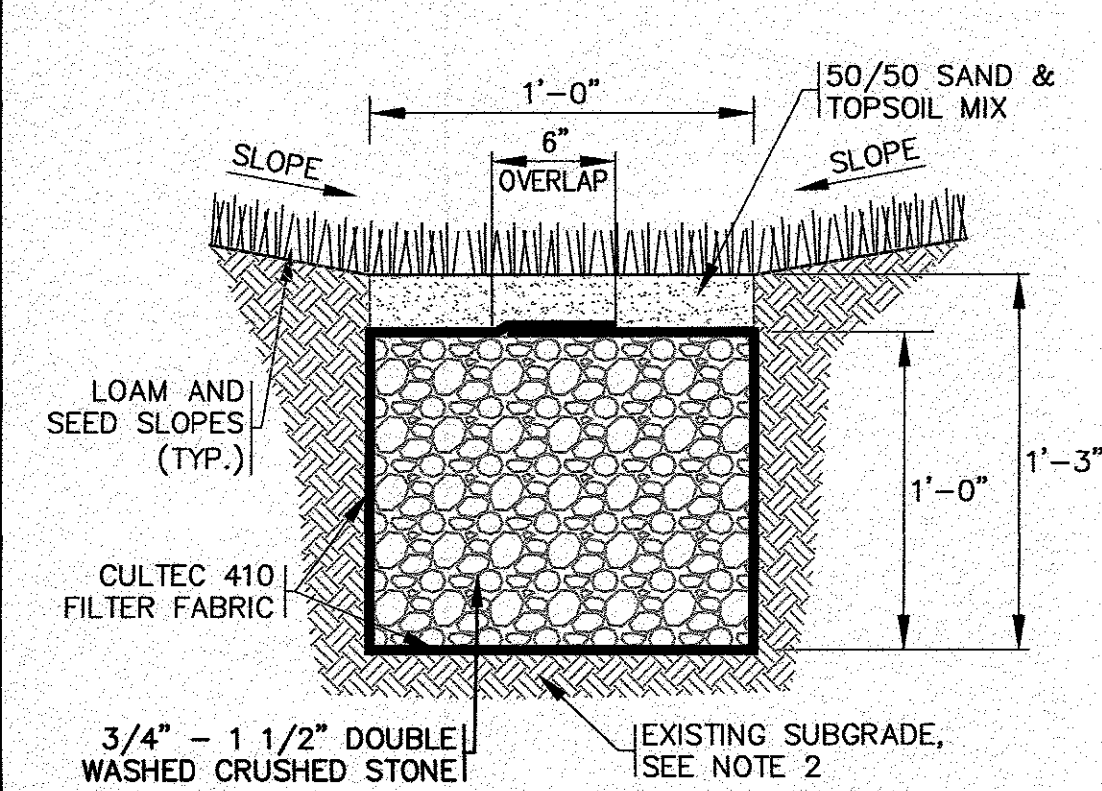
- GENERAL NOTES:**
- GENERAL ARRANGEMENT DRAWINGS ONLY. CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS.
 - THE DIAMETER OF THE INLET AND OUTLET PIPES MAY BE NO MORE THAN 18". REFER TO PLAN FOR PIPE SIZES.
 - MULTIPLE INLET PIPES POSSIBLE (REFER TO PROJECT PLAN).
 - INLET/OUTLET PIPE ANGLE CAN VARY TO ALIGN WITH DRAINAGE NETWORK (REFER TO PROJECT PLANS).
 - PEAK FLOW RATE AND MINIMUM HEIGHT LIMITED BY AVAILABLE COVER AND PIPE DIAMETER.
 - LARGER SEDIMENT STORAGE CAPACITY MAY BE PROVIDED WITH DEEPER SUMP DEPTH.
 - THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
 - REFER TO MANUFACTURERS SHOP DRAWINGS FOR COMPLETE DETAILS, DIMENSIONS AND SYSTEM PARTS.
 - FIRST DEFENSE STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING. ALL CASTINGS SHALL MEET AASHTO M306 AND HYDRO INTERNATIONAL SPECIFICATIONS.
 - FIRST DEFENSE UNIT SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- INSTALLATION NOTES:**
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
 - 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.
 - FOR COMPLETE INSTALLATION DETAILS REFER TO THE MANUFACTURERS INSTALLATION SPECIFICATIONS.
 - REFER TO GRADING & DRAINAGE PLAN FOR LOCATION, ELEVATIONS AND INVERTS.



- NOTES:**
- SILTATION FENCE SHALL BE ACF ENVIRONMENTAL LS125 SILT FENCE OR AN APPROVED EQUAL.
 - SILTATION FENCING SHALL BE INSTALLED DOWNSLOPE OF ALL PROPOSED AND EXISTING DISTURBED AREAS, OR AS SHOWN ON THE PLANS.
 - EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATIVE OR STABILIZED COVER HAS BEEN FIRMLY ESTABLISHED.
 - EROSION CONTROL MEASURES SHALL FOLLOW THE PERFORMANCE STANDARDS OF THE USDA SOIL CONSERVATION SERVICE, AND ANY APPLICABLE STATE/LOCAL CONSERVATION AUTHORITY.

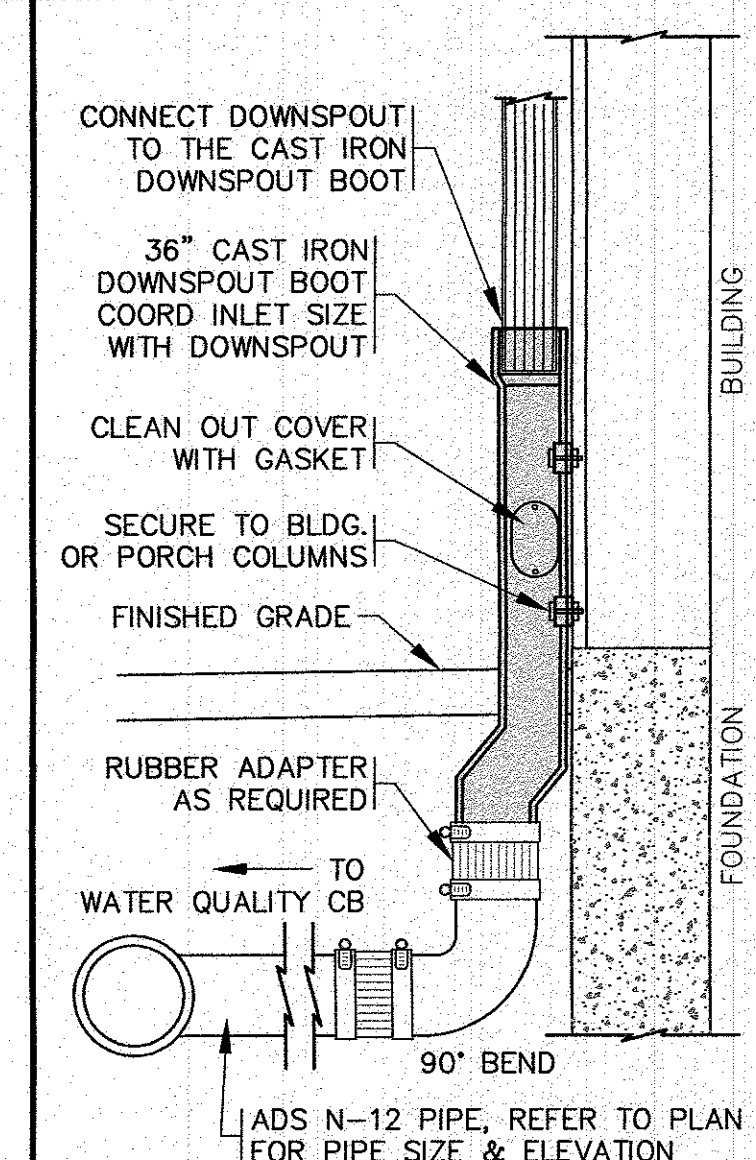
EROSION CONTROL BARRIER DETAIL
N.T.S.

STORM EVENT	ELEVATION
2 YEAR STORM	35.40
10 YEAR STORM	36.52
25 YEAR STORM	37.26
100 YEAR STORM	38.47



- NOTES:**
- REFER TO PLAN FOR LOCATIONS AND ELEVATIONS.
 - WHERE REQUIRED CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS 2' AROUND AND BENEATH STONE TRENCH AND REPLACE WITH CLEAN SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.

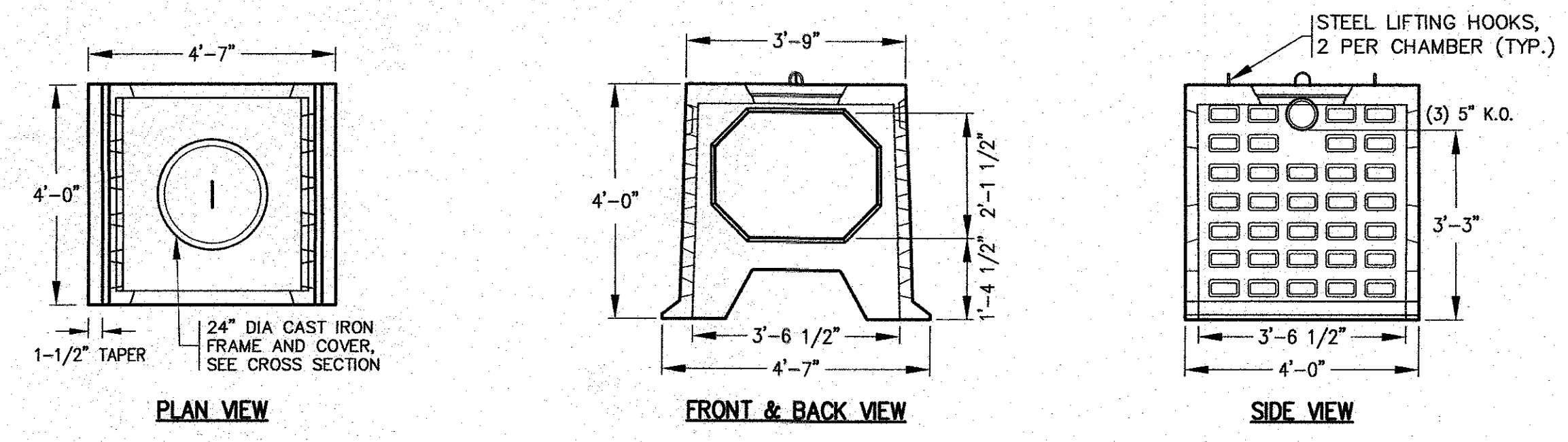
FRENCH DRAIN DETAIL
N.T.S.



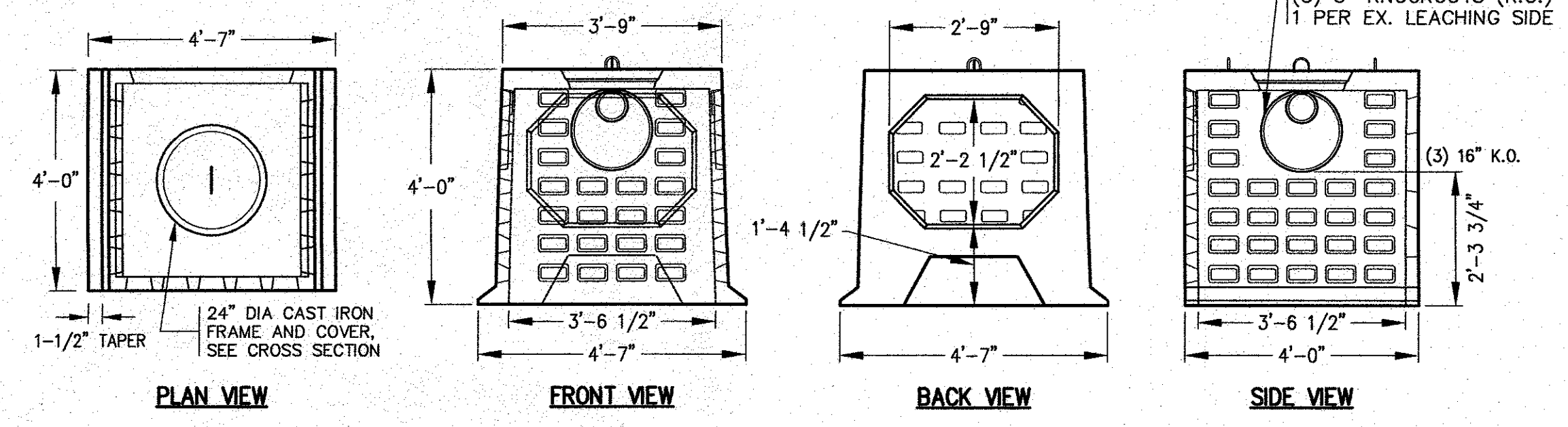
- NOTES:**
- REFER TO SITE PLAN FOR LOCATIONS, PIPE SIZES, INVERTS, ETC.
 - REFER TO ARCHITECTURAL PLANS FOR DOWNSPOUT SIZES AND LOCATIONS.

DOWNSPOUT DETAIL
N.T.S.

DATE: MAY 25, 2023	DRAWN BY: JMP	CHECKED BY: WFM	JOB NO.: 22-9890	SCALE: N.T.S.	REV. 1	DATE: 8/30/23	BY: JMP	DESCRIPTION: PER PEER REVIEW COMMENTS
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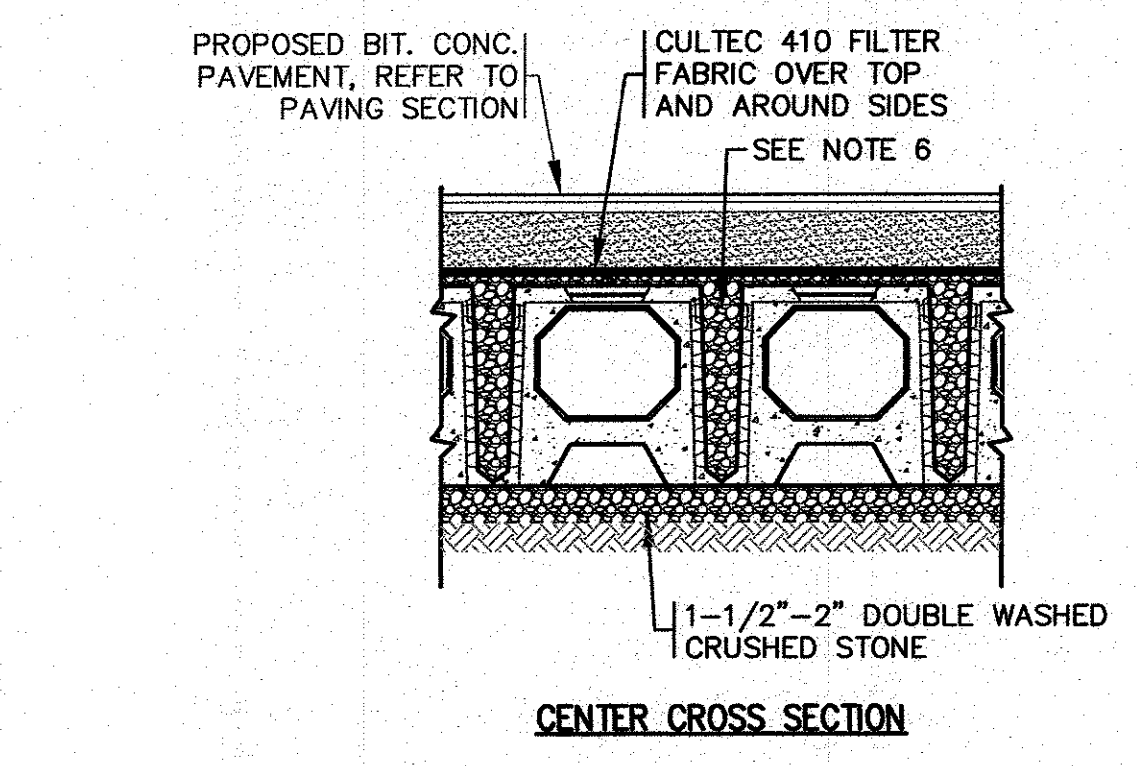
LEACHING GALLEY CENTER SECTION
N.T.S.



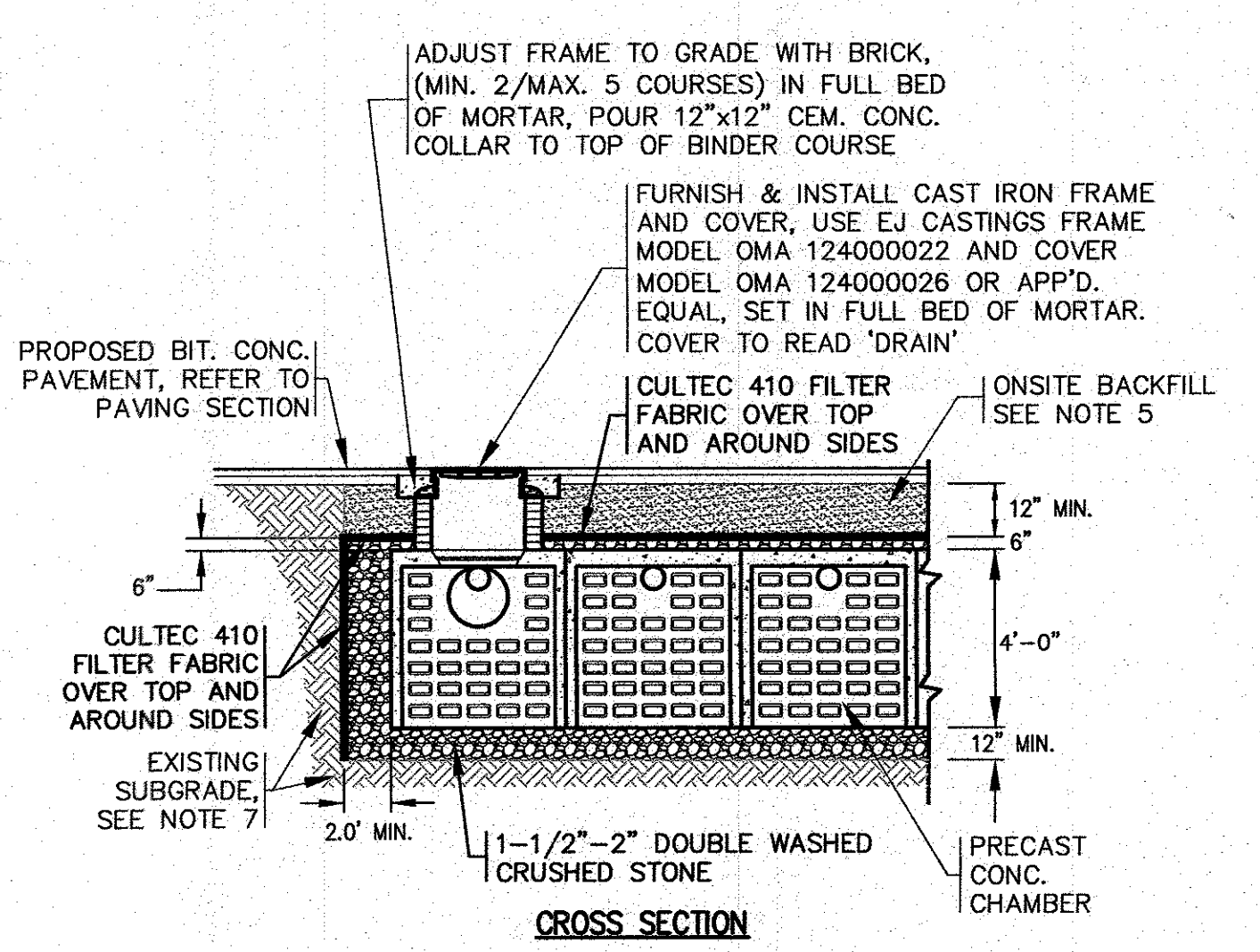
LEACHING GALLEY END SECTION
N.T.S.

- 4'x4' GALLEY NOTES:**
- CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
 - DESIGNED FOR HS-20 LOADING.
 - GALLEY AVAILABLE IN BOTH END AND CENTER SECTIONS. CENTER SECTIONS HAVE LARGE OPENING IN BOTH THE BACK AND FRONT SIDES.
 - REFER TO THE DRAINAGE & GRADING SHEET FOR INVERTS AND ELEVATIONS.
 - USE ON SITE BACKFILL OVER CONC. GALLEYS WHERE GALLEYS ARE NOT UNDER PAVEMENT. WHEN GALLEYS ARE UNDER PAVEMENT REFER TO PAVEMENT CROSS SECTION.
 - FILL ANY GAPS BETWEEN GALLEY CHAMBERS WITH 1-1/2"-2" DOUBLE WASHED CRUSHED STONE.
 - CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS 2' MINIMUM BENEATH AND AROUND ALL SIDES OF THE LEACHING GALLEYS. THIS INCLUDES ORGANICS, TOPSOIL, ROOTS AND OTHER UNSUITABLE SOILS, REPLACE WITH CLEAN SOIL, SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.

PRECAST CONCRETE LEACHING GALLEYS
N.T.S.



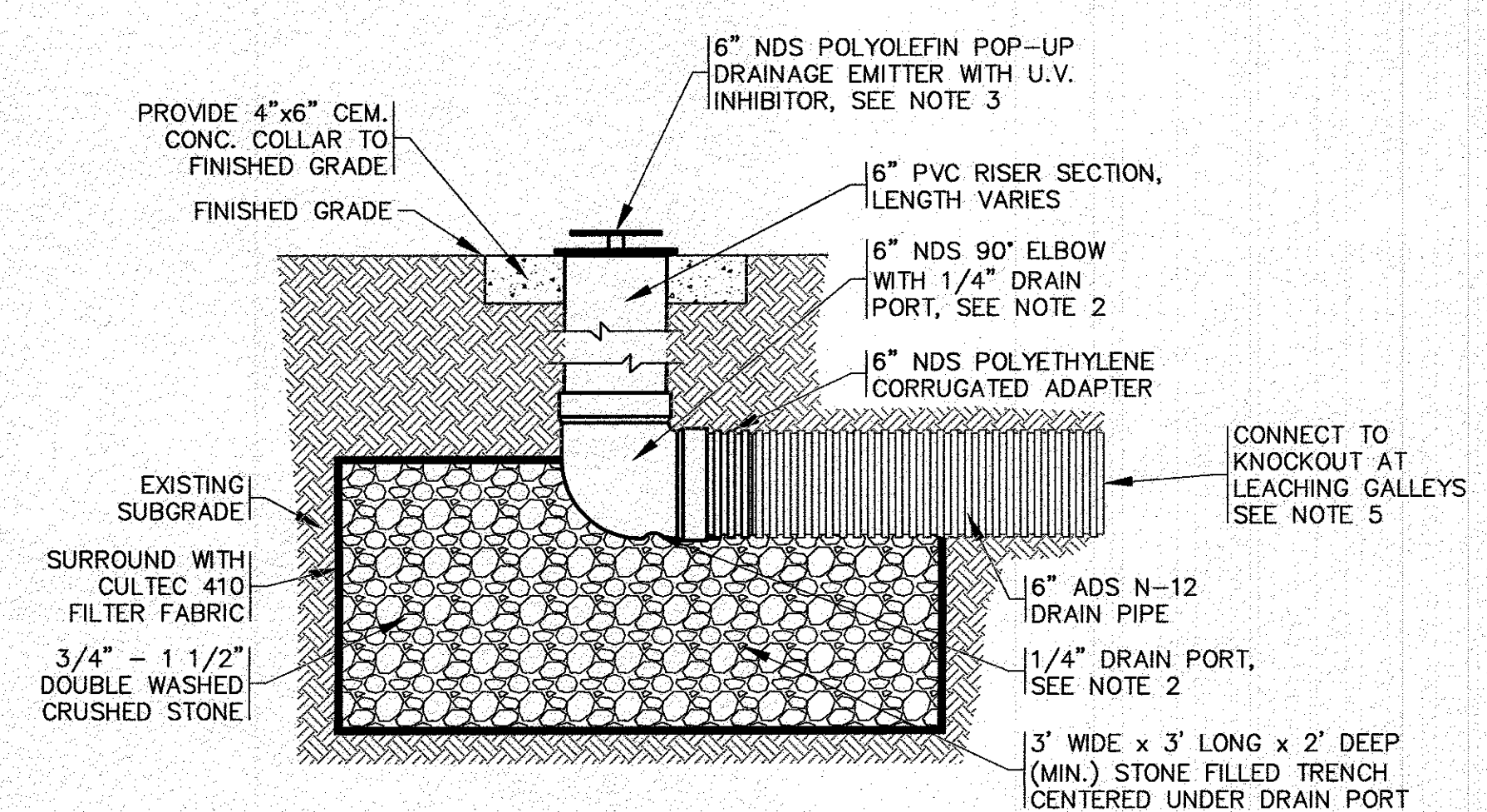
CENTER CROSS SECTION



CROSS SECTION

SYSTEM ELEVATIONS:

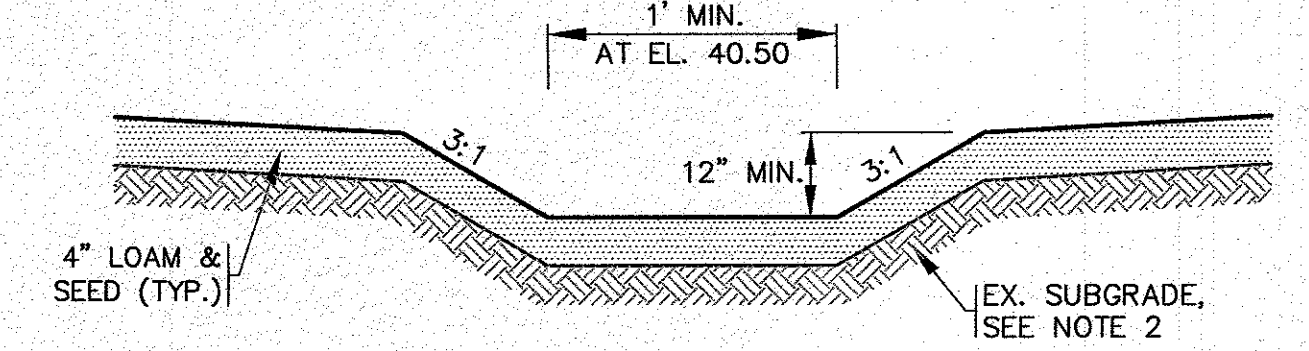
BOTTOM OF STONE	BOTTOM OF GALLEY	TOP OF GALLEY	TOP OF STONE
34.00	35.00	39.00	39.50



- NOTES:**
- REFER TO SITE PLAN FOR LOCATION.
 - INCREASE THE 1/4" DRAIN PORT TO 1" DIA.
 - PROTECT THE POP-UP DRAINAGE EMITTER DURING CONSTRUCTION WITH A 12" PERFORATED PIPE PLACE AROUND THE UNIT.
 - FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES REFER TO THE MANUFACTURER'S SPECIFICATIONS.
 - SLOPE PIPE FROM CULTEC CHAMBERS DOWN TO DRAINAGE EMITTER AT A MINIMUM OF 2.0%.

DRAINAGE EMITTER
N.T.S.

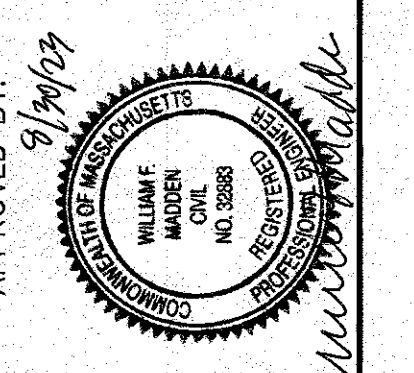
STORM EVENT	ELEVATION
2 YEAR STORM	40.50
10 YEAR STORM	40.51
25 YEAR STORM	40.63
100 YEAR STORM	40.85



- NOTES:**
- GRASS SHALL BE MAINTAINED A MINIMUM OF 4" HIGH WITHIN THE DRAINAGE AREAS.
 - CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS 2' MINIMUM BENEATH AND AROUND ALL SIDES OF THE LANDSCAPE DEPRESSION. THIS INCLUDES ORGANICS, TOPSOIL, ROOTS AND OTHER UNSUITABLE SOILS, REPLACE WITH CLEAN SOIL, SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.
 - REFER TO DRAINAGE AND GRADING PLAN FOR LOCATION AND ELEVATIONS.

LANDSCAPE DEPRESSION
N.T.S.

APPROVED BY:



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SITE DEVELOPMENT PLAN
DETAIL SHEET 3

JOB NO.: 22-9890
DWG. 10 OF 10