



LARCHMERE KENDALL PARKING LOT GREEN INFRASTRUCTURE RENOVATION

12795 LARCHMERE BOULEVARD CITY OF SHAKER HEIGHTS CUYAHOGA COUNTY, OHIO FEBRUARY 2018



LOCATION MAP
 N.T.S.

PROJECT DESCRIPTION

THE KENDALL AND LARCHMERE GREEN INFRASTRUCTURE PARKING LOT RENOVATION IS A PROJECT THAT WILL PROVIDE VARIOUS BENEFITS TO THE CITY OF SHAKER HEIGHTS. THROUGH IMPROVING THE SITES ABILITY TO ACCOMMODATE STORMWATER INTO THE GREEN INFRASTRUCTURE AND REDUCE THE RUNOFF INTO THE COMBINED SEWER SYSTEM. THE IMPLEMENTATION OF GREEN INFRASTRUCTURE WILL ALSO IMPROVE WATER QUALITY THROUGH THE CAPTURING AND TREATING OF POLLUTANTS, PROVIDE EDUCATIONAL OPPORTUNITIES FOR LOCAL RESIDENTS AND STUDENTS AND ADD BEAUTIFICATION OF THE LARCHMERE STREETScape AND NEIGHBORHOOD.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

APPROVALS

 DIRECTOR OF PUBLIC WORKS - SHAKER HEIGHTS
 PATRICIA SPEESE

DATE: _____

 CITY ENGINEER - SHAKER HEIGHTS
 JOSEPH R. CIUNI, P.E., P.S.

DATE: _____



VICINITY MAP
 N.T.S.

CONTACT INFORMATION

CHRISTIAN MAIER, ASSISTANT DIRECTOR
 DEPARTMENT OF PUBLIC WORKS
 CITY OF SHAKER HEIGHTS
 15600 CHAGRIN BLVD.
 SHAKER HEIGHTS, OH 44120
 O: 216.491.3283
 F: 216.491.8829

PLAN DESIGNER

IVAN VALENTIC, PLA
 PROJECT MANAGER
 GPD GROUP
 5595 TRANSPORTATION BLVD., SUITE 100
 CLEVELAND, OHIO 44125
 O: 216.927.8684
 F: 2015.518.5545

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BENCHMARKS:

STATE PLANE GRID NORTH, NAD 83 (2011), OHIO NORTH ZONE 3401.
 ELEVATIONS ARE NAVD 88.

CONTROL POINT #1 - MAGS
 GPD MAG NAIL CONTROL POINT SET
 N = 664781.927
 E = 2217032.477
 ELEVATION = 890.12'

CONTROL POINT #2 - MAGS
 GPD MAG NAIL CONTROL POINT SET
 N = 664696.515
 E = 2216963.773
 ELEVATION = 889.93'

CONTROL POINT #3 - REBAR
 REBAR SET
 N = 664850.021
 E = 2216982.392
 ELEVATION = 889.57'

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764

(Non-members must be called directly)

**OIL & GAS PRODUCERS
 UNDERGROUND PROTECTION SERVICE**
 1-800-925-0988

REV.	DATE	DESCRIPTION

Larchmere Kendall Parking Lot
 Green Infrastructure Renovation
 Shaker Heights, Ohio

TITLE SHEET

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
IV	AMS

JOB NO.
2016331.02

T-001

GENERAL

CONSTRUCTION SPECIFICATIONS

THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (2016) SHALL BE INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS AND SHALL GOVERN THIS PROJECT...

PROJECT INFORMATION AND WORK SEQUENCE

THE WORK CONTEMPLATED UNDER THE CONTRACT FOR "THE LARCHMERE AND KENDALL GREEN INFRASTRUCTURE PARKING LOT RENOVATION PROJECT" SHALL INCLUDE THE FURNISHING OF ALL MATERIAL, LABOR, SUPERINTENDENCE, TOOLS, AND SERVICES FOR AND INCIDENTAL TO THE IMPROVEMENTS PROPOSED BY THIS CONTRACT AS SPECIFIED HEREIN...

- A) REMOVAL OF PAVEMENT AND CURBS AS DESIGNATED ON THE PLANS.
B) EXCAVATE FOR THE BIORETENTION AREAS AND BUILD CURBS AND INSTALL BIORETENTIONS.
C) CONNECT UTILITIES.
D) MILL AND FILL OF THE EXISTING PARKING LOT AREA AS DESIGNATED PER PLAN.

IT IS IMPORTANT, THEREFORE, THAT A PHYSICAL INSPECTION OF THE WORK TO BE PERFORMED BE MADE BY THE BIDDER SO THAT FULL AWARENESS OF THE SCOPE OF WORK IS UNDERSTOOD.

PROJECT NOTIFICATION

CONTRACTOR SHALL NOTIFY THE CITY OF SHAKER HEIGHTS ENGINEER (216-518-5544) AND THE SHAKER HEIGHTS DEPARTMENT OF PUBLIC WORKS (216-491-1490) AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION...

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE UTILITY INFORMATION AS SHOWN...

Table with 3 columns: Utility Name, Address, and Contact Information. Includes Cleveland Water Dept, Neorsd, Charter Communications, Dominion East Ohio Gas, First Energy, and A.T.&T. Ohio.

THE CONTRACTOR SHALL THOROUGHLY REVIEW THE SITE AND BECOME FAMILIAR WITH ALL UTILITIES (WATER, SANITARY, ELECTRIC, GAS, TELEPHONE, FIBER OPTIC CABLE, ETC.) WITHIN THE LIMITS OF THE PROJECT WHICH MAY INTERFERE WITH THE PROPOSED CONSTRUCTION...

SUPPORT OF EXISTING UTILITIES IS CONSIDERED MEANS AND METHODS OF THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING ADEQUATE SUPPORT OF ALL UTILITIES DURING CONSTRUCTION. COST FOR REPAIRING DAMAGED UTILITIES SHALL BE BORNE BY THE CONTRACTOR UNLESS DETERMINED OTHERWISE BY THE ENGINEER...

GENERAL PROVISIONS

ALL REFERENCES TO THE GENERAL PROVISIONS (SECTION 100) OF THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS (ODOT CMS) THAT ARE CITED IN THE ITEMIZED SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, PROPOSAL NOTES, PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS SHALL, FOR THE PURPOSE OF THIS CONTRACT, BE CONSIDERED AND TAKEN AS MEANING THE CITY OF SHAKER HEIGHTS' GENERAL PROVISIONS AS CONTAINED IN THE SPECIFICATION BOOKLET.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

HORIZONTAL & VERTICAL DATUM

BASIS OF BEARING IS STATE PLANE GRID NORTH, NAD83(2011), OHIO NORTH ZONE 3401.

ELEVATIONS ARE NAVD88.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

TIME FOR COMPLETION

WORK ON THIS CONTRACT SHALL COMMENCE IN ACCORDANCE WITH THE GENERAL PROVISION REQUIREMENTS. THE CONTRACT COMPLETION DATE SHALL BE 45 CALENDAR DAYS FROM THE DAY THAT THE NOTICE TO PROCEED IS ISSUED.

PRE-CONSTRUCTION DVD

THE CONTRACTOR SHALL SUBMIT A DVD RECORDING OF THE CONSTRUCTION LIMITS TO THE CITY OF SHAKER HEIGHTS PRIOR TO ANY WORK BEING PERFORMED. THE DVD SHALL TAKE SPECIAL NOTE OF ALL SURFACE FEATURES INCLUDING DRIVEWAYS, TREES, FENCES, LANDSCAPING FEATURES AND PLANTERS. AREAS THAT HAVE BEEN DAMAGED DUE TO CONTRACTOR NEGLIGENCE SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

ESTIMATED QUANTITIES

THE ESTIMATED QUANTITIES INCLUDED IN THE BID DOCUMENTS ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR TO ASSIST IN BID DEVELOPMENT AND SHOULD BE CONSIDERED APPROXIMATE ONLY. NEITHER THE OWNER NOR THE ENGINEER GUARANTEES THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR MUST VISIT THE JOB SITE AND VERIFY EXISTING CONDITIONS, QUANTITIES AND DEGREE OF PROJECT DIFFICULTY PRIOR TO SUBMITTING HIS BID.

SITE RESTORATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES, BUILDINGS, ROADWAYS, DRIVEWAYS, STRUCTURES, AND SITE CONDITIONS RESULTING FROM HIS WORK. THE CONTRACTOR SHALL RESTORE ALL AREAS AND UTILITIES DISTURBED BY HIS WORK TO THE CONDITION EXISTING PRIOR TO CONSTRUCTION AND PER PROJECT DRAWINGS AND SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, ANY POWER-OPERATED DEVICE SHALL NOT BE OPERATED BETWEEN THE HOURS OF 7:00 PM AND 7:00 AM MONDAY THROUGH FRIDAY. WEEKEND WORK MUST BE REQUESTED 48 HOURS IN ADVANCE.

IN ADDITION, ANY SUCH DEVICE SHALL NOT BE OPERATED AT ANY TIME IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

MAINTENANCE OF TRAFFIC

THE CONTRACTOR SHALL CONFINE HIS EQUIPMENT, MATERIALS, AND EMPLOYEE PARKING TO A TEMPORARY ZONE ON KENDALL AVENUE. THE WORK ZONE WILL NEED TO BE REMOVED NIGHTLY AND OVER THE WEEKENDS. CONTRACTOR SHALL NOT PARK OR OBSTRUCT THE FRONT OF ANY MERCHANTS DRIVES TO MINIMIZE THE IMPACT OF DOWNTOWN.

MAINTENANCE BOND

THE SUCCESSFUL BIDDER SHALL PROVIDE AT ITS OWN EXPENSE A TWO-YEAR MAINTENANCE BOND, IN THE AMOUNT OF TWENTY-FIVE PERCENT (25%) OF THIS CONTRACT. THE TERM OF THE BOND SHALL BEGIN ON THE DATE OF FINAL ACCEPTANCE OF THE IMPROVEMENT AND SHALL GUARANTEE THE IMPROVEMENT WILL REMAIN IN GOOD CONDITION FOR AND DURING THE ENTIRE TWO-YEAR PERIOD OF GUARANTEE.

ITEM SPECIAL - CONTINGENCY ALLOWANCE

THE CONTINGENCY ALLOWANCE IS INCLUDED FOR SUCH SITUATIONS WHEN, IN THE PROSECUTION OF ANY WORK OR AT THE DIRECTION OF THE ENGINEER, IT BECOMES NECESSARY TO MAKE ALTERATIONS OR MODIFICATIONS FOR WORK OR CONDITIONS UNFORESEEN IN WHICH BID ITEMS CAN NOT BE APPLIED OR APPROXIMATE BID QUANTITIES ARE EXCEEDED.

THE LUMP SUM PRICE STIPULATED ON THE BID FORM FOR THIS ITEM SHALL BE ADDED TO THE CONTRACTOR'S BID AMOUNT FOR ALL OTHER BID ITEMS AND INCLUDED AS PART OF THE CONTRACTOR'S TOTAL AMOUNT OF BID. CONTINGENCY ALLOWANCE SHALL ONLY BE USED AT THE DIRECTION AND APPROVAL OF THE ENGINEER.

GENERAL CONSTRUCTION NOTES

- 1. PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY...

- A) RECIPIENT ACKNOWLEDGES THAT ANY USE OF THE TRANSFERRED DATA IS FOR INFORMATION ONLY AND NOT GUARANTEED OR WARRANTED BY GPD GROUP. USE OF TRANSFERRED DATA BY THE RECIPIENT SHALL BE AT RECIPIENT'S SOLE RISK.
B) ACCORDINGLY, WITH RESPECT TO THE CONVERSION AND USE OF SUCH ELECTRONIC DATA, RECIPIENT AGREES TO ASSUME ALL RISKS ASSOCIATED THEREWITH...

EXISTING LEGEND:

Legend table mapping symbols to existing site features: Existing Iron Pin Found, Existing Iron Pipe Found, Existing Monument Box Found, Existing Power & Telephone Pole, Existing Light & Telephone Pole, Existing Electric Pullbox, Existing Signal Pole, Existing Catch Basin, Existing Unknown Manhole, Existing Fire Hydrant, Existing Water Valve, Existing Water Service Valve, Existing Sprinkler Head, Existing Gas Valve, Existing Telephone Pedestal, Existing Telephone Manhole, Existing Sign, Existing Underground Gas Lines, Existing Right of Way Line, Existing Property Line.

GENERAL CONSTRUCTION NOTES (CONT.)

- 12. UPON RECEIPT OF DRAWING FILE, THE CONTRACTOR SHALL RUN AN INDEPENDENT VERTICAL CONTROL TRAVERSE TO CHECK BENCHMARKS AND A HORIZONTAL CONTROL TRAVERSE THROUGH THE REFERENCED PROJECT CONTROL DATUM TO CONFIRM GEOMETRIC DATA.
13. ALL DIMENSIONS AND RADII ARE GIVEN TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
14. ALL EXTERIOR SITE SPECIFIC PORTLAND CEMENT CONCRETE (P.C.C.) SHALL MEET THE LATEST EDITION OF THE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR CURING AND INSTALLATION...

ENVIRONMENTAL WORK

- 1. POSSIBLE PETROLEUM CONTAMINATED SOILS
2. EXCAVATION ACTIVITIES ASSOCIATED WITH THE INSTALLATION OF A PERMEABLE PAVER DRAINAGE SYSTEM IDENTIFIED PETROLEUM CONTAMINATED SOILS (PCS) WITHIN THE PROPERTY AT THE FOLLOWING LOCATION:
2.1. 12795 LARCHMERE BOULEVARD, SHAKER HEIGHTS, CUYAHOGA COUNTY, OHIO
3. THE CONTRACTOR SHALL MANAGE PETROLEUM-CONTAMINATED SOILS ACCORDING TO THE FOLLOWING NOTES:
3.1. SOIL WITHIN THE WORK AREA WILL BE EXCAVATED AND DIRECT LOADED INTO TRUCKS FOR TRANSPORTATION TO A LICENSED AND PERMITTED DISPOSAL FACILITY...

ITEM SPECIAL - TRANSPORT AND DISPOSAL OF MATERIAL

THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY HANDLE, STORE (IF NECESSARY), TEST FOR DISPOSAL, TRANSPORT AND DISPOSE OF REGULATED MATERIALS, INCLUDING ANY REQUIRED PERMITS, APPROVALS, OR FEES WITHIN THE LIMITS IDENTIFIED ABOVE. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID PER TON. TONNAGE MAY BE ESTIMATED AT 1.5 TIMES THE TOTAL CUBIC YARDS. THE FOLLOWING ESTIMATED CONTINGENCY QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

PCS TRANSPORT & DISPOSAL: 400 TONS
C&D DISPOSAL, NON-HAZARDOUS SOLID WASTE: 60 TONS

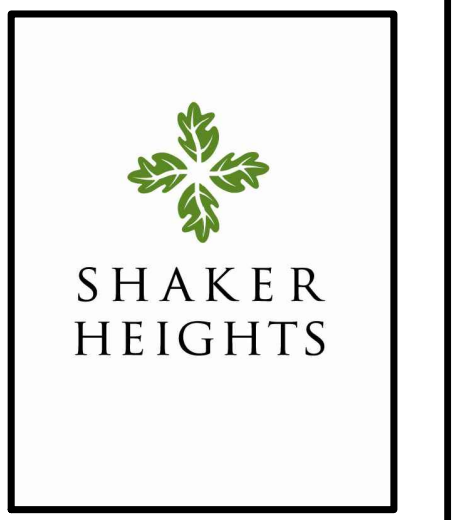


Table with 2 columns: REV, DATE and 10 empty rows for revision tracking.

Latchmere Kendall Parking Lot Green Infrastructure Renovation Shaker Heights, Ohio

GENERAL NOTES

Table with 2 columns: PERMIT, BID, CONSTRUCTION, RECORD and 2 columns: VALUE (-).

Table with 2 columns: PROJECT MANAGER (IV) and DESIGNER (AMS).

JOB NO. 2016331.02

C-001

EROSION AND SEDIMENT CONTROL NOTES

- ALL WORK SPECIFIED AS AN OHIO DEPARTMENT OF TRANSPORTATION (ODOT) ITEM SHALL BE GOVERNED BY ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (2016) OR OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR) AS WELL AS THE CURRENT EDITION OF THE CITY OF SHAKER HEIGHTS STORM WATER MANAGEMENT MANUAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO POSSESS AND TO BE FAMILIAR WITH APPLICABLE SECTIONS.
- THESE CONTRACT DRAWING SHALL BE MADE AVAILABLE ON SITE AT ALL TIMES AND PRESENTED UPON REQUEST. IF UNFORESEEN EROSION AND SEDIMENT CONTROL (E&SC) IS ENCOUNTERED, ADDITIONAL EROSION AND SEDIMENT CONTROL (E&SC) MEASURES SHALL BE IMPLEMENTED TO MANAGE THE CURRENT SITE CONDITIONS WHICH MAY BE REQUESTED BY THE OWNER, COUNTY ENGINEER, PROJECT ENGINEER OR SOIL. OHIO EPA. AND WATER CONSERVATION SERVICE REPRESENTATIVE AT ANYTIME. SUCH REQUESTS AND CHANGE IN SITE CONDITIONS SHALL BE IMPLEMENTED IMMEDIATELY AT CONTRACTOR'S EXPENSE.
- ALL EROSION AND SEDIMENT CONTROL (E&SC) PRACTICES WILL BE INSTALLED BEFORE ANY CONSTRUCTION ACTIVITIES OCCURS.
- ALL EROSION AND SEDIMENT CONTROL (E&SC) ITEMS SHALL BE INSTALLED AS SHOWN OR NOTED IN THESE PLANS.
- PERMANENT VEGETATION SHALL BE INSTALLED PER LANDSCAPE SPECIFICATIONS.
- PRIOR TO THE TIME THAT DRAINAGE DIVERTS TO INLETS, INLET SEDIMENT FILTERS SHALL BE INSTALLED AT ALL INLET STRUCTURES TO KEEP PIPING SYSTEMS FREE OF SILTATION.
- SILT BARRIERS SHALL BE INSTALLED AROUND ALL EXISTING AND NEW STORM INLETS, CATCH BASINS, YARD DRAINS.
- EROSION AND SEDIMENT CONTROL (E&SC) MEASURES SHALL BE INSTALLED AROUND ALL DIRT OR TOPSOIL STOCKPILES AND OTHER TEMPORARILY DISTURBED AREAS AS SHOWN ON THESE PLANS AND AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL INSPECT ALL E&SC MEASURES DAILY AND WITHIN 24 HRS AFTER EVERY 1/2" RAINFALL EVENT. REPAIR AS NECESSARY TO PREVENT EROSION. SILTATION SHALL BE REMOVED FROM AREAS WHERE FAILURES HAVE OCCURRED AND CORRECTIVE ACTION TAKEN WITHIN 24 HOURS TO MAINTAIN ALL E&SC. FOR MISSING BMPs REQUIRED, THE MISSING BMPs SHALL BE INSTALLED WITHIN 24 HRS OF THE INSPECTION. CONTRACTORS INSPECTOR SHALL BE A QUALIFIED INDIVIDUAL. SUCH REPORTS SHALL BE MADE AVAILABLE TO OWNER, ENGINEER AND CITY / STATE OFFICIALS UPON THEIR REQUEST. REPORTS SHALL BE KEPT FOR 3 YEARS AFTER TERMINATION OF THE CONSTRUCTION ACTIVITIES. CONTRACTOR MAY SUBMIT A WAIVER REQUEST TO THE OHIO EPA FOR A REDUCTION TO WEEKLY INSPECTIONS IF THE SITE WILL BE STABILIZED DORMANT SITE FOR A LONG PERIOD.
- SILT BARRIERS, CONSTRUCTION ENTRANCES, AND SILT PERIMETER CONTROLS SHALL REMAIN IN PLACE UNTIL A GOOD STAND OF GRASS HAS BEEN OBTAINED AND/OR PAVING OPERATIONS ARE COMPLETE. CONTRACTOR SHALL KEEP SILT FROM ENTERING ANY STORM DRAINAGE SYSTEM. ONCE SITE HAS BEEN COMPLETELY STABILIZED AND ANY SILT IN PIPES SHALL BE REMOVED WITHIN 10 DAYS.
- UTILITY COMPANIES MUST COMPLY WITH ALL EROSION AND SEDIMENT CONTROL MEASURES AS DEFINED ON THE STORM WATER POLLUTION PREVENTION PLANS, DETAILS AND NOTES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL ITEMS AT ALL TIMES.
- DUST CONTROL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. IF POSSIBLE GRADING SHALL BE DONE BY PHASING. IF PHASING IS NOT AN OPTION, DUST SHALL BE CONTROLLED WITH WATER DURING EARTHWORK. AFTER EARTHWORK OPERATIONS, THE EXPOSED SOILS SHALL BE COVERED WITH STRAW OR MULCH UNTIL SEEDED. SEE DETAIL WITHIN THESE PLANS. OIL IS NOT TO BE USED AS A DUST SUPPRESSANT.
- ANY DISCHARGE OF PETROLEUM OR PETROLEUM PRODUCTS OF LESS THAN 25 GALLONS ONTO A PERVIOUS SURFACE SHALL BE LEGALLY REMOVED AND PROPERLY TREATED OR PROPERLY DISPOSED OF, OR OTHERWISE REMEDIATED, SO THAT NO CONTAMINATION FROM THE DISCHARGE REMAINS ON-SITE.
- IN THE EVENT OF A LARGE PETROLEUM SPILL (25 OR MORE GALLONS) CONTRACTOR MUST CONTACT THE CURRENT STATE'S EPA, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) WITHIN 30 MINUTES OF A SPILL OF 25 OR MORE GALLONS.
- INSTALL CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT FACILITY, IF CONDITIONS ARE SUCH THAT MUD IS COLLECTING ON VEHICLE TIRES, THE TIRES MUST BE CLEANED BEFORE THE VEHICLES ENTER THE PUBLIC ROADWAY. THE SITE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING OR FLOW OF MUD ONTO THE PUBLIC RIGHT-OF-WAY. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO THE ROADWAY MUST BE REMOVED PROMPTLY.
- CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING CONSTRUCTION FENCE, SIGNS, ETC. TO WARN AND KEEP PEOPLE OFF SITE FOR THE DURATION OF THE PROJECT. IF AN EXISTING FENCE IS PARTIALLY AROUND THE PERIMETER OF THE SITE IT COULD BE UTILIZED AS A CONSTRUCTION FENCE DURING INFRASTRUCTURE WORK.
- IF ENCOUNTERED DURING SITE REDEVELOPMENT, ANY OIL/GAS WELLS OR MINE SHAFTS MUST BE PROPERLY ABANDONED, VAULTED AND VENTED IN ACCORDANCE WITH CURRENT REGULATIONS AND SPECIFICATIONS OF ALL GOVERNING AUTHORITIES
- IF, FOR ANY REASON, THE PROJECT IS SUSPENDED, THE CONTRACTOR SHALL INSURE THAT ALL INSTALLED EROSION MEASURES ARE FUNCTIONING AND PROPERLY MAINTAINED DURING THIS PERIOD, AND THAT ALL BARE SOILS ARE SEEDED AND MULCHED WITH TEMPORARY SEED MIXTURE.
- TEMPORARY SEEDING: ALL AREAS THAT REQUIRE TO BE TEMPORARY STABILIZED SHALL BE TEMPORARY SEEDED. THIS WORK WILL CONSIST OF FERTILIZING, WATERING AND SEEDING MIX THAT IS APPROPRIATE FOR THE MONTH THAT THE TEMPORARY SEEDING WILL BE APPLIED. THE TEMPORARY SEEDING WILL TAKE PLACE AT THE RATES INDICATED UNDER ODOT ITEM 832 - MULCHING OR WINTER SEEDING & MULCHING.
- PERMANENT SEEDING: ALL AREAS THAT REQUIRE PERMANENT STABILIZED SHALL BE PERMANENTLY SEEDED. THIS WORK WILL CONSIST OF FERTILIZING, WATERING AND SEEDING MIX THAT IS APPROPRIATE FOR THE MONTH THAT THE PERMANENT SEEDING WILL BE APPLIED. THE PERMANENT SEEDING WILL TAKE PLACE AT THE RATES INDICATED UNDER CITY OF ODOT ITEM 659 - SEEDING AND MULCHING.

- WASTES GENERATED BY CONSTRUCTION ACTIVITIES (I.E. CONSTRUCTION MATERIALS SUCH AS PAINTS, SOLVENTS, FUELS, CONCRETE, WOOD, ETC) MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS. HAZARDOUS AND TOXIC SUBSTANCES ARE USED ON VIRTUALLY ALL CONSTRUCTION SITES. GOOD MANAGEMENT OF THESE SUBSTANCES IS ALWAYS NEEDED.
- CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWING GENERAL GUIDELINES REGARDING DISPOSAL AND HANDLING OF HAZARDOUS AND CONSTRUCTION WASTES:
 - PREVENT SPILLS
 - USE PRODUCTS UP
 - FOLLOW LABEL DIRECTIONS FOR DISPOSAL
 - REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
 - RECYCLE WASTES WHENEVER POSSIBLE
 - DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND
 - DON'T POUR DOWN THE SINK, DOOR DRAIN OR SEPTIC TANKS
 - DON'T BURY CHEMICALS OR CONTAINERS
 - DON'T BURN CHEMICALS OR CONTAINERS
 - DON'T MIX CHEMICALS TOGETHER
- CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS USED ON-SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL. CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF AT THE CURRENT STATE'S EPA APPROVED CD&D LAND FILL.
- NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON-SITE.
- HANDLING CONSTRUCTION CHEMICALS. MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.
- EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HRS. OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER. SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVE GROUND TANK OF 660 GALLONS OR MORE, ACCUMULATIVE ABOVE GROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. CONTAMINATED SOILS MUST BE DISPOSED OF IN ACCORDANCE WITH ITEM 8.
- CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER, FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.
- IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LAND FILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LAND FILL). NOTE THOSE STORM WATER RUNOFFS ASSOCIATED WITH CONTAMINATED SOILS ARE NOT BE AUTHORIZED UNDER THE CURRENT STATE'S EPA GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- OTHER AIR PERMITTING REQUIREMENTS: CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS INCLUDING BUT NOT LIMITED TO: MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC. THESE ACTIVITIES WILL REQUIRE SPECIFIC THE CURRENT STATE'S EPA AIR PERMITS FOR INSTALLATION AND OPERATION. OPERATORS MUST SEEK AUTHORIZATION FROM THE CORRESPONDING DISTRICT OF THE EPA. FOR DEMOLITION OF ALL COMMERCIAL SITES, A NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE SUBMITTED TO THE CURRENT STATE'S EPA TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE REQUIRED.
- PROCESS WASTE WATER/LEACHATE MANAGEMENT. OHIO EPA'S CONSTRUCTION GENERAL PERMIT ONLY ALLOWS THE DISCHARGE OF STORM WATER AND DOES NOT INCLUDE OTHER WASTE STREAMS/DISCHARGES SUCH AS VEHICLE AND/OR EQUIPMENT WASHING, ON-SITE SEPTIC LEACHATE CONCRETE WASH OUTS, WHICH ARE CONSIDERED PROCESS WASTEWATERS. ALL PROCESS WASTEWATERS MUST BE COLLECTED AND PROPERLY DISPOSED AT AN APPROVED DISPOSAL FACILITY. IN THE EVENT, LEACHATE OR SEPTAGE IS DISCHARGED; IT MUST BE ISOLATED FOR COLLECTION AND PROPER DISPOSAL AND CORRECTIVE ACTIONS TAKEN TO ELIMINATE THE SOURCE OF WASTE WATER.
- PLEASE REFER TO THE CITY OF SHAKER HEIGHTS STORM WATER MANAGEMENT MANUAL OR ODNR RAINWATER AND LAND DEVELOPMENT MANUAL, CURRENT EDITION, FOR ADDITIONAL INFORMATION.

CONSTRUCTION SEQUENCE

- DURING PRECONSTRUCTION MEETING ALL EROSION & SEDIMENT CONTROL FACILITIES & PROCEDURES SHALL BE DISCUSSED.
- INSTALL CONSTRUCTION ENTRANCE AS DETAILED ON PLANS. TEMPORARY CONSTRUCTION FENCING SHALL BE INSTALLED AROUND PERIMETER OF CONSTRUCTION SITE. FENCING SHALL BE USED TO RESTRICT OUTSIDE TRAFFIC TO SITE.
 - CLEARING & GRUBBING, AS NECESSARY, FOR INSTALLATION OF PERIMETER CONTROLS. INSTALL SILT PERIMETER CONTROLS AS SHOWN ON PLANS. SILT PERIMETER CONTROLS SHALL BE INSTALLED LEVEL, ALONG THE CONTOURS, WITH ENDS TURNED UPSLOPE TO PREVENT CONCENTRATED FLOW AT THE SILT PERIMETER CONTROLS.
 - INSTALL TEMPORARY SILT INLET PROTECTION ON ALL EXISTING CATCH BASINS AND INLETS, AS DESIGNATED IN THE PLANS. REMOVAL OF SILT INLET PROTECTION FROM DESIGNATED INLETS CAN ONLY OCCUR WHEN A STRUCTURE IS REMOVED, AND AS REQUIRED BY THE PROGRESSION OF THE DEMOLITION AND CONSTRUCTION.
 - BEGIN PAVEMENT REMOVALS (PLANTING REMOVAL.).
 - UTILIZE DUST CONTROL MEASURES AS REQUIRED TO MINIMIZE AIR-BORNE POLLUTION BY METHODS APPROVED BY THE CITY OF SHAKER HEIGHTS AND OHIO EPA OFFICE.
 - BUILD PARKING LOT AND INSTALL GREEN INFRASTRUCTURE MEASURE, MAKING GI MEASURES ARE FREE OF SILT RUNOFF.
 - TEMPORARY SEED & MULCH AS CONSTRUCTION PROGRESSES. STABILIZE AREAS AS SHOWN IN TABLE 2.
 - REMOVE TEMPORARY E&SC DEVICES.
 - INSTALL FINAL LANDSCAPE ELEMENTS TO SITE.

SITE DATA

PROJECT DESCRIPTION

THE KENDALL AND LARCHMERE GREEN INFRASTRUCTURE PARKING LOT RENOVATION IS A PROJECT THAT WILL PROVIDE VARIOUS BENEFITS TO THE CITY OF SHAKER HEIGHTS. THROUGH IMPROVING THE SITES ABILITY TO ACCOMMODATE STORMWATER INTO THE GREEN INFRASTRUCTURE AND REDUCE THE RUNOFF INTO THE COMBINED SEWER SYSTEM, THE IMPLEMENTATION OF GREEN INFRASTRUCTURE WILL ALSO IMPROVE WATER QUALITY THROUGH THE CAPTURING AND TREATING OF POLLUTANTS, PROVIDE EDUCATIONAL OPPORTUNITIES FOR LOCAL RESIDENTS AND STUDENTS AND ADD BEAUTIFICATION OF THE LARCHMERE STREETScape AND NEIGHBORHOOD.

TOTAL DISTURBED AREA: 0.18 AC

EXISTING DRAINAGE/RECEIVING WATER: DOAN BROOK

EROSION CONTROL DEVICES: TEMPORARY/PERMANENT SEEDING AND MULCHING, PERIMETER FILTER FABRIC FENCE AND INLET PROTECTION

SCHEDULE: THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE CITY AND DESIGNER/ENGINEER. EROSION AND SEDIMENTATION BMPs SHALL BE PLACED AND MAINTAINED IN ACCORDANCE WITH THIS SCHEDULE

OWNER/DEVELOPER: CITY OF SHAKER HEIGHTS
 CHRISTIAN MAIER, ASSISTANT DIRECTOR
 DEPARTMENT OF PUBLIC WORKS
 CITY OF SHAKER HEIGHTS
 15600 CHAGRIN BLVD.
 SHAKER HEIGHTS, OH 44120
 O: 216.491.3283
 F: 216.491.8829

SITE CONTACT: SAME AS OWNER/DEVELOPER

PLAN DESIGNER: GPD GROUP
 IVAN VALENTIC, PLA
 PROJECT MANAGER
 GPD GROUP
 5595 TRANSPORTATION BLVD., SUITE 100
 CLEVELAND, OHIO 44125
 O: 216.927.8684
 F: 2015.518.5545

OHIO EPA GENERAL PERMIT NO. OHC000004 CONSTRUCTION EROSION AND SEDIMENT CONTROL PLAN HAS BEEN ASSIGNED NPDES PERMIT NUMBER(S):
 SHALL BE UPDATED ONCE DOCUMENTATION IS AVAILABLE

SOIL STABILIZATION -

STABILIZATION OF DISTURBED AREAS SHALL, AT A MINIMUM, BE INITIATED IN ACCORDANCE WITH THE TIME FRAMES SPECIFIED IN THE FOLLOWING TABLES.

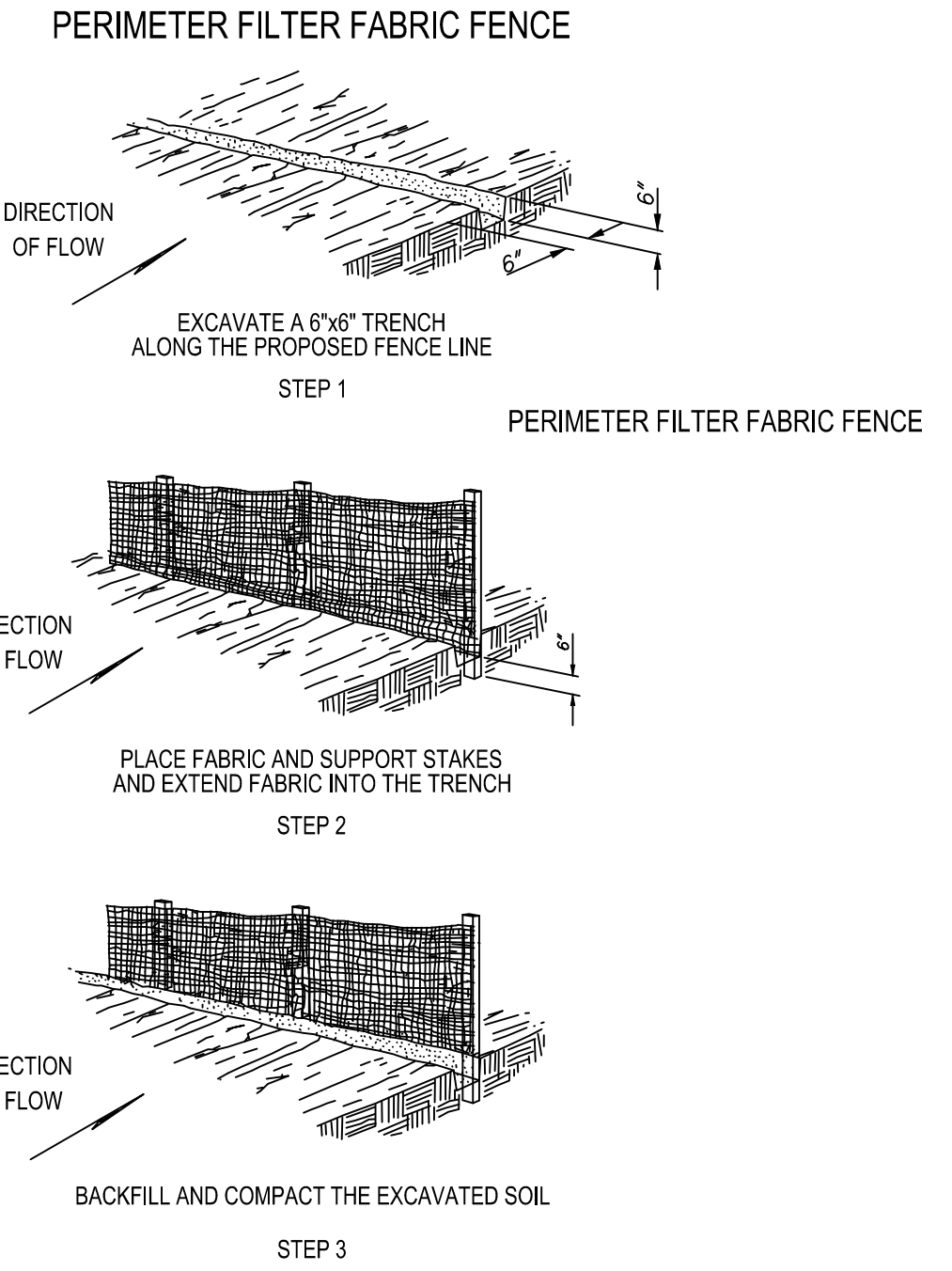
TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TABLE 2: TEMPORARY STABILIZATION

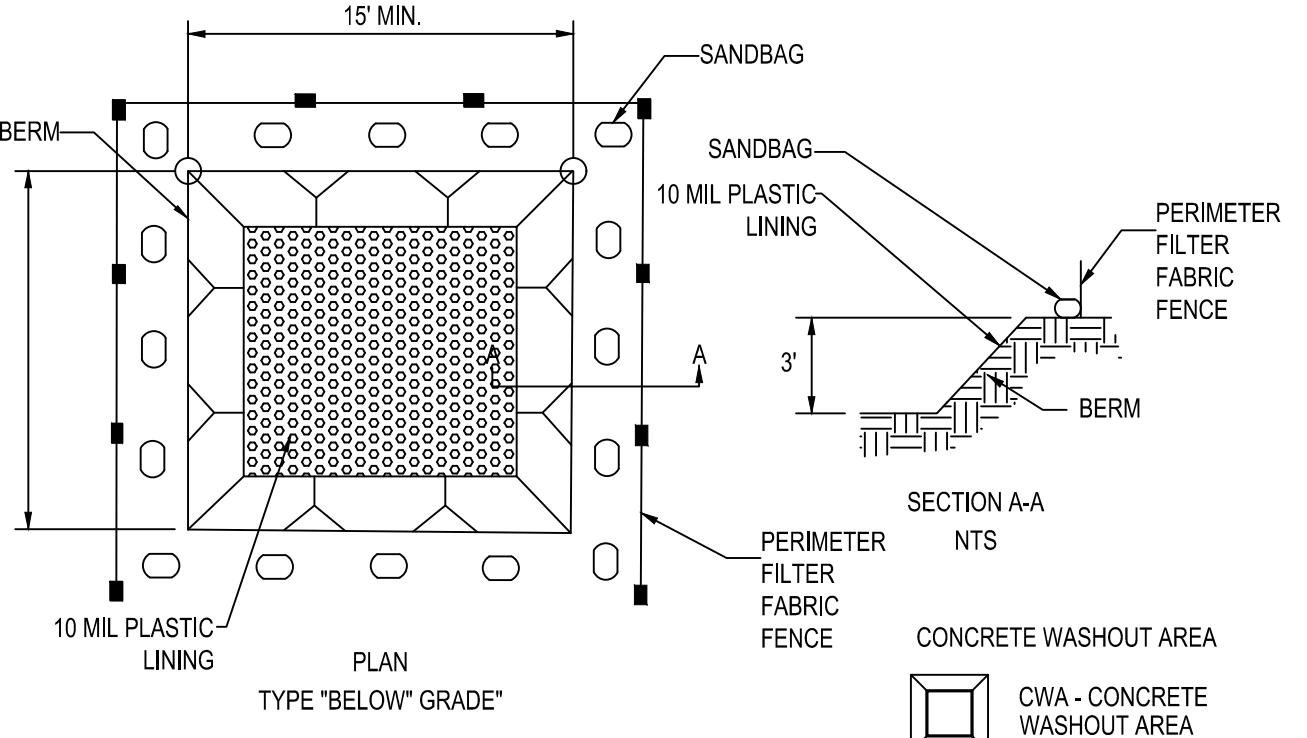
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOTE AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S) PRIOR TO THE ONSET OF WINTER WEATHER

PERIMETER FILTER FABRIC FENCE



NOTES:

- MATERIALS: PER ODOT STANDARDS.
- CONSTRUCTION: TRENCH THE FILTER FABRIC FENCE AS DETAILED. THE CONTRACTOR MAY ELECT TO TRENCH THE FENCE DETAILED ON STEPS 1 THROUGH 3 IN ONE PLOWING OPERATION
- PAYMENT: ODOT ITEM 832 - PERIMETER FILTER FABRIC FENCE
- MAINTENANCE: IF RUNOFF OVERTOPS THE FENCE, FLOWS UNDER THE FABRIC, AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS CONCENTRATED FLOW TO DISCHARGE, ONE OF THE FOLLOWING MUST BE PERFORMED:
- THE LAYOUT OF THE FENCE SHALL BE CHANGED
 - SEDIMENT SHALL BE REMOVED
 - ANOTHER BMP SHALL BE INSTALLED
- SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED OR WHEN THE SEDIMENT REACHES ONE- HALF (1/2) OF THE HEIGHT OF THE FENCE
- FILTER FABRIC FENCE SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONG RAINFALL. THE LOCATION OF THE FENCE SHALL BE REVIEWED DAILY TO ENSURE EFFECTIVENESS
- REPAIRS SHALL BE MADE AS NEEDED TO ENSURE BMP IS PERFORMING AS INTENDED



NOTES:

- MATERIALS: PERIMETER FILTER FABRIC FENCE, EXCAVATED MATERIAL AND PLASTIC LINING
- CONSTRUCTION: WASHOUT AREAS SHOULD BE LOCATED AWAY FROM EXISTING WATERCOURSES. THE WASHOUTS SHOULD BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREAS AND ELSEWHERE TO CLEARLY INDICATE THE LOCATION OF THE WASHOUTS. USE EXCAVATED MATERIAL FOR PERIMETER BERM
- CONSTRUCTION: THE CITY OF SHAKER HEIGHTS ALLOWS THE USE OF PORTABLE CONCRETE WASHOUTS. THE CONTRACTOR MUST SUBMIT ITEM SPECIFICATIONS BEFORE CONSTRUCTION TO THE City of Shaker Heights BEFORE CONSTRUCTION BEGINS IF CONCRETE WASHOUT DIFFERS FROM ONE SHOWN
- PAYMENT: ITEM SPECIAL - CONCRETE WASHOUT AREA (EACH)
- MAINTENANCE: WASHOUT SHOULD BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FROM CONCRETE WASTE
- CONCRETE MATERIALS ACCUMULATED SHALL BE REMOVED
- WASHOUT SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS.
- REPAIRS SHALL BE MADE AS NEEDED TO ENSURE BMP IS PERFORMING AS INTENDED
- WASHOUT WATER, PIECES OF CONCRETE AND ALL OTHER DEBRIS SHALL BE TRANSPORTED FROM SITE AND DISPOSED OF PROPERLY
- ONCE WASHOUT HAS BEEN REMOVED THE DISTURBED AREA SHALL BE STABILIZED WITH TOP SOIL AND SEEDED

GPD GROUP
 Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
 520 South Main Street, Suite 2531
 Akron, OH 44311
 330.572.2100 Fax 330.572.2102
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SHAKER HEIGHTS

REV.	DATE	DESCRIPTION

Latchmere Kendall Parking Lot
 Green Infrastructure Renovation
 Shaker Heights, Ohio

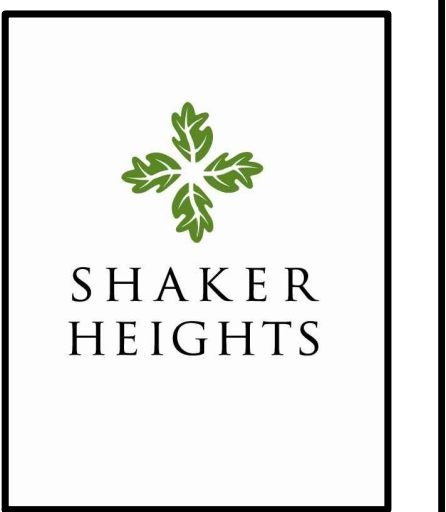
EROSION AND SEDIMENT CONTROL NOTES & DETAILS

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
IV	AMS

JOB NO.
2016331.02

C-131



REV.	DATE	DESCRIPTION

**Latchmere Kendall Parking Lot
 Green Infrastructure Renovation
 Shaker Heights, Ohio**

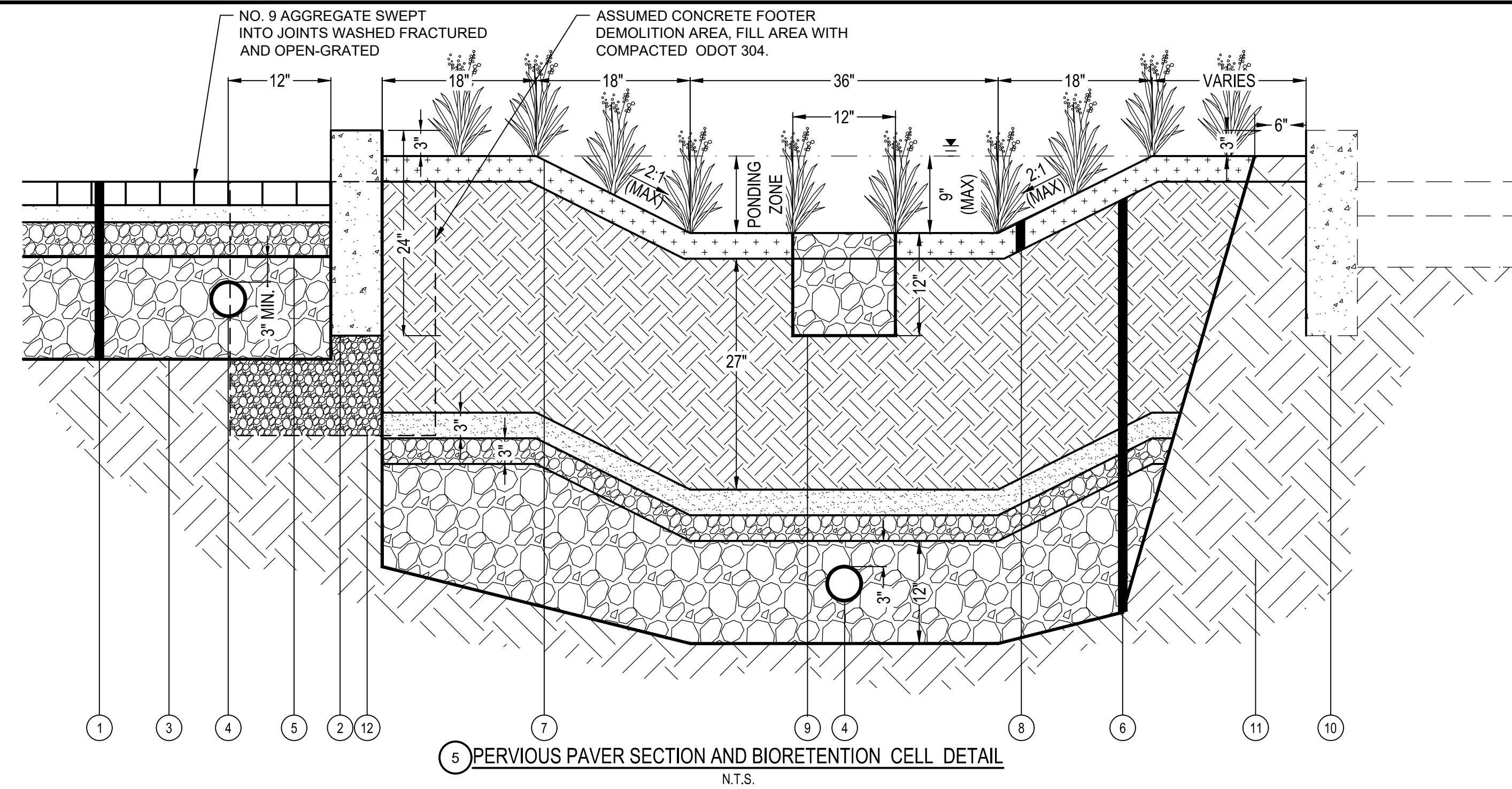
**GREEN INFRASTRUCTURE
 DETAILS AND NOTES**

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-

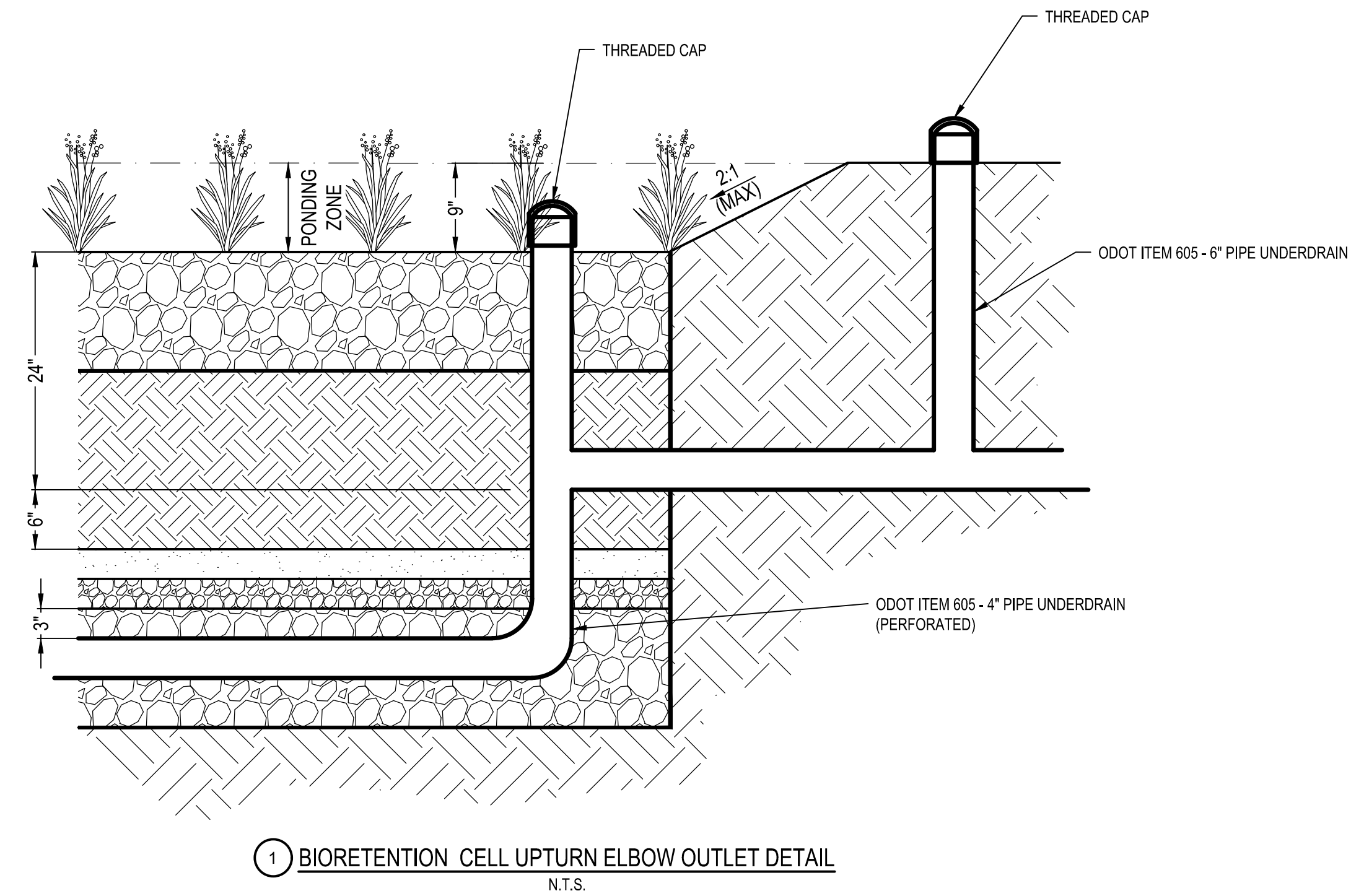
PROJECT MANAGER	DESIGNER
IV	AMS

JOB NO.
2016331.02

C-501



5 PERVIOUS PAVER SECTION AND BIORETENTION CELL DETAIL
 N.T.S.



1 BIORETENTION CELL UPTURN ELBOW OUTLET DETAIL
 N.T.S.

LEGEND:

- | | |
|---|---|
| 1 ITEM SPECIAL - PERMEABLE BRICK PAVER - (SF)
2-3/4" X 4" X 8" HEAVY DUTY BRICK PAVERS, PATTERN HERRINGBONE
2" BEDDING COURSE - NO. 8 AGGREGATE STONE BEDDING COURSE
5" BASE COURSE - NO. 57 AGGREGATE STONE, CLEAN, FRACTURED
11" SUB-BASE COURSE - NO. 2 AGGREGATE STONE, CLEAN, FRACTURED | 6 ITEM SPECIAL - BIORETENTION CELL - (EA)
27" BIORETENTION SOIL MEDIA
3" CLEAN MEDIUM CONCRETE SAND
3" NO. 8 OR NO. 78 AGGREGATE STONE
12" SUB-BASE COURSE - NO. 57 AGGREGATE STONE |
| 2 ODOT ITEM 609 - CURB, TYPE 6, AS PER PLAN - (FT)
3 ODOT ITEM 204 - GEOTEXTILE FABRIC, TYPE A (TYPE 2) PER CMS 712.09 - (SY)
4 ODOT ITEM 605 - 4" PIPE UNDERDRAIN (PERFORATED), 720.07 - (FT)
5 ITEM SPECIAL - TRIAX TX 160 GEOGRID (SY) OR APPROVED EQUAL. | 7 PLANTING MATERIAL PER PLANTING PLAN
8 3" OF DARK HARDWOOD MULCH PER LANDSCAPE NOTES
9 LANDSCAPE STONE PER PLAN AND SHEET C-002
10 EXISTING CURB AND WALK (DO NOT DISTURB)
11 EXISTING NATIVE SOILS
12 COMPACTED ODOT 304 |

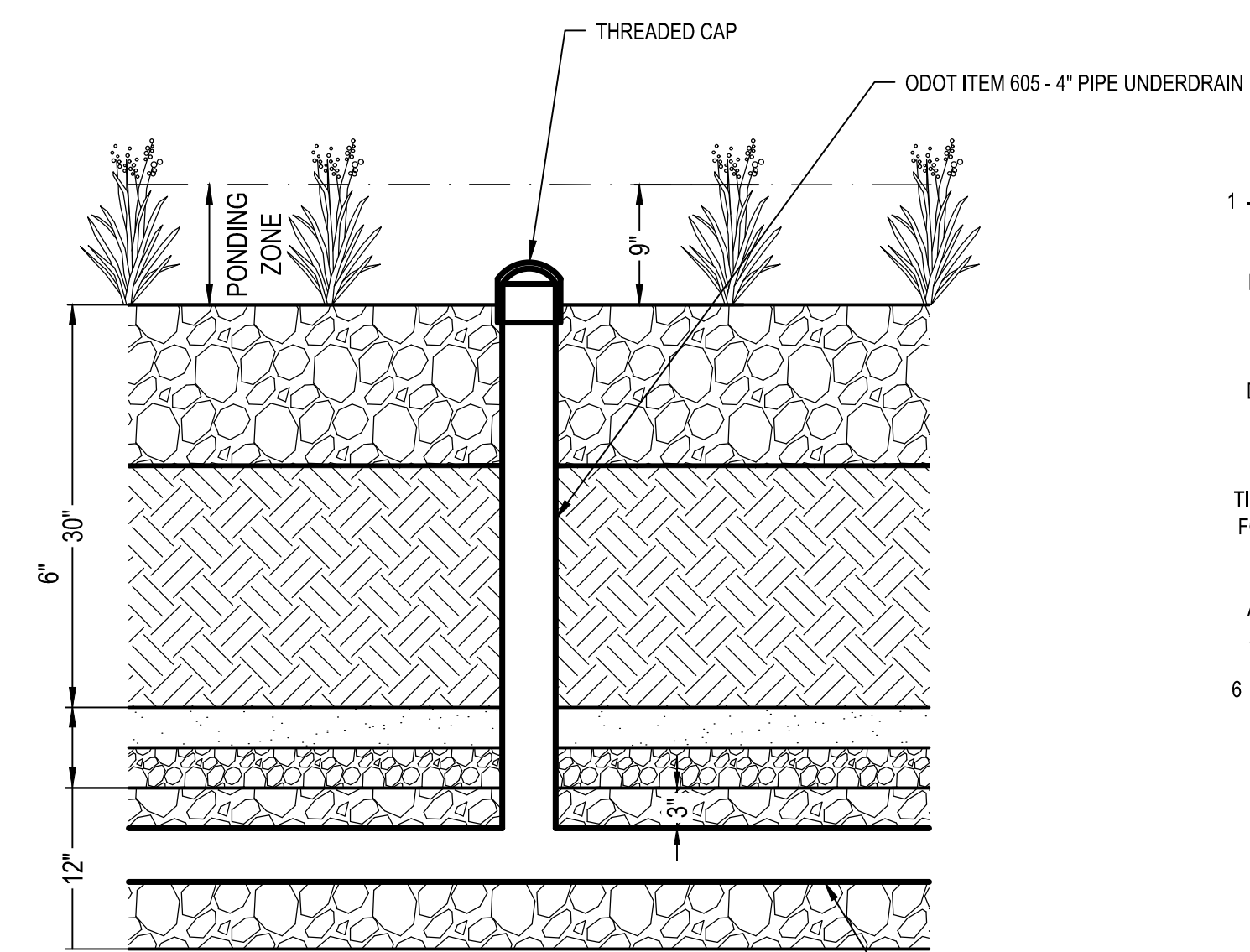
BIORETENTION NOTES:

- PLANTING SOIL MEDIA (BIORETENTION SOIL MEDIA):**
 TEXTURE CLASS: LOAMY SAND HAVING NO LESS THAN 80% SAND AND NO GREATER THAN 10% CLAY CONSIDERING ONLY THE MINERAL FRACTION OF THE SOIL
 PH RANGE: 5.2-8.0
 SOLUBLE SALTS: 500 PPM MAXIMUM
 DECOMPOSED ORGANIC MATTER: 3-5% BY WEIGHT
 PHOSPHOROUS: PHOSPHORUS OF THE PLANTING SOIL SHALL FALL BETWEEN 15 AND 60 MG/KG AS DETERMINED BY THE MEHLICH III TEST
 SAND: SHALL BE CLEAN AND MEET AASHTO M-6 OR ASTM C-33 WITH GRAIN SIZE OF 0.02-.04"
 SUITABLE SOIL MEDIA MIX:
 SAND: 7.5 PARTS - CLEAN SAND
 NATIVE SOIL: 1.5 PART - LOAM, SILT LOAM OR CLAY LOAM TEXTURE
 DECOMPOSED ORGANIC MATTER: 1 PART - LEAF COMPOST, PINE BARK FINES, MULCHES FINES ETC.
 FILTER LAYER 3" OF CLEAN CONCRETE SAND (ASTM C-33) OVER 3" OF #8 STONE
 GRAVEL LAYER AND UNDERDRAIN SYSTEM GRAVEL BED SHALL CONSISTS OF #57 WASHED STONE

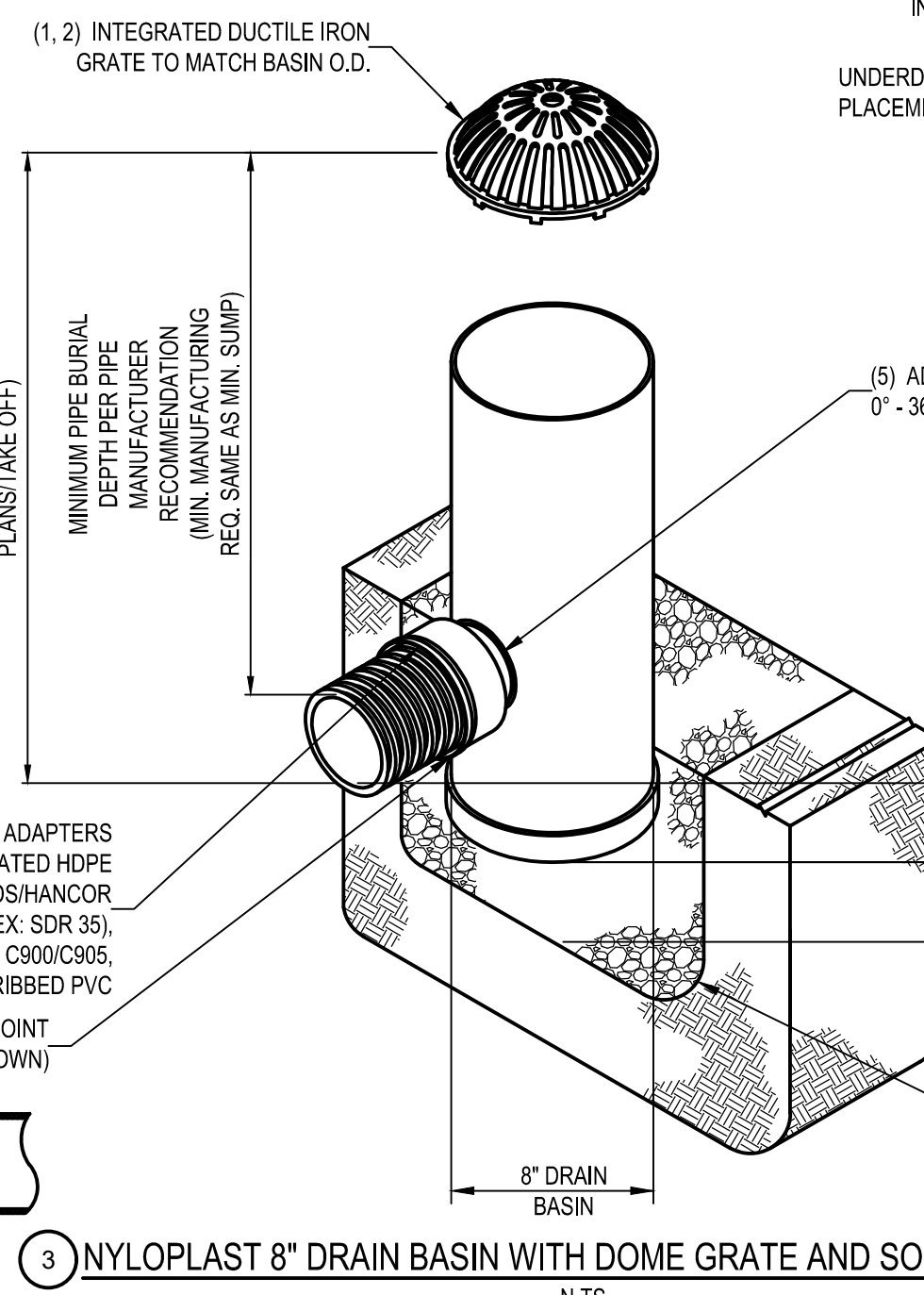
BIORETENTION CONSTRUCTION NOTES:

- TIMING OF CONSTRUCTION:** CONSTRUCTION SHALL TAKE PLACE AFTER LAND GRADING IS COMPLETE AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. CONSTRUCTION SHALL NOT TAKE PLACE DURING PERIODS OF PRECIPITATION SINCE CLOGGING OF SOILS, BEDDING, FILTER OR PLANTING SOIL MAY OCCUR.
 CONSTRUCT THE BIORETENTION CELL(S) AFTER ALL CONTRIBUTING DRAINAGE AREAS ARE STABILIZED AS SHOWN ON THE CONTRACT PLANS AND TO THE SATISFACTION OF THE ENGINEER. DO NOT USE THE COMPLETED BIORETENTION CELL(S) AS TEMPORARY SEDIMENT CONTROL FACILITIES DURING CONSTRUCTION. DO NOT OPERATE HEAVY EQUIPMENT WITHIN THE PERIMETER OF A BIORETENTION FACILITY DURING EXCAVATION, UNDERDRAIN PLACEMENT, BACKFILLING OR PLANTING OF THE FACILITY. USE ALL SUITABLE EXCAVATED MATERIAL IN THE WORK. ALTERNATIVELY, LEGALLY USE, RECYCLE, OR DISPOSE OF ALL EXCAVATED MATERIALS ACCORDING TO 105.16 AND 105.17.
- EXCAVATE THE BIORETENTION CELL(S) TO THE DIMENSIONS, SIDE SLOPES, AND ELEVATIONS SHOWN ON THE CONTRACT PLANS. MINIMIZE THE COMPACTION OF THE BOTTOM OF THE BIORETENTION FACILITY BY THE METHOD OF EXCAVATION.**
 THOROUGHLY MIX THE BIORETENTION SOIL PRIOR TO PLACEMENT. TEST AND ADJUST THE PH AS NEEDED
 CONSTRUCT THE UNDERDRAIN SYSTEM. PLACE THE GRANULAR BACKFILL MATERIAL TO THE INVERT OF THE UNDERDRAIN. ENSURE A MINIMUM OF 3" OF GRANULAR COVER OVER THE UNDERDRAIN PRIOR TO PLACEMENT OF THE BIORETENTION SOIL
- THE BIORETENTION SOIL SHALL BE A UNIFORM MIX THAT IS FREE OF STONES, STUMPS, ROOTS, OR ANY OTHER OBJECT THAT IS LARGER THAN TWO INCHES. THE SOIL MAY CONSIST OF EXISTING SOIL, FURNISHED SOIL, OR A COMBINATION OF BOTH PROVIDED THAT IT MEETS THE FOLLOWING REQUIREMENTS:**
 A) THOROUGHLY MIX THE BIORETENTION SOIL PRIOR TO PLACEMENT. TEST AND ADJUST THE PH AS NEEDED
 B) CONSTRUCT THE UNDERDRAIN SYSTEM. PLACE THE GRANULAR BACKFILL MATERIAL TO THE INVERT OF THE UNDERDRAIN. ENSURE A MINIMUM OF 3" OF GRANULAR COVER OVER THE UNDERDRAIN PRIOR TO PLACEMENT OF THE BIORETENTION SOIL

- PLACE OBSERVATION WELLS AND CLEANOUTS WHERE SHOWN IN THE PLANS. CONNECT THE WELLS/CLEANOUTS TO THE PERFORATED UNDERDRAIN WITH THE APPROPRIATE MANUFACTURED CONNECTIONS. THE WELLS/CLEANOUTS SHALL EXTEND 6 INCHES ABOVE THE TOP ELEVATION OF THE BIORETENTION FACILITY. CAP THE WELLS/CLEANOUTS WITH A THREADED SCREW CAP. CAP THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL/CLEANOUT OR CONNECTED TO OTHER CONDUITS.**
- PLACE GRASS SPECIFIED FOR BIORETENTION FACILITIES AS SPECIFIED IN THE PLANS. PLANT MATERIALS WILL BE MEASURED AND PAID FOR WITH ITEM SPECIAL - MISC.: BIORETENTION CELL - EA. APPLY NO PESTICIDES, HERBICIDES, AND FERTILIZERS DURING PLANTING, ESTABLISHMENT, OR MAINTENANCE UNDER ANY CIRCUMSTANCES.**
- EXCAVATE, SOILS AND LINERS:** EXCAVATE THE TRENCH TO PLAN DIMENSIONS BEING CAREFUL TO PROTECT IN-SITU SOILS BY AVOIDING COMPACTION OF THE TRENCH WITH EQUIPMENT AND FOOT TRAFFIC. MEET THE REQUIREMENTS SPECIFIED. DOCUMENTATION OF CERTIFICATION/TESTING SHALL BE AVAILABLE ONSITE TO SITE INSPECTORS. THE SOIL MEDIA SHALL BE PLACED IN 12" LIFTS AND LIGHTLY SETTLED BY GENTLE SOAKING WITH WATER. SOIL MEDIA SHALL BE PLACED TO A DEPTH OF APPROXIMATELY 5% HIGHER THAN THE FINISHED GRADE TO ALLOW SETTLING.
- VEGETATION:** PRETREATMENT AREAS/GRASS FILTER AREA SHALL BE SEED PER THE CONTRACT DOCUMENTS. THE SIDE SLOPES AND DITCHES SHALL BE WELL ESTABLISHED BEFORE CONSTRUCTION OF THE BIORETENTION CELLS BEGINS. THE CITY/ENGINEER SHALL CONFIRM THAT THE SIDE SLOPES AND DITCHES HAVE NECESSARY ESTABLISHMENT TO BEGIN CONSTRUCTION OF THE CELL(S).
- BIORETENTION CELLS WILL BE PAID FOR AS ITEM SPECIAL - MISC.: BIORETENTION CELL AT THE CONTRACT BID PRICE PER EACH. THE PAYMENT WILL BE FULL COMPENSATION (EXCAVATION, GRAVEL/SAND, SOIL MEDIA, UNDERDRAINS, OBSERVATION/ CLEANOUTS, SEEDING AND MULCHING, TIED CONCRETE BLOCK MAT, TYPE 1, ETC...) FOR ALL APPLICABLE INCIDENTALS NECESSARY TO SATISFACTORILY COMPLETE THE WORK.**



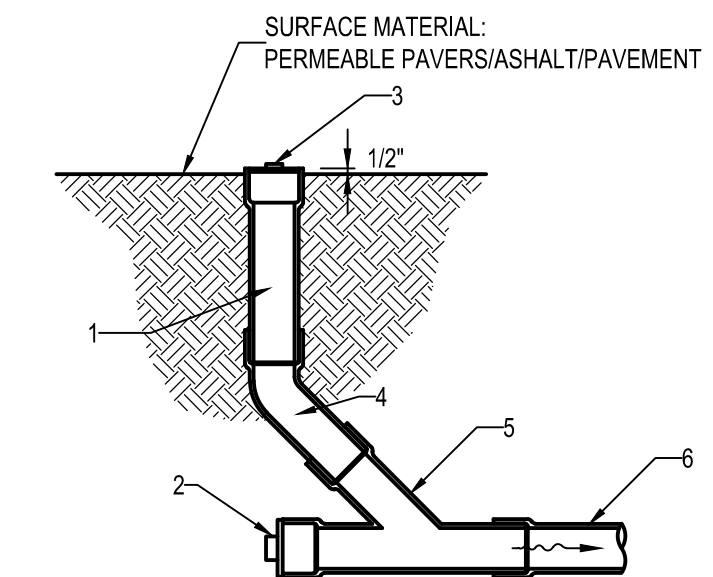
4 BIORETENTION CELL CLEAN OUT DETAIL
 N.T.S.



3 NYLOPLAST 8" DRAIN BASIN WITH DOME GRATE AND SOLID COVER
 N.T.S.

KEYED NOTES

- 4" DIA. CLEAN-OUT PIPE
- CAP AND SEAL CONDUIT
- THREADED CLEAN-OUT CAP (SOLID)
- 45° BEND
- WYE
- UNDERDRAIN



2 CLEAN OUT DETAIL FOR PAVEMENT OR GRASS AREAS
 N.T.S.



REV.	DATE	DESCRIPTION

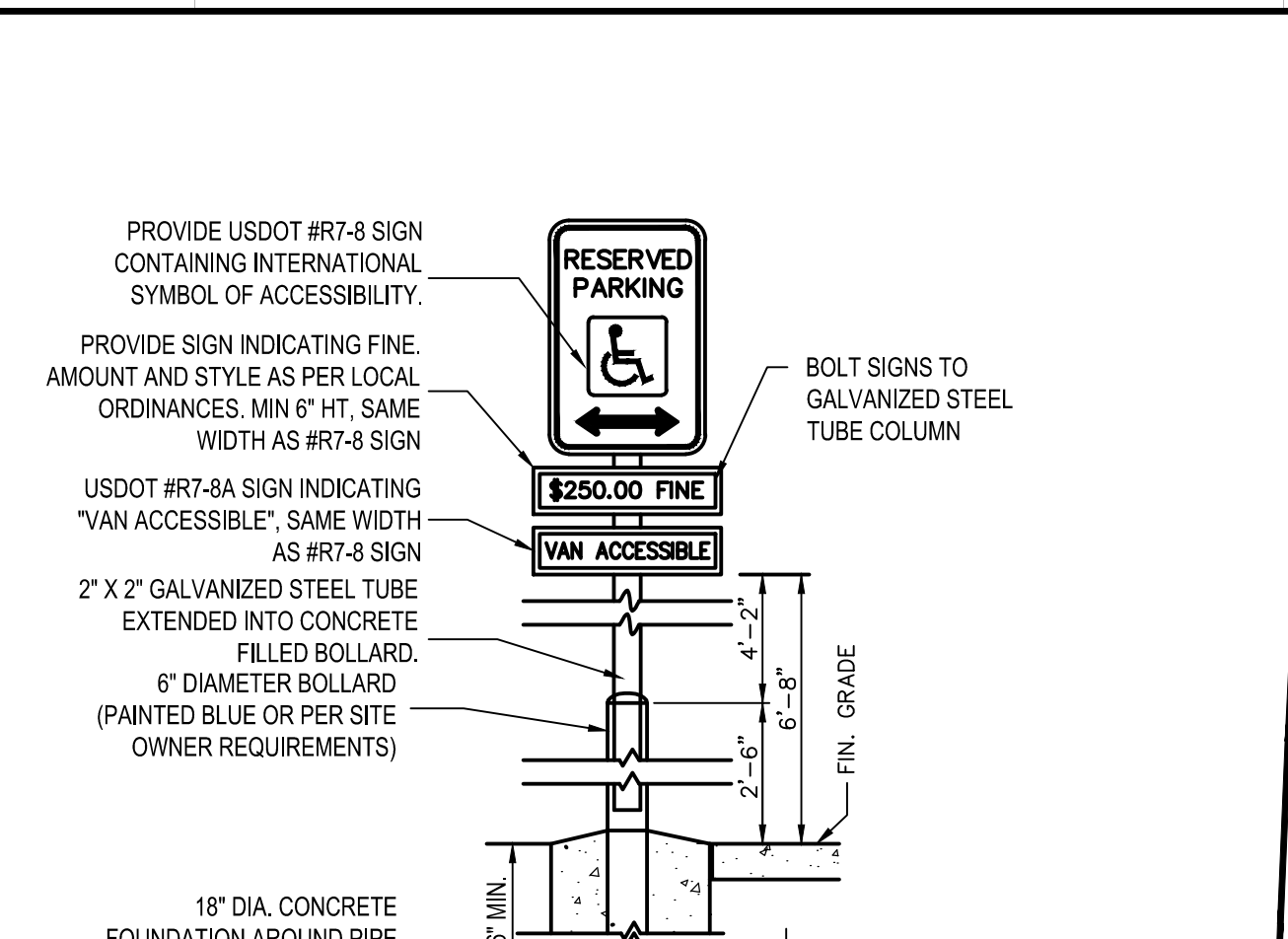
**Larchmere Kendall Parking Lot
 Green Infrastructure Renovation
 Shaker Heights, Ohio**

SITE DETAILS

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-
PROJECT MANAGER	DESIGNER
IV	AMS

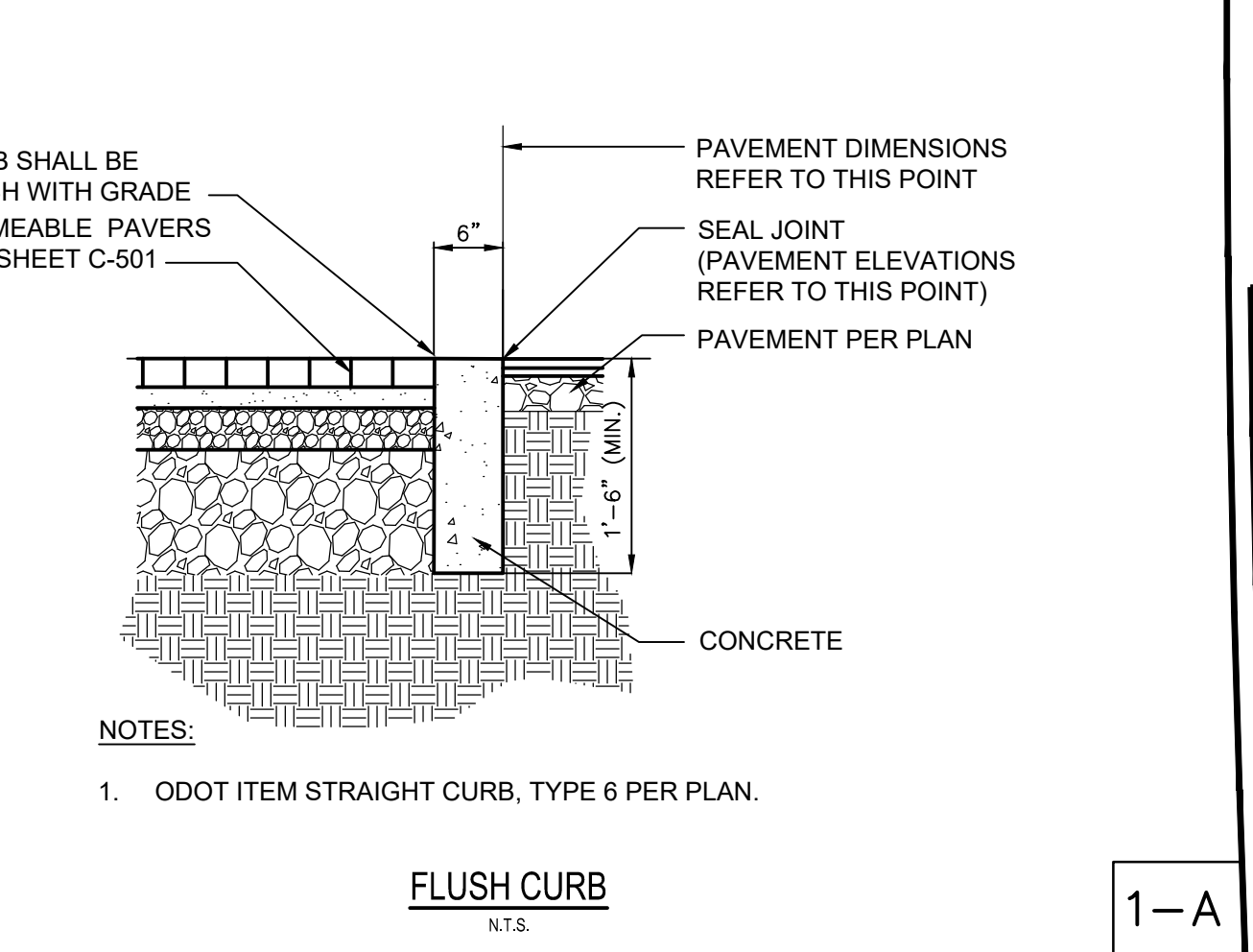
JOB NO.
2016331.02

C-502



NOTES:

- CONTRACTOR SHALL VERIFY SIGN WITH LOCAL AND ADA REQUIREMENTS AND SPECIFICATIONS BEFORE INSTALLATION. LOCAL JURISDICTION SIGN REQUIREMENTS SHALL TAKE PRECEDENCE OVER THIS DETAIL.
- SIGNS SHALL BE LOCATED SO THAT THEY CANNOT BE OBTSCURED BY A VEHICLE PARKED IN THE SPACE.
- BOLLARD TO BE DELETED IF SIGN POST IS OUT OF VEHICULAR PATH OR PARKING SPACE. WHEN NOT USING BOLLARD FOUNDATION THE SIGN POST SHALL BE EMBEDDED 3'-6" IN A 12" DIA. CONCRETE FOOTING 4'-0" DEEP (0.12 CU. YDS. OF CONCRETE REQUIRED).
- SIGN TO BE PROVIDED AT ALL ACCESSIBLE PARKING SPACES AS PER ADA REGULATIONS.
- IF SIGN IS MOUNTED TO BUILDING, THE BOTTOM OF THE VAN ACCESSIBLE SIGN SHALL BE 5'-0" FROM THE FINISH GRADE.



NOTES:

ALL PAVEMENT MARKINGS TO BE WHITE PAVEMENT PAINT, UNLESS STATED OTHERWISE.

MARKING (STRIPING) PAINT FOR PARKING SPACES, TRAFFIC ARROWS, ADA PARKING AND SYMBOLS, ETC., PER ASTM-P-78-66T STANDARDS AND AS FOLLOWS:

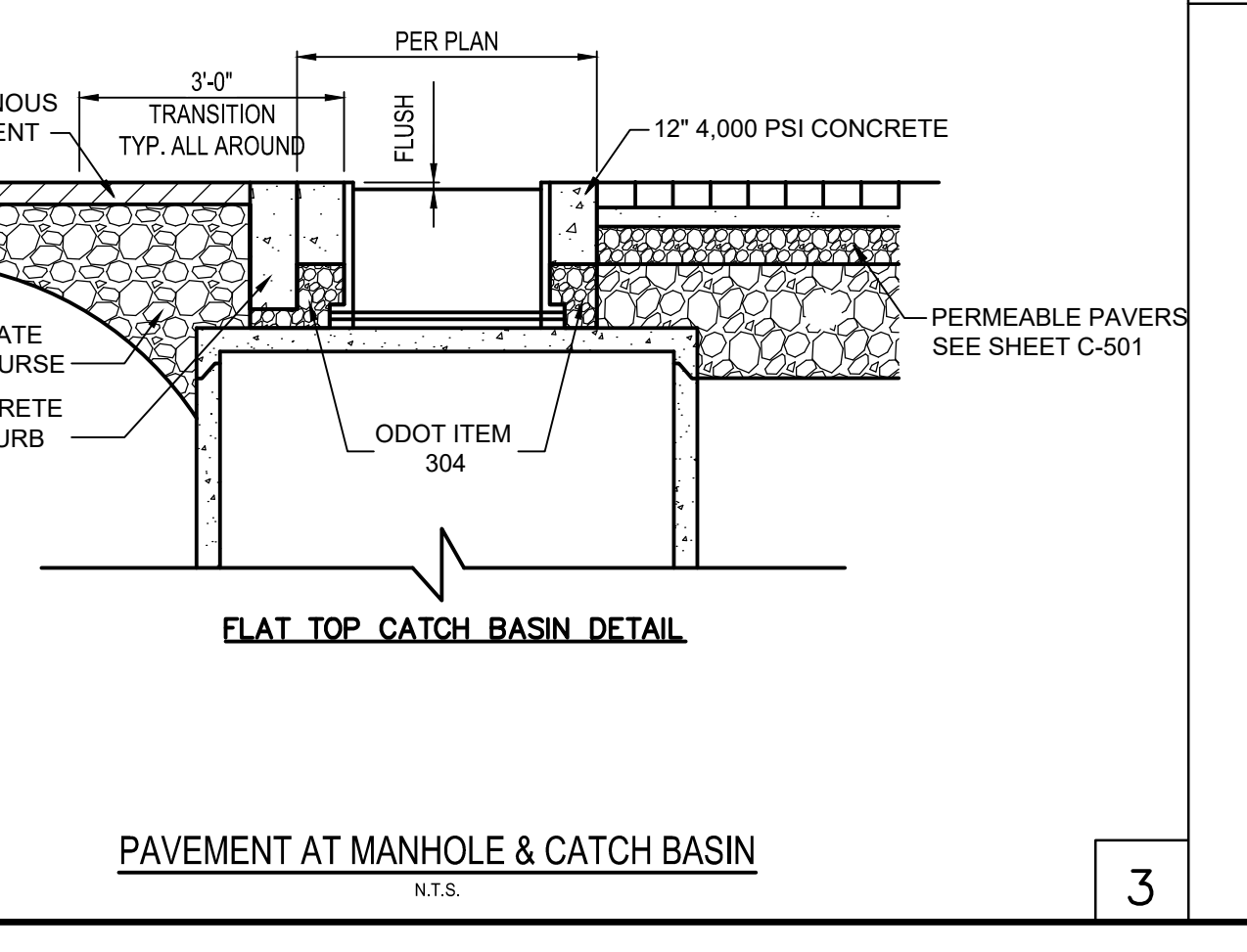
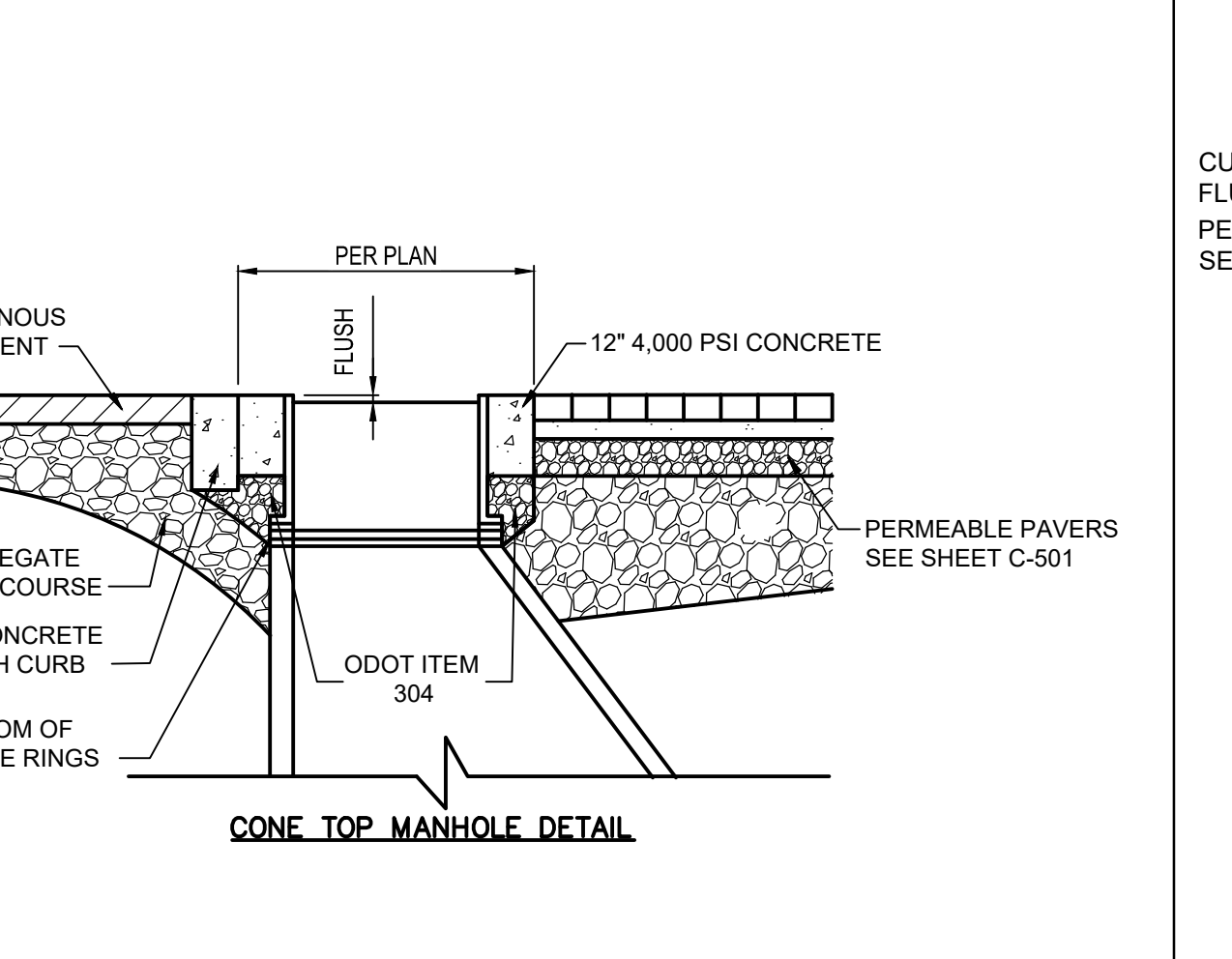
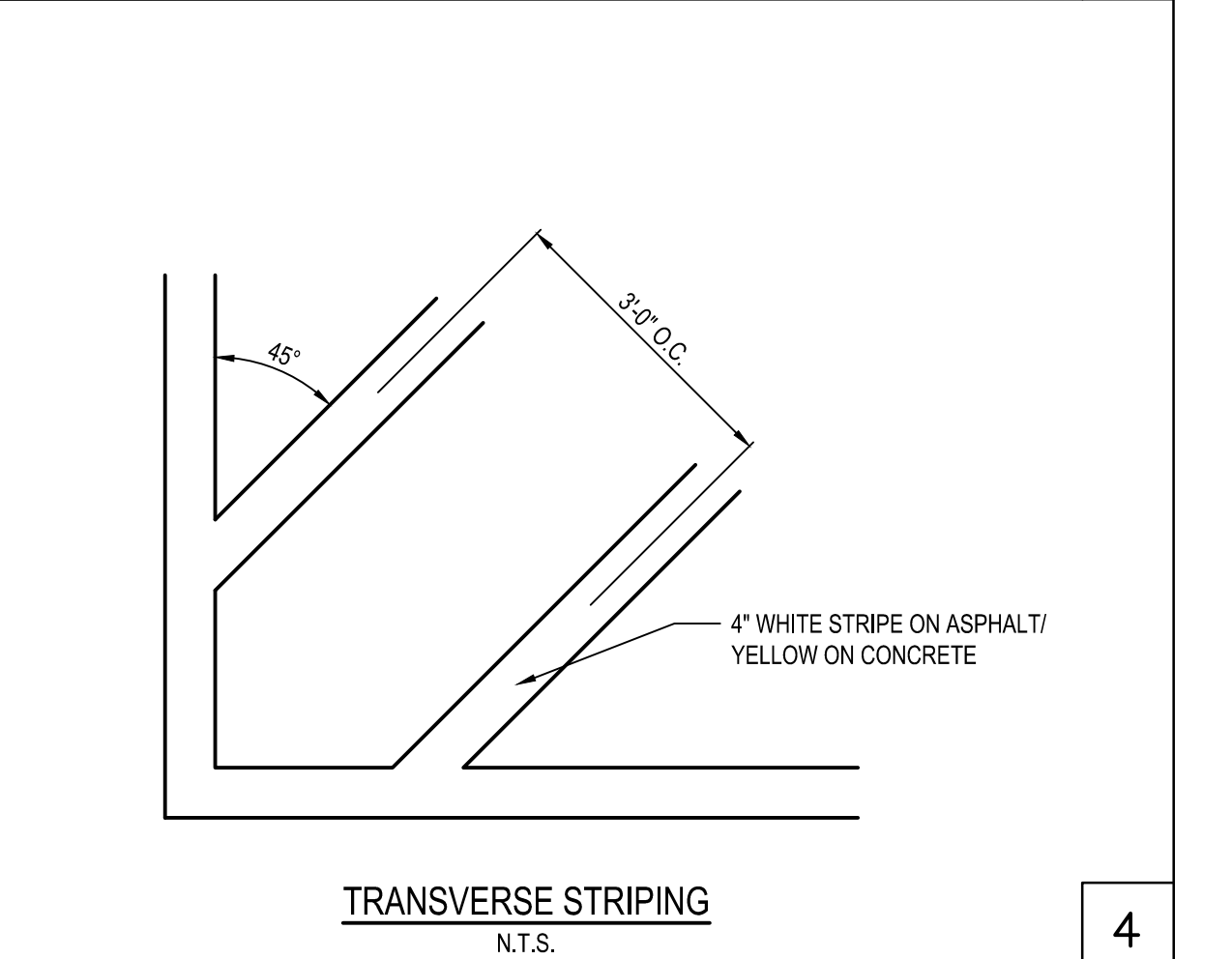
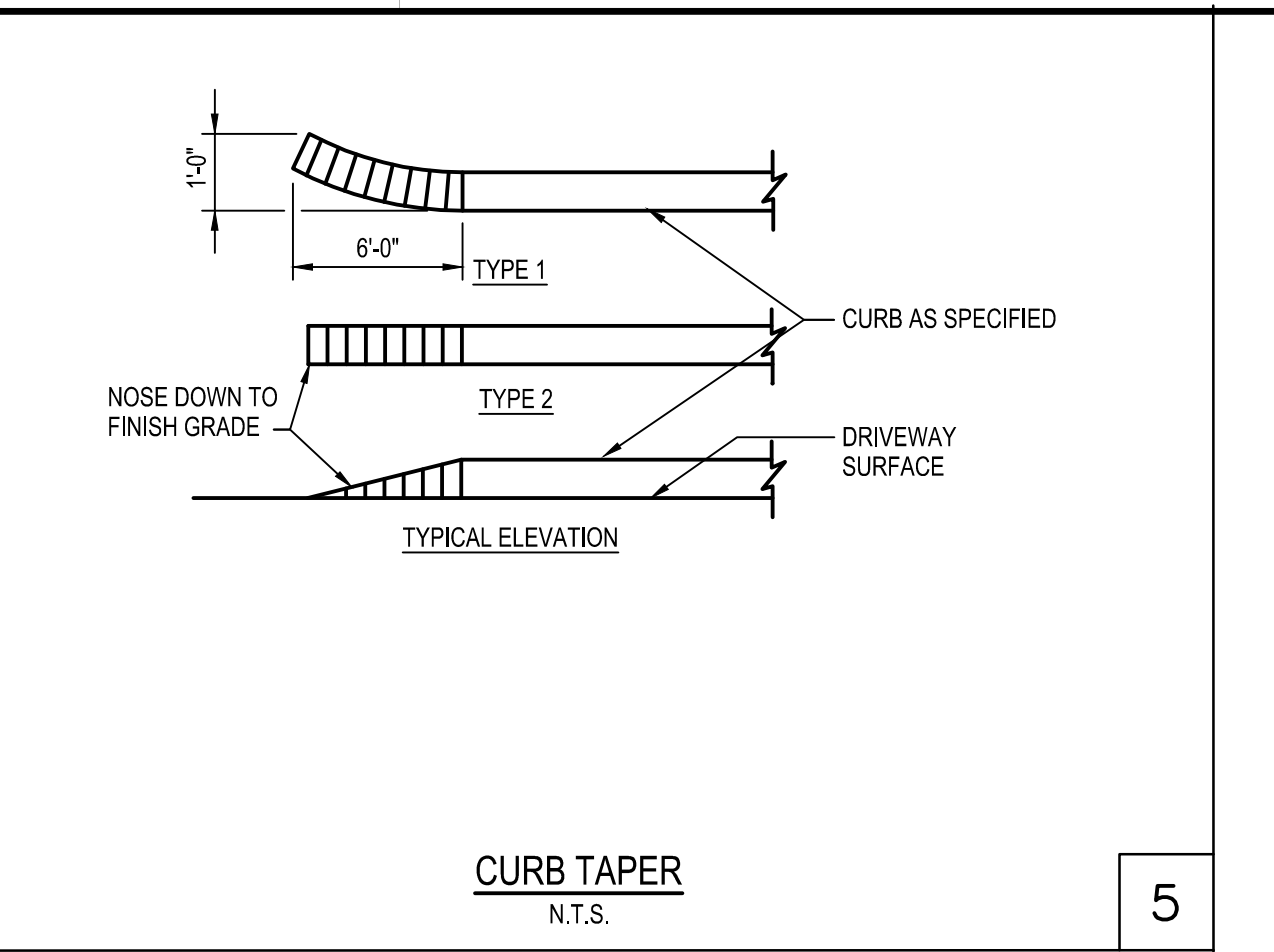
EXISTING SURFACES WITHOUT ANY SEAL COATING: OIL BASE (ALKYD RESIN TYPE TO MEET FEDERAL SPECIFICATION TTP-85).

NEW OR EXISTING SURFACES WITH A TOP COATING OR SEAL COATING (USUALLY WATER BASE); WATER BASE TYPE TO MEET FEDERAL SPECIFICATION TTP-01952.

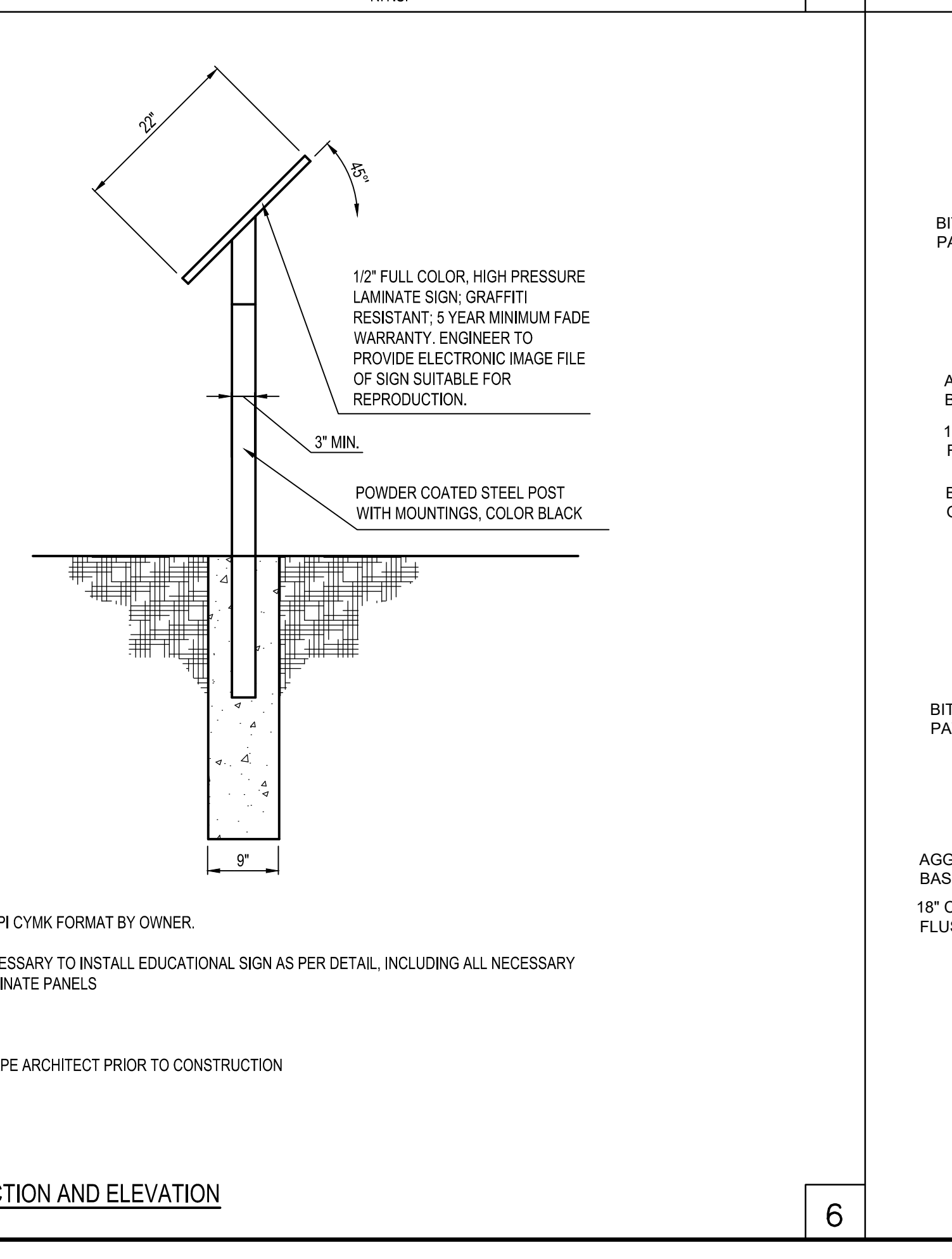
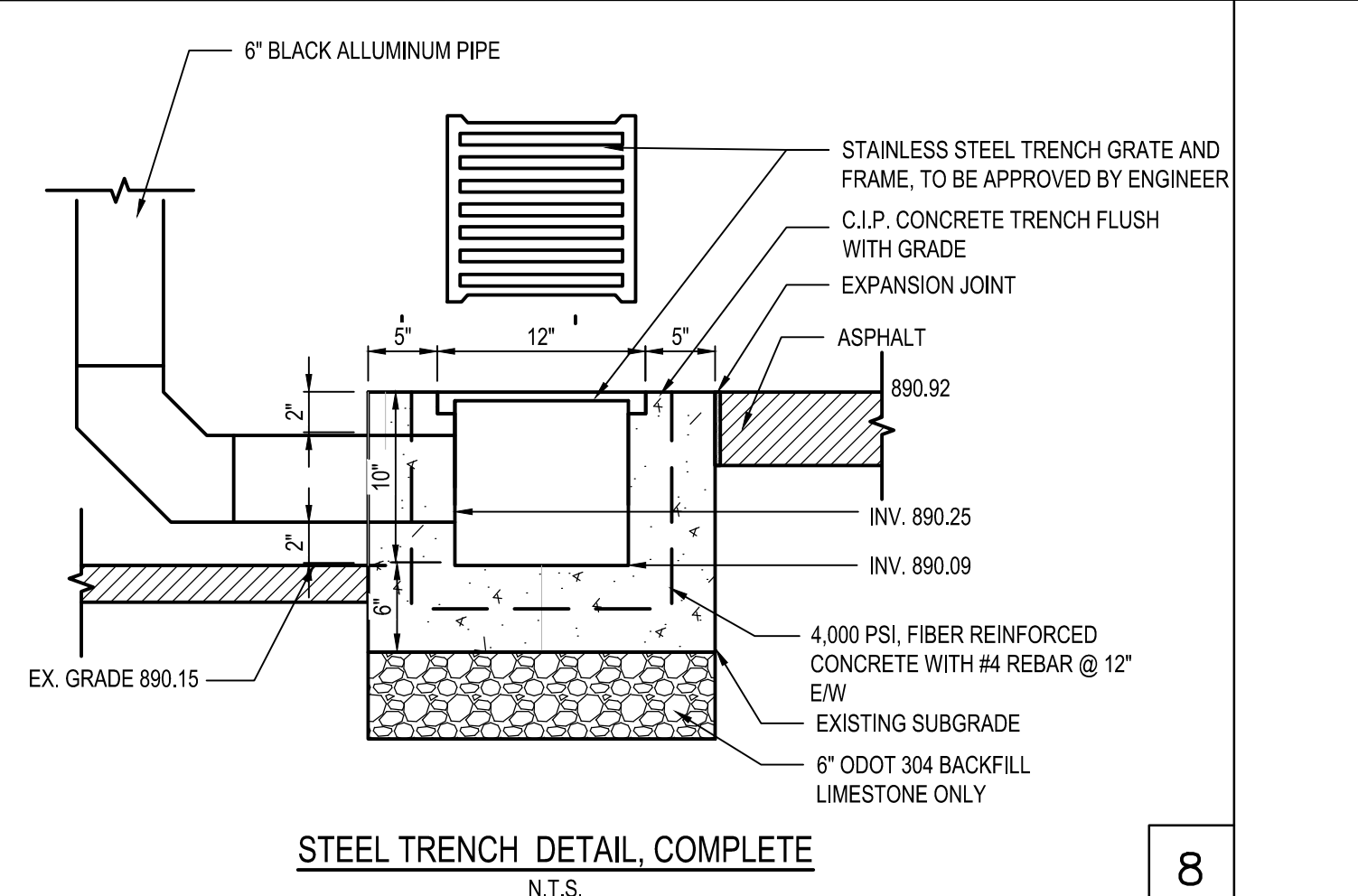
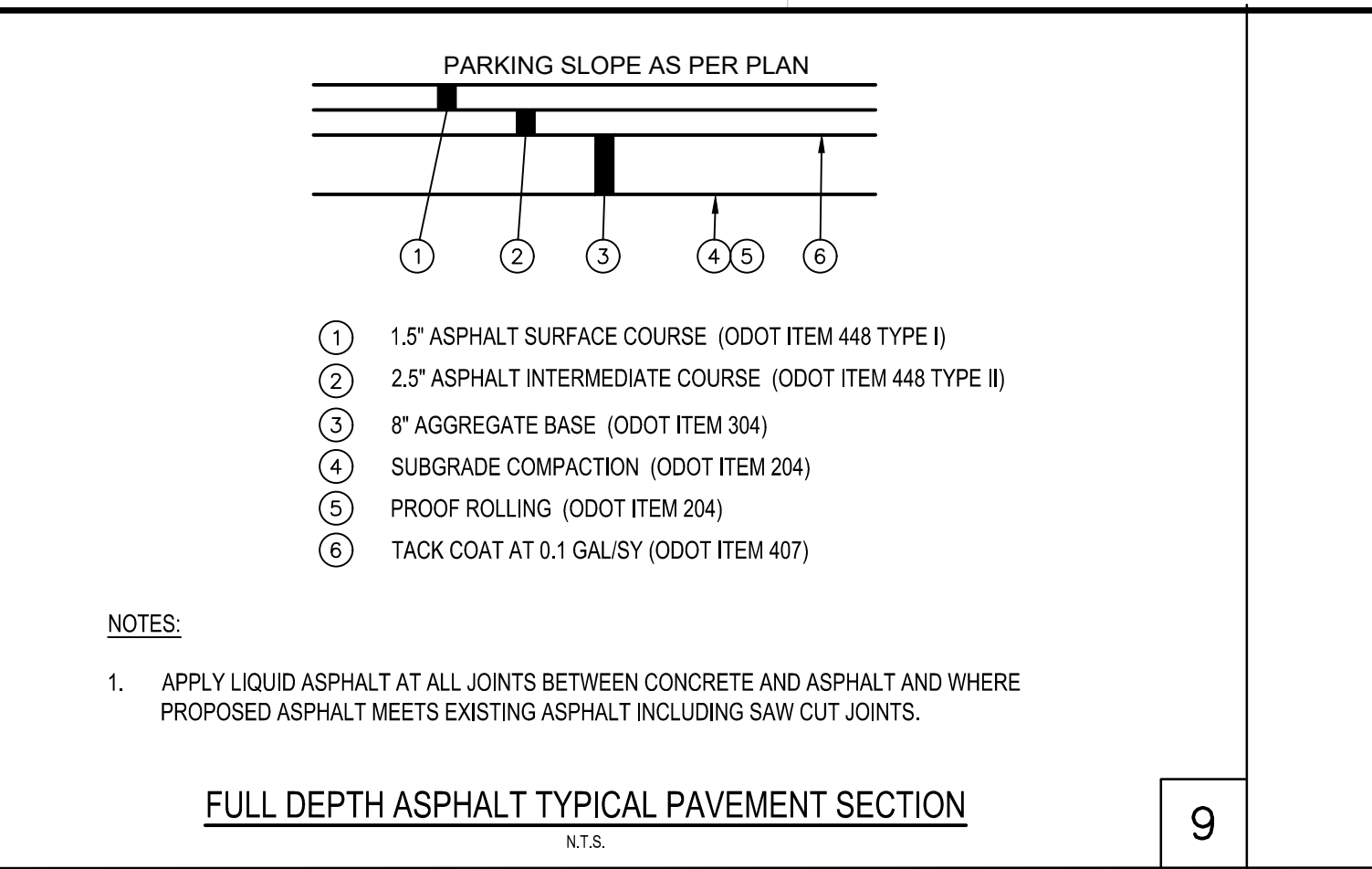
PROVIDE A NON-SLIP AGGREGATE ADDITIVE TO MARKING PAINT USED AT ADA ACCESS RAMPS.

APPLY 2 COATS WITH STRAIGHT EDGES, WHITE ON ASPHALT

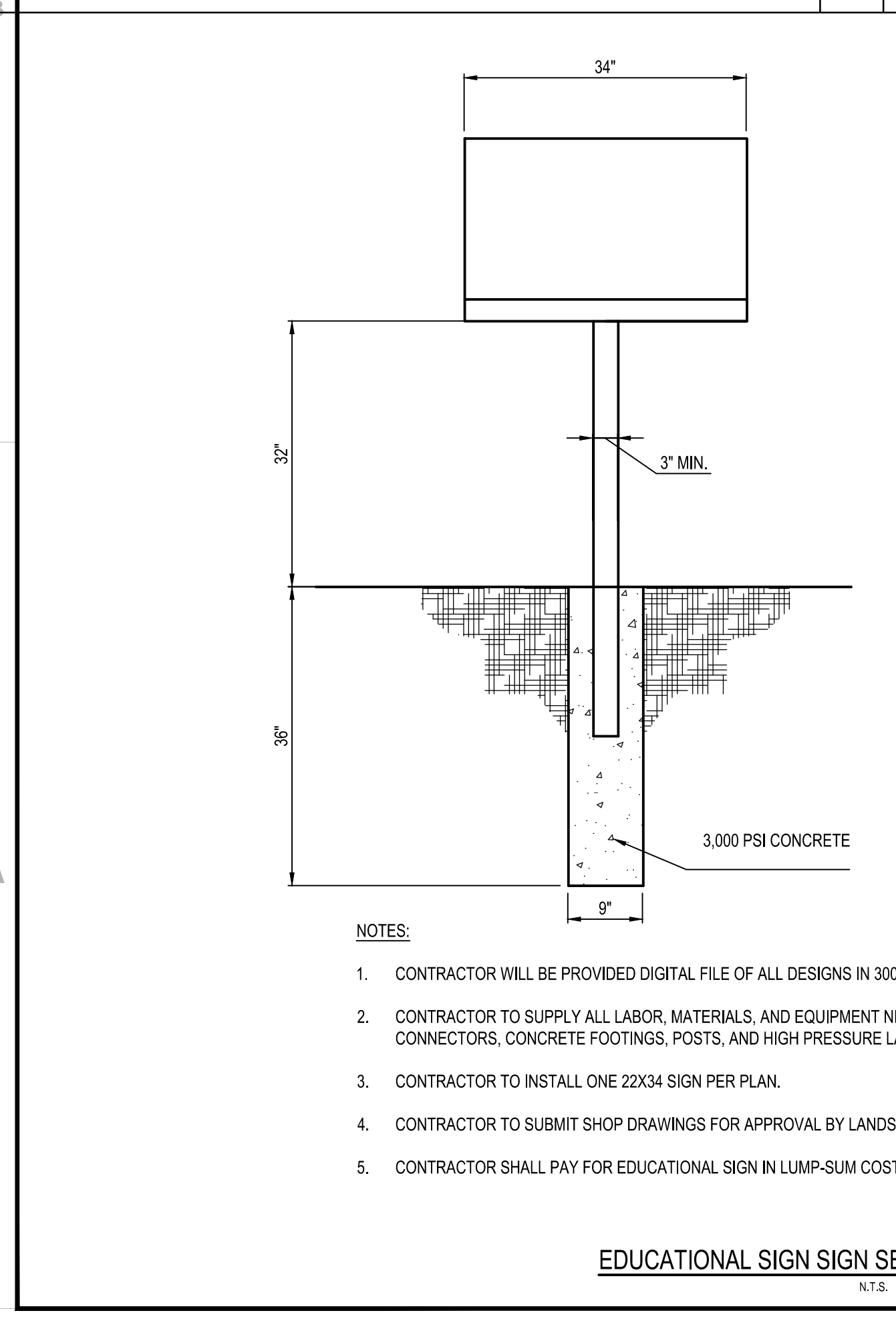
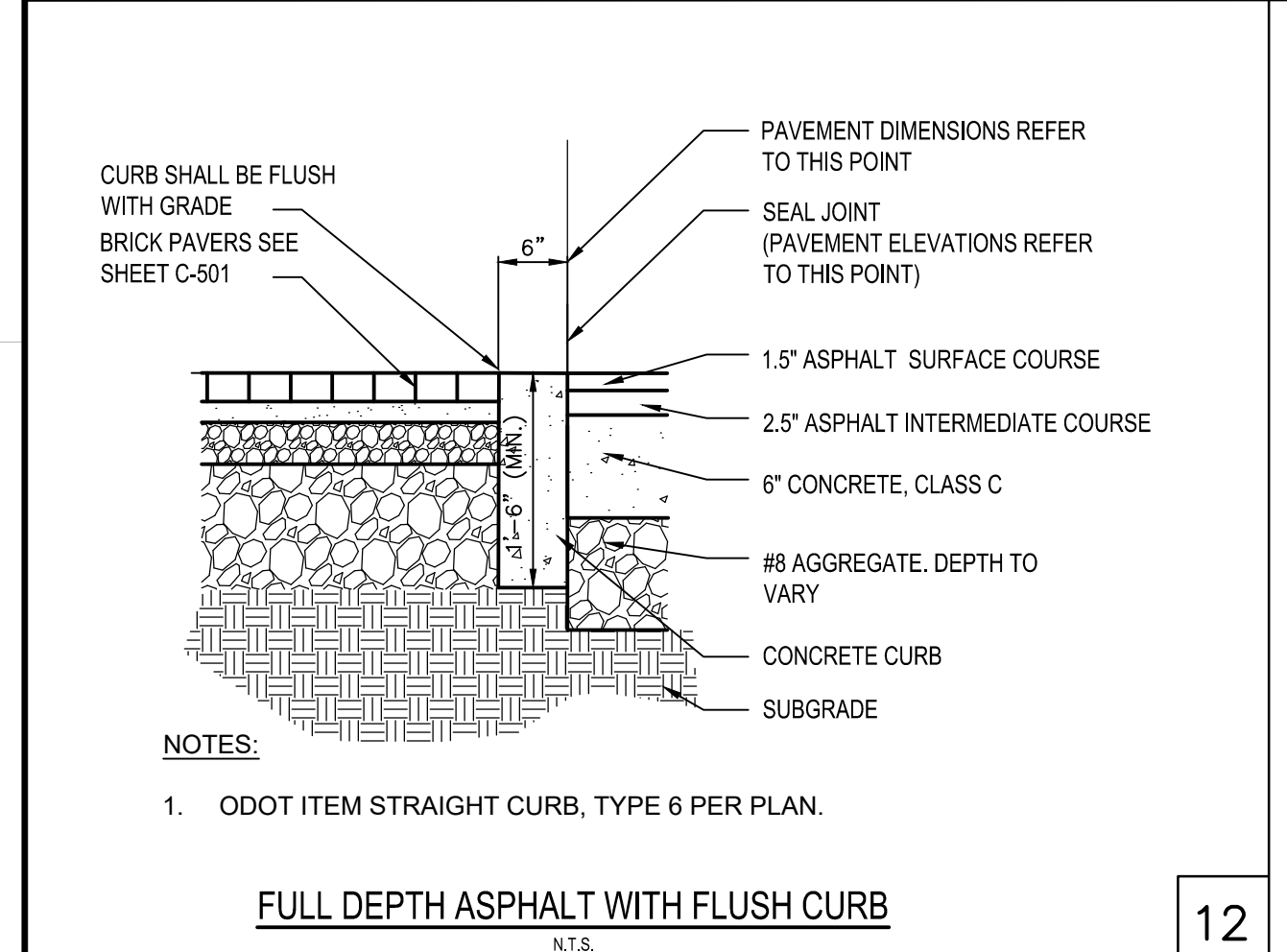
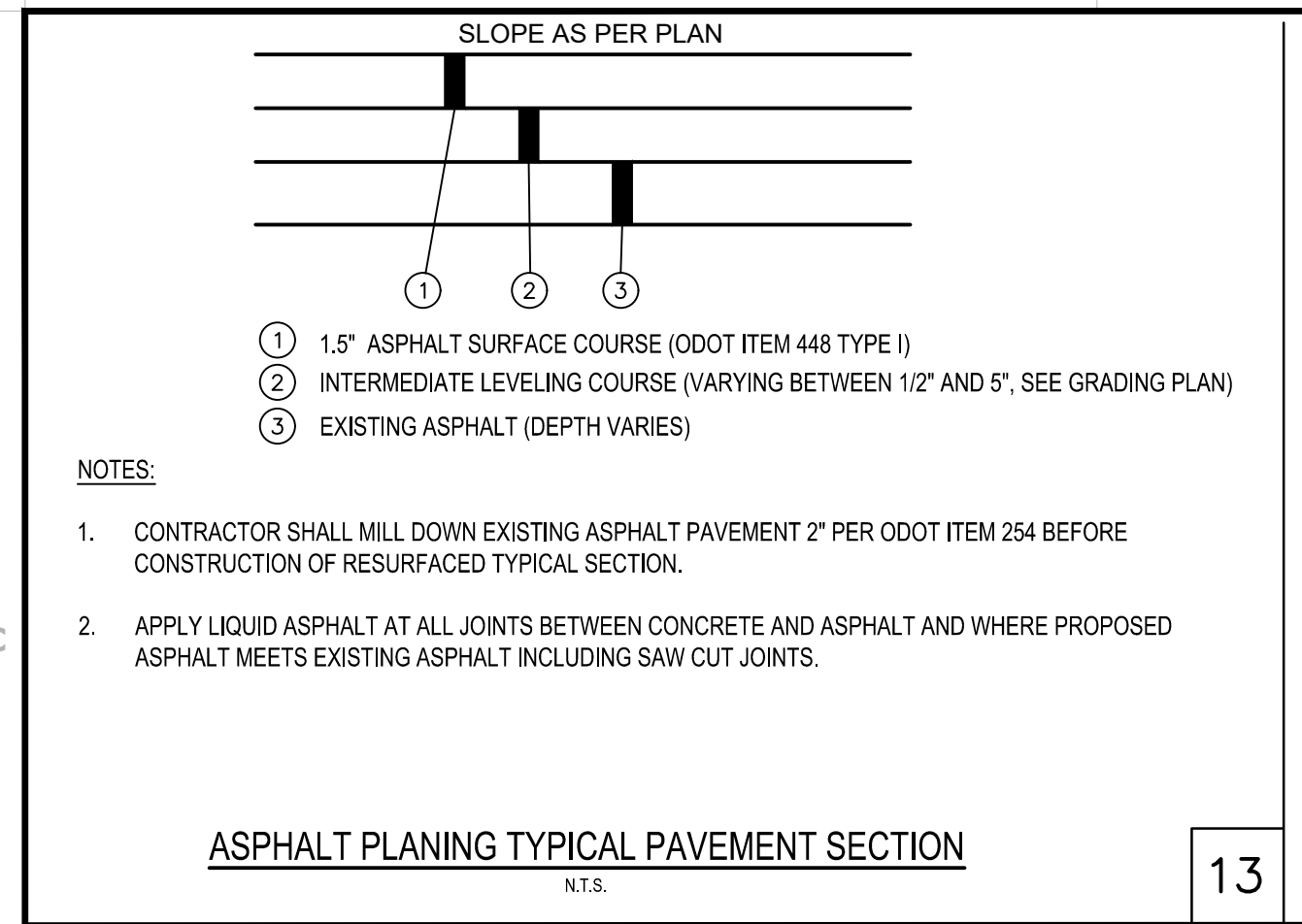
2'-0" TYP.
 4'-0" TYP.
 1'-0" TYP.



PAVEMENT AT MANHOLE & CATCH BASIN
N.T.S.



EDUCATIONAL SIGN SIGN SECTION AND ELEVATION
N.T.S.



ASPHALT PLANING TYPICAL PAVEMENT SECTION
N.T.S.

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 February 9, 2018 8:49 AM - jbarkey

Landscape Notes & Planting Specifications

PART 1 - GENERAL

1.1 DESCRIPTION

1. WORK INCLUDED: LANDSCAPE INSTALLATION REQUIRED FOR THIS WORK IS INDICATED ON THE DRAWINGS AND, IN GENERAL, INCLUDES ALL PLANTING AND OTHER GROUND COVER INSTALLATION THROUGHOUT THE WORK.
2. REVIEW THE GENERAL CONTRACT CONDITIONS AND SHEET C-001, WHICH CONTAIN INFORMATION AND REQUIREMENTS THAT APPLY TO THIS SECTION.

1.2 QUALITY ASSURANCE

1. QUALIFICATIONS OF WORKMEN:
 - A. PROVIDE AT LEAST ONE PERSON/FOREMAN WHO SHALL BE PRESENT AT ALL TIMES DURING EXECUTION OF THIS PORTION OF THE WORK AND WHO SHALL BE THOROUGHLY FAMILIAR WITH THE TYPE OF MATERIALS, DESIGN METHODS, DETAILS, ETC. BEING INSTALLED AND THE BEST METHODS FOR THEIR INSTALLATION AND WHO SHALL DIRECT ALL WORK PERFORMED UNDER THIS SECTION.
 - B. THIS DESIGNATED PERSON/FOREMAN SHALL BE PRESENT AT ALL LANDSCAPE PERTINENT PRE-CONSTRUCTION MEETINGS, SCOPE REVIEW MEETINGS, OWNER ARCHITECT CONTRACTOR (OAC) MEETINGS, AND ON-SITE THROUGHOUT THE DURATION OF THE LANDSCAPE PORTION OF THE PROJECT. THIS DESIGNATED INDIVIDUAL IS THE MAIN POINT OF CONTACT BETWEEN ALL PARTIES INVOLVED AS IT RELATES TO HISHER CONSTRUCTION PROCEDURE.
 - C. THIS DESIGNATED PERSON/FOREMAN SHALL ALSO BE THE MAIN POINT OF CONTACT FOR ALL SUBMITTALS, SAMPLES AND PROJECT NOTIFICATIONS AS OUTLINED HEREIN.
 - D. THIS DESIGNATED PERSON/FOREMAN SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS TO ENSURE CONTINUITY FOR THE PROJECT, AND PROVIDE CLEAR DIRECTION FOR ALL CONSULTANTS INVOLVED.
2. CODES, REGULATIONS AND STANDARDS:
 - A. ALL PLANTS AND PLANTING MATERIAL SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE AND COUNTY LAWS REQUIRING INSPECTION FOR DISEASE AND INSECT CONTROL.
 - B. QUALITY AND SIZE:
 - a. GENERAL: QUALITY AND SIZE SHALL CONFORM TO THE CURRENT EDITION OF 'HORTICULTURAL STANDARDS' FOR NUMBER ONE GRADE NURSERY STOCK AS ADOPTED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
 - b. DECIDUOUS TREES: DECIDUOUS TREES WILL MEASURE IN UNITS OF AN AVERAGE CALIPER AT POINT 6-12 INCHES ABOVE THE GROUND.
 - c. EVERGREEN TREES WILL MEASURE IN UNITS OF AVERAGE HEIGHT IN FEET ABOVE THE GROUND.
 - d. PLANT STOCK: EACH BALL SHALL BE OF SUFFICIENT SIZE TO INSURE SUCCESSFUL FIBROUS FEEDING ROOTS NECESSARY TO INSURE SUCCESSFUL RECOVERY AND DEVELOPMENT OF THE PLANT.
 - e. TOPSOIL SHALL CONFORM TO ASTM D 5268-92.

1.3 SUBMITTALS

1. PLANT MATERIAL LIST: WITHIN 35 DAYS AFTER AWARD OF CONTRACT, AND BEFORE ANY PLANTING MATERIALS ARE DELIVERED TO THE JOB SITES, SUBMIT TO THE LANDSCAPE ARCHITECT A COMPLETE LIST OF NURSERIES WHERE PLANTS ARE TO BE OBTAINED AND ANY SUBSTITUTIONS PROPOSED TO BE INSTALLED.
 - A. INCLUDE COMPLETE DATA ON SOURCE LOCATION, SIZE, QUALITY AND PHOTOS OF PLANT MATERIAL LISTED ON COMPANY/NURSERY LETTERHEAD AS AN OFFICIAL DOCUMENT. NO EMAIL MESSAGES OR INFORMAL NOTES WILL BE ACCEPTED. THE DOCUMENT SHALL LIST, AT A MINIMUM, THE NURSERY LOCATION INCLUDING ADDRESS, TELEPHONE, FAX, AND EMAIL AND CONTACT NAME.
 - B. DEMONSTRATE COMPLETE CONFORMANCE WITH THE REQUIREMENTS OF THIS SECTION.
 - C. THIS SHALL IN NO WAY BE CONSTRUED AS PERMITTING FOR SPECIFIC ITEMS DESCRIBED IN THE DRAWINGS OR THESE SPECIFICATIONS UNLESS THE SUBSTITUTION HAS BEEN APPROVED IN ADVANCE BY THE LANDSCAPE ARCHITECT.
 - D. TREES AND SHRUBS WILL BE TAGGED BY THE LANDSCAPE ARCHITECT AND/OR OWNER'S REPRESENTATIVE AT THE TREE GROWER NURSERY OR PHOTOS WILL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PURCHASE, DIGGING AND DELIVERY TO THE SITE.
 - E. PRIOR TO PLANTING THE LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE RESERVE THE RIGHT TO REJECT ANY PLANT MATERIAL DELIVERED TO THE SITE THAT IS NOT IN CONFORMANCE WITH THE REQUIREMENTS OF THIS SECTION. REMOVE REJECTED TREES OR SHRUBS IMMEDIATELY FROM THE PROJECT SITE.
2. CERTIFICATES
 - A. SUBMIT CERTIFICATES OF INSPECTION REQUIRED BY LAW FOR TRANSPORTATION OF EACH SHIPMENT OF PLANTS ALONG WITH PROPER INVOICING AND STATE CERTIFICATION.
 - B. UPON COMPLETION OF THE INSTALLATION, DELIVER ALL CERTIFICATES TO THE LANDSCAPE ARCHITECT.
 - C. FILE COPIES OF CERTIFICATES AFTER ACCEPTANCE OF MATERIAL, INSPECTION AND APPROVAL AT SOURCE DOES NOT PRECLUDE REJECTION OF PLANTS AT THE PROJECT SITE.
 - D. PLANT MATERIAL TAGS/LABELS SHALL REMAIN FIXED TO ALL PLANTINGS UNTIL FINAL APPROVAL BY THE ARCHITECT. ONCE FINAL APPROVAL HAS BEEN MADE, CONTRACTOR SHALL REMOVE PLANT MATERIAL TAGS/LABELS AT THE DIRECTION OF THE OWNER AND/OR LANDSCAPE ARCHITECT.
3. PLANT MEASUREMENT:
 - A. MEASURE ACCORDING TO ANSI Z60.1. SPREAD, HEIGHT OR CONTAINER SIZES SHOWN ON THE DRAWINGS ARE MINIMUM ACCEPTABLE SIZES. DO NOT PRUNE TO OBTAIN REQUIRED SIZES. IF RANGE OF SIZES IS GIVEN, NO PLANT SHALL BE LESS THAN MINIMUM SIZE, AND AT LEAST 50 PERCENT (50%) OF PLANTS SHALL BE AS LARGE AS UPPER HALF OF RANGE SPECIFIED.
 - a. TREES AND SHRUBS: MEASURE WITH BRANCHES AND TRUNKS OR CANES IN THEIR NORMAL POSITION. TAKE HEIGHT MEASUREMENTS FROM AT OR NEAR THE TOP OF THE ROOT FLARE FOR FIELD STOCK GROWN AND CONTAINER GROWN STOCK. MEASURE MAIN BODY OF TREE OR SHRUB FOR HEIGHT AND

SPREAD, DO NOT MEASURE BRANCHES OR ROOT TIP TO TIP. TAKE CALIPER MEASUREMENTS 6 INCHES ABOVE THE ROOT FLARE FOR TREES UP TO 4 INCH CALIPER SIZE, AND 12 INCHES ABOVE THE ROOT FLARE FOR LARGER TREES.

- a. OTHER PLANTS: MEASURE WITH STEMS, PETIOLES AND FOLIAGE IN THEIR NORMAL POSITION.

1.4 PRODUCT HANDLING

1. DELIVERY:
 - A. BALLED AND BURLAPPED (B&B) STOCK: CARE SHOULD BE TAKEN AT ALL TIMES AS TO NOT DAMAGE THE BARK OR BRANCHES. DAMAGE TO THE BARK WILL RESULT IN REJECTION OF THE PLANT MATERIALS. PLANTS SHALL BE ONLY LIFTED AND HANDLED FROM THE BOTTOM OR SIDES OF THE BALL AS MUCH AS POSSIBLE IN ORDER TO PREVENT DAMAGE TO THE PLANT OR ROOT BALL.
 - B. PLANT STOCK TO BE DELIVERED B&B SHALL BE MOVED WITH A COMPACT BALL OF EARTH SO FIRMLY WRAPPED IN BURLAP THAT UPON DELIVERY THE SOIL IN THE BALL IS STILL FIRM AND COMPACTED ABOUT THE SMALL FEEDING ROOTS.
 - C. DELIVER ALL MATERIALS IN SEALED CONTAINERS. MATERIALS WHICH BECOME DAMAGED AND UNSUITABLE FOR USE SHALL BE REPLACED.
2. TEMPORARY STORAGE AND PROTECTION:
 - A. PROTECT PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS.
 - B. PLANTS THAT CANNOT BE PLANTED IMMEDIATELY ON DELIVERY SHALL BE KEPT IN THE SHADE, WELL PROTECTED WITH SOIL, SHREDDED HARDWOOD MULCH, STRAW, OR OTHER ACCEPTABLE MATERIAL, AND SHALL BE KEPT WELL WATERED.
 - C. REPLACEMENTS: IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY FOR THE APPROVAL OF THE LANDSCAPE ARCHITECT AND AT NO ADDITIONAL EXPENSE TO THE OWNER.

1.5 SELECTION, TAGGING AND ORDERING PLANT MATERIAL

1. DOCUMENTATION:

SUBMIT DOCUMENTATION WITHIN 10 DAYS AFTER AWARD OF CONTRACT THAT ALL PLANT MATERIALS HAVE BEEN LOCATED. ARRANGE PROCEDURE FOR REVIEW OF PLANT MATERIAL AT THE TIME OF SUBMISSION. THE LANDSCAPE ARCHITECT IS TO REVIEW PLANT MATERIAL AT SOURCE IF REQUIRED BY OWNER.
2. REVIEW:

REQUEST FOR A REVIEW OF PLANT MATERIALS AND QUANTITIES AT PLACE OF GROWTH OR FROM NURSERY SHIPMENT SITE AT LEAST 7 DAYS IN ADVANCE OF SHIPPING TO THE PROJECT SITE. RIGHT IS RESERVED TO REFUSE REVIEW AT THIS TIME, IF LANDSCAPE ARCHITECT'S OR OWNER'S REPRESENTATIVE JUDGMENT, A SUFFICIENT QUANTITY OF PLANTS IS NOT AVAILABLE.
3. TRANSPORTATION

CONTRACTOR SHALL ACCOMPANY LANDSCAPE ARCHITECT AND/OR OWNER TO ALL REVIEW(S) OF PLANT MATERIALS BEFORE ANY PURCHASING OR DIGGING OF MATERIALS. LANDSCAPE ARCHITECT WILL REVIEW AND TAG PLANTS AT PLACE OF GROWTH AND UPON DELIVERY FOR CONFORMITY TO SPECIFICATIONS.
4. UNAVAILABLE MATERIAL:

IF PROOF IS SUBMITTED THAT ANY PLANT SPECIFIED IS NOT ATTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR VARIETY WITH THE CORRESPONDING ADJUSTMENT OF CONTRACT PRICE. SIZE SUBSTITUTION INCREASES FROM THE SIZE SPECIFIED GREATER THAN ONE INCH (1") CALIPER SIZE OR TWO FEET (2') HEIGHT FOR EVERGREEN TREES WILL NOT BE ALLOWED. SUBSTANTIATE SUCH PROOF IN WRITING NO LATER THAN 20 DAYS AFTER AWARD OF CONTRACT. LATE SUBSTITUTIONS ARE AT THE SOLE APPROVAL OF THE LANDSCAPE ARCHITECT.

1.6 ANALYSIS OF SAMPLES AND TESTS

1. SAMPLING:

RIGHT IS RESERVED TO TAKE AND ANALYZE SAMPLES OF MATERIALS FOR CONFORMITY TO SPECIFICATIONS AT ANY TIME. FURNISH SAMPLES UPON REQUEST.
2. REJECTED MATERIALS:

REMOVE REJECTED MATERIALS IMMEDIATELY FROM THE SITE AT CONTRACTOR'S EXPENSE. PAY COST OF TESTING OF MATERIALS NOT MEETING SPECIFICATIONS.

PART 2 - MATERIALS

2.1 PLANTING MATERIAL

1. TOPSOIL:

GENERAL ON-SITE TOPSOIL SHALL BE 1/4 ORIGINAL ON-SITE SOIL AND 3/4 SANDY LOAM OR LOAM SOIL AS DEFINED BY THE USDA SOIL CONSERVATION SERVICE SOIL CLASSIFICATION SYSTEM. FREE FROM ADMIXTURE OF SUBSOIL, HEAVY CLAY, COARSE SAND, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIALS AS PER ASTM D 5268-92. 95% OF TOPSOIL SHALL PASS A 2.0 ML SIEVE. ORGANIC CONTENT SHALL BE 4% TO 12% OF TOTAL DRY WEIGHT.

 - A. IF THE QUALITY OR QUANTITY OF ON-SITE TOPSOIL STOCKPILED IS INSUFFICIENT TO COMPLETE THE WORK, PROVIDE IMPORTED TOPSOIL. OBTAIN RIGHTS AND PAY ALL COSTS FOR IMPORTED TOPSOIL MATERIAL.
 - B. PROPOSED TOPSOIL SHALL BE ACCEPTABLE TO LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE AND SOILS TESTING FIRM.
 - C. PROVIDE A HISTORY OF THE CROPS GROWN IN AND THE CHEMICALS APPLIED TO THE IMPORTED TOPSOIL.
 - D. SUBMIT AN ANALYSIS OF BOTH EXISTING AND IMPORTED TOPSOIL TO DETERMINE THE NECESSARY AMENDMENTS AND RECOMMENDED RATES OF APPLICATION FOR EACH TYPE OF PLANT TO BE GROWN.
 - E. IF ANY EXISTING OR IMPORTED TOPSOIL IS DEEMED TO BE CONTAMINATED, A FULL ANALYSIS ACCORDING TO THE FOLLOWING SPECIFICATIONS SHALL BE PERFORMED.
 - a. PRE-INSTALLATION AGRONOMIC SOILS REPORT: SUBMIT SOIL ANALYSIS REPORT AT OWNER'S EXPENSE

FOR EXISTING SOIL AND NEW TOPSOIL, BEFORE DELIVERY OF TOPSOIL, FURNISH THE LANDSCAPE ARCHITECT WITH SIX (6) COPIES OF SOIL ANALYSIS MADE BY THE APPROVED SOIL TESTING LABORATORY STATING PERCENTAGES OF SILT, CLAY, SAND AND ORGANIC MATTER, PH, MINERAL AND PLANT NUTRIENT CONTENT OF TOPSOIL.

- b. TESTING AGENCY: CONTRACTOR TO SUBMIT CONTACT INFORMATION OF DESIRED SOIL-TESTING LABORATORY PRIOR TO PROVIDING SAMPLES TO THE LAB FOR TESTING. LANDSCAPE ARCHITECT SHALL APPROVE SOIL-TESTING LABORATORY PRIOR TO TESTING. CONTRACTOR TO PAY COST OF TESTING OF MATERIALS NOT MEETING SPECIFICATIONS AS STATED WITHIN. REPORT SHALL BE COMPLETED WITHIN (3-5) BUSINESS DAYS OF RECEIVING ANY SOIL SAMPLES FROM CONTRACTOR.
 - c. SUBMIT REPORT THREE (3) WEEKS PRIOR TO MATERIAL INSTALLATION IN SOIL ANALYSIS REPORT: INDICATE SUITABILITY OF SOIL TYPES FOR ORNAMENTAL TREES AND SHRUBS AND LAWN GROWTH. IF NOT SUITABLE, STATE QUANTITIES OF SAND, ORGANIC MATTER, NITROGEN, PHOSPHORUS, POTASH, AND ANY ALUMINUM SULPHATE OR OTHER SOIL AMENDMENTS TO BE ADDED TO MAKE TOPSOIL SUITABLE. INCLUDE RECOMMENDATIONS TO IMPROVE LEVEL OF ORGANIC MATTER.
 - d. POST-INSTALLATION AGRONOMIC SOIL REPORTS: WHEN ALL PLANTING OPERATIONS ARE COMPLETE, AND NO LATER THAN FOURTEEN (14) DAYS PRIOR TO FINAL ACCEPTANCE INSPECTION, SUBMIT A SOIL ANALYSIS REPORT TO THE LANDSCAPE ARCHITECT FROM FOUR (4) DIFFERENT LOCATIONS AS DIRECTED BY THE LANDSCAPE ARCHITECT. THE SOIL ANALYSIS SHALL BE MADE BY AN APPROVED SOIL TESTING LABORATORY STATING PERCENTAGES OF SILT, CLAY, SAND, AND ORGANIC MATTER, PH, MINERAL AND PLANT NUTRIENT CONTENT OF SOIL. THIS REPORT TO AID IN THE LONG-TERM MAINTENANCE OF INSTALLED PLANT MATERIAL.
2. PLACEMENT OF THE SPECIFIED DEPTH OF IMPORTED TOPSOIL SHALL OCCUR IN ALL PLANTING AREAS (SEED OR SOD AND ALL PLANTING BEDS). COMPACT PLACEMENT OF TOPSOIL MATERIAL TO 80%-85% STANDARD PROCTOR DENSITY, AND PROVIDE SOIL TESTING ANALYSIS REPORT TO LANDSCAPE ARCHITECT AND OWNER PRIOR TO INSTALLING PLANT MATERIALS.
 - A. DO NOT COVER COMPACT TOPSOIL. OVER COMPACTED TOPSOIL WILL BE LOOSENEO TO A DEPTH OF 36" AND RE-COMPACTED TO MEET SPECIFICATIONS.
 3. PLANTS:
 - A. TREES, SHRUBS, AND HERBACEOUS PLANTS:
 - a. ALL TREES, SHRUBS AND HERBACEOUS PLANTS, DECIDUOUS PLANTS OR EVERGREENS SHALL BE SOUND, HEALTHY, VIGOROUS, FIRST CLASS, FRESHLY DUG, NURSERY GROWN IN A CLIMATE SIMILAR TO OR MORE SEVERE THAN OHIO.
 - b. ALL PLANT MATERIAL SHOULD BE FREE OF INSECTS, THEIR EGGS AND LARVAE.
 - c. PLANTS SHALL BE FREE OF MECHANICAL OR CULTURAL INJURY BY RODENTS, AND FREE OF NOTICEABLE AFTER EFFECTS, BORERS AND OTHER PESTS.
 - d. PLANTS SHALL BE TRUE TO SCIENTIFIC NAMES. THE NAMES USED ARE THOSE OF 'STANDARDIZED PLANT NAMES'.
 4. SOIL AMENDMENTS
 - A. SOIL AMENDMENTS: 'SOIL MOIST' GRANULAR SOIL MOISTURIZER POLYMER PRODUCT AS MANUFACTURED AND DISTRIBUTED BY JRM CHEMICAL INC., CLEVELAND, OHIO (216-475-8488), OR EQUAL IF NO IRRIGATION IS APPLIED.
 6. MULCH:
 - A. NO SOIL OR MULCH IS TO COVER THE ROOT FLARE OF ANY TREE OR SHRUBS.
 - B. NON-DYED, DOUBLE SHREDDED HARDWOOD SHALL BE INSTALLED IN ALL OTHER LANDSCAPE BEDS
 7. FERTILIZER FOR PLANTING:
 - A. EACH TREE PLANTING TO RECEIVE GRANULAR NITROFORM (18-6-12) FERTILIZER, APPLY 1/4 POUND PER ONE-INCH TRUNK DIAMETER TO THE TOP OF THE ROOT BALL AND EXTEND TO PAST THE DRIP LINE. FERTILIZER TO BE MIXED IN WITH THE TOPSOIL BACKFILL MIX AROUND EACH PLANT.
 - B. EACH TREE AND SHRUB TO RECEIVE THE LANDSCAPER'S BIONUTRION (3-0-3) GRANULAR WITH MYCORRHIZAL TECHNOLOGY FERTILIZER. APPLY 4 OUNCES PER ONE INCH TRUNK DIAMETER OR 1 FOOT OF ROOT BALL AND EXTEND PAST THE DRIP LINE. APPLY 16 OUNCES PER 100 SQUARE FEET (SQ. FT.) OF SHRUB AND PLANTING BED AREA. FERTILIZER TO BE MIXED IN WITH THE TOPSOIL BACKFILL MIX.
 - C. SHRUB AND GROUND COVER BEDS TO RECEIVE NITROFORM SLOW RELEASE FERTILIZER WITH AN APPLICATION RATE OF 2 LBS. OF NITROGEN PER EVERY 1000 SQUARE FEET OF BED AREA AT THE TIME OF INSTALLATION. FERTILIZER TO BE MIXED IN WITH THE TOPSOIL BACKFILL MIX.
 8. ANTI-DESICCANT: EMULSION TYPE, FILM FORMING AGENT DESIGNED TO PERMIT A TRANSPIRATION BUT RETARD EXCESSIVE LOSS OF MOISTURE FROM PLANTS. DELIVER IN MANUFACTURER'S FULLY IDENTIFIED CONTAINERS AND MIX IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 9. HERBICIDE: ROUND UP, KLEENUP, OR EQUAL.
 10. WRAPPING: TREE WRAP TAPE NOT LESS THAN FOUR(4) INCHES WIDE, DESIGNED TO PREVENT BORE DAMAGE AND WINTER FREEZING.
 11. STAKE AND TIES: PROVIDE STAKES OF SOUND NEW HARDWOOD, TREATED SOFTWOOD, OR REDWOOD, FREE OF KNOTHOLES AND OTHER DEFECTS. TIE STAKES TO TREE TRUNKS WITH FLAT WOVEN POLYPROPYLENE TIES: ARBORITE GREEN, OR APPROVED EQUAL. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
 12. TREE EARTH ANCHOR SYSTEM: PROVIDE DUCKBILL TREE SUPPORT SYSTEM FOR TREE ROOT BALLS ANCHORING IN PLANTING PIT. SIZE OF ANCHORING SYSTEM TO BE PER THE DRAWINGS AND DETAILS ASSOCIATED WITH THE CONTRACT DOCUMENTS AND MANUFACTURER'S SPECIFICATIONS. SUBMIT SAMPLES FOR APPROVAL. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 13. EROSION CONTROL BLANKET: INTERLOCKING STRAW FIBER BLANKET WITH DEGRADABLE NETTING STRUCTURE.
 14. SOIL SEPARATOR FABRIC: SHALL BE NON-WOVEN, WATER PERMEABLE POLYESTER GEOTEXTILE, MANUFACTURED AS A LANDSCAPING PRODUCT.

PART 3- EXECUTION

3.1 SURFACE CONDITIONS

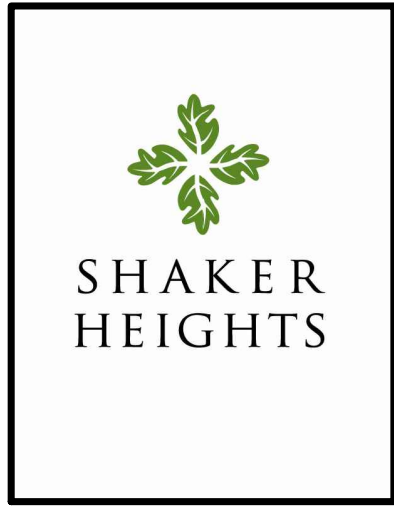
1. INSPECTION: PRIOR TO ALL WORK IN THIS SECTION, CAREFULLY INSPECT THE INSTALLED WORK OF ALL OTHER TRADES AND VERIFY THAT ALL SUCH WORK IS COMPLETE TO THE POINT WHERE THIS INSTALLATION MAY PROPERLY COMMENCE.
 - A. VERIFY THAT ALL TOPSOIL INSTALLATION METHODS AND APPROVALS HAVE BEEN COMPLETED IN ACCORDANCE WITH THIS SECTION.
 - B. VERIFY THAT ALL PROPOSED WORK AREAS ARE FREE OF WEEDS AND ROCKS 3/4 INCH IN DIAMETER OR LARGER.
 - C. VERIFY PERCENTAGE OF COMPACTION OF EXISTING SUBSOIL AND TOPSOIL INSTALLATION IS ACCEPTABLE FOR HEALTHY, PLANT GROWTH AND ROOT ESTABLISHMENT WITH APPROPRIATE PERCENTAGES OF SOIL PARTICLES, WATER AND AIR PER CUBIC FOOT.
 - D. VERIFY WITH THE LANDSCAPE ARCHITECT THAT TOPSOIL INSTALLATION HAS BEEN APPROVED.
2. DISCREPANCIES:
 - E. IN THE EVENT OF ANY DISCREPANCIES, IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT.
 - F. DO NOT PROCEED WITH THE INSTALLATION IN THE AREAS OF DISCREPANCIES UNTIL AFTER SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED.
 - G. IF QUANTITIES LISTED IN PLANT MATERIAL LIST DO NOT CORRELATE WITH PLANTINGS INDICATED ON PLAN, THE QUANTITIES ON THE PLAN SHALL GOVERN.

3.2 LAYOUT

1. SHRUBS AND TREES SHALL BE INSTALLED WITHIN 1'-0" AND GROUND COVER SHALL BE INSTALLED WITHIN 6" OF PLANT LOCATION ON THE PLAN.

3.4 PLANTING

1. GENERAL:
 - A. ALL TREE AND SHRUB PLANTING OPERATIONS SHALL BE PERFORMED BETWEEN THE DATES OF MARCH 15 TO MAY 15, AND OCTOBER 1 TO DECEMBER 1. ALL EVERGREEN PLANTING OPERATIONS SHALL BE PERFORMED BETWEEN APRIL 1 TO MAY 15 AND OCTOBER 1 TO NOVEMBER 15. ALL GROUND COVER PLANTING OPERATIONS SHALL BE PERFORMED BETWEEN APRIL 1 TO JUNE 1 AND IN THE FALL WHEN SOD IS WORKABLE.
 - B. PLANT AREAS: PLANTING AREAS ARE PITS, OR PREPARED PLANTING BEDS FOR TREES, SHRUBS AND VINES WHERE INDICATED ON THE DRAWINGS.
 - C. TOPSOIL FOR PLANTING OPERATIONS SHALL BE FURNISHED BY THE CONTRACTOR AS SPECIFIED WITHIN.
 - D. THE DEPTH OF PLANTING AREAS IS THE DEPTH BELOW THE FINISHED GRADE.
 - E. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND AROUND OR AWAY FROM ALL PLANTING BEDS TO PREVENT PONDING OF WATER. DO NOT RAISE BED GRADES OR FINISHED GRADES ABOVE FINISHED FLOOR ELEVATIONS, KEEP AT LEAST 2" BELOW FINISHED FLOOR ELEVATIONS.
 - F. GIVE NOTIFICATION TO LANDSCAPE ARCHITECT OF COMPLETION OF EARTHWORK PRIOR TO PROCEEDING WITH INSTALLATION OF TOPSOIL. LANDSCAPE ARCHITECT TO APPROVE SUB-GRADE SOIL CONDITIONS PRIOR TO THE INSTALLATION OF ANY TOPSOIL.
 - G. GIVE NOTIFICATION TO THE LANDSCAPE ARCHITECT OF COMPLETION OF TOPSOIL WORK PRIOR TO PROCEEDING WITH PLANTING OPERATIONS. LANDSCAPE ARCHITECT TO APPROVE TOPSOIL INSTALLATION PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL.



REV.	DATE	DESCRIPTION

Latchmere Kendall Parking Lot
Green Infrastructure Renovation
Shaker Heights, Ohio
LANDSCAPE NOTES

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-
PROJECT MANAGER	
DESIGNER	
IV	AMS

JOB NO.
2016331.02

L-001

REV.	DATE	DESCRIPTION

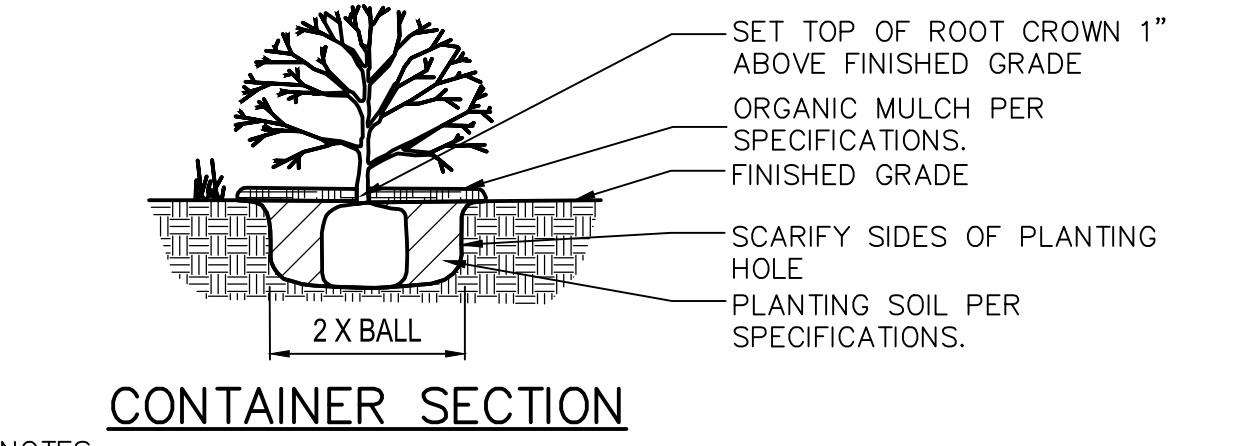
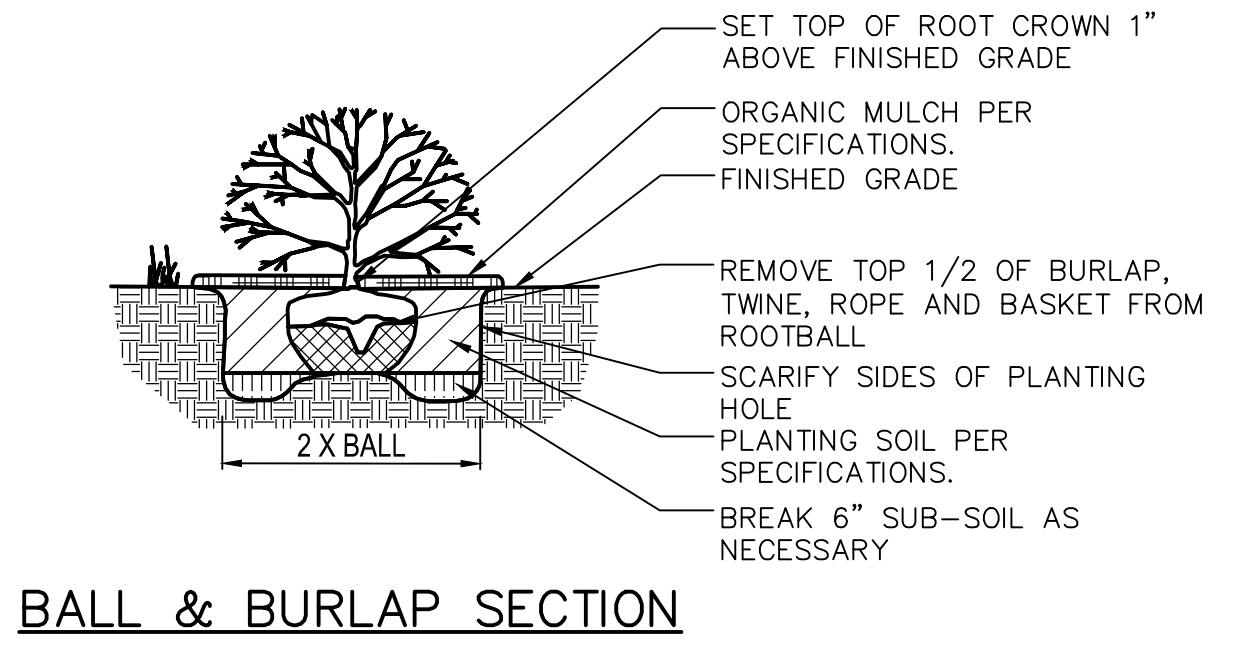
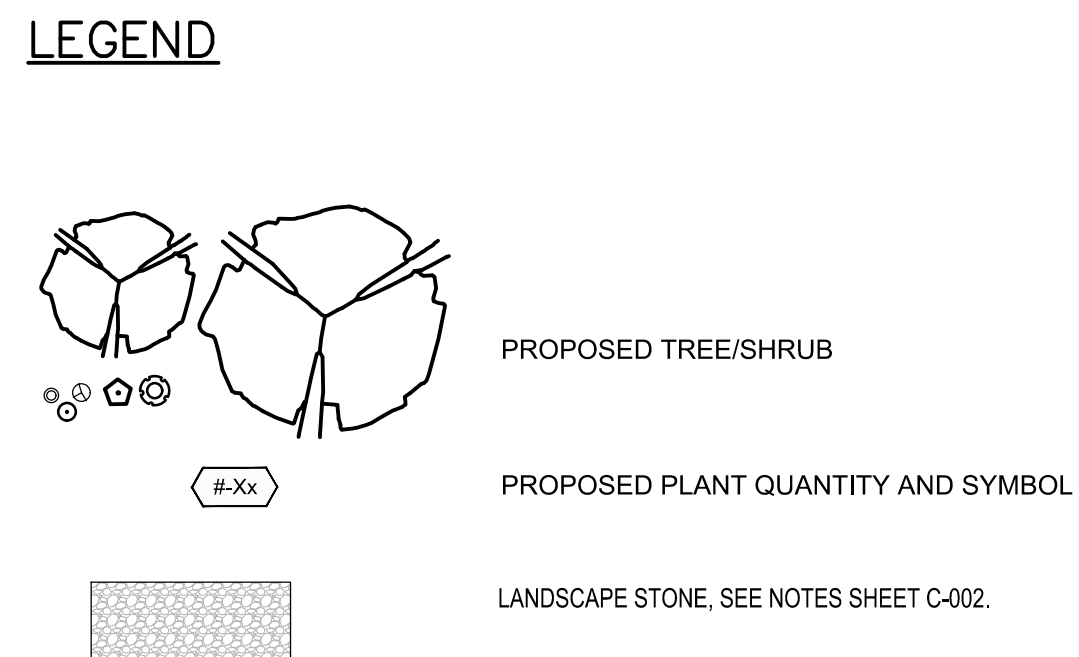
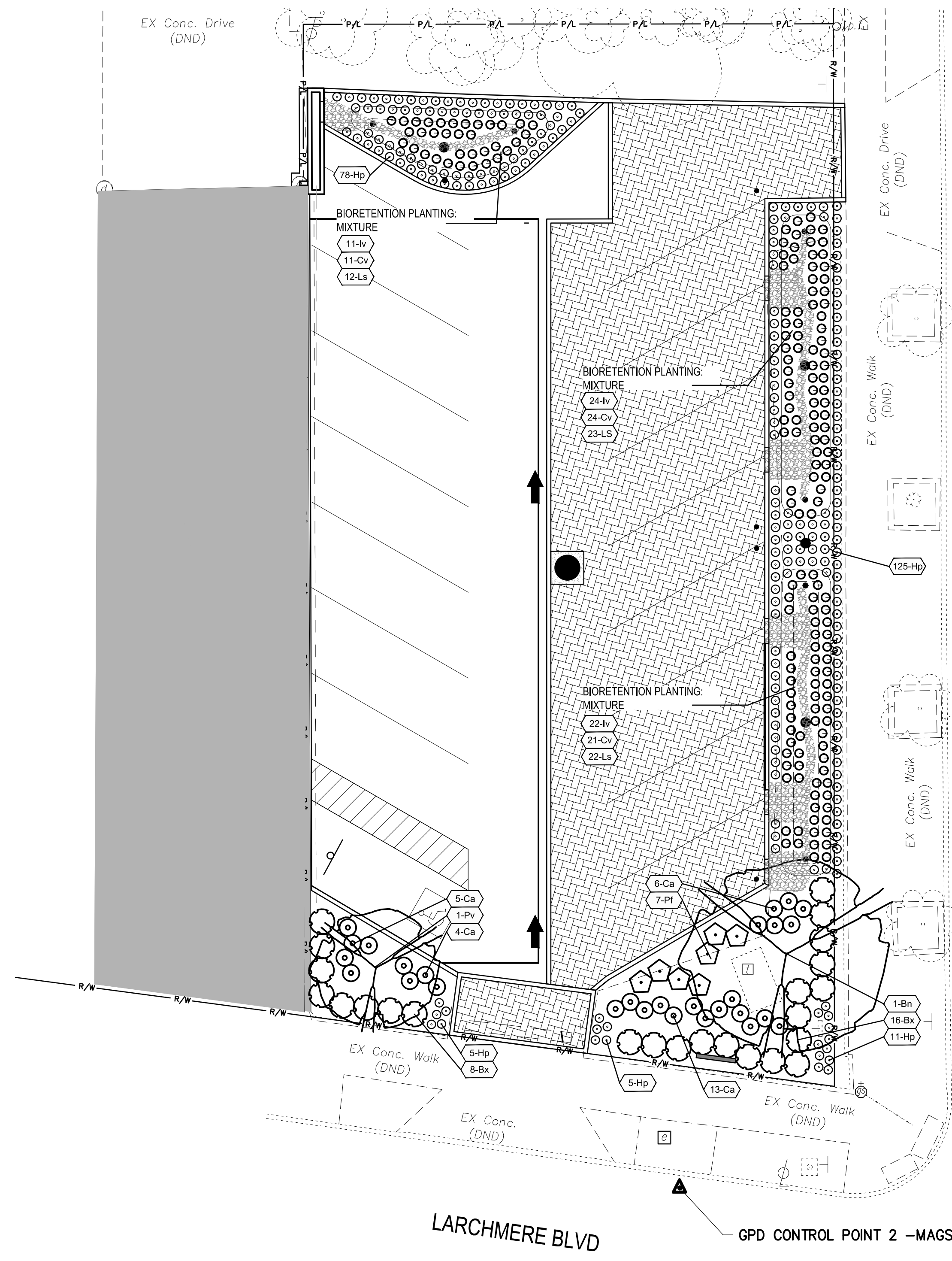
Larchmere Kendall Parking Lot
 Green Infrastructure Renovation
 Shaker Heights, Ohio

LANDSCAPE PLAN & DETAILS

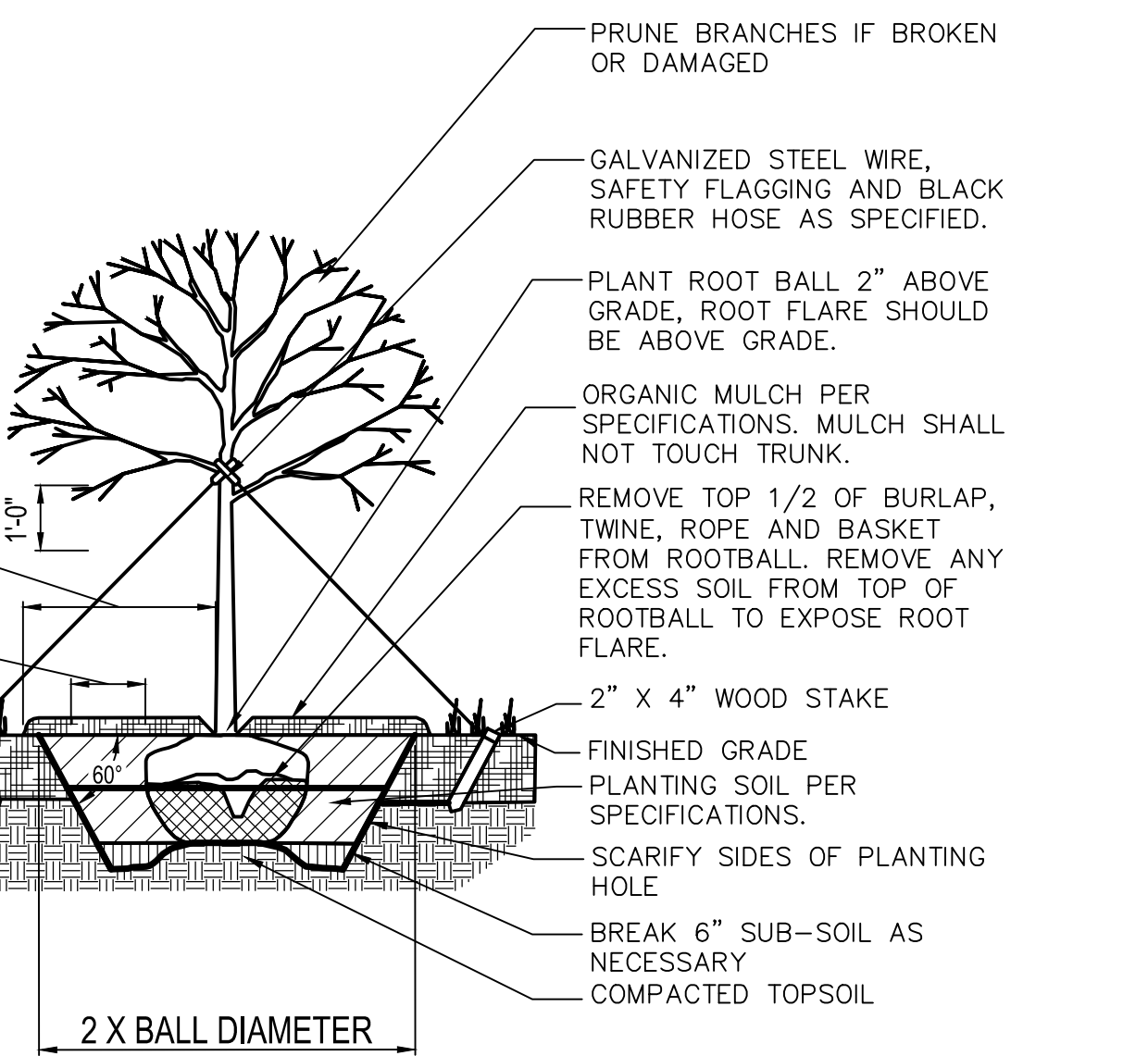
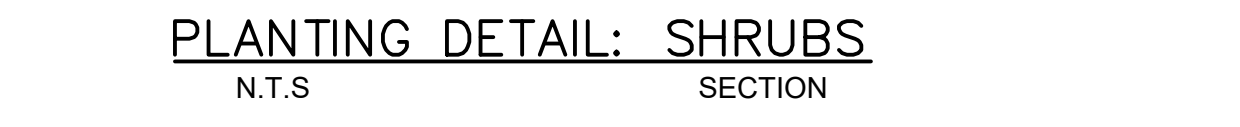
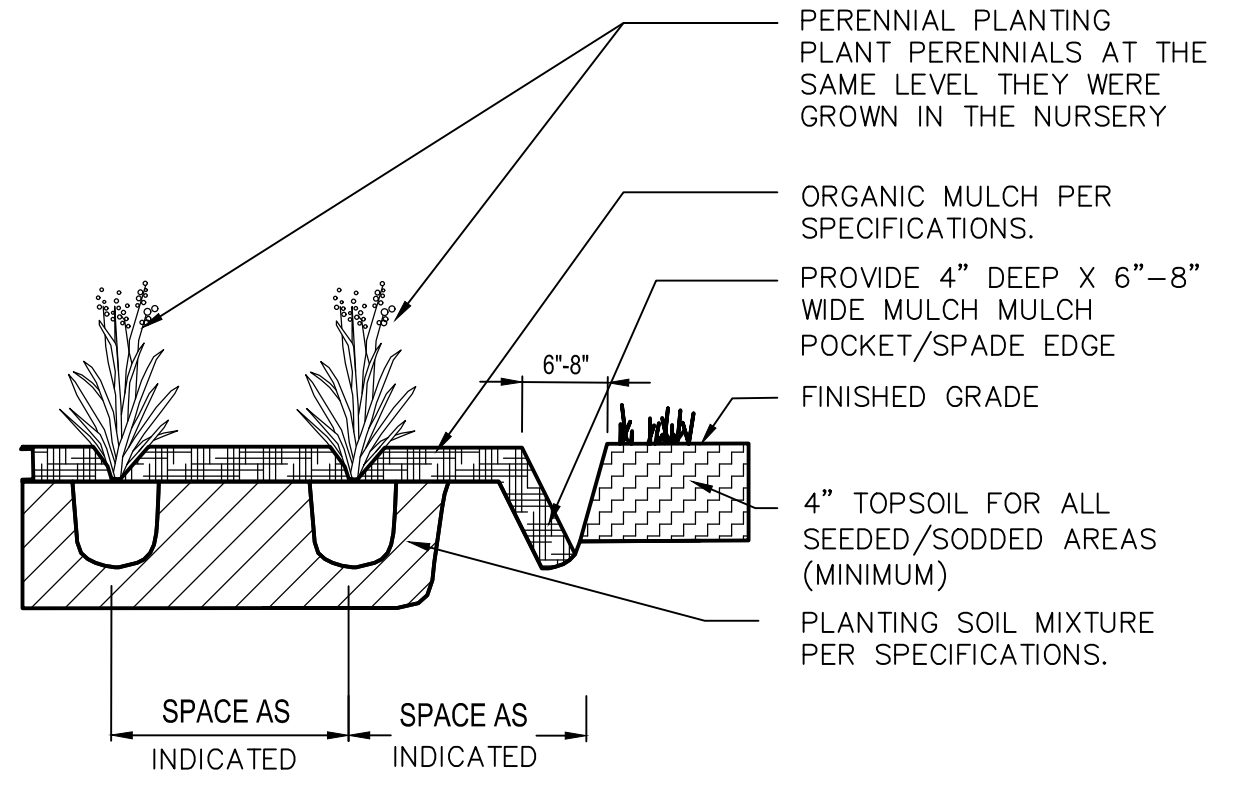
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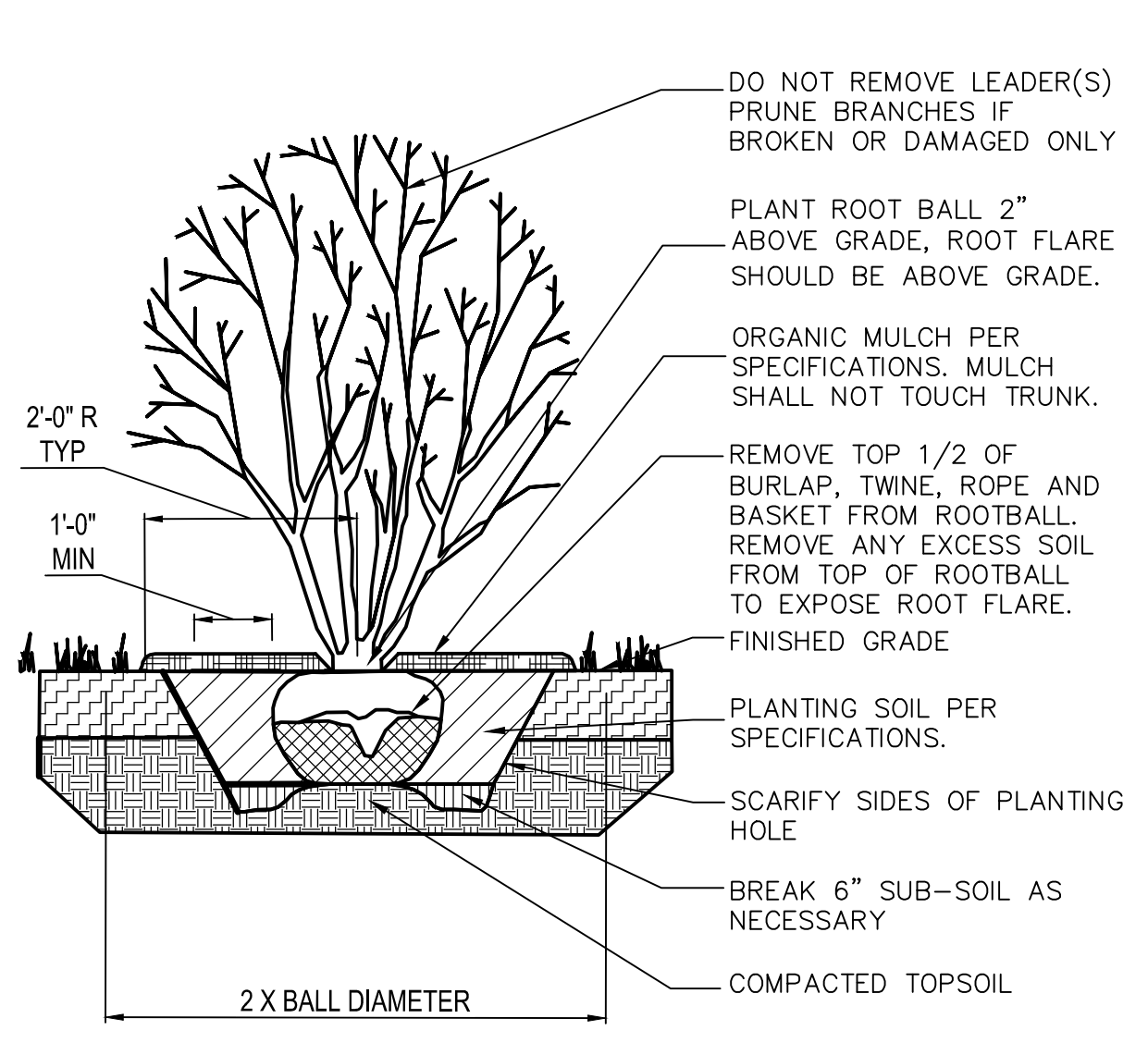
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GENERAL NOTES:
 PRUNE ROOTS IF BALL IS ROOTBOUND. REMOVE ALL CONTAINERS AND NON-BIODEGRADABLE BURLAP. WHEN BACKFILLING PLANT PIT, PLACE PLANTING SOIL IN TWO LIFTS. AFTER FIRST LIFT, PUDDLE SOIL IN WITH WATER TO REMOVE ALL AIR POCKETS. PLACE SECOND LIFT AND CONTINUE TO PUDDLE AND FILL AS NECESSARY.



GENERAL NOTES:
 IF ROOTBALL IS WRAPPED IN NON-BIODEGRADABLE BURLAP, REMOVE ENTIRE WRAP AFTER PLACED IN PIT. WHEN BACKFILLING PLANT PIT, PLACE PLANTING SOIL IN TWO LIFTS. AFTER FIRST LIFT, PUDDLE SOIL IN WITH WATER TO REMOVE ALL AIR POCKETS. PLACE SECOND LIFT AND CONTINUE TO PUDDLE AND FILL AS NECESSARY.



GENERAL NOTES:
 IF ROOTBALL IS WRAPPED IN NON-BIODEGRADABLE BURLAP, REMOVE ENTIRE WRAP AFTER PLACED IN PIT. WHEN BACKFILLING PLANT PIT, PLACE PLANTING SOIL IN TWO LIFTS. AFTER FIRST LIFT, PUDDLE SOIL IN WITH WATER TO REMOVE ALL AIR POCKETS. PLACE SECOND LIFT AND CONTINUE TO PUDDLE AND FILL AS NECESSARY.

PLANT LIST

Symbol	Botanical Name	Common Name	Qty.	Min. Size	Condition	Remarks
Bn	Betula nigra 'Heritage'	Heritage River Birch	1	12' H	B&B	Per Plan
Hp	Hemerocallis 'Purple De Oro'	Purple De Oro Daylily	224	No. 1	Cont.	18" o/c
Bx	Buxus x 'Green Mound'	Green Mound Boxwood	24	18" H and W	B&B	3' o/c
Ca	Calamagrostis x acutiflora 'Overdam'	Overdam Feather Reed Grass	28	No. 2	Cont.	24" o/c
Cv	Crex vulpinoidea	Fox Sedge	56	No. 1	Cont.	18" o/c
Iv	Iris versicolor	Blue Flag Iris	57	No. 1	Cont.	18" o/c
Ls	Liatris spicata	Blazing Star	57	No. 1	Cont.	18" o/c
Pf	Potentilla fruticosa 'Goldfinger'	Goldfinger Potentilla	7	24" H and W	Cont.	3' o/c
Pv	Prunus virginiana 'Canada Red'	Canada Red Chokecherry	1	2" Cal.	B&B	Per Plan

*Bioretention Mixture of Cv, Iv and Ls to be evenly distributed.