

UTILITIES/AUTHORITIES	
DEPARTMENT OF PUBLIC WORKS CRANFORD DPW ROUND HOUSE, 364 NORTH AVENUE PHONE: (908) 709-7217 CONTACT: ERIK HASTRUP	
T.V. CABLE SERVICE COMCAST CABLEVISION OF NJ 1800 RAHWAY AVENUE, UNION, NJ 07083 PHONE: (908) 851-2258 CONTACT: GEORGE PALYCA	
GAS SERVICE ELIZABETHTOWN GAS COMPANY 520 GREEN LANE, UNION. NJ 07083 PHONE: (908) 662-8321 CONTACT: GREGORY J. BALINT	
ELECTRIC SERVICE PUBLIC SERVICE ELECTRIC AND GAS COMPANY 472 WESTON CANAL ROAD, SOMERSET, NJ 08873 PHONE: (732) 764-3067 CONTACT: JOHN GRABENSTEIN	
WATER SERVICE NEW JERSEY AMERICAN WATER COMPANY 1341 NORTH AVENUE, PLAINFIELD, NJ 07061 PHONE: (908) 791-3456 CONTACT: MICHAEL F. BANGE	
TELEPHONE SERVICE VERIZON COMMUNICATIONS 290 WEST MOUNT PLEASANT AVENUE, FLOOR G, BUILDING 4, LIVINGSTON, NJ 07039 PHONE: (973) 422-5156 CONTACT: DARREN CRAY	

TELEPHONE SERVICE
VERIZON COMMUNICATIONS
290 WEST MOUNT PLEASANT AVENUE, FLOOR G,
BUILDING 4, LIVINGSTON, NJ 07039
PHONE: (973) 422-5156
CONTACT: DARREN CRAY

KATHLEEN MILLER PRUNTY, MAYOR
BRIAN ANDREWS, DEPUTY MAYOR/COMMISSIONER

THOMAS H. HANNEN, JR., COMMISSIONER
MARY O'CONNOR, COMMISSIONER
JASON GAREIS, COMMISSIONER

PATRICIA DONAHUE, TOWNSHIP CLERK
JAMIE CRYAN, TOWNSHIP ADMINISTRATOR

PATRICIA DONAHUE, TOWNSHIP CLERK
JAMIE CRYAN, TOWNSHIP ADMINISTRATOR

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The map displays a street grid in the City of Lincoln, Nebraska. Key streets shown include Rankin Avenue, Johnson Avenue, Burnside Avenue, Hillcrest Avenue, South Union Avenue, and Retford Avenue. The project location is highlighted with a shaded area and labeled "PROJECT LOCATION (ALTERNATE BID 'A')". A north arrow and a scale bar (1 inch = 300 feet) are also present.

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS 2019
WITH AMENDMENTS THERETO SHALL GOVERN

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Carl P. O'Brien
NEW JERSEY LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: GE45154
COLLIERS ENGINEERING & DESIGN, INC.
N.J. C.O.A. #: 24GA27986500

TOWNSHIP OF CRANFORD
COUNTY OF UNION
STATE OF NEW JERSEY

SCALE: AS SHOWN	DATE: 08/19/21	DRAWN BY: BAK	CHECKED BY: BKP
PROJECT NUMBER: CDT073		DRAWING NAME: C-CVER	

SHEET NUMBER:

1 of 34

1. ALL EXISTING FEATURES DEPICTED ON BURNSIDE AVENUE AND ELISE STREET ARE BASED ON INFORMATION FROM THE SURVEY ENTITLED, "RIGHT-OF-WAY AND TOPOGRAPHIC SURVEY FOR BURNSIDE AVE AND ELISE ST" FOR THE TOWNSHIP OF CRANFORD, PREPARED BY COLLIER ENGINEERING & DESIGN, DATED 07/23/21, LAST REVISED 8/31/21.
2. ALL EXISTING FEATURES DEPICTED ON JOHNSON AVENUE ARE BASED ON AERIAL IMAGERY AND UTILITY MARKOUTS OBSERVED IN THE FIELD.
3. THE HORIZONTAL POSITION OF THIS SURVEY IS BASED ON GPS OBSERVATION AND IS RELATIVE TO NAD 1983 ADJUSTMENT.
4. THE ELEVATIONS SHOWN HEREON ARE RELATIVE TO N.A.V.D. 1988 ADJUSTMENT.

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION RELATED TO THE PROPOSED IMPROVEMENTS SHOWN HEREIN SHALL BE IN ACCORDANCE WITH THE FOLLOWING, UNLESS SPECIFICALLY AMENDED OR SUPPLEMENTED BY CONTRACT DOCUMENTS:
 - A. NJ, DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007", AS CURRENTLY AMENDED;
 - B. NJ, DEPARTMENT OF TRANSPORTATION "STANDARD ROADWAY CONSTRUCTION - TRAFFIC CONTROL - BRIDGE CONSTRUCTION DETAILS, 2007", AS CURRENTLY AMENDED;
 - C. "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED;
 - D. CURRENT PREVAILING MUNICIPAL, COUNTY AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS AND REQUIREMENTS;
 - E. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS;
 - F. CURRENT MANUFACTURER'S SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY INCLUDING PROVISION OF ALL SAFETY DEVICES AND TRAINING REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING THE PROJECT PLANS, SPECIFICATIONS, DETAILS, AND SITE. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY SITE CONDITIONS DIFFER MATERIALLY FROM THOSE REPRESENTED HEREIN.
4. THE CONTRACTOR SHALL OBTAIN PERMITS REQUIRED FOR THE PROPOSED IMPROVEMENTS.
5. ALL MATERIALS MUST BE AMERICAN MADE. THE CONTRACTOR MUST PROVIDE THE ENGINEER WITH SHIPPING AND DELIVERY TICKETS/RECEIPTS FOR ALL MATERIALS TO USED FOR CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
6. THE CONTRACTOR SHALL OBTAIN SHOP DRAWING APPROVAL PRIOR TO THE INSTALLATION OF EACH ITEM. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL AT LEAST TWO (2) WEEKS PRIOR TO ORDERING MATERIALS.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL STAKEOUT AND LAYOUT, AS NECESSARY, TO CONSTRUCT THE PROPOSED IMPROVEMENTS IN STRICT CONFORMANCE WITH THE PROJECT PLANS, SPECIFICATIONS AND DETAILS.
8. ACTUAL FIELD LIMITS OF MILLING, PAVING, CURB AND SIDEWALK WORK WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
9. NO "SIDE PROJECTS" FOR RESIDENTS, UTILITIES OR BUSINESS MAY BE CONSTRUCTED WITH MATERIAL PURCHASED FOR THE COMPLETION OF THE PROPOSED IMPROVEMENTS SHOWN HEREIN.
10. THE CONTRACTOR MUST REVIEW AND AGREE TO AS-BUILT QUANTITIES WITH THE ENGINEER ON A WEEKLY BASIS.
11. THE ENGINEER MUST BE CONTACTED IMMEDIATELY UPON THE CONTRACTOR RECEIVING A COMPLAINT FROM ANY PERSON WITHIN THE PROJECT AREA OR MUNICIPAL OFFICIAL.

1. UNDERGROUND UTILITIES WITHIN OFF-SITE STREETS AND FEATURES WERE MAPPED USING RADIO FREQUENCY PIPE AND CABLE LOCATORS (RFL) AND GROUND PENETRATING RADAR (GPR). OTHER BURIED UTILITIES MAY BE PRESENT BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE RFL AND GPR SYSTEMS, UNFAVORABLE SOIL CONDITIONS, SITE ACCESS, AND/OR DENSE UTILITY INFRASTRUCTURE. THEREFORE, 100% DETECTION IS NOT GUARANTEED. CAUTION SHOULD BE USED WHEN EXCAVATING IN THE VICINITY OF MAPPED FEATURES.
2. POSITION OF GEOPHYSICAL FEATURES CANNOT BE GUARANTEED WITHOUT EXPOSURE.
3. TARGETS WITH LATERAL EXTENTS OF LESS THAN 3 FEET AS OBSERVED IN GEOPHYSICAL DATA WERE NOT MAPPED.
4. PLOTTED UTILITY POSITIONS AND DEPTHS REPRESENT LOCATION OF MOST APPROPRIATE INTERPRETED GEOPHYSICAL RESPONSE. THIS RESPONSE IS GENERALLY PRESENT OVER THE TOP CENTER OF THE TARGET BUT MAY BE LOCATED OFF-CENTER DEPENDING ON SIGNAL QUALITY AND THE EFFECTS OF LOCAL INTERFERENCE. FEATURE MAY BE WIDER THAN PLOTTED LINE (E.G. DUCT BANKS, LARGE CONDUIT).
5. UTILITIES MAY BE INSTALLED WITHIN A DUCT BANK. DUE TO THE LIMITATIONS OF GEOPHYSICAL EQUIPMENT AND THE LOCATION OF FEATURES WITHIN THE DUCT BANK, THE ACTUAL HORIZONTAL AND VERTICAL DIMENSIONS OF THE DUCT BANK SYSTEM (AS OBSERVED IN GEOPHYSICAL DATA) MAY VARY.
6. DUE TO LIMITATIONS OF GEOPHYSICAL METHODS, IT IS NOT ALWAYS POSSIBLE TO DISCRIMINATE BETWEEN UTILITIES AND OTHER BURIED FEATURES; THEREFORE IT IS POSSIBLE THAT SOME PLOTTED FEATURES MAY REPRESENT OBJECTS OTHER THAN UTILITIES.
7. DUE TO VARYING SOIL CONDITIONS, POSSIBLE CHANGES IN UTILITY MATERIAL, AND OTHER FACTORS, SOME UNDERGROUND UTILITIES COULD NOT BE TRACED ENTIRELY WITHIN THE PROJECT LIMITS. THE UTILITY MAY CONTINUE, BUT SINCE IT WAS NOT OBSERVED IN THE GEOPHYSICAL DATA BEYOND THESE POINTS, IT COULD NOT BE MAPPED.
8. DEPTHS SHOWN FOR UTILITIES ARE IN FEET BELOW EXISTING GROUND SURFACE AT TIME OF SURVEY. AS RFLS CANNOT PROVIDE RELIABLE DEPTH INFORMATION, DEPTHS ARE NOT PROVIDED FOR UTILITIES LOCATED WITH RFLS, BUT NOT DETECTED IN THE GPR DATA.
9. DUE TO THE SITE SPECIFIC CONDITIONS, GPR SIGNAL PENETRATION DEPTH IS APPROXIMATELY 4 FEET. UTILITIES BELOW THIS DEPTH WERE NOT CONSISTENTLY DETECTED WITH GPR. THERE MAY BE OTHER UTILITIES PRESENT AT THE SITE BELOW THIS DEPTH THAT WERE NOT DETECTED AND THEREFORE ARE NOT PLOTTED ON THESE MAPS.
10. ONLY THOSE AREAS DENOTED WITHIN THE PROJECT SITE LIMITS WERE INVESTIGATED WITH GEOPHYSICAL METHODS. NO CLAIMS TO UTILITY POSITION ARE MADE OUTSIDE OF THESE BOUNDARIES.
11. SURFACE OBSTRUCTIONS SUCH AS UTILITY POLES AND HEAVY VEGETATION MAY HAVE LIMITED THE DATA COLLECTION AREA.
12. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ONE-CALL SERVICES AS REQUIRED BY STATE AND/OR LOCAL ORDINANCES PRIOR TO ANY EXCAVATION ACTIVITIES.
13. NOT ALL UTILITY POLES, UTILITY VALVES AND UTILITY LINES ARE SHOWN ON THE PLAN. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
14. THE CONTRACTOR SHALL CALL FOR A UTILITY MARK-OUT PRIOR TO THE START OF CONSTRUCTION (CALL 1-800-272-1000).
15. UTILITY RELOCATIONS SHOWN ON THE PLAN, IF ANY, ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REPRESENT ALL REQUIRED WORK. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES/AUTHORITIES IMPACTED BY THE PROPOSED WORK AND PERFORMING UTILITY RELOCATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERTINENT UTILITY COMPANIES/AUTHORITIES. NO SEPARATE PAYMENT SHALL BE MADE FOR COORDINATING AND PERFORMING UTILITY RELOCATIONS.
16. ALL UTILITY MANHOLES, VALVE BOXES, CLEANOUTS, METERS, ETC. SHALL BE RESET BY THE CONTRACTOR TO MEET PROPOSED ROAD, SIDEWALK AND DRIVEWAY GRADES. THE CONTRACTOR SHALL COORDINATE WITH IMPACTED UTILITY COMPANIES/AUTHORITIES AS NECESSARY.
17. WATER VALVE BOXES GAS VALVE BOXES WITHIN THE ROADWAY SHALL BE RESET TO MEET PROPOSED GRADES.
18. MISCELLANEOUS UTILITY EQUIPMENT WITHIN THE DRIVEWAYS SHALL BE RESET TO MEET PROPOSED GRADES DURING THE PROGRESS OF CURB, SIDEWALK AND DRIVEWAY CONSTRUCTION. NO SEPARATE PAYMENT SHALL BE MADE FOR THE RESETTING OF MISCELLANEOUS UTILITY EQUIPMENT, INCLUDING VALVE BOXES, CLEANOUTS, METERS, ETC. WITHIN SIDEWALK AND DRIVEWAY AREAS.
19. THE CONTRACTOR SHALL TAKE PRECAUTION WHEN WORKING ADJACENT TO UTILITIES AND TEMPORARILY STOP UTILITY POLES; IF REQUIRED, DURING THE PROGRESS OF WORK.
20. THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL STORM SEWER STRUCTURES, AS NECESSARY, FOR THE DURATION OF THE PROJECT.

1. THE CONTRACTOR SHALL WORK ON WEEKDAYS ONLY. APPROVAL TO WORK ON WEEKENDS MUST BE GRANTED BY THE LOCAL POLICE DEPARTMENT AND OWNER.
2. THE CONTRACTOR SHALL NOT COMMENCE ANY CONSTRUCTION RELATED ACTIVITIES BEFORE 7 AM ON WEEKDAYS. ALL CONSTRUCTION RELATED ACTIVITIES MUST BE FINISHED AND THE SITE SHALL BE CLEANED AND SECURED BY 5 PM DAILY.

1. ALL SIGNAGE, TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), AS CURRENTLY AMENDED.
2. ALL EXISTING SIGNS SHALL BE RESET/RELOCATED WITH NEW POSTS. SIGNS SHALL BE RESET USING EXISTING SIGN BLADES WITH NEW SIGN POSTS PLACED IN SLEEVES. SLEEVES FOR NEW SIGN POSTS SHALL BE FILLED.

1. THE CONTRACTOR MUST PROVIDE A SMOOTH SAWCUT EDGE WHERE PROPOSED PAVEMENT ABUTS EXISTING PAVEMENT.
2. AFTER MILLING OPERATIONS AND PRIOR TO PAVING, THE CONTRACTOR MUST ALLOW ADEQUATE TIME FOR THE ENGINEER TO INSPECT THE MILLED SURFACE TO EVALUATE THE NEED FOR REPAIRS IN THE PAVEMENT BASE.
3. IF REPAIRS IN THE PAVEMENT BASE ARE NECESSARY AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL NOT SCHEDULE OR COMMENCING PAVING OPERATIONS UNTIL SUCH TIME THAT ALL REPAIRS IN THE PAVEMENT BASE ARE COMPLETE.
4. THE CONTRACTOR SHALL MARK ALL RAISED UTILITY MANHOLES, INLETS AND VALVE BOXES THAT ARE EXPOSED AS A RESULT OF MILLING. IN ADDITION, THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT RAMPS AROUND RAISED UTILITIES AS DIRECTED BY THE ENGINEER WHERE SUCH UTILITIES MAY BE IN CONFLICT WITH VEHICULAR AND PEDESTRIAN TRAFFIC.
5. ALL JOINTS BETWEEN EXISTING AND PROPOSED ASPHALT SHALL BE SEALED WITHIN 48 HOURS OF PAVING.

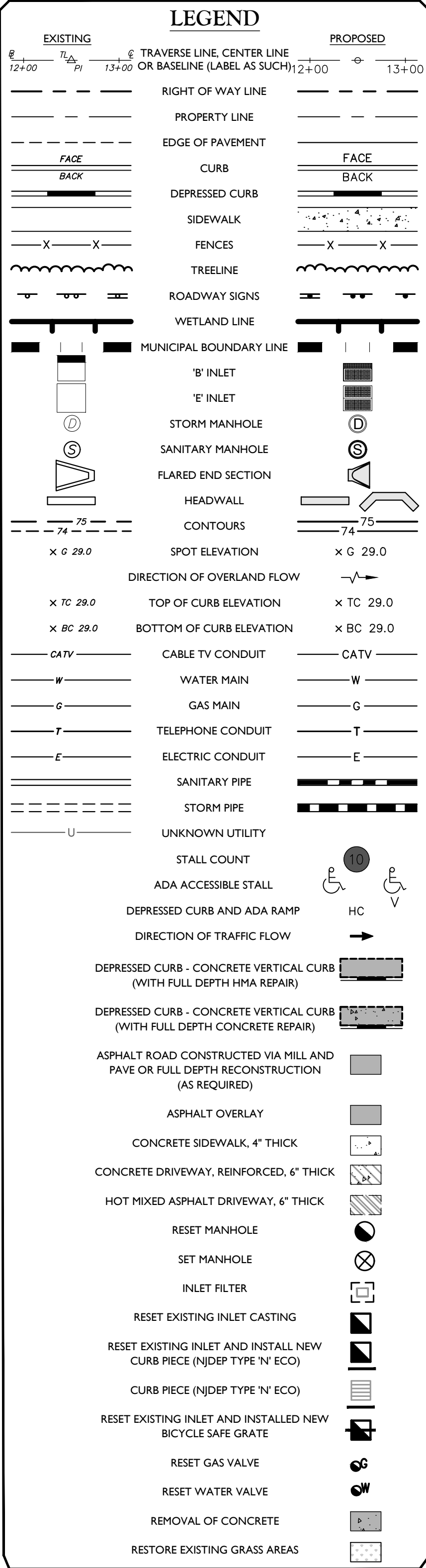
1. THE CONTRACTOR SHALL COORDINATE ALL TRAFFIC CONTROL MEASURES WITH THE LOCAL POLICE DEPARTMENT AND OWNER. TRAFFIC CONTROL DETAILS PROVIDED HEREIN ARE TYPICAL AND SUBJECT TO MODIFICATION BY THE LOCAL POLICE DEPARTMENT AND OWNER.
2. THE CONTRACTOR SHALL MAKE PROVISIONS FOR MATERIAL AND EQUIPMENT STORAGE. NO EQUIPMENT OR MATERIALS SHALL BE STORED WITHIN THE R.O.W. WITHOUT EXPRESS WRITTEN CONSENT FROM THE LOCAL POLICE DEPARTMENT AND OWNER.
3. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL SCHEDULE AND STAGING PLAN TO THE LOCAL POLICE DEPARTMENT AND OWNER FOR REVIEW AND APPROVAL. THE PLAN MUST BE APPROVED BY THE LOCAL POLICE DEPARTMENT AND OWNER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY THE OWNER AND LOCAL POLICE DEPARTMENT SEVENTY-TWO (72) HOURS PRIOR TO THE START OF ANY WORK.
5. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL POLICE DEPARTMENT TO DETERMINE THE NEED FOR POLICE TRAFFIC DIRECTORS. THE CONTRACTOR SHALL PROVIDE THE LOCAL POLICE DEPARTMENT WITHIN AT LEAST ONE (1) WEEK NOTICE PRIOR TO REQUESTING POLICE TRAFFIC DIRECTORS.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PLACING TEMPORARY NO PARKING SIGNS. SIGNS MUST BE OBTAINED FROM THE LOCAL POLICE DEPARTMENT. TEMPORARY NO PARKING SIGNS MUST BE POSTED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE CONSTRUCTION.

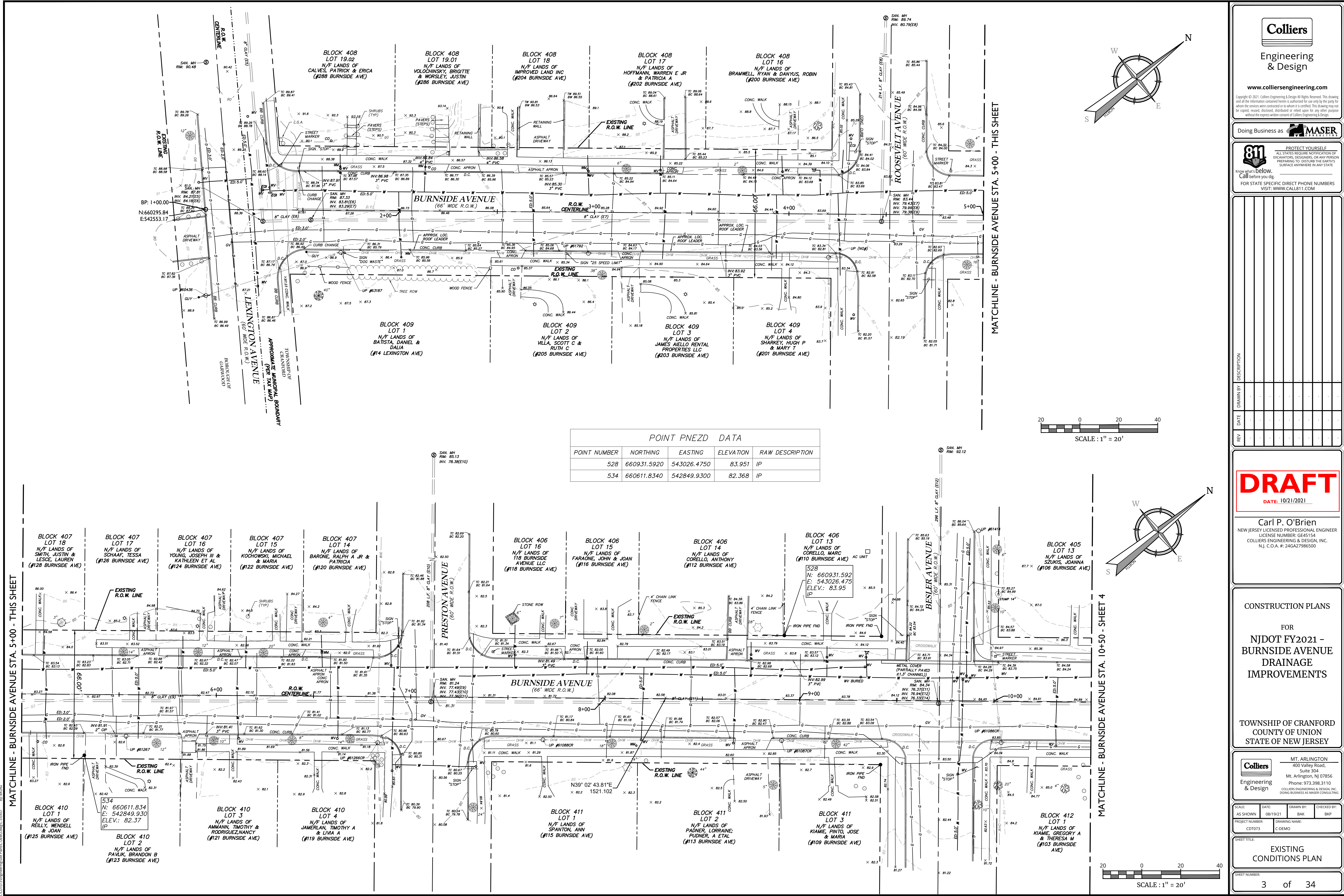
1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN SOIL EROSION AND SEDIMENT CONTROL MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL MEASURES IN NEW JERSEY.
2. INLET FILTERS ARE TO BE INSTALLED ON ALL EXISTING AND NEW INLETS WITHIN THE PROJECT LIMITS AND IMMEDIATELY ADJACENT TO PROJECT LIMITS.
3. SILT FENCE SHALL BE INSTALLED AS DIRECTED IN THE FIELD BY THE ENGINEER, AS NECESSARY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING DUST CONTROL MEASURES, AS NECESSARY. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED TO AVOID DUST POLLUTION.
5. THE CONTRACTOR SHALL PROTECT ALL TREES SCHEDULED TO REMAIN DURING CONSTRUCTION. DAMAGE TO EXISTING TREES WILL BE EVALUATED BY THE OWNER AND ENGINEER. DAMAGED TREES WILL BE REPLACED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
6. WHERE EXISTING TREES AND ROOT SYSTEMS MAY CONFLICT WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR MUST RETAIN A CERTIFIED TREE EXPERT TO EVALUATE TREES IN QUESTION. ALL EVALUATIONS SHALL BE IN WRITING AND SHALL ACCURATELY IDENTIFY THE TREE IN QUESTION BY STATION AND OFFSET (LEFT OR RIGHT); ALL EVALUATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. TREES THAT ARE TO REMAIN, WHERE IT IS DETERMINED THAT ROOT CUTTING MAY SEVERELY DAMAGE THE TREE, SHALL HAVE A CURB BREAK AND STEEL CURB FACE PLATE INSTALLED AS DIRECTED BY THE ENGINEER.
8. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF-SITE. NO EXCAVATED MATERIAL SHALL BE STOCKPILED AND STORED WITHIN THE PROJECT LIMITS.

1. ALL EXCAVATED MATERIALS ARE TO BE DISPOSED OF IN ACCORDANCE WITH APPROVED NJDOT AND NJDEP MEANS AND METHODS. THE CONTRACTOR MUST NOT DEPOSIT EXCESS MATERIALS WITHIN THE MUNICIPAL LIMITS WITHOUT EXPRESS PERMISSION OF THE OWNER.
2. ALL EXCAVATED AND DEMOLISHED MATERIALS, DEBRIS, AND EQUIPMENT, INCLUDING STONE, TOPSOIL, TREES, BLOCK AND CONCRETE FORMS, MUST BE REMOVED FROM THE PROJECT AREA AT THE CONCLUSION OF EACH DAY, UNLESS OTHERWISE APPROVED BY THE ENGINEER AND LOCAL POLICE DEPARTMENT.
3. THE CONTRACTOR SHALL NOTE THAT ROADWAY BASE MATERIAL MAY CONSIST OF COBBLESTONES, CONCRETE AND/OR ASPHALT. NO ADDITIONAL PAYMENTS WILL BE MADE TO CONTRACTOR FOR DAMAGES TO EQUIPMENT OR ADDITIONAL LABOR REQUIRED TO MAKE IMPROVEMENTS AS DESCRIBED ON PLANS DUE TO VARIATIONS IN ROADWAY BASE MATERIALS.
4. ALL EXISTING GRATES AND CASTINGS ARE THE PROPERTY OF THE MUNICIPALITY OR RESPECTIVE UTILITY AUTHORITY. ALL EXISTING GRATES AND CASTINGS THAT ARE TO BE REPLACED AS A PART OF THE PROPOSED IMPROVEMENTS SHALL BE RETURNED TO THE MUNICIPALITY OR RESPECTIVE UTILITY AUTHORITY.
5. THE CONTRACTOR MUST PROTECT CONCRETE UNTIL CONCRETE IS CURED. DAMAGED AND VANDALIZED CONCRETE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. RECYCLED AGGREGATE (CONCRETE OR ASPHALT) MUST BE NJDOT APPROVED. CONTRACTOR MUST PROVIDE DOCUMENTATION FOR APPROVED MATERIAL PRIOR TO PLACEMENT.
7. THE CONTRACTOR SHALL RESET ALL RAILINGS, GATES AND FENCES AS REQUIRED TO COMPLETE THE PROPOSED IMPROVEMENTS.
8. THE CONTRACTOR IS RESPONSIBLE TO REPLACE/RESET ANY SPRINKLERS DAMAGED/DISTURBED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

1. THE CONTRACTOR SHALL MAINTAIN SAFE PEDESTRIAN AND VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES FOR THE DURATION OF THE PROJECT.
2. DURING DEMOLITION AND IMMEDIATELY AFTER POURING CONCRETE, THE CONTRACTOR MUST PLACE WOOD PLANKS, AT LEAST TWO (2) FT. WIDE, AT EACH ADJACENT BUILDING ENTRANCE TO ALLOW FOR SAFE ACCESS. PEDESTRIANS CANNOT BE EXPECTED TO CROSS OVER STONE, DIRT OR OTHER DEMOLISHED MATERIAL WITHOUT PLANKS. THE CONTRACTOR WILL NOT BE PERMITTED TO LEAVE THE SITE WITHOUT PLACING WOODEN ACCESS PLANKS TO PROVIDE SAFE PEDESTRIAN ACCESS.
3. THE CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL TEMPORARILY INSTALL AND MAINTAIN DENSE GRADED AGGREGATE OR HOT MIX ASPHALT TO PROVIDE A RIDING SURFACE FOR VEHICLE ACCESS TO EACH PROPERTY DURING CONSTRUCTION.
4. THE CONTRACTOR MUST ASSURE ACCESS FOR EMERGENCY VEHICLES AND GARBAGE COLLECTION VENDORS FOR THE DURATION OF THE PROJECT.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESSIBLE CURB RAMPS WITH HAND RAILS WHEN EXISTING ACCESSIBLE ACCESS IS REMOVED OR LIMITED DUE TO CONSTRUCTION.
6. NO SEPARATE PAYMENT SHALL BE MADE FOR THE PROVISION OF SAFE PEDESTRIAN AND VEHICULAR ACCESS AS DESCRIBED ABOVE AND AS DIRECTED IN THE FIELD BY THE ENGINEER.

1. PRIOR TO FINAL ACCEPTANCE, ALL PROPERTY CORNERS OR MONUMENTS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY A NEW JERSEY LICENSED LAND SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
2. THE CONTRACTOR MUST REPLACE ANY DAMAGED CONCRETE CURB AND SIDEWALK BEFORE ACCEPTANCE OF THE PROJECT BY THE OWNER.
3. ALL AREAS OUTSIDE OF THE PROJECT LIMITS THAT ARE DISTURBED AS RESULT OF CONSTRUCTION ACTIVITIES SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER PRIOR TO PROJECT ACCEPTANCE.
4. ALL GRASSED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY TOPSOILING, SEEDING, FERTILIZING AND MULCHING.

[illegible]



POINT PNEZD DATA				
POINT NUMBER	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION
528	660931.5920	543026.4750	83.951	IP
534	660611.8340	542849.9300	82.368	IP

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DRAFT

DATE: 10/21/2021

Carl P. O'Brien

NEW JERSEY LICENSED PROFESSIONAL ENGINEER

LICENSE NUMBER: 6645154

COLLIERS ENGINEERING & DESIGN, INC.

N.J. C.O.A. #: 24627986500

CONSTRUCTION PLANS

FOR

NJDOT FY2021 - BURNSIDE AVENUE DRAINAGE IMPROVEMENTS

TOWNSHIP OF CRANFORD

COUNTY OF UNION

STATE OF NEW JERSEY

Colliers

Engineering & Design

MT. ARLINGTON

400 Valley Road,

Suite 304

MT. Arlington, NJ 07856

Phone: 973.398.3110

COLLIERS ENGINEERING & DESIGN, INC.

DOING BUSINESS AS MASER CONSULTING

SCALE: AS SHOWN

DATE: 08/19/21

DRAWN BY: BAK

CHECKED BY: BKP

PROJECT NUMBER: CDT073

DRAWING NAME: C-DEMO

SHEET TITLE: EXISTING CONDITIONS PLAN

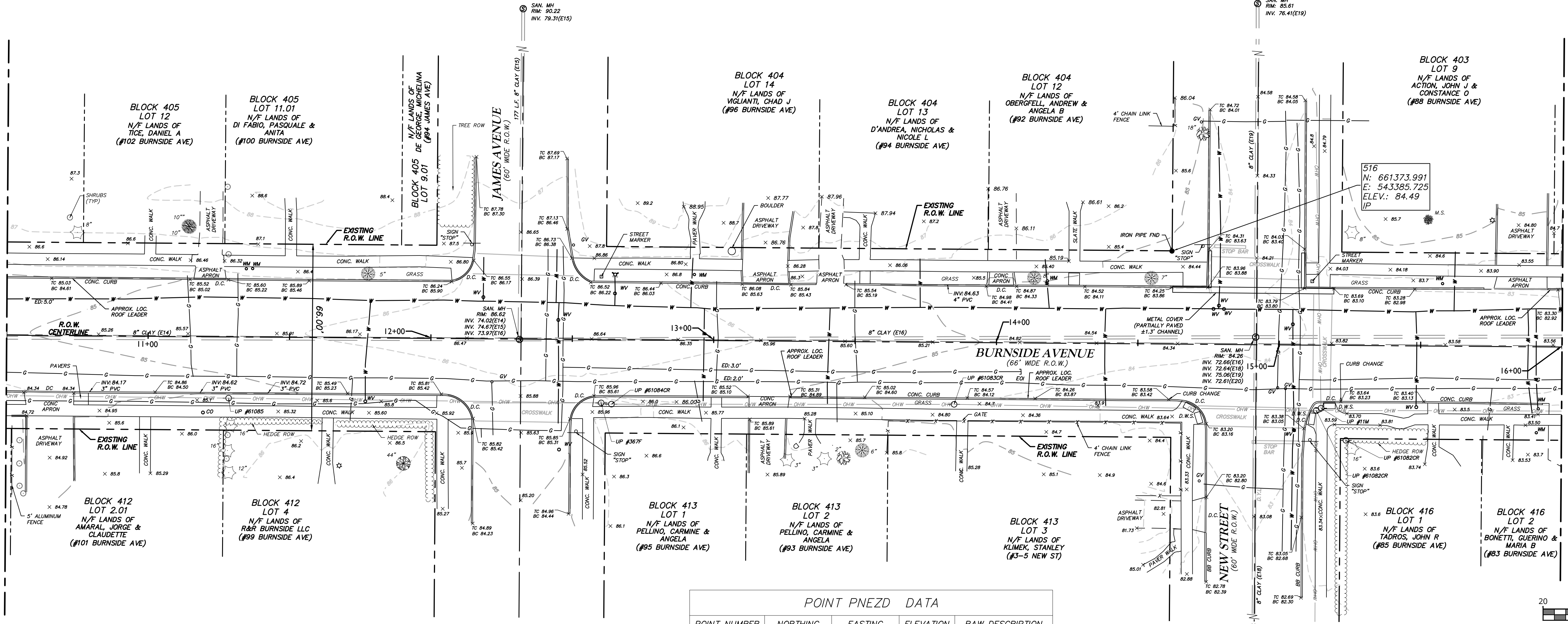
SHEET NUMBER: 3 of 34

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

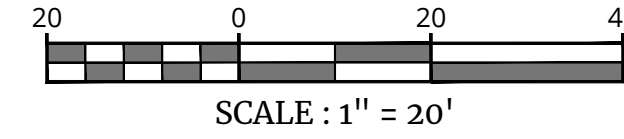
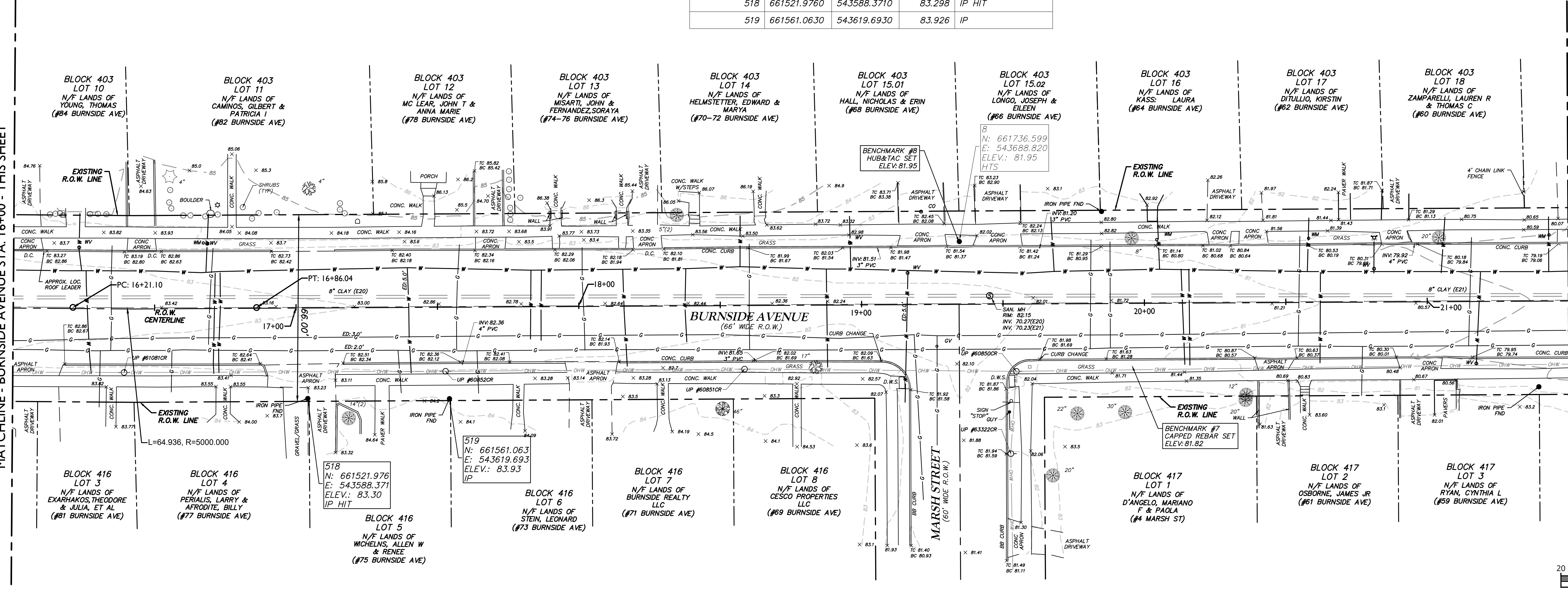
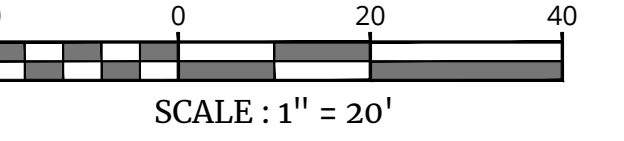
MATCHLINE - BURNSIDE AVENUE STA. 10+50 - SHEET 3

MATCHLINE - BURNSIDE AVENUE STA. 16+00 - THIS SHEET

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POINT PNEZD DATA				
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516	661373.9910	543385.7250	84.490	IP
518	661521.9760	543588.3710	83.298	IP HIT
519	661561.0630	543619.6930	83.926	IP



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AS SHOWN

DATE:

08/19/21

DRAWN BY:

BAK

CHECKED BY:

BRP

PROJECT NUMBER:

COT073

DRAWING NAME:

C-DEMO

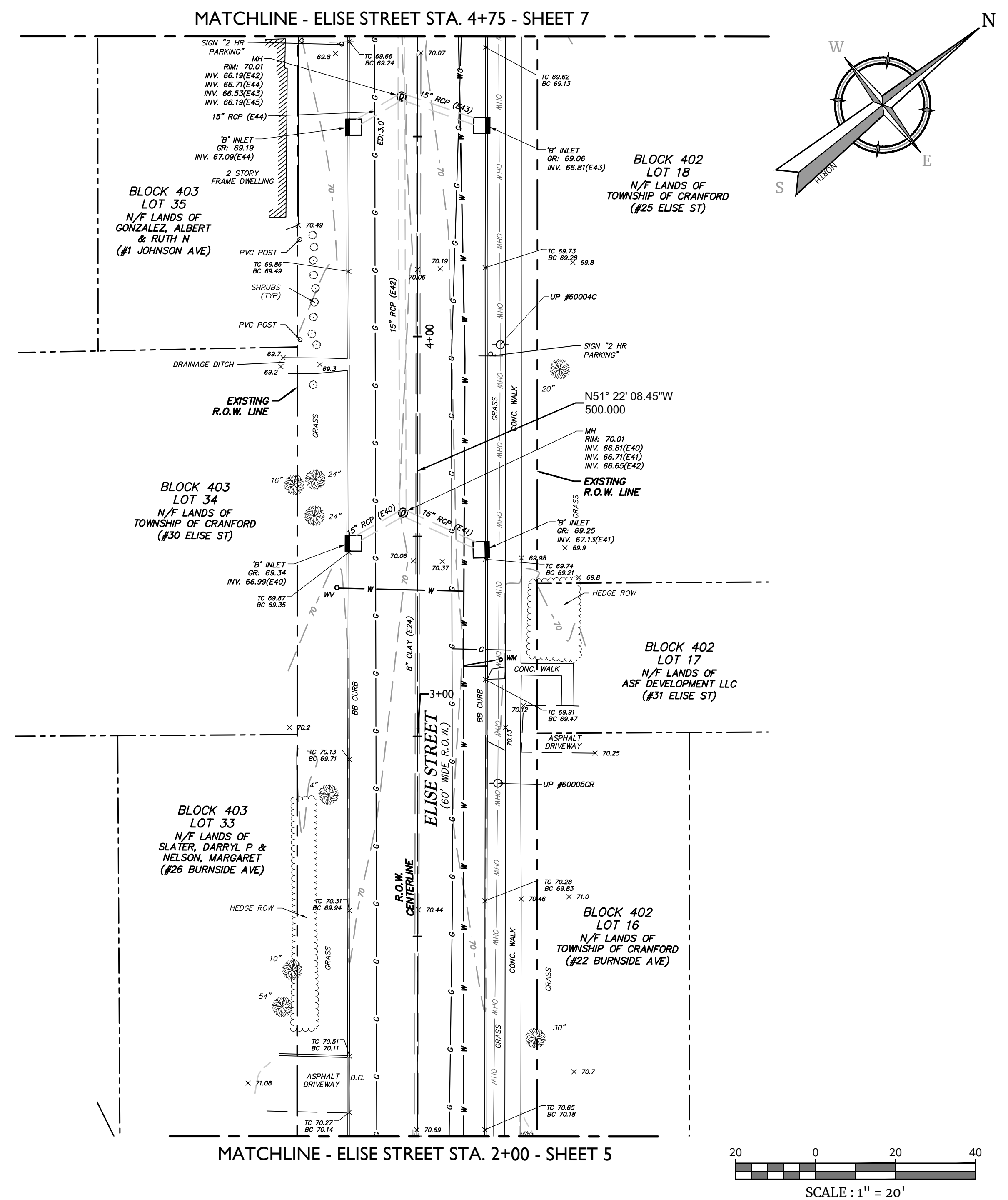
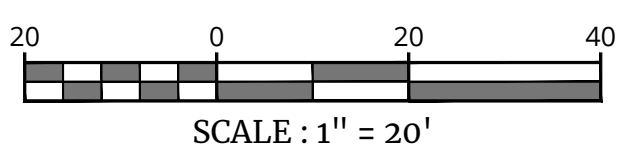
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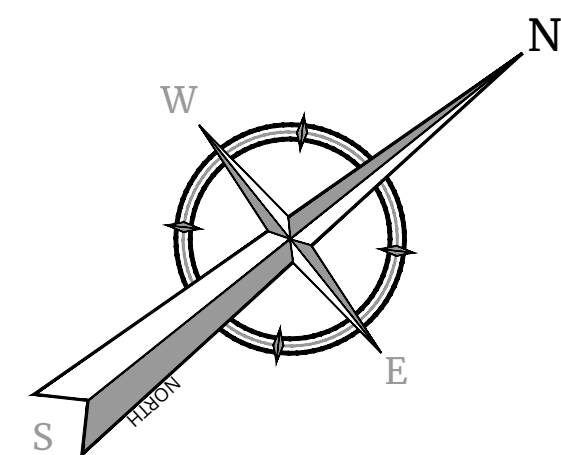
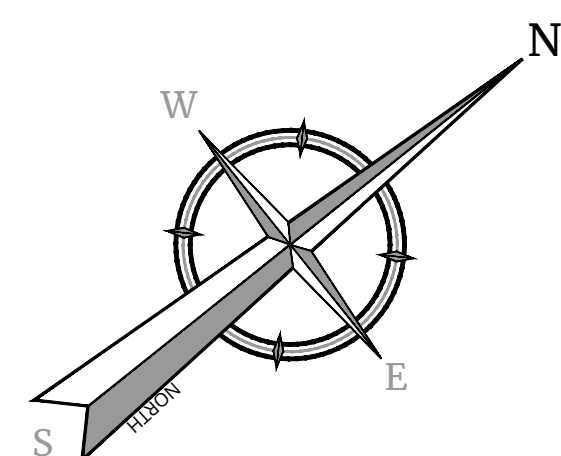
EXISTING CONDITIONS PLAN

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DATE: 10/21/2021

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LICENSE NUMBER: GE45154
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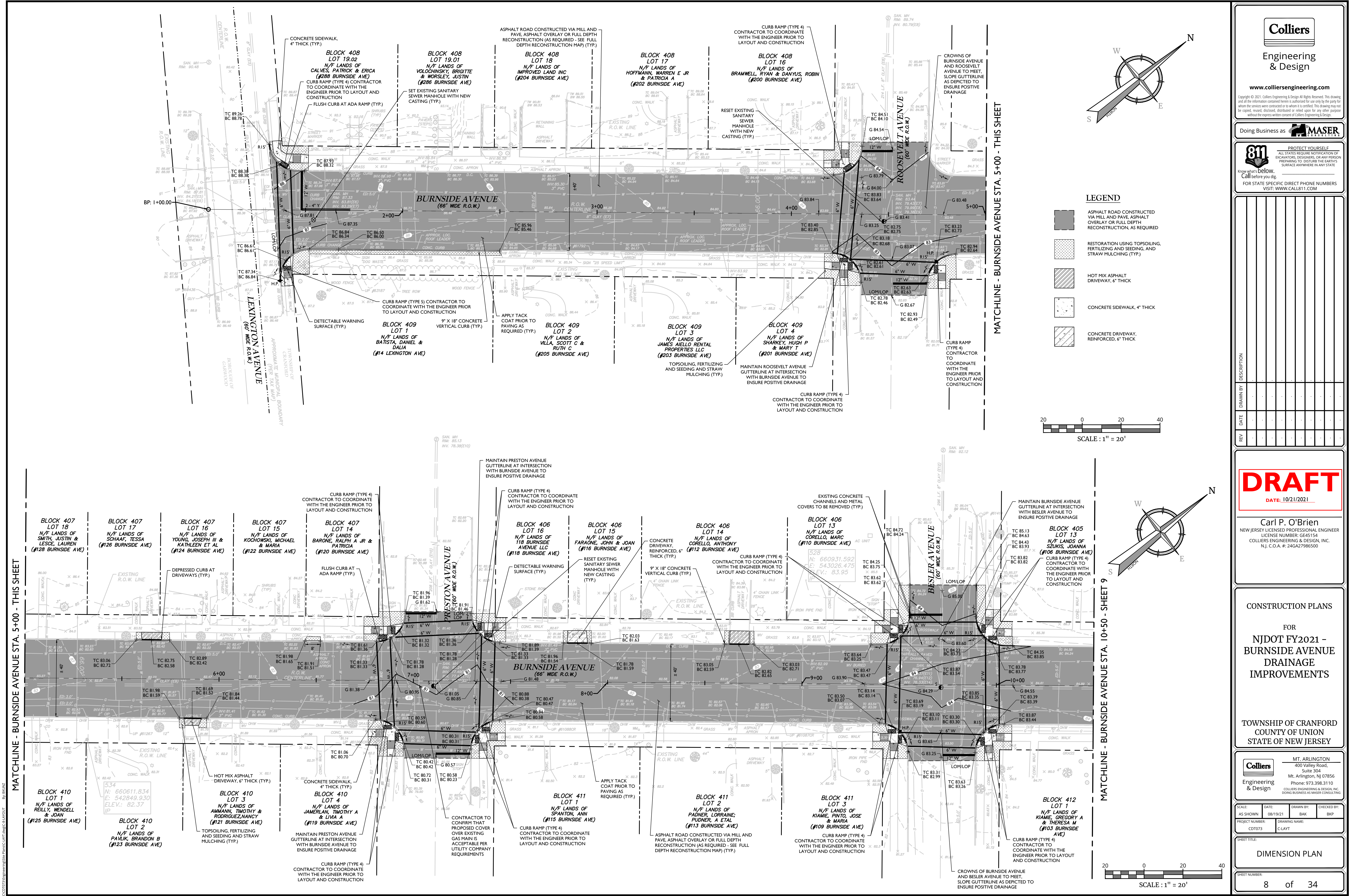
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PROJECT NUMBER: CDT073		DRAWING NAME: C-DEMO	

SHEET TITLE:

EXISTING
CONDITIONS PLAN

SHEET NUMBER:
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HOT MIX ASPHALT DRIVEWAY, 6" THICK

CONCRETE SIDEWALK, 4" THICK

CONCRETE DRIVEWAY, REINFORCED, 6" THICK

DATE

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DESCRIPTION

REV

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DRAWING NAME:

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SHEET NUMBER:

DIMENSION PLAN

8 of 34

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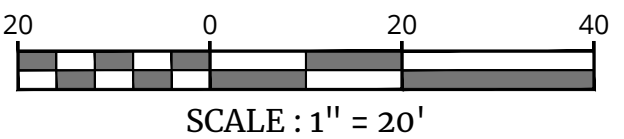
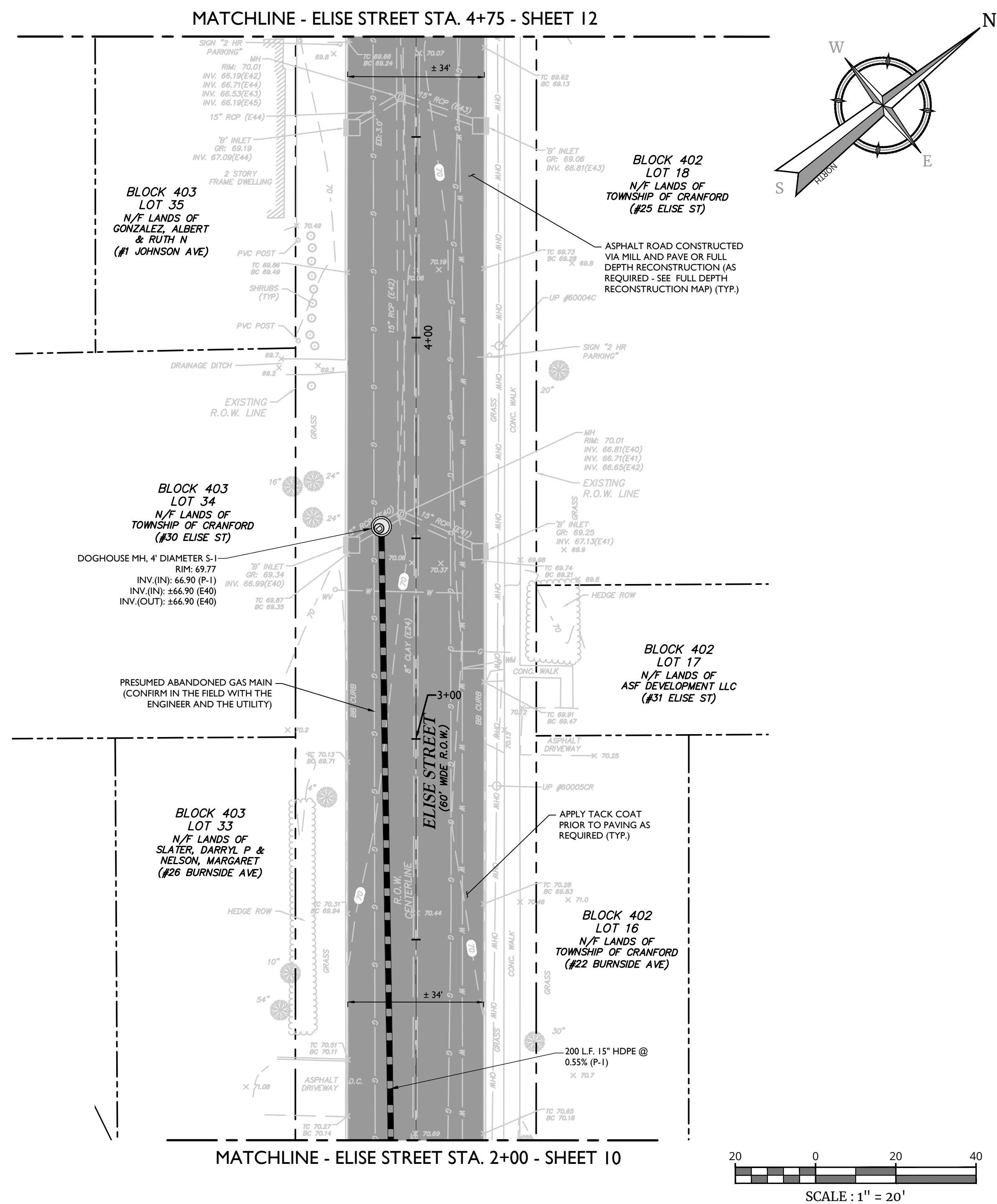
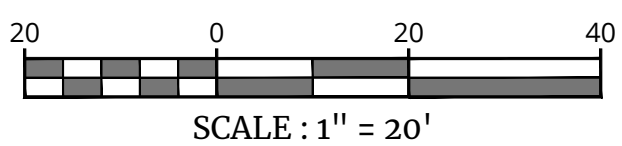
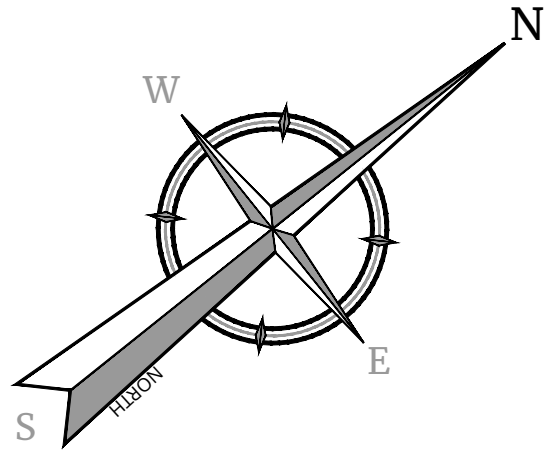
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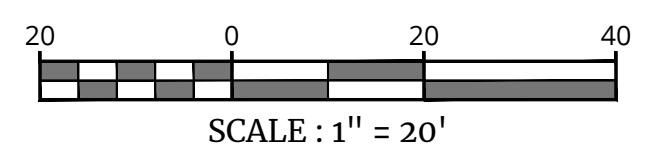
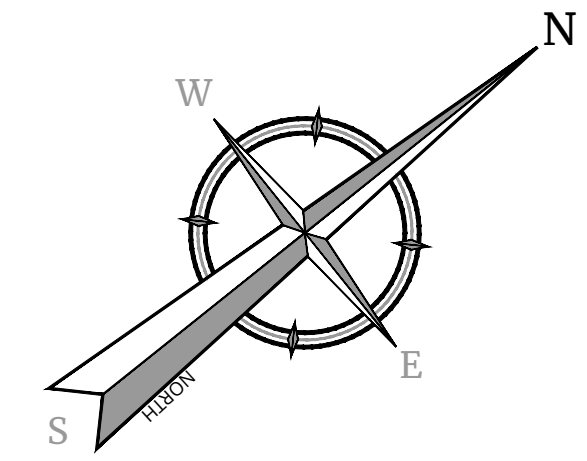
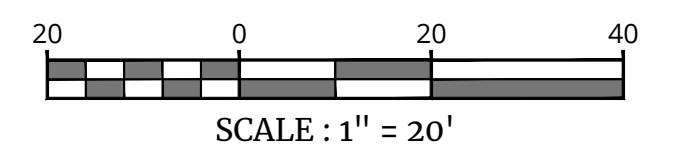
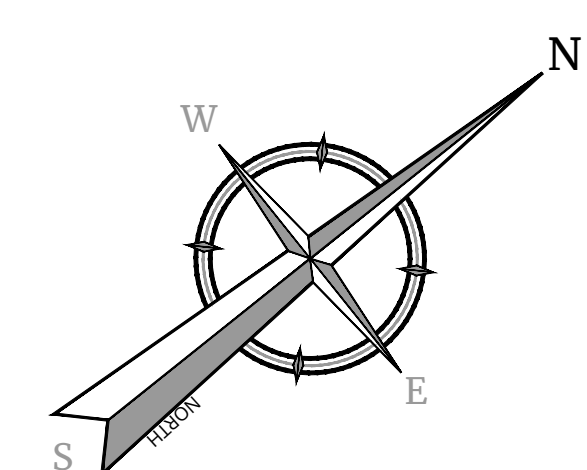
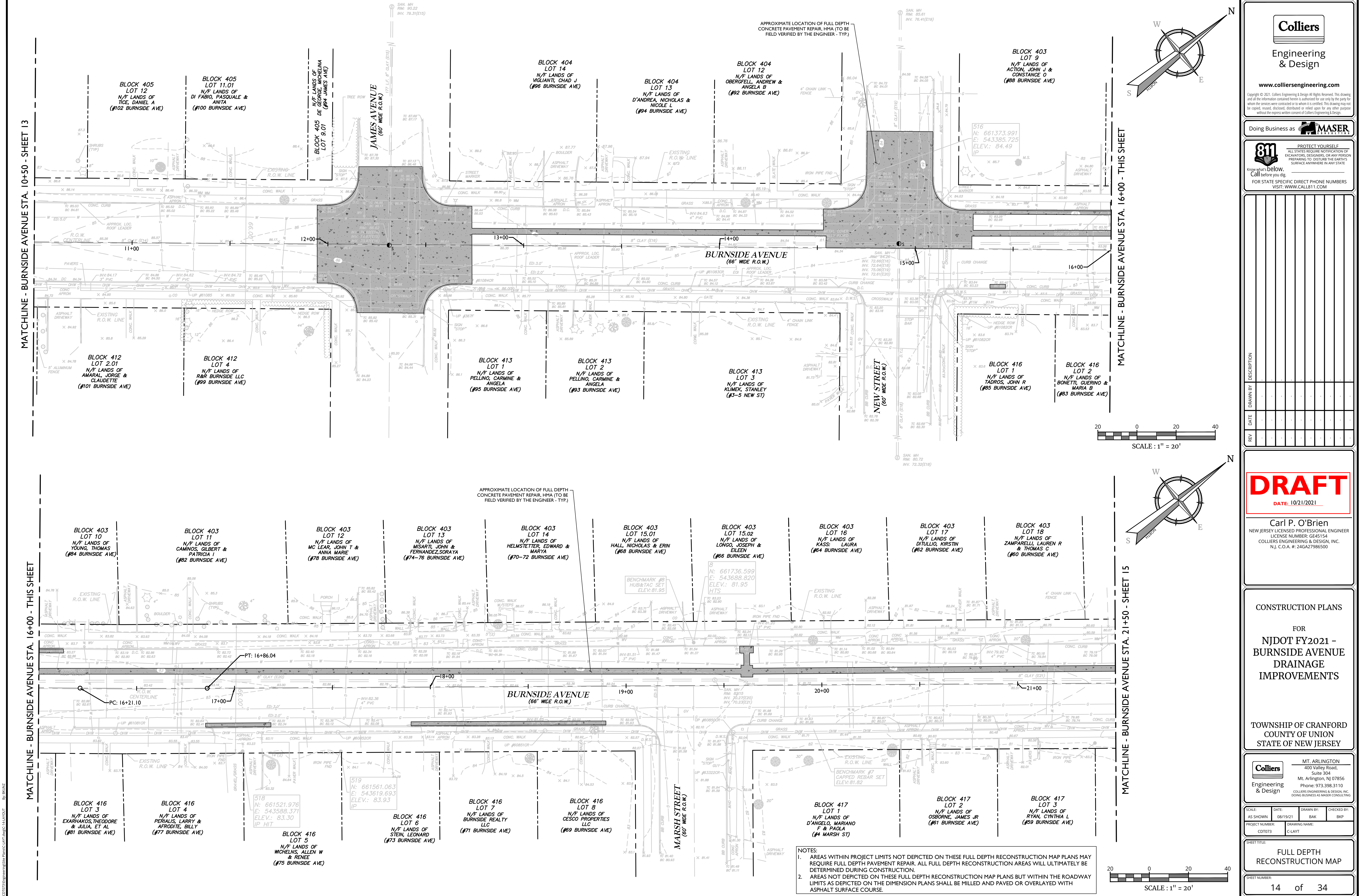
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PROJECT NUMBER:		DRAWING NAME:	
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SHEET NUMBER:
11 of 34





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DRAWING NAME: CLAYT

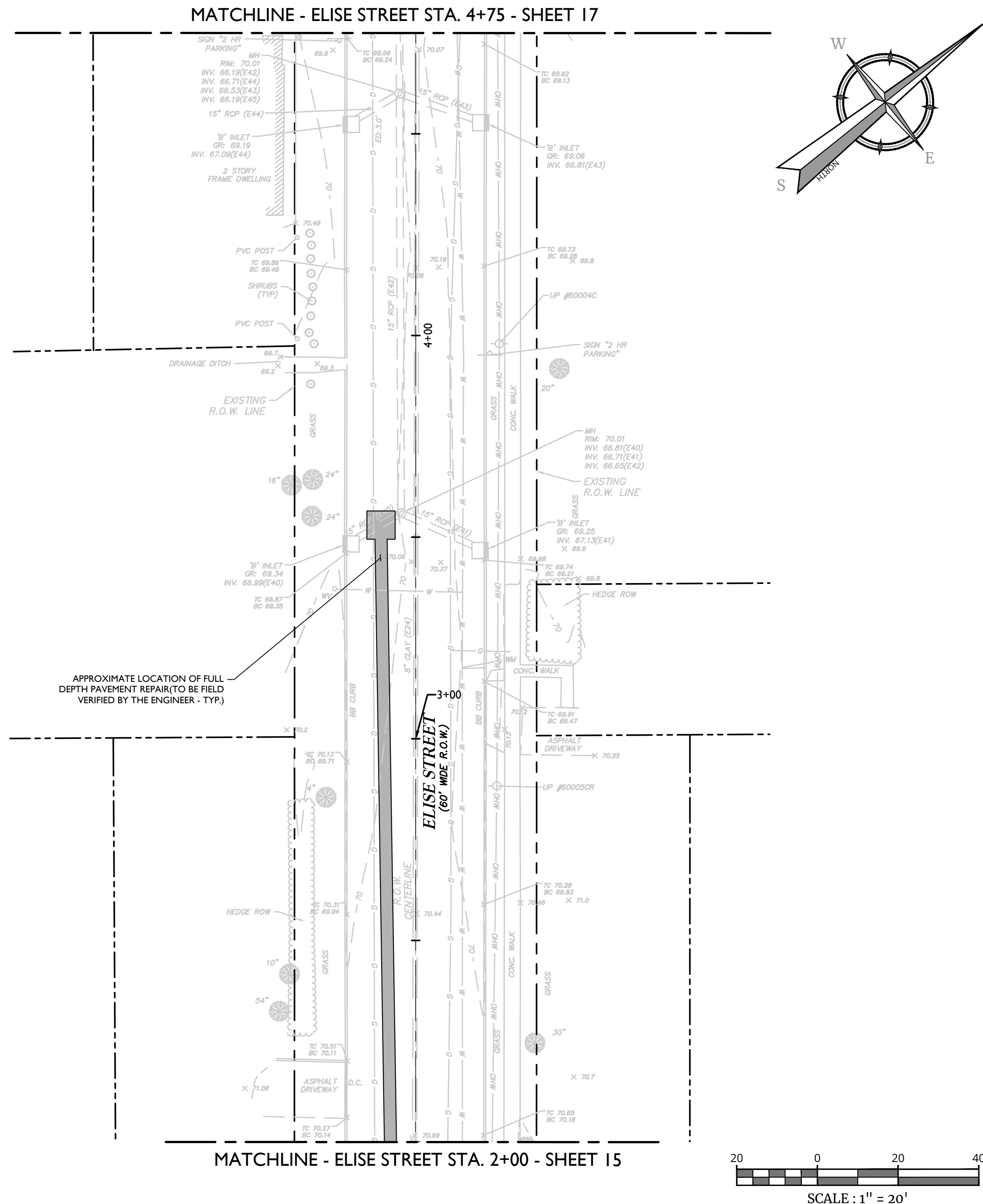
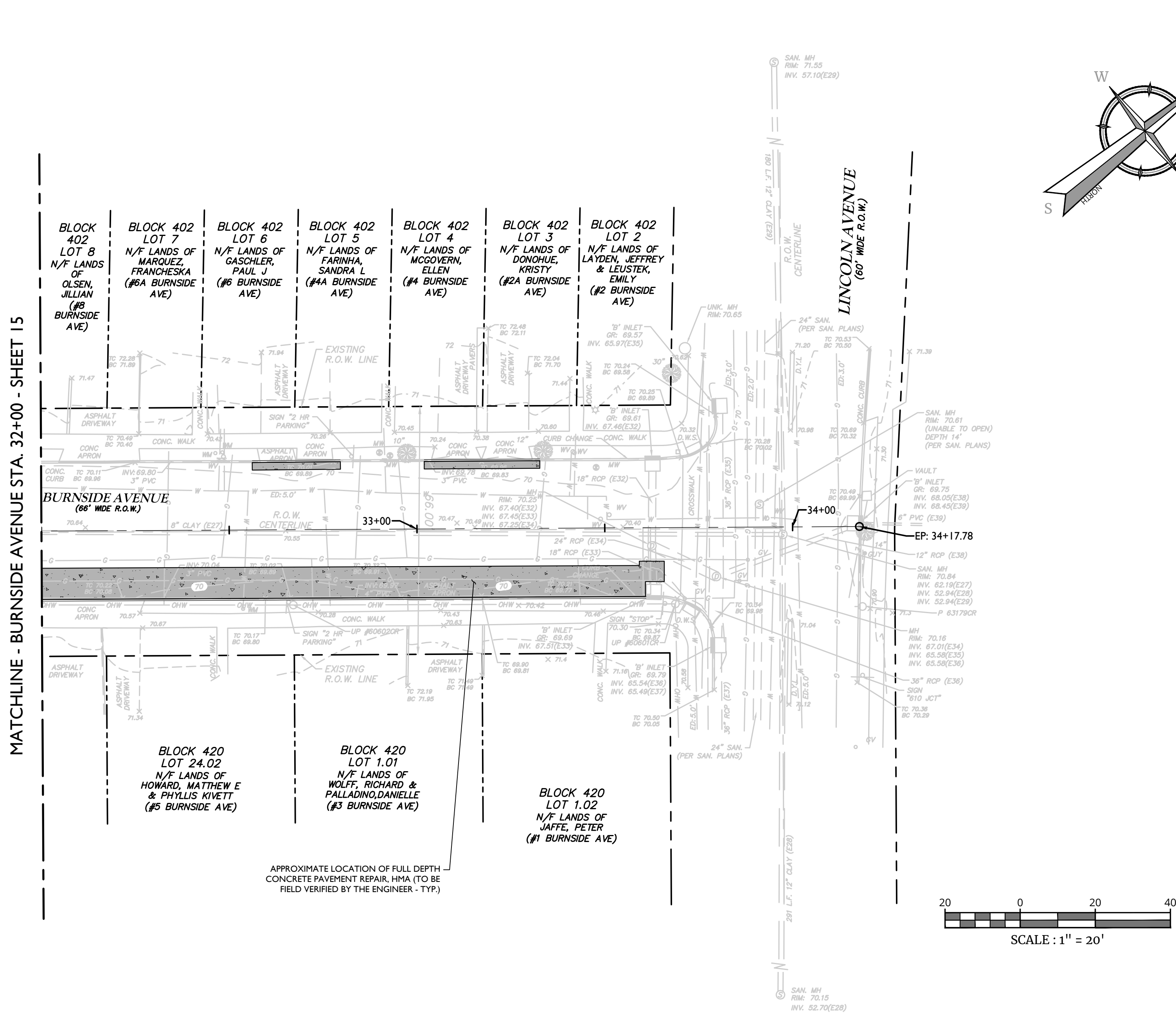
SHEET TITLE: FULL DEPTH RECONSTRUCTION MAP

SHEET NUMBER: 14 of 34

NOTES:
1. AREAS WITHIN PROJECT LIMITS NOT DEPICTED ON THESE FULL DEPTH RECONSTRUCTION MAP PLANS MAY REQUIRE FULL DEPTH PAVEMENT REPAIR. ALL FULL DEPTH RECONSTRUCTION AREAS WILL ULTIMATELY BE DETERMINED DURING CONSTRUCTION.
2. AREAS NOT DEPICTED ON THESE FULL DEPTH RECONSTRUCTION MAP PLANS BUT WITHIN THE ROADWAY LIMITS AS DEPICTED ON THE DIMENSION PLANS SHALL BE MILLED AND PAVED OR OVERLAYED WITH ASPHALT SURFACE COURSE.

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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2. AREAS NOT DEPICTED ON THESE FULL DEPTH RECONSTRUCTION MAP PLANS BUT WITHIN THE ROADWAY LIMITS AS DEPICTED ON THE DIMENSION PLANS SHALL BE MILLED AND PAVED OR OVERLAYED WITH ASPHALT SURFACE COURSE.

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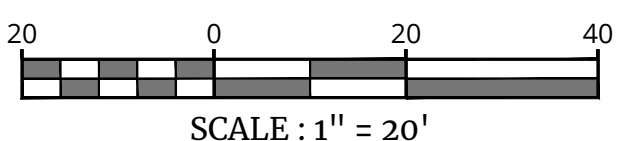
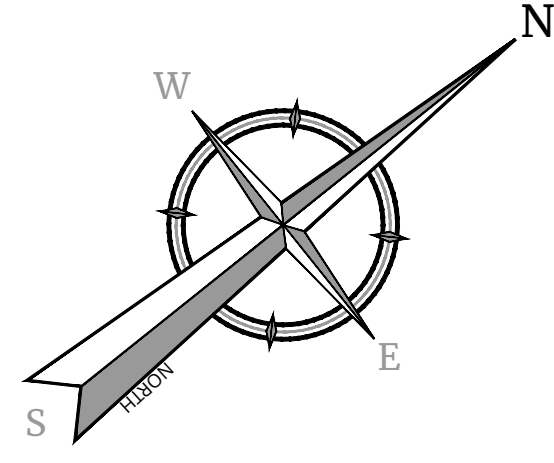
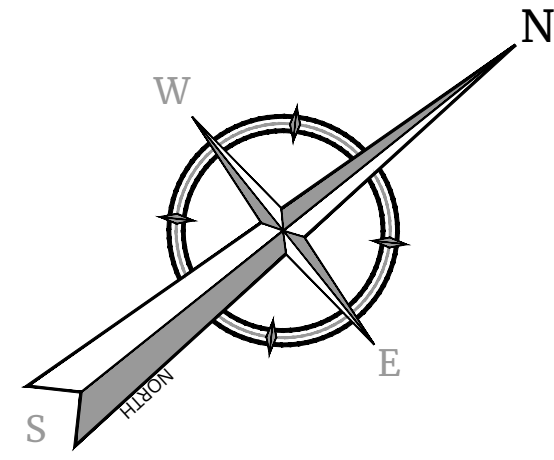
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DRAWING NAME: C-LAY1

SHEET TITLE:
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RECONSTRUCTION MAP

SHEET NUMBER:
16 of 34

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LICENSE NUMBER: GE45154
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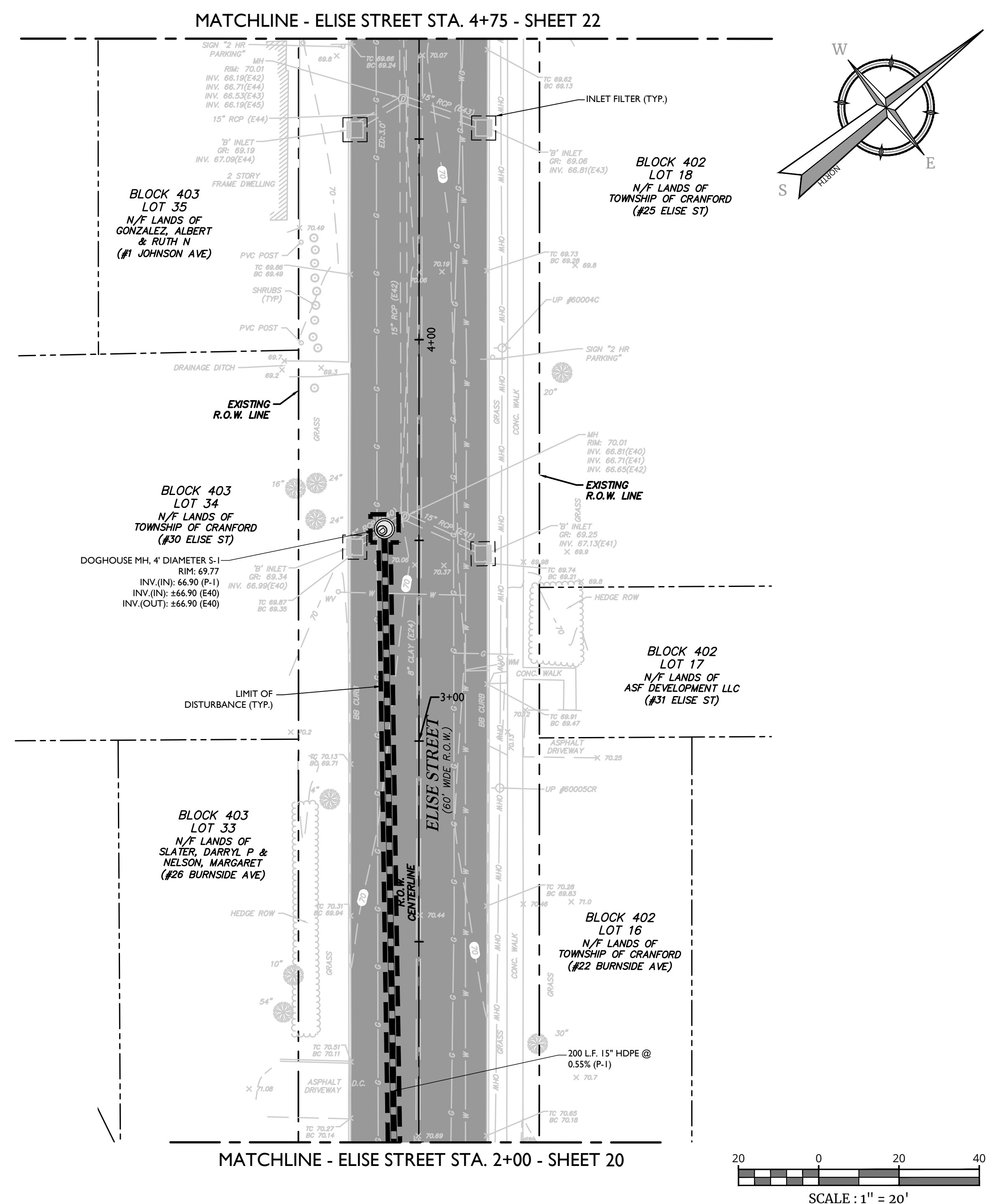
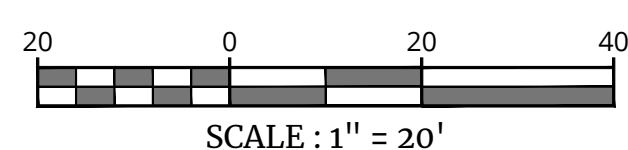
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PROJECT NUMBER: CDT073		DRAWING NAME: C-SESC	

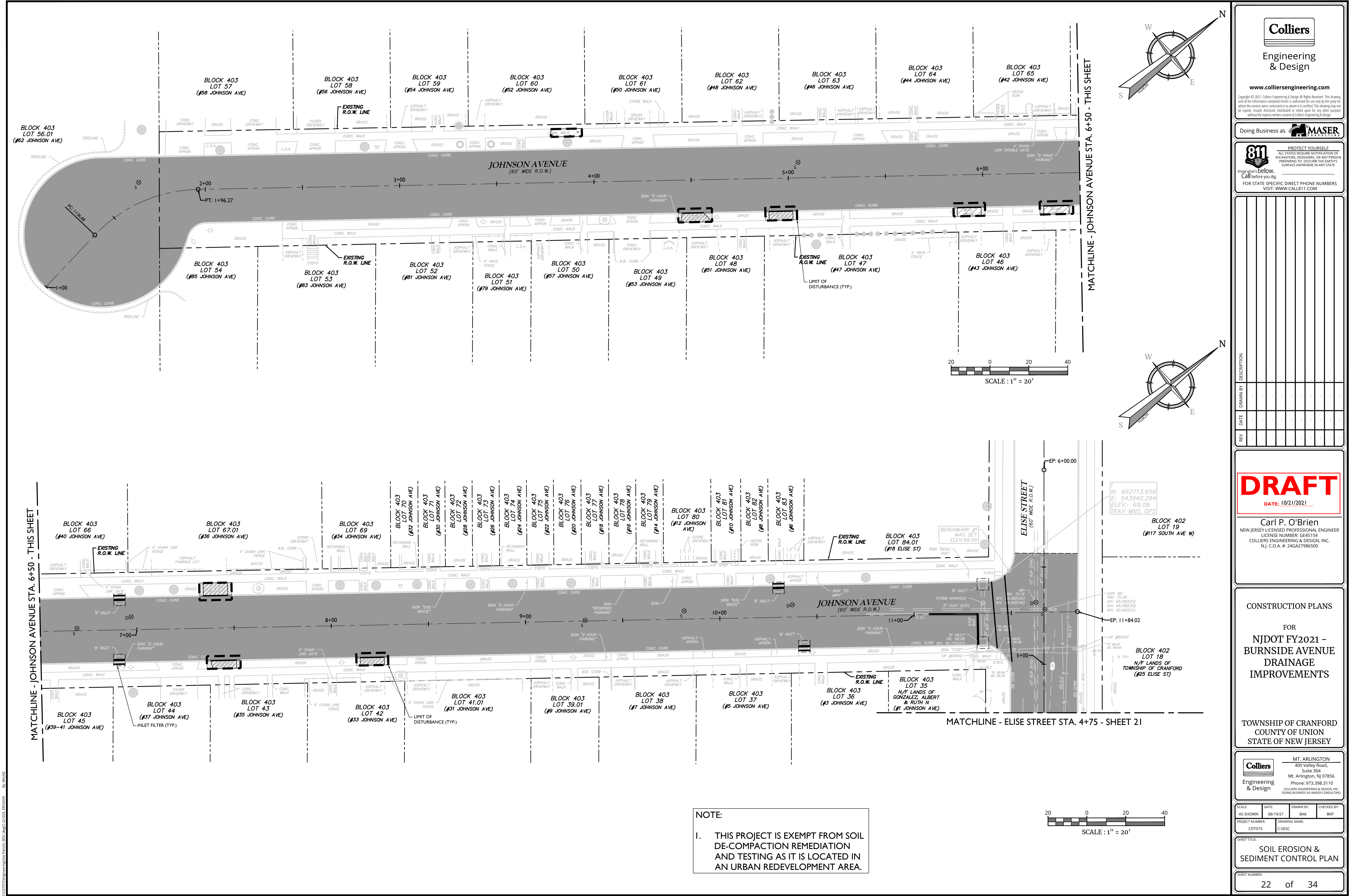
SOIL EROSION & SEDIMENT CONTROL PLAN

SHEET NUMBER:
21 of 34



I. THIS PROJECT IS EXEMPT FROM SOIL DE-COMPACTION REMEDIATION AND TESTING AS IT IS LOCATED IN AN URBAN REDEVELOPMENT AREA.

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DRAFT

DATE: 10/21/2021

Carl P. O'Brien

NEW JERSEY LICENSED PROFESSIONAL ENGINEER

LICENSE NUMBER: 645154

COLLIERS ENGINEERING & DESIGN, INC.

N.J. C.O.A. #: 24GA27986500

CONSTRUCTION PLANS

FOR

NJDOT FY2021 - BURNSIDE AVENUE DRAINAGE IMPROVEMENTS

TOWNSHIP OF CRANFORD

COUNTY OF UNION

STATE OF NEW JERSEY

Colliers

Engineering & Design

MT. ARLINGTON

400 Valley Road,

Suite 304

MT. Arlington, NJ 07856

Phone: 973.398.3110

COLLIERS ENGINEERING & DESIGN, INC.

DOING BUSINESS AS MASER CONSULTING

SCALE: AS SHOWN

DATE: 08/19/21

DRAWN BY: BAK

CHECKED BY: BKP

PROJECT NUMBER: CDT073

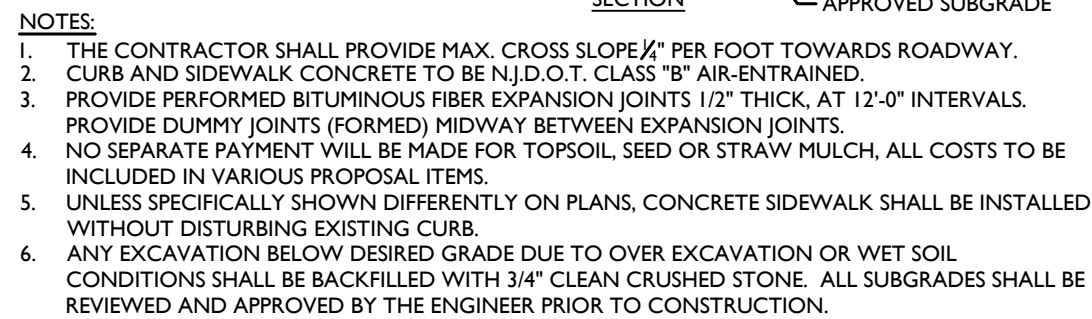
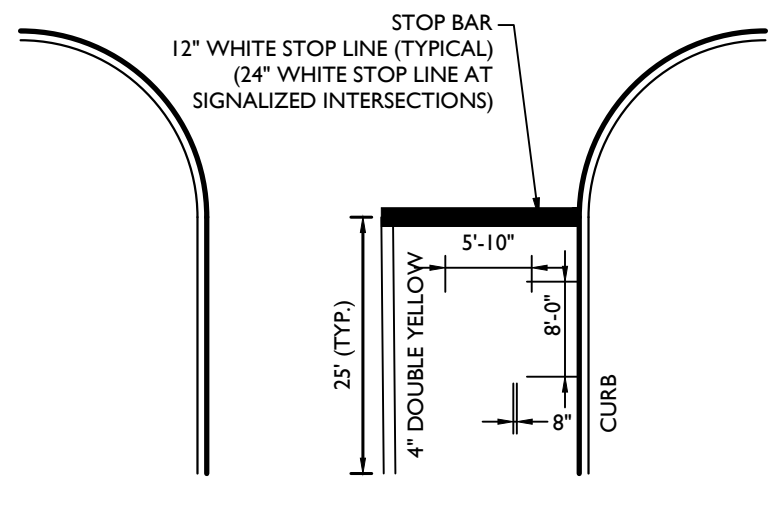
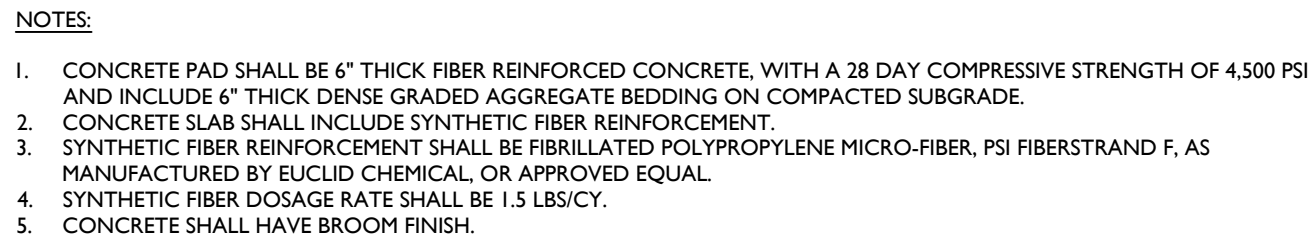
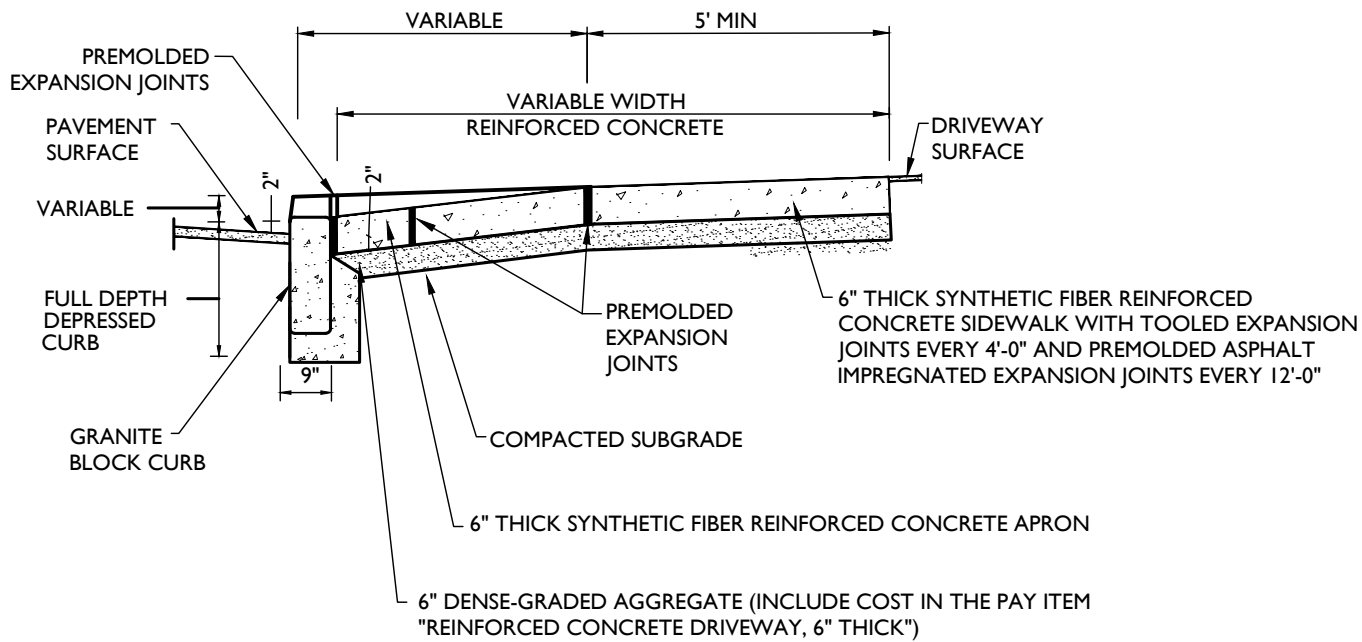
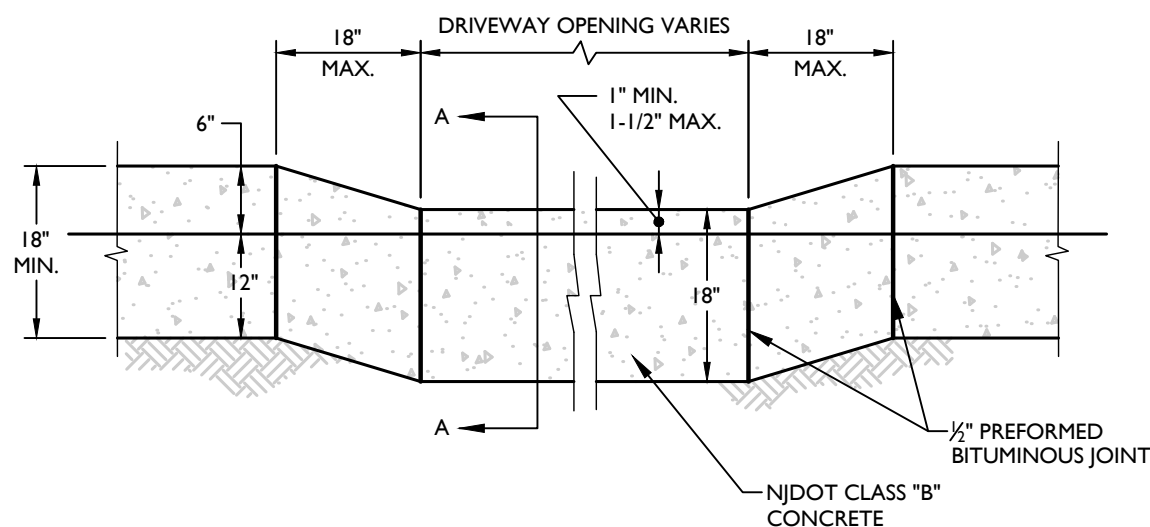
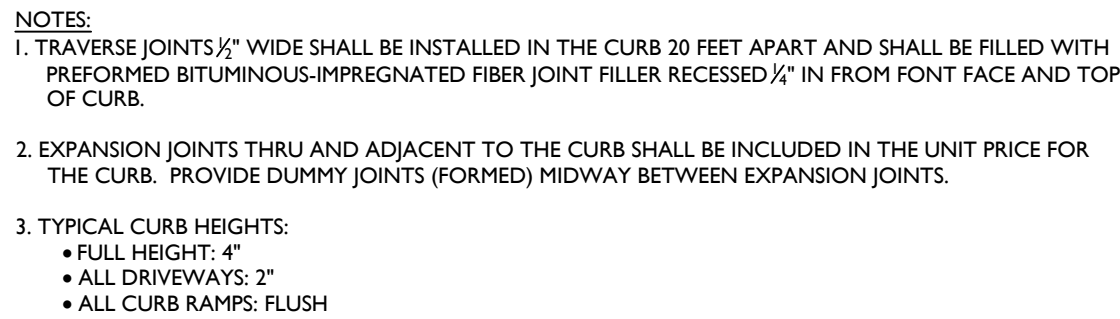
DRAWING NAME: C-SEC

SHEET TITLE: SOIL EROSION & SEDIMENT CONTROL PLAN

SHEET NUMBER: 22

of 34

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

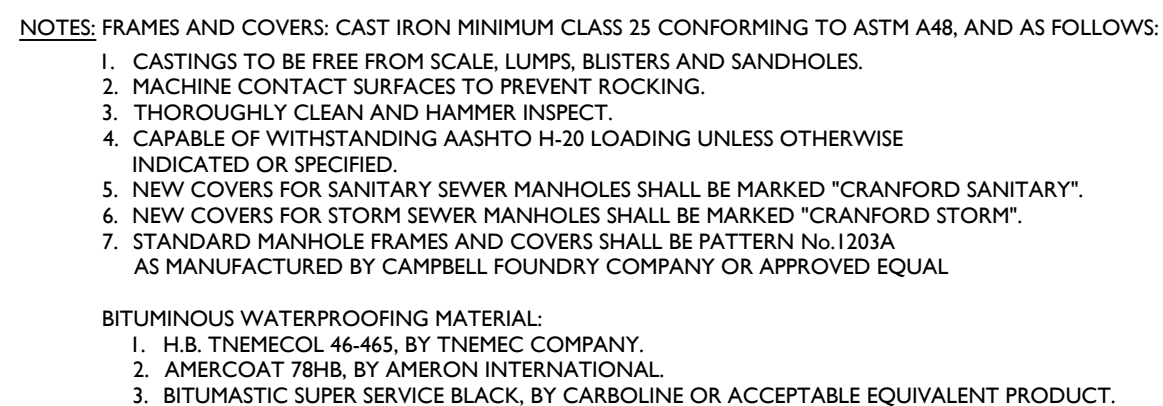
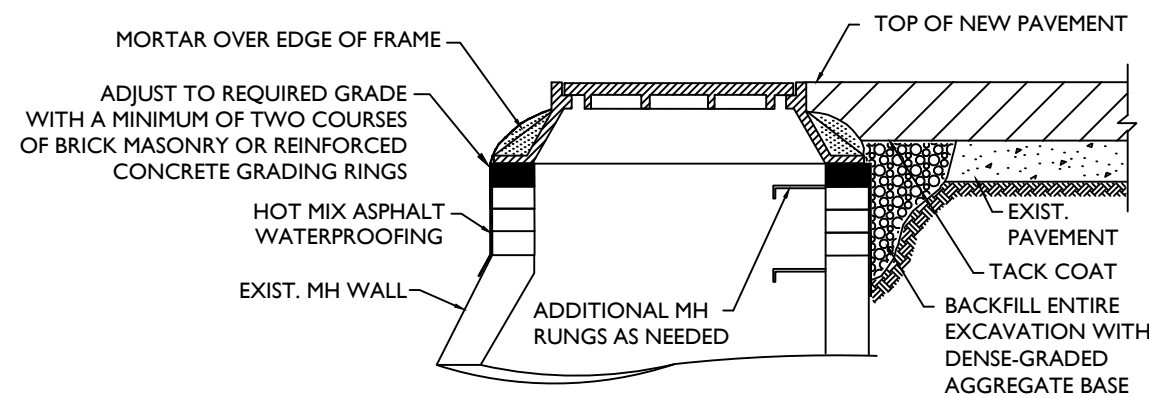


AS SHOWN ON PLANS

HMA SURFACE COURSE 9.5M164, 2" THICK

DENSE-GRADED AGGREGATE BASE COURSE, 4" THICK

COMPACTED SUBGRADE



Technical drawings of the 10' x 10' x 12' concrete water storage tank, showing top, side, and cross-section views with dimensions.

Top View (A-A): Shows the 10' x 10' footprint. The central area is labeled "DUMP NO WASTE" and "DRAINS TO WATERWAYS". The overall dimensions are 10' x 10'. Section lines A-A and B-B are indicated.

Side Elevation (B-B): Shows the 12' height and the 10' width. The overall dimensions are 10' x 12'. Section lines A-A and B-B are indicated.

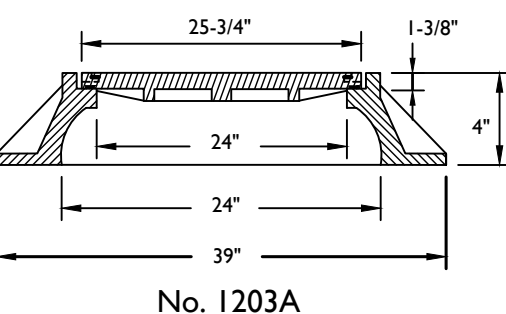
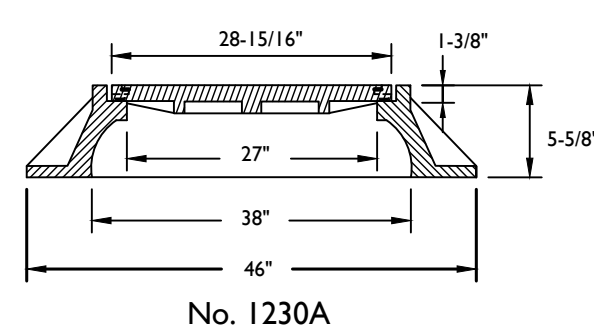
Cross-Section (C-C): Shows the 12' height and the 10' width. The central area is labeled "DUMP NO WASTE" and "DRAINS TO WATERWAYS". The overall dimensions are 10' x 12'. Section lines A-A and B-B are indicated.

ASPHALT TYPE	MINIMUM COMPACTED THICKNESS	MAXIMUM COMPACTED THICKNESS PER LIFT
HOT MIX ASPHALT 9.5M64	1.5" - LEVELING COURSE, 2" SURFACE COURSE	4"
HOT MIX ASPHALT 19M64	3" - LEVELING COURSE, 4" BASE COURSE	6"

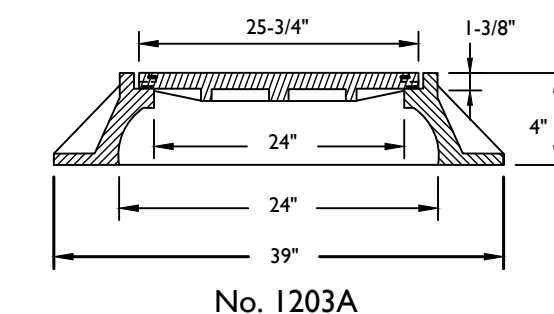
AFTER MILLING, PERFORM BASE REPAIR AS DIRECTED IN THE FIELD BY THE ENGINEER, PRIOR TO OVERLAYING SURFACE.
TO DETERMINE BASE REPAIR, THE CONTRACTOR SHALL ROLL THE ROAD TO DETERMINE THE CONDITION OF THE BASE COURSE. SPOT SPOTS AND UNSUITABLE ROAD BASE SHALL BE REPAIRED. SAW CUT, EXPOSED BASE COURSE OF HPMA SHALL BE REPAIRED AS REQUIRED. CONTRACTOR SHALL REPAIR EXISTING DITCHES. SEE FULL DEPTH BASE REPAIR DETAIL.
WHEN PROPOSED HPMA SURFACE IS 0" - 2" ABOVE EXISTING HPMA SURFACE COURSE, MILL EXISTING HPMA SURFACE COURSE TO ACHIEVE 2" BETWEEN EXISTING HPMA SURFACE COURSE AND PROPOSED HPMA SURFACE COURSE.
WHEN PROPOSED HPMA SURFACE IS 2" - 4" ABOVE EXISTING HPMA SURFACE COURSE, MILL EXISTING 9.5MMA 2" - 4" COMPACTED LIFT THICKNESS. LIFTS MAY BE SEPARATED INTO MULTIPLE THINNER LIFTS AS LONG AS MINIMUM COMPACTED THICKNESSES ARE ADHERED TO, PERFORM CRACK SEALING AND BASE REPAIR AS DIRECTED IN THE FIELD BY THE ENGINEER, PRIOR TO OVERLAYING SURFACE.
WHEN PROPOSED HPMA SURFACE IS 4" - 6" ABOVE EXISTING HPMA SURFACE COURSE, MILL EXISTING 9.5MMA 4" - 6" COMPACTED LIFT THICKNESS. LIFTS MAY BE SEPARATED INTO MULTIPLE THINNER LIFTS AS LONG AS MINIMUM COMPACTED THICKNESSES ARE ADHERED TO, PERFORM CRACK SEALING AND BASE REPAIR AS DIRECTED IN THE FIELD BY THE ENGINEER, PRIOR TO OVERLAYING SURFACE.
WHEN PROPOSED HPMA SURFACE IS 5" - 10" ABOVE EXISTING HPMA SURFACE COURSE, INSTALL A LIFT OF 19996 AND A LIFT OF 3.5MMA, ADHERING TO MINIMUM AND MAXIMUM COMPACTED LIFT THICKNESSES DESCRIBED IN THE HPMA SPECIFICATIONS. MILL EXISTING HPMA SURFACE COURSE TO ACHIEVE 5" BETWEEN EXISTING HPMA SURFACE COURSE AND PROPOSED HPMA SURFACE COURSE.
INSTALLATION OF HPMA SHALL BE REIMBURSED BY THE TON FOR THE HPMA INSTALLED. NO SEPARATE PAYMENT SHALL BE MADE FOR INSTALLING MULTIPLE LIFTS OF HPMA. INCLUDE COSTS IN HOT MIX ASPHALT PAY ITEM.
CONTRACTOR SHALL APPLY TACK COAT PRIOR TO PAVING AS REQUIRED.

Diagram illustrating the limit of milling operation and existing pavement. The diagram shows a cross-section of a road surface. A horizontal line represents the 'EXISTING PAVEMENT'. A vertical line represents the 'LIMIT OF MILLING OPERATION'. The area between the existing pavement and the limit of milling operation is labeled 'MILLED AREA'. A note 'SEE NOTE' points to the milled area.

PLAN



PLAN



Technical drawings of the 3D Brook Trout Design, showing front, side, and top views with dimensions and material specifications.

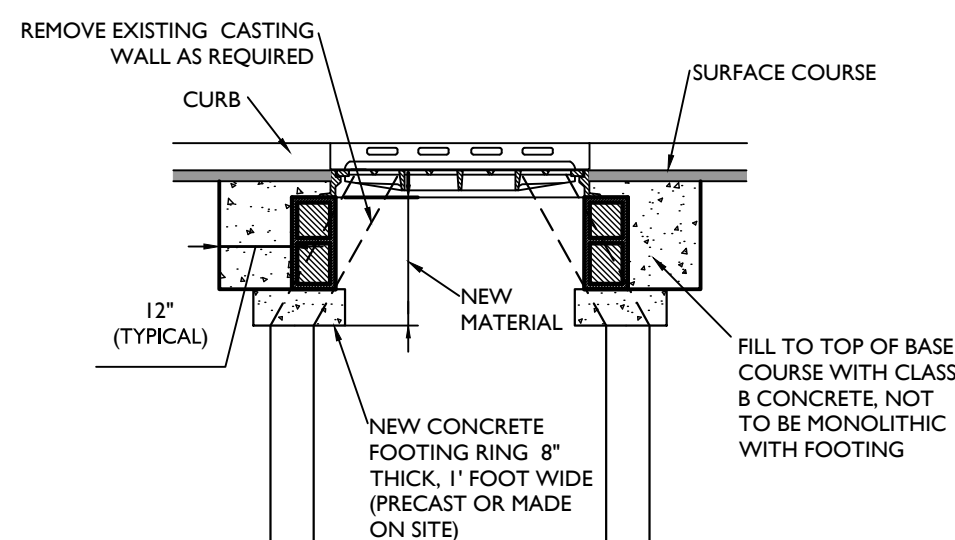
Front View: The front view shows a rectangular structure with a top section labeled "CLUMP FOD WASTE" and "CLUMP FOD WASTE". The overall width is 47-3/4" and the height is 21-3/4". The bottom section consists of a grid of rectangular openings.

Side View (Left): The side view shows the profile of the structure. The overall height is 48". The top section is 4" high. The bottom section is 30" high. The material is specified as "6" OR 8" AS REQ'D BY ENGINEER". The bottom flange is 5-1/2" wide.

Side View (Right): The side view shows the profile of the structure. The overall height is 48". The top section is 4" high. The bottom section is 30" high. The material is specified as "6" OR 8" AS REQ'D BY ENGINEER". The bottom flange is 5-1/2" wide.

Top View: The top view shows the plan of the structure. The overall width is 48". The overall depth is 20". The material is specified as "6" OR 8" AS REQ'D BY ENGINEER". The bottom flange is 5-1/2" wide.

3D BROOK TROUT DESIGN



C:\CDT073\Engineering\Site Plans\C-DTLS.dwg\C-24-DETAILS By: BKUNZ

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STATE OF NEW JERSEY

SCALE: AS SHOWN	DATE: 08/19/21	DRAWN BY: BAK	CHECKED BY: BKP
PROJECT NUMBER: CDT073		DRAWING NAME: C-DTLS	

CONSTRUCTION DETAILS

SHEET NUMBER: _____

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1. MANHOLES SHALL BE CONSTRUCTED OF PRECAST CONCRETE.
2. CASTINGS OF PRECAST MANHOLES SHALL BE ADJUSTED TO GRADE WITH PRECAST CONCRETE GRADE RINGS, AS REQUIRED (2" INCHES MAXIMUM).
3. WHERE EXISTING PIPE IS TO BE CONNECTED TO NEW MANHOLE, 5 FEET OF NEW PIPE AND COUPLINGS SHALL BE INCLUDED IN COST OF MANHOLE.
4. PRECAST MANHOLES SHALL MEET THE REQUIREMENTS OF ASTM C-478. PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
5. REINFORCED CONCRETE STRUCTURES SHALL WITHSTAND AASHTO HS-20 LIVE LOAD CONDITIONS.
6. PROVIDE PRECAST MANHOLE SLAB IN LIEU OF STANDARD PRECAST TOP SECTION FOR MANHOLES HAVING 6'-9" DEPTH OR LESS.

N.T.S.



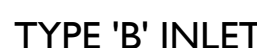
- NOTES:
1. SEE PRECAST STANDARD MANHOLE DETAIL FOR TYPICAL INSTALLATION.
2. PRECAST MANHOLE SECTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C-478

N.T.S.

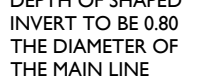


- I. CONTRACTOR SHALL USE A CONCRETE CRADLE IF THE VERTICAL CLEARANCE BETWEEN THE PROPOSED STORM PIPE AND EXISTING UTILITY IS LESS THAN 12".

N.T.S



N.T.S



- NOTES:
1. INVERTS TO BE ELIMINATED IN BOTTOM OF TERMINAL INLETS, BOTTOMS SHALL BE DISHED AND SLOPED TOWARD THE OUTLET PIPE AT A RATE OF GRADE OF 2 INCHES PER FOOT.
 2. INLETS SHALL BE CONSTRUCTED OF CAST CONCRETE.
 3. PROVIDE 7/8" DIA. X 7' X 12" ALUMINUM LADDER RUNGS, 12" O.C. OR COPOLYMER POLYPROPYLENE PLASTIC STEPS WITH 1/2" DIA. GRADE 60 STEEL REINF. MA INDUSTRIES PS2-FP OR PS2-B WITH PRECAST PRESS FIT INSERTS, 12" O.C.
 4. INLET FRAMES AND GRATE SHALL BE CAST CONCRETE, SQUARE BOUNDARY PATTERN NO. 1230A, SQUARE FLANGE FLARED TYPE FRAME OR APPROVED EQUAL.
 5. WHEN ADDITIONAL DEPTH IS SCHEDULED, WALLS BELOW DEPTH OF 8'-0" MEASURED FROM THE TOP OF GRATE TO INVERT, SHALL BE 12" IN WIDTH AND 12" IN DEPTH.
 6. REINFORCE CONCRETE STRUCTURES SHALL WITHSTAND MASHTO HS-20 LIVE LOAD CONDITIONS.

N.T.S.



N.T.S.



MCN|SITE-HADA-2100



1. BACKFILL TO BE PLACED SO AS TO ENSURE SUFFICIENT COMPACTION UNDER PIPE HAUNCHES.
2. THE PIPE OR UTILITY TRENCH TO BE BACKFILLED IN ACCORDANCE WITH THE SPECIFICATIONS FOR BACKFILLING. ENSURE THE WIDTH IS 36" MINIMUM OF THE OUTSIDE DIAMETER OF THE PIPE PLUS 18".

N.T.S.



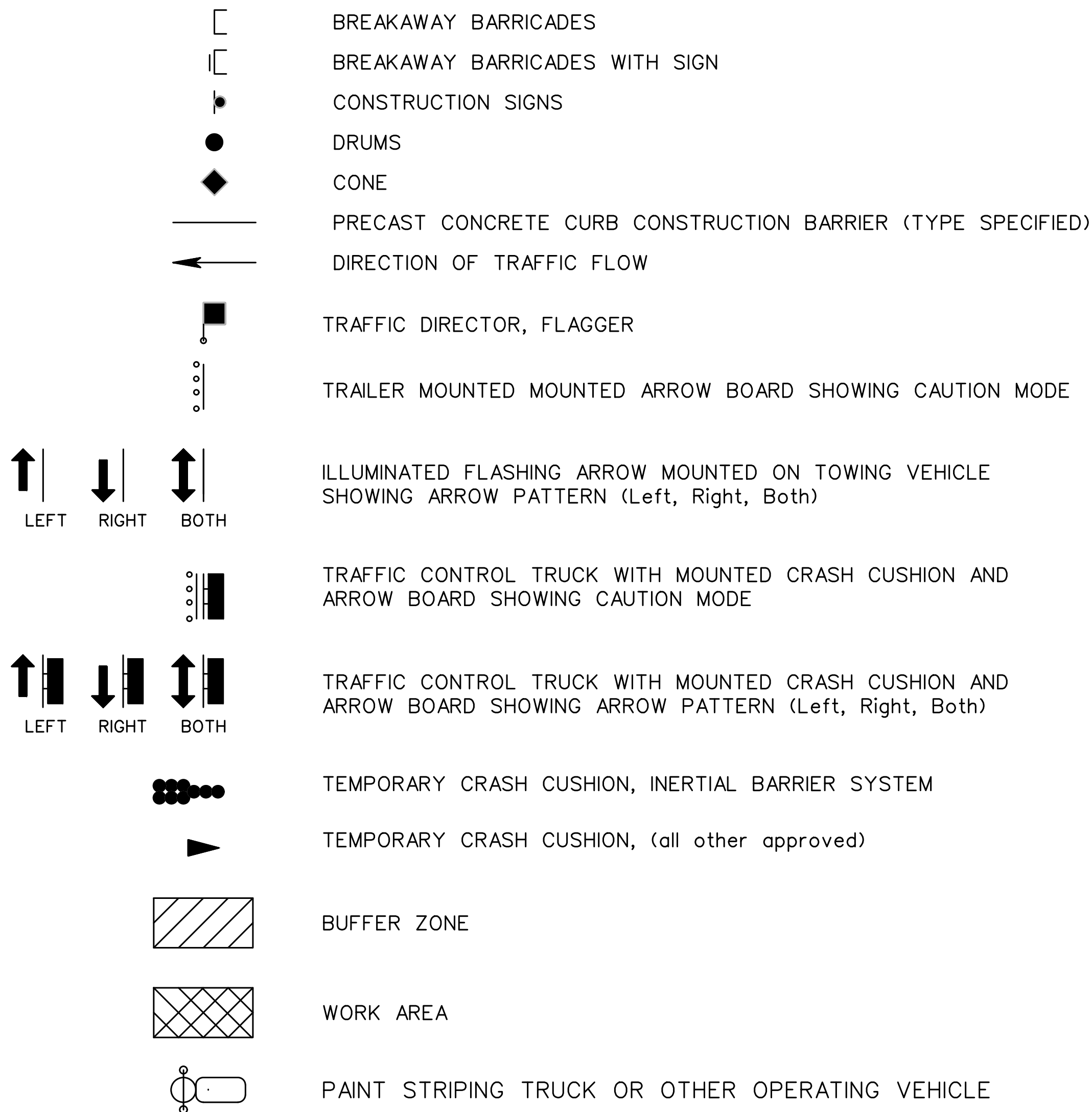
- I. THE INVERT SHALL BE PRECAST OR FORMED IN THE FIELD USING PRECISION FORMS TO CREATE A SMOOTH, ACCURATE CHANNEL THAT MINIMIZES TURBULENCE AND RESULTS IN OPTIMUM FLOW

N.T.S

SCALE: AS SHOWN	DATE: 08/19/21	DRAWN BY: BAK	CHECKED BY: BKP
PROJECT NUMBER: CDT073		DRAWING NAME: C-DTLS	



LEGEND



GENERAL NOTES:

1. ADVANCE WARNING SIGNS DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
2. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY RE TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE RE.
6. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
7. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
8. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) SHALL BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
9. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
10. CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHALL BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
11. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) SHALL BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS SHALL BE AS DIRECTED BY THE RE.
12. MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT SHALL MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
13. THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN SHALL BE SUBMITTED TO THE RE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
14. TRAFFIC SAFETY SERVICES SHALL BE USED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL.
15. ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON AT LEAST 6H : 1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE SHALL BE BACKFILLED.
16. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RE.
17. BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL BE TRANSITIONED ON A MINIMUM 20H : 1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
18. THE PLACEMENT AND OR RELOCATION OF PRECAST CONCRETE CURB, CONSTRUCTION BARRIER SHALL BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
19. CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE, AT THE TIME OF OR DURING CONSTRUCTION, AS REQUESTED BY THE R.E..
20. THE SPEED LIMIT, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS SHALL BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING REGIONAL TRAFFIC ENGINEER - WORK ZONE.
21. THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
22. TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S) , 4 FEET BY 2.5 FEET SIGN SHALL BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN SHALL ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN SHALL BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
23. THE FINAL HMA SURFACE PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE RE OR INDICATED ON THE PLANS. MANHOLES AND INLETS SHALL BE SET TO FINISHED GRADE AND TEMPORARY PAVEMENT RAMPS ARE TO BE CONSTRUCTED AROUND THEM WITH A MINIMUM 20H : 1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.

24. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
25. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.
26. TRAFFIC IMPACT NOTICES AND CHANGES
 - A. TERMS:
WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING SHALL BE AS FOLLOWS:
 - i. IMPACTS TO NORMAL TRAFFIC FLOW - WORK THAT REQUIRES A PORTION OF THE PAVED ROADWAY BEING BLOCKED OR CLOSED WITH SAFETY DEVICES OR VEHICLES, INCLUDING, BUT NOT LIMITED TO, FULL OR PARTIAL LANE CLOSURES, FULL OR PARTIAL RAMP CLOSURES, SHOULDER CLOSURES, MOVING OPERATIONS SUCH AS TRAFFIC STRIPING OR SWEEPING, LANE SHIFTS, OR ALTERNATING TRAFFIC. THIS APPLIES EVEN WHEN DETOURS ARE PROVIDED.
 - ii. TEMPORARY LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH IS ROUTINELY SET UP AND REMOVED ON A DAILY BASIS.
 - iii. PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.
 - B. ADVANCE NOTICES

FOR THE INITIAL STARTUP WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR SHALL NOTIFY THE RE IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE DEPARTMENT OF THE PROPOSED DATE. THE NOTICE SHALL BE SUBMITTED AT LEAST TWO (2) HIGHWAY CLOSURE DAYS PRIOR TO THE START DATE AND ADVANCE NOTICE OF THE PROPOSED DATE. START OF WORK THAT IMPACTS NORMAL TRAFFIC FLOW WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE SEVEN (AND/OR FOURTEEN) CALENDAR DAYS BEFORE THE START DATE. FIFTEEN (15) CALENDAR DAYS BEFORE THE PROPOSED DATE FOR THE TRAFFIC IMPACT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.

FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR SHALL NOTIFY THE RE IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE. START OF A NEW TRAFFIC PATTERN WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM THE PROPOSED DATE OF THE START OF THE NEW TRAFFIC PATTERN SEVEN (AND/OR FOURTEEN) DAYS BEFORE STARTING TRAFFIC CONTROL MEASURES FOR THE ESTABLISHMENT OF THE NEW PATTERN. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.

STARTING THE ESTABLISHMENT OF A NEW PERMANENT TRAFFIC PATTERN SHALL BEGIN NO EARLIER THAN 11:00 PM FRIDAY AND SHALL BE COMPLETED AND READY FOR OPERATIONS BY 6:00 PM THE FOLLOWING SUNDAY. THE ESTABLISHMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE LANE CLOSURE HOURS SPECIFIED IN THE CONTRACT.

ADVANCE NOTICES SENT PRIOR TO THE PRE-CONSTRUCTION MEETING SHALL BE ADDRESSED TO THE CONTACT PERSON AS SPECIFIED IN SUBSECTION 101.04 OF THE SPECIAL PROVISIONS.

C. PROGRESS NOTICES

ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY SHALL BE SUBMITTED TO THE RE BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-101 PROVIDED BY THE DEPARTMENT.

EACH DAY OF "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE RE BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-102 PROVIDED BY THE DEPARTMENT.

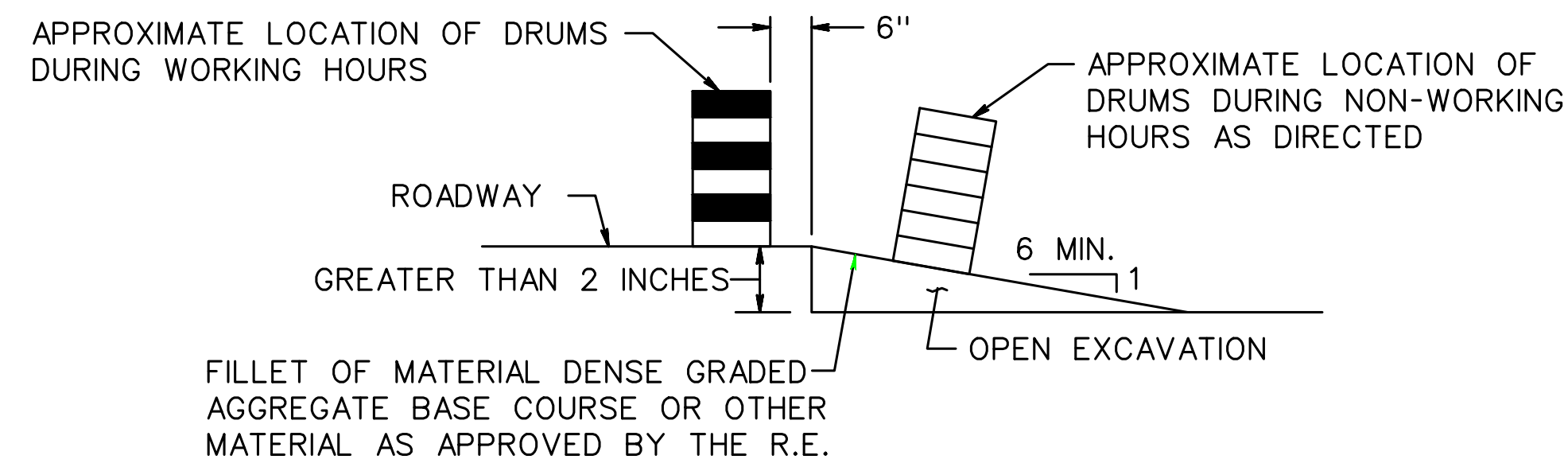
"TEMPORARY LANE CLOSURES" FOR WEEKENDS SHALL BE SUBMITTED TO THE RE BY 9:00 AM ON THE IMMEDIATELY PRECEDING FRIDAY ON THE DAILY FORM TO-102 PROVIDED BY THE DEPARTMENT.

D. CHANGES TO THE SCHEDULED CLOSURES

REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE RE AS FOLLOWS:

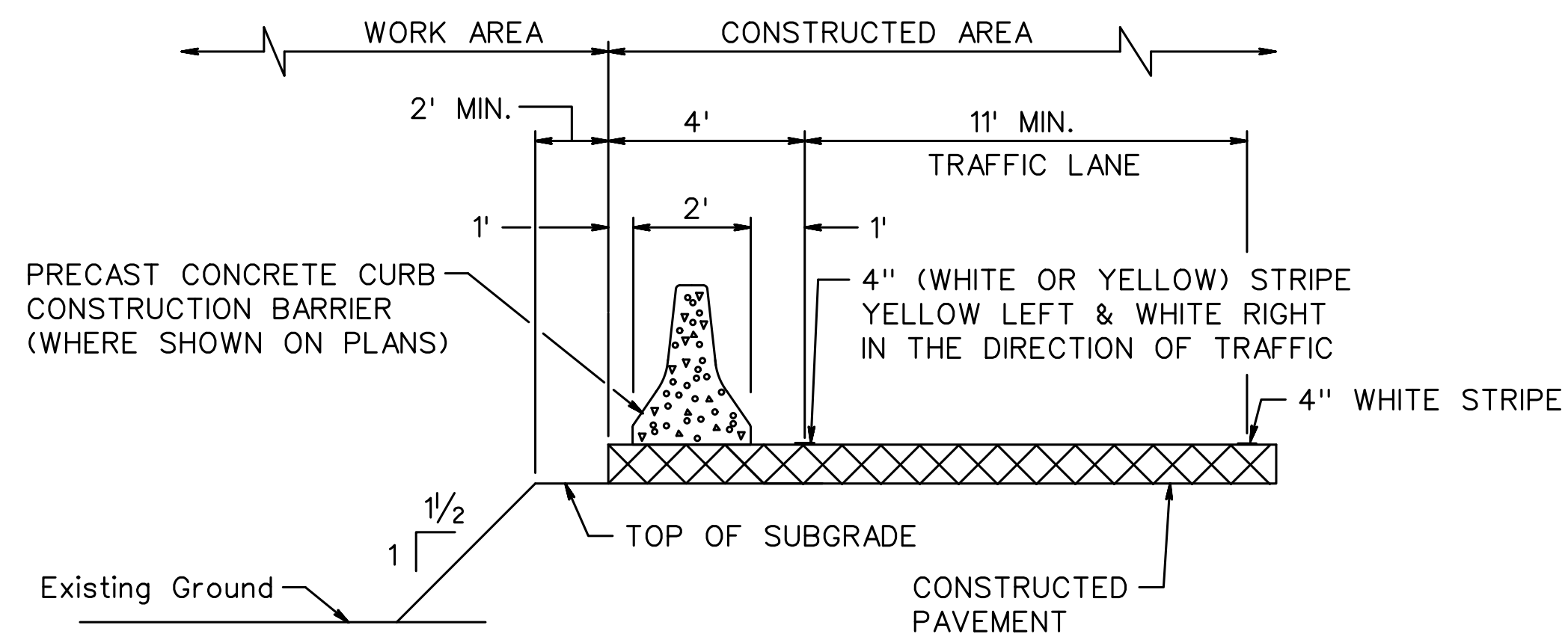
CHANGES TO THE SCHEDULED HOURS FOR "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE R.E. AT LEAST EIGHT CALENDAR DAYS IN ADVANCE OF WHEN THE CHANGE IS PROPOSED TO START.

OTHER PROPOSED CHANGES TO "TEMPORARY LANE CLOSURES" AND ALL CHANGES TO "PERMANENT LANE CLOSURES" SHALL BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.



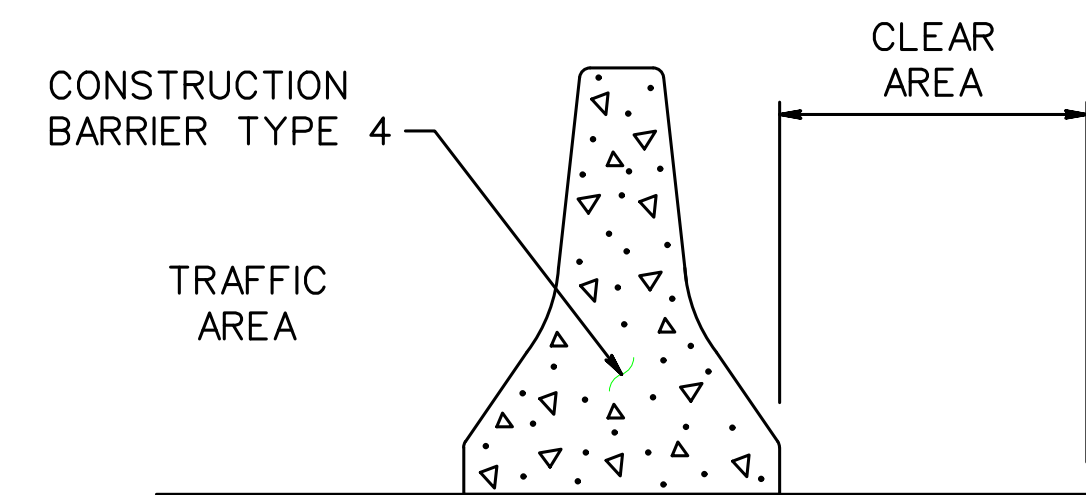
NOTE:
ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

ESCAPE RAMP DETAIL



TYPICAL SECTION

PLACEMENT OF PRECAST CONCRETE CONSTRUCTION BARRIER



- NOTES:
- CHANGES TO THE PROPOSED JOINT CLASS AT ANY LOCATION MUST BE APPROVED BY THE DEPT.
 - NO ROADWAY DROP OFFS, OBSTRUCTIONS, STORAGE OF MATERIALS OR WORK WILL BE PERMITTED IN THE CLEAR AREA UNLESS APPROVED BY THE R.E.

STAGE	LOCATION		JOINT CLASS
	RTE.	STA. TO	

JOINT CLASS	CLEAR AREA
A	20 INCHES
B	16 INCHES
C	11 INCHES

CONSTRUCTION BARRIER, TYPE 4
JOINT CLASS AND CLEAR AREA

REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED SIGHT DISTANCE TO BEGINNING OF CHANNELIZING TAPERS		
	DESIRABLE	MINIMUM	
	RURAL FEET	URBAN FEET	RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	875	1150	550
60	1000	1275	650
65	1050		725

- NOTES:
- AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
 - RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES SHALL BE DOUBLE THE VALUES SHOWN ABOVE.
 - RURAL AND URBAN ROAD DESIGNATIONS SHALL BE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT LINE DIAGRAMS.
 - DESIRABLE VALUES SHALL BE PROVIDED WHEREVER POSSIBLE. IF IT IS NOT FEASIBLE OR PRACTICAL TO PROVIDE DESIRABLE VALUES BECAUSE OF HORIZONTAL OR VERTICAL CURVATURE OR IF RELOCATION OF THE TAPER IS NOT POSSIBLE, THEN MINIMUM VALUES CAN BE APPLIED. WHEN MINIMUM VALUES ARE USED, SPECIAL ATTENTION SHOULD BE GIVEN TO THE USE OF SUITABLE TRAFFIC CONTROL DEVICES FOR PROVIDING ADVANCED WARNING OF THE CONDITIONS THAT ARE LIKELY TO BE ENCOUNTERED.
 - TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.

RECOMMENDED TAPER LENGTH AND SPACING FOR CHANNELIZING TAPERS					RECOMMENDED SPACING ALONG TANGENTS	
REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	MINIMUM TAPER LENGTH L - FOR LANE WIDTHS			MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET
		10'	11'	12'		
25	10.5:1	105	115	125	25	50
30	15:1	150	165	180	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

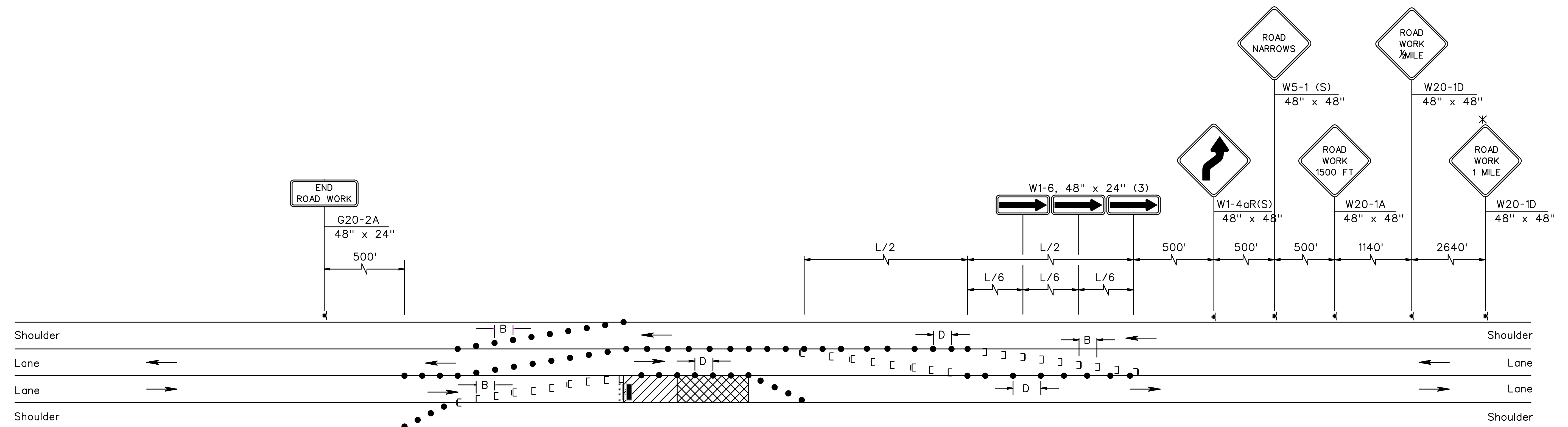
NOTE:
THE MAXIMUM DEVICE SPACING ALONG CURVES SHALL BE AS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.

N.T.S.

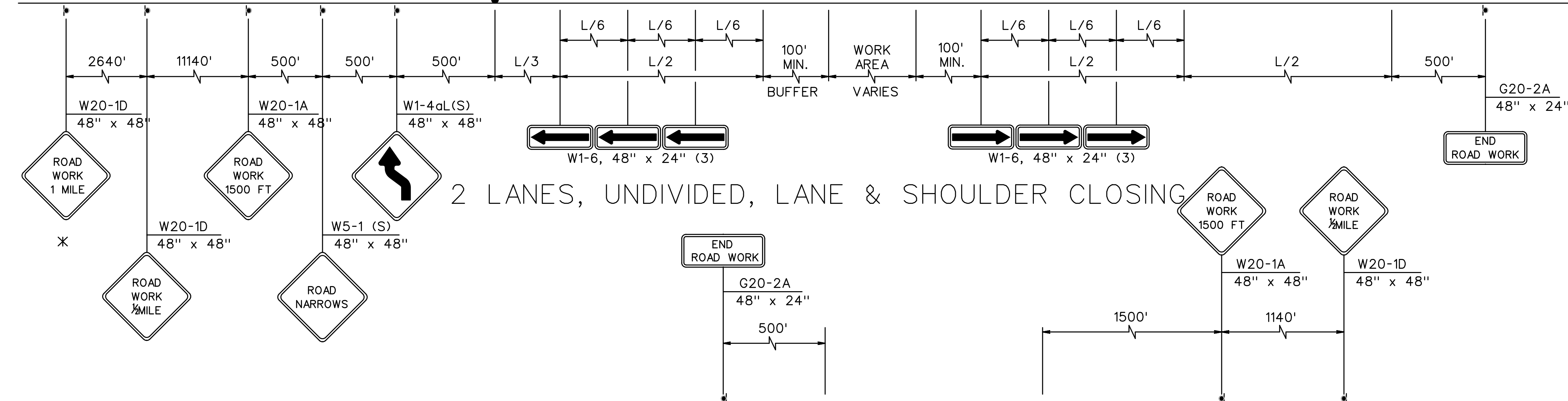
TCD-2

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS



2 LANES, UNDIVIDED, LANE & SHOULDER CLOSING



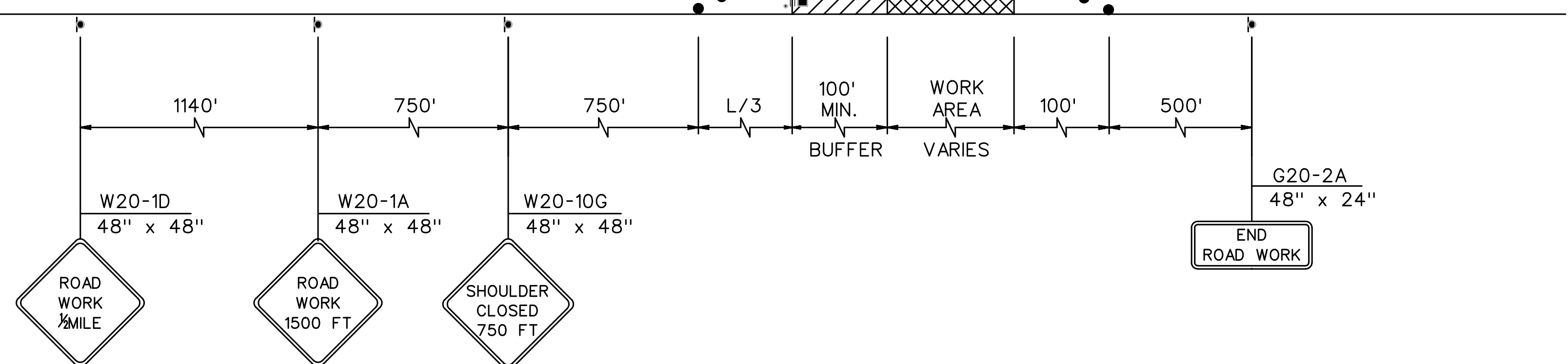
* THIS SIGN SHALL BE INSTALLED FOR ROADS WITH A SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

NOTE:
SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B AND D.

N.T.S.



R8-8 SIGN DETAIL
NOT TO SCALE

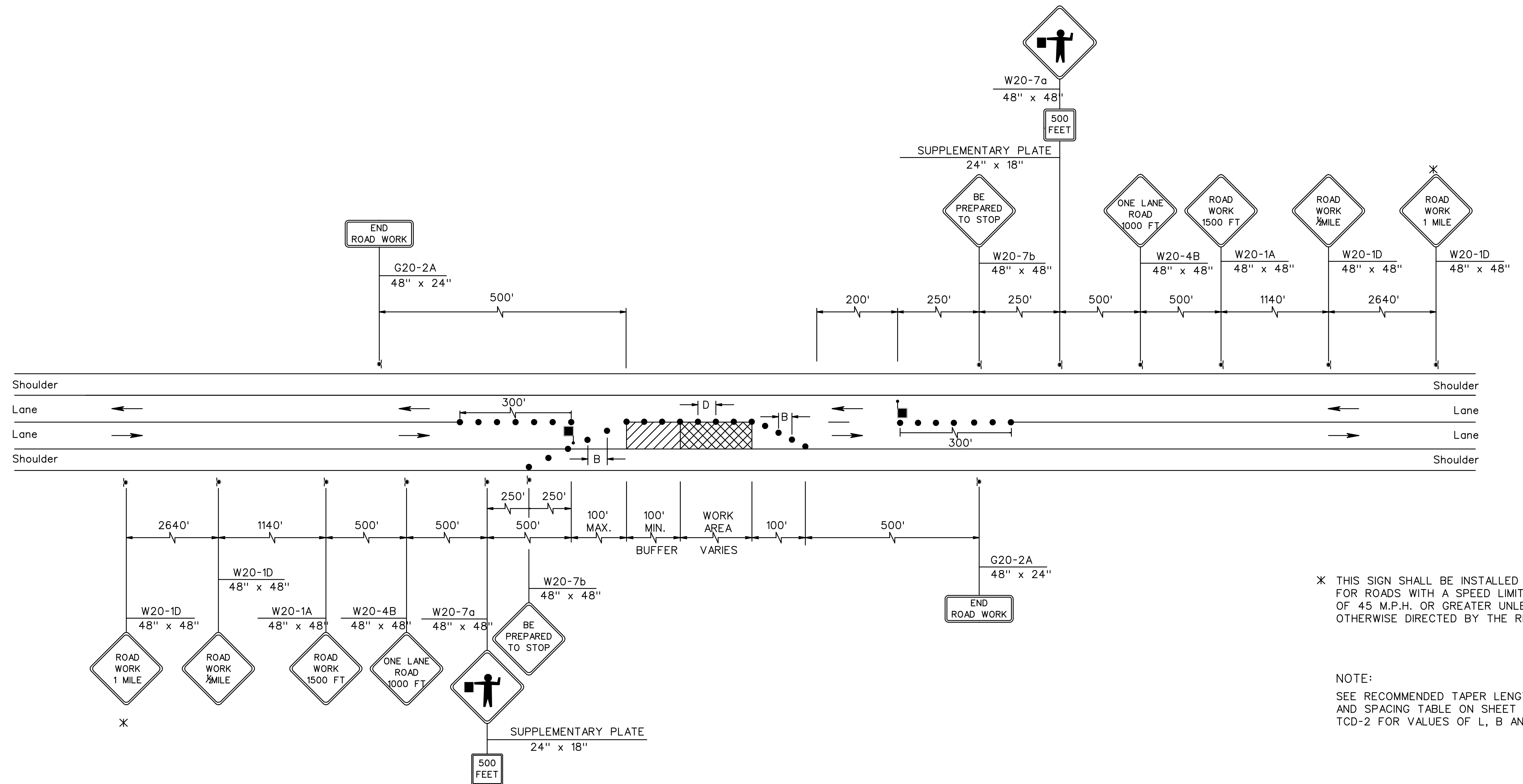


2 LANES, UNDIVIDED, SHOULDER CLOSING

TCD-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS



2 LANES, UNDIVIDED, LANE & SHOULDER CLOSING W/FLAGGING

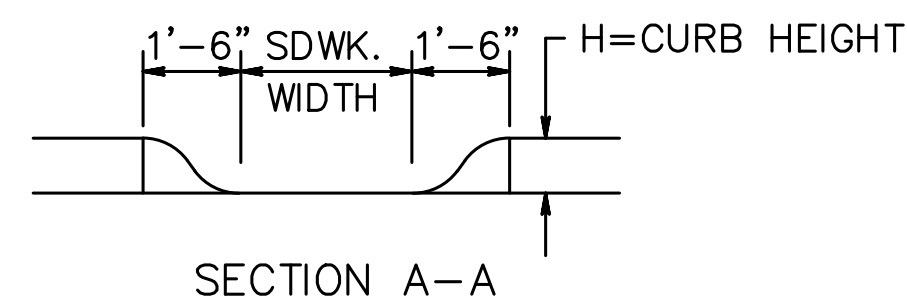
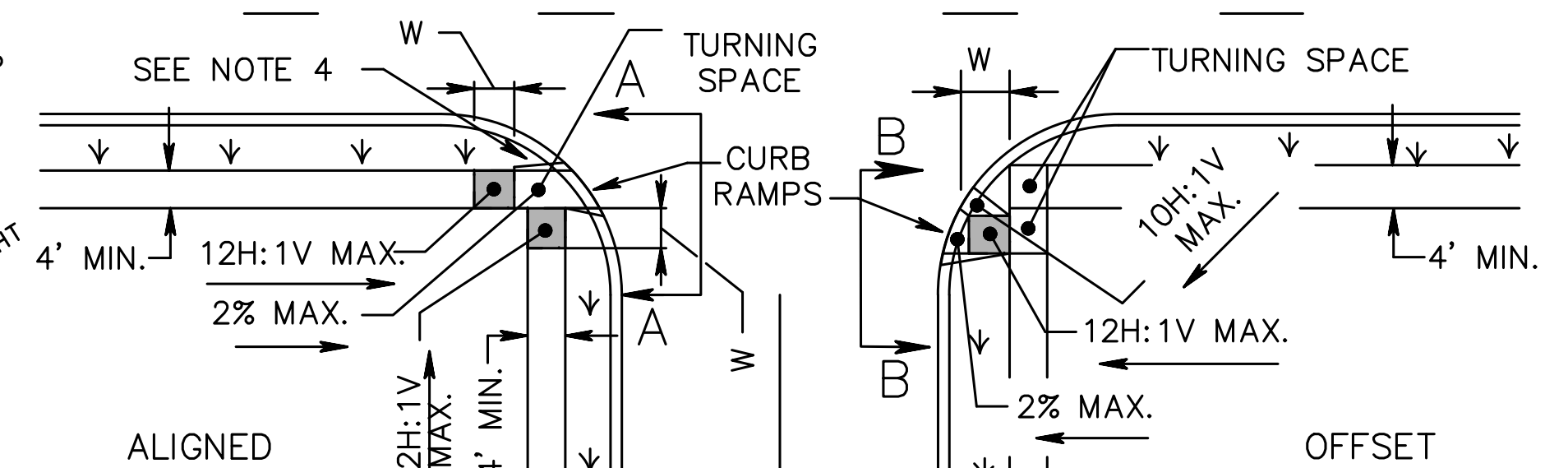
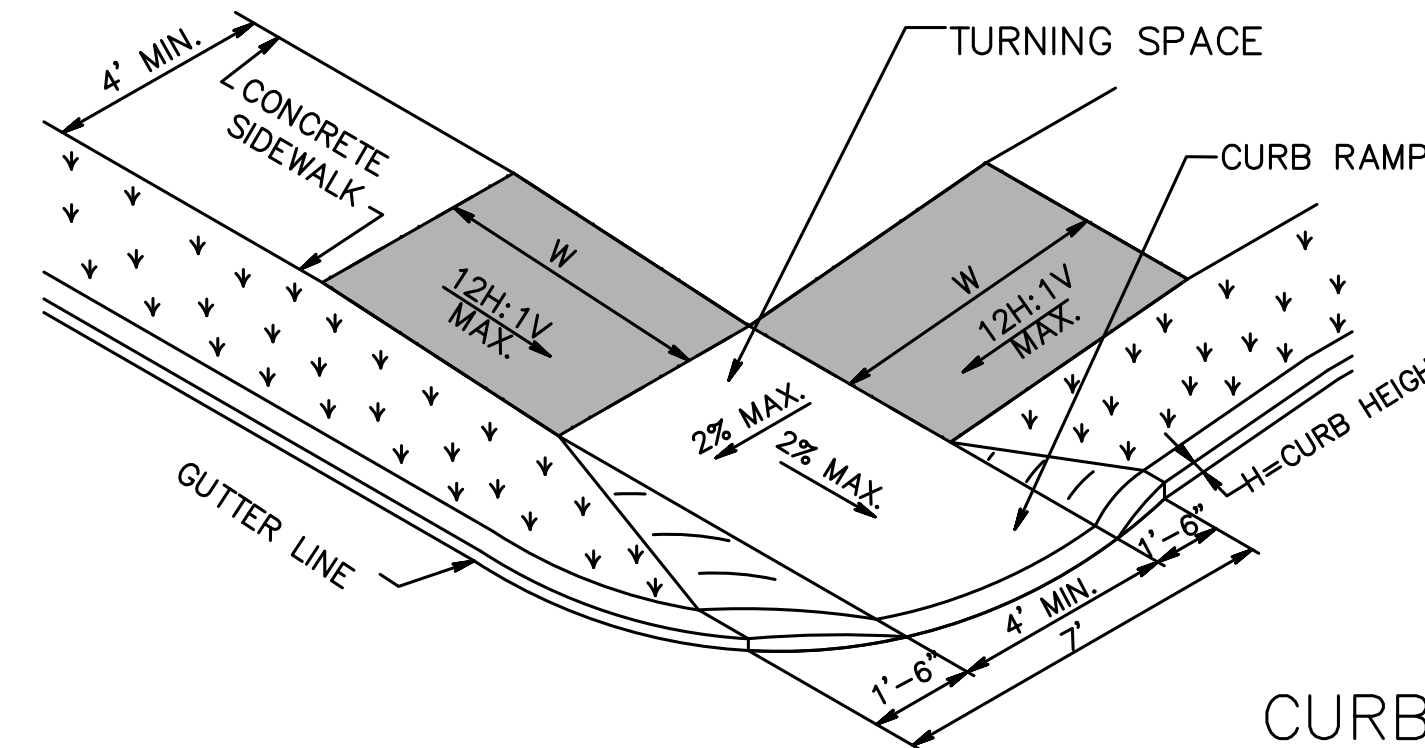
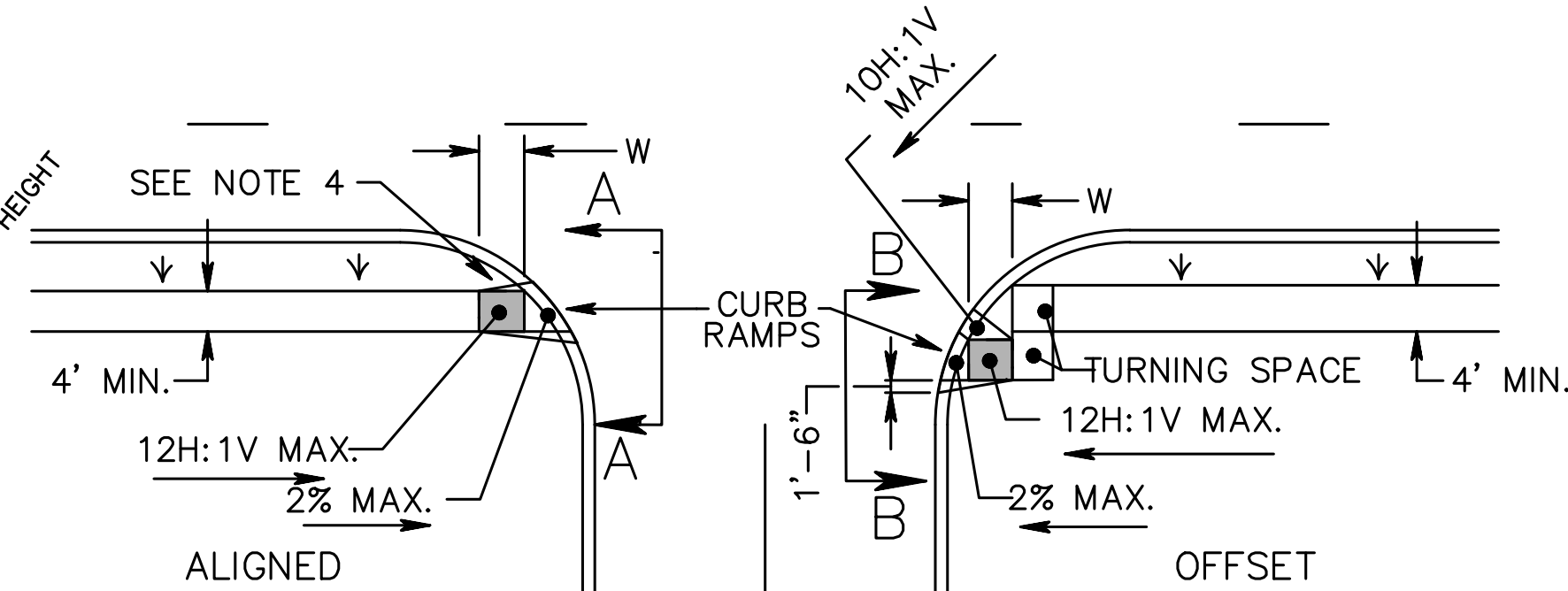
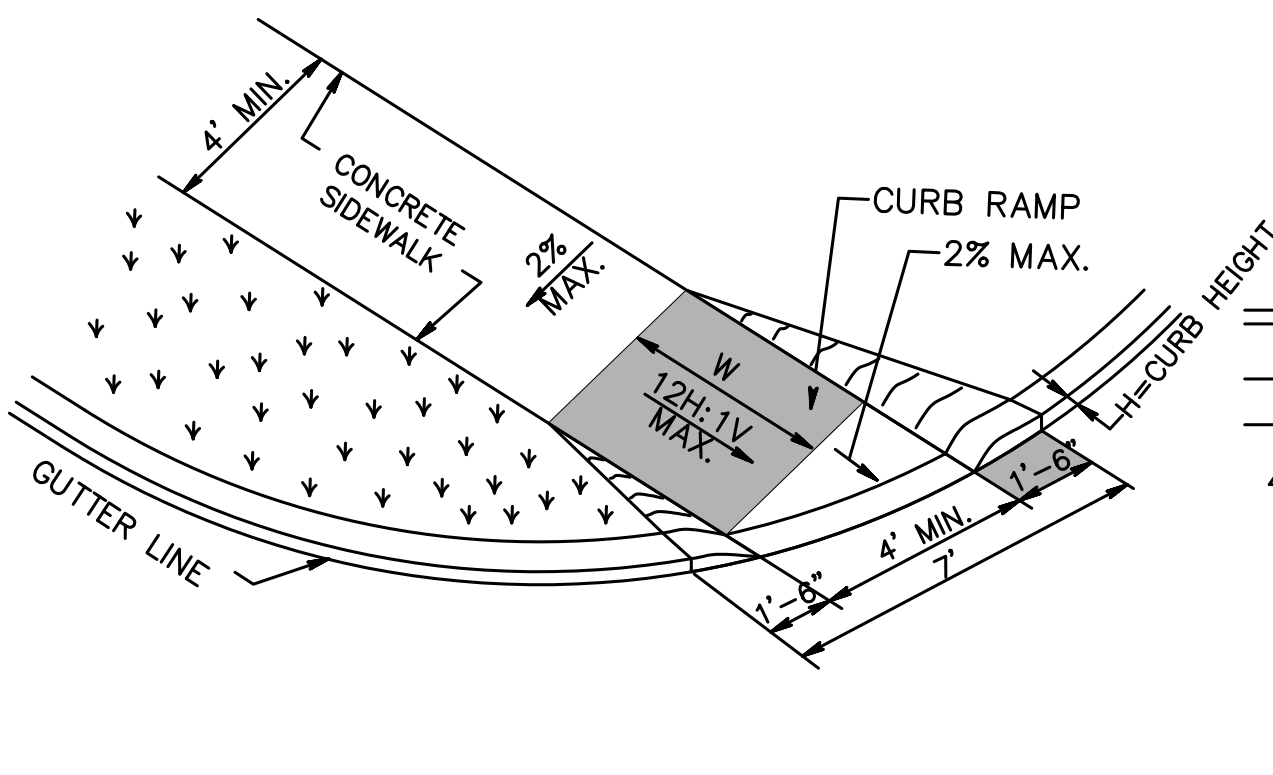
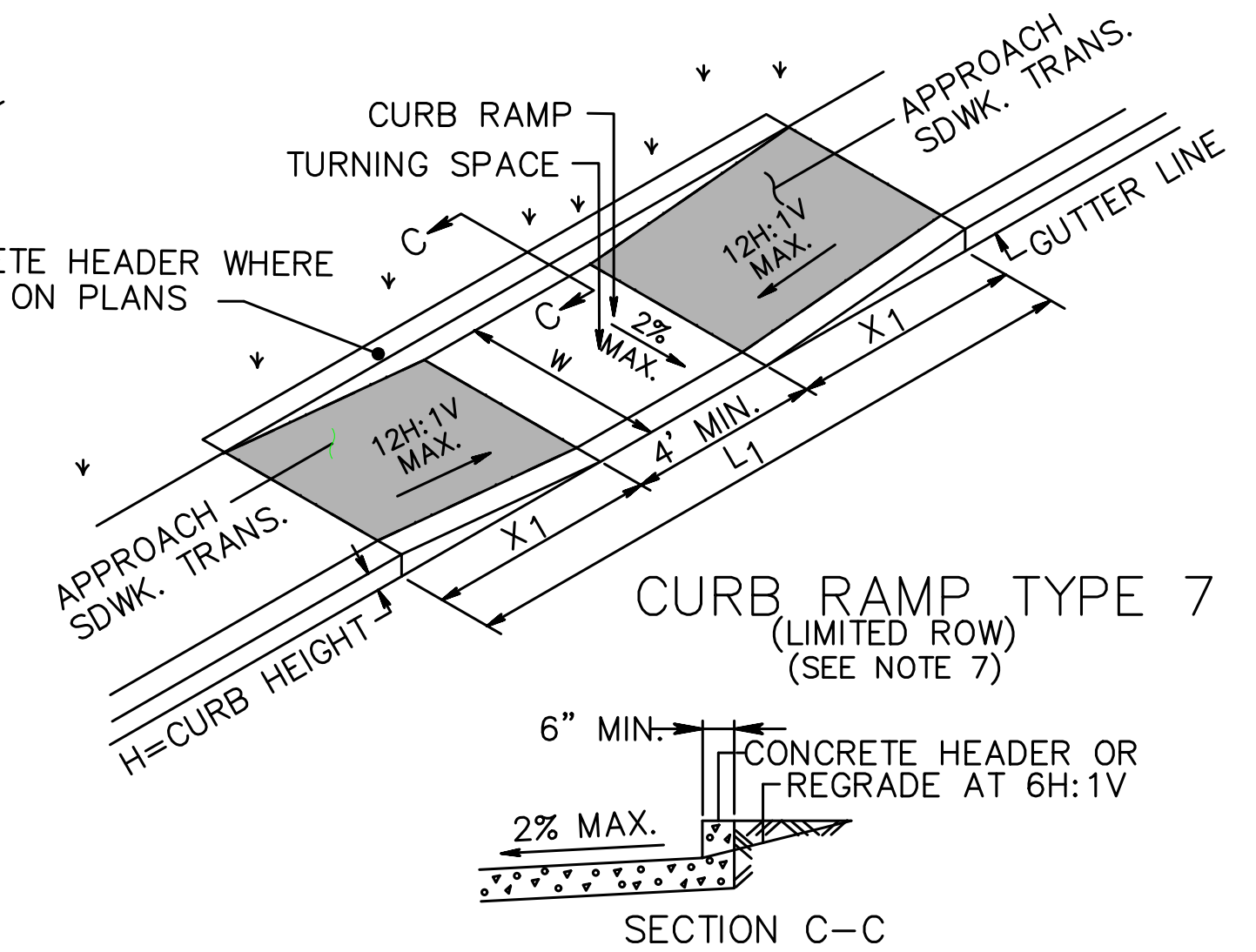
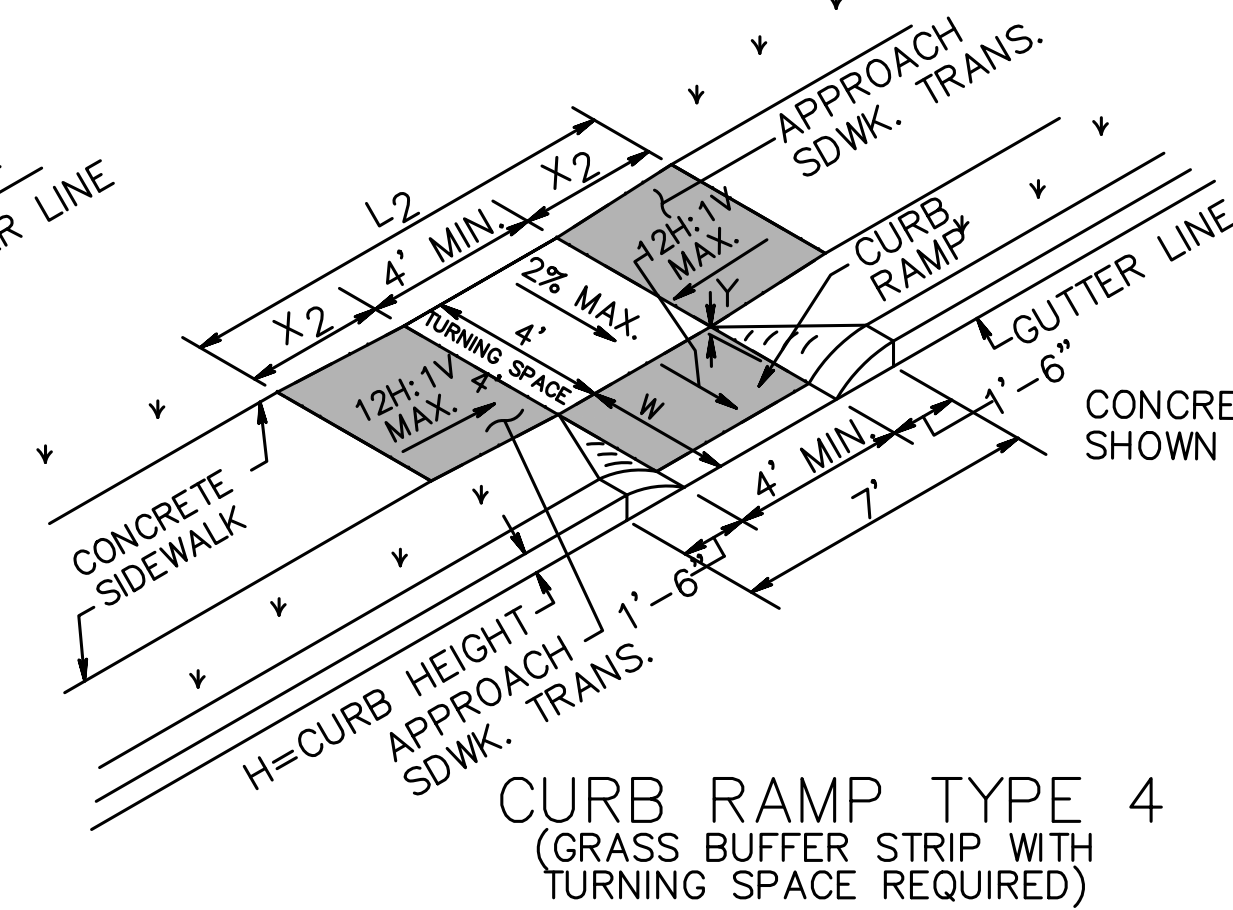
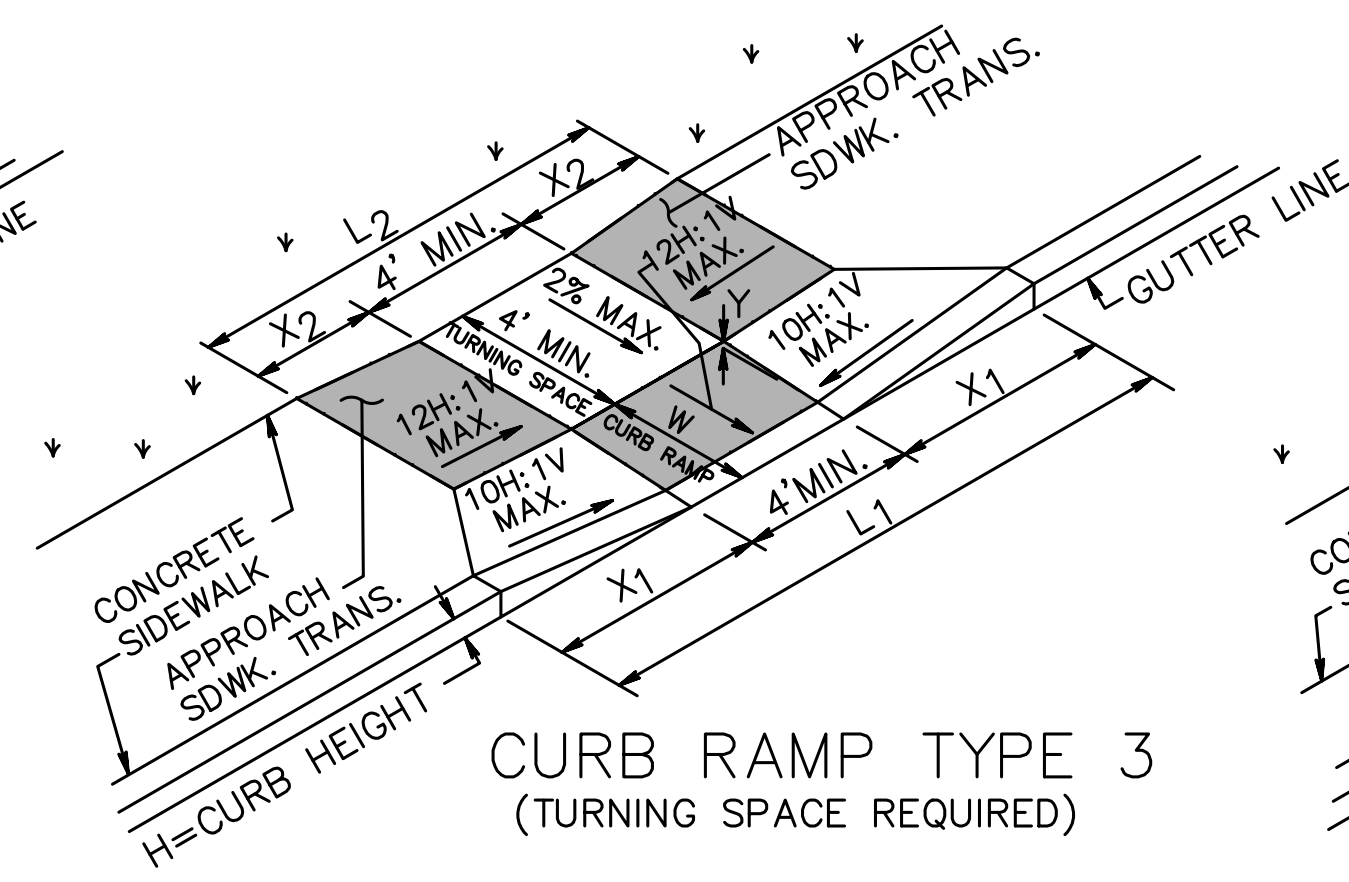
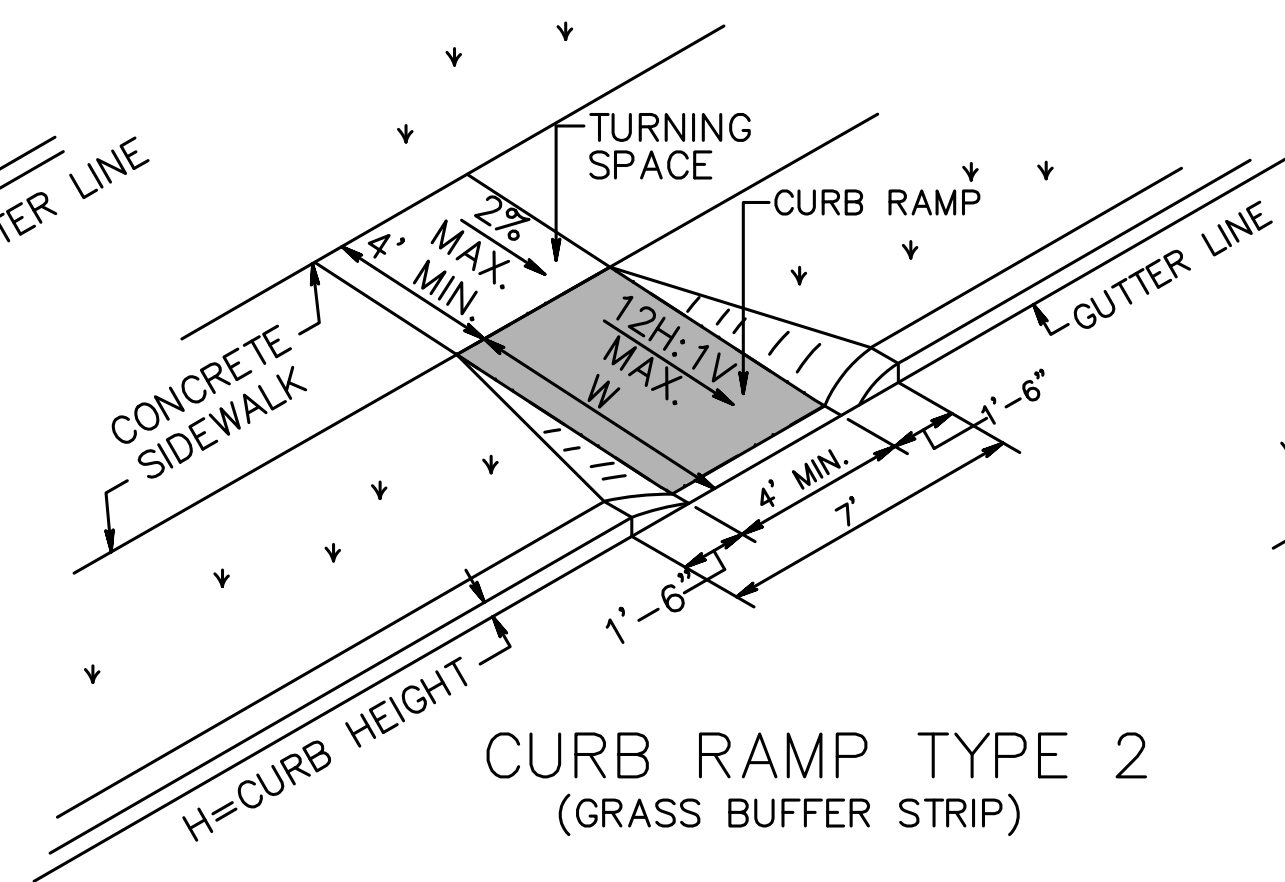
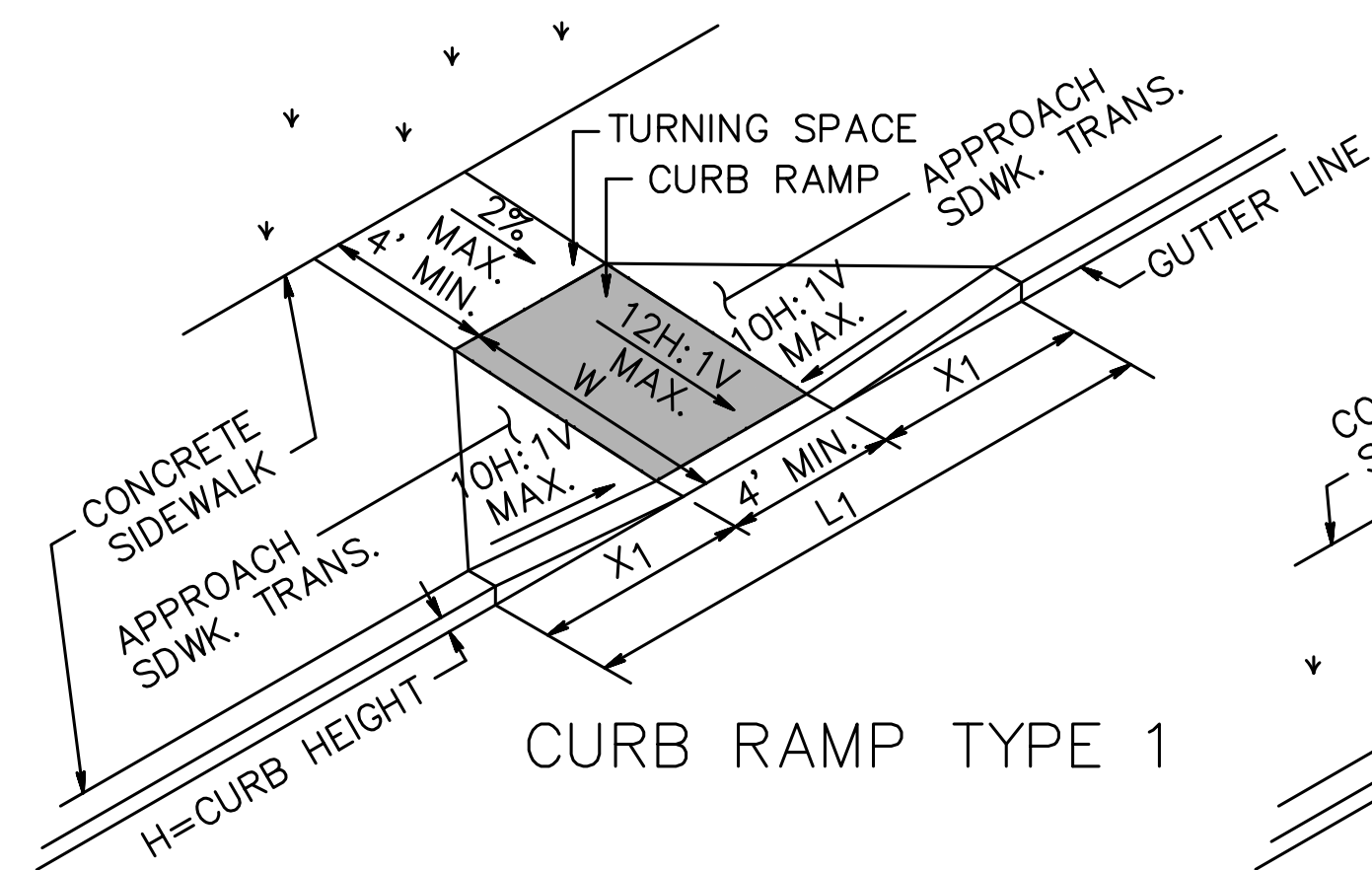
N.T.S.

TCD-4

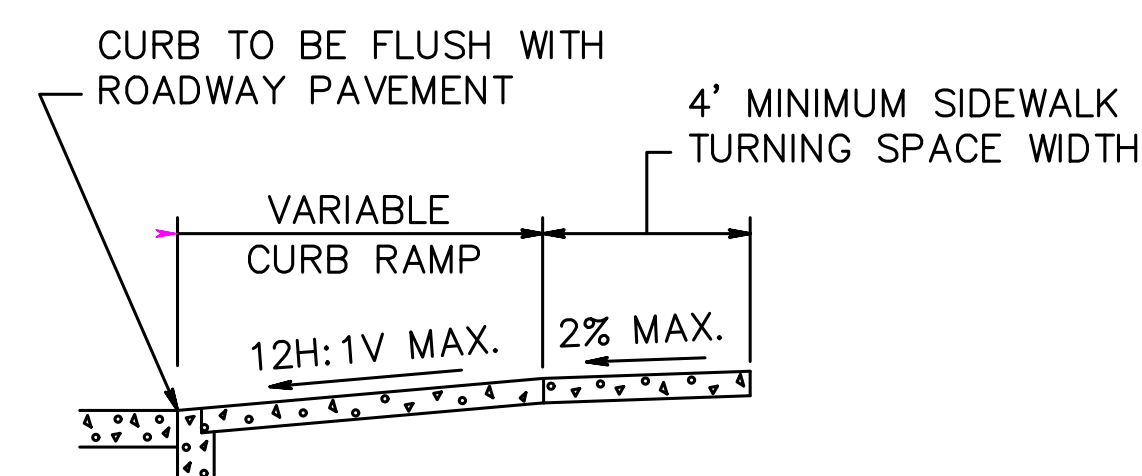
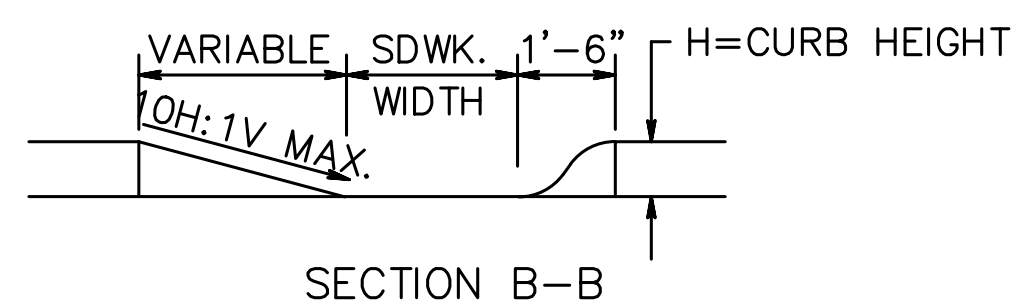
NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

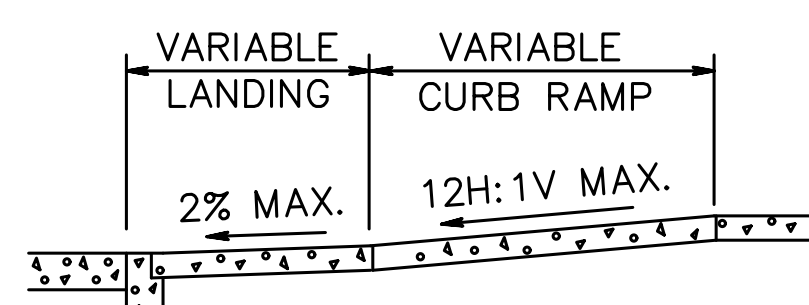
30
34



NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



SECTION THROUGH CURB RAMPS 1 THROUGH 4



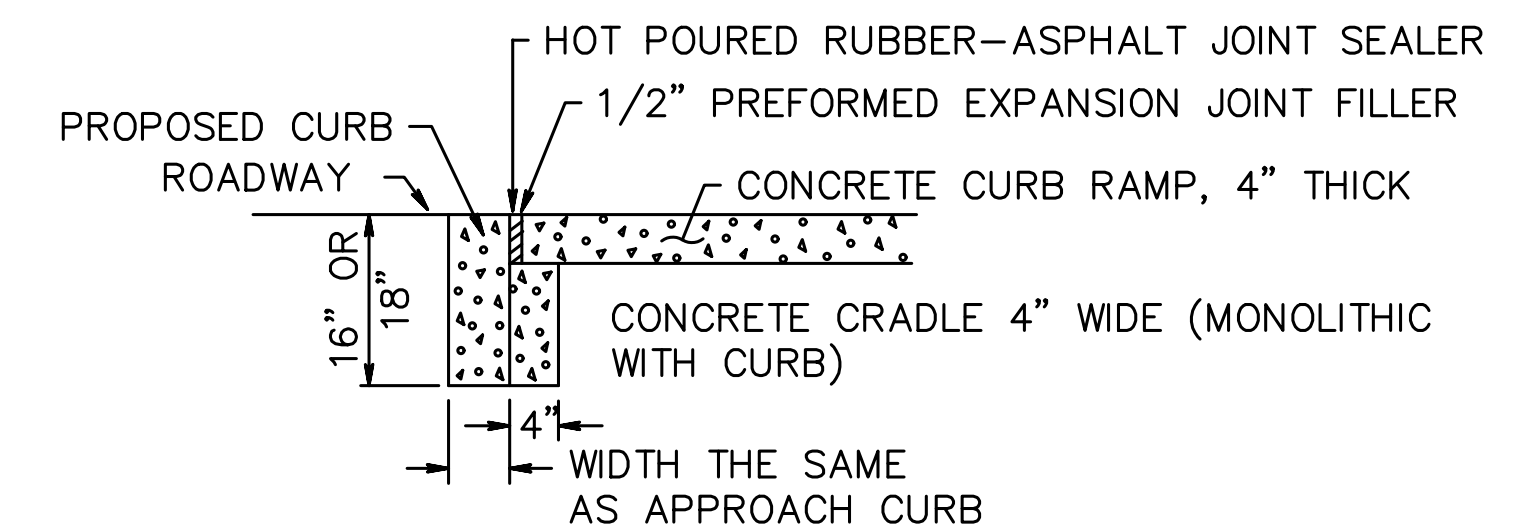
SECTION THROUGH CURB RAMPS 5 AND 6

NOTES:

1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
2. FOR DIMENSIONS SEE CD-606-1B AND CD-606-1C.
3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, USE CURB RAMP TYPE 7, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
8. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED. SEE PLANS.
9. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.
10. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X2 IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH.

CURB RAMP NOTES:

1. THE MAXIMUM CROSS SLOPE OF SIDEWALKS SHALL BE 2%.
2. THE MAXIMUM LONGITUDINAL TRANSITION SLOPE OF SIDEWALKS SHALL BE 5%.
3. THE MAXIMUM LONGITUDINAL SLOPE OF CURB RAMPS SHALL BE 8%.
4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE ALONG ALL SIDEWALKS, CURB RAMPS AS WELL ADJACENT TO ALL SIDEWALKS. STORMWATER RUNOFF SHALL NOT BE BLOCKED BY SIDEWALKS OR CURBS.
5. FOR TYPE 5 & TYPE 6 RAMPS, LEADING EDGE OF DETECTABLE WARNING SURFACE MUST BE LOCATED A MAXIMUM OF 5 FEET FROM EDGE OF TRAVELWAY - THIS REQUIREMENT MAY WARRANT MULTIPLE DETECTABLE WARNING SURFACES FOR A SINGLE RAMP.
6. THERE MUST BE A MINIMUM OF 24 INCH OF DETECTABLE WARNING SURFACE IN THE DIRECTION OF PEDESTRIAN TRAVEL, THE FULL WIDTH OF THE SIDEWALK - THIS REQUIREMENT MAY WARRANT MULTIPLE DETECTABLE WARNING SURFACES FOR A SINGLE RAMP.
7. A MINIMUM 4' X 4' LANDING AREA, GRADED AT A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS, MUST BE PROVIDED AT THE TOP OF EVERY RAMP.



DROPPED CURB AND CRADLE

CONCRETE SIDEWALK
(PUBLIC SIDEWALK CURB RAMP)
N.T.S.

CD-606-1

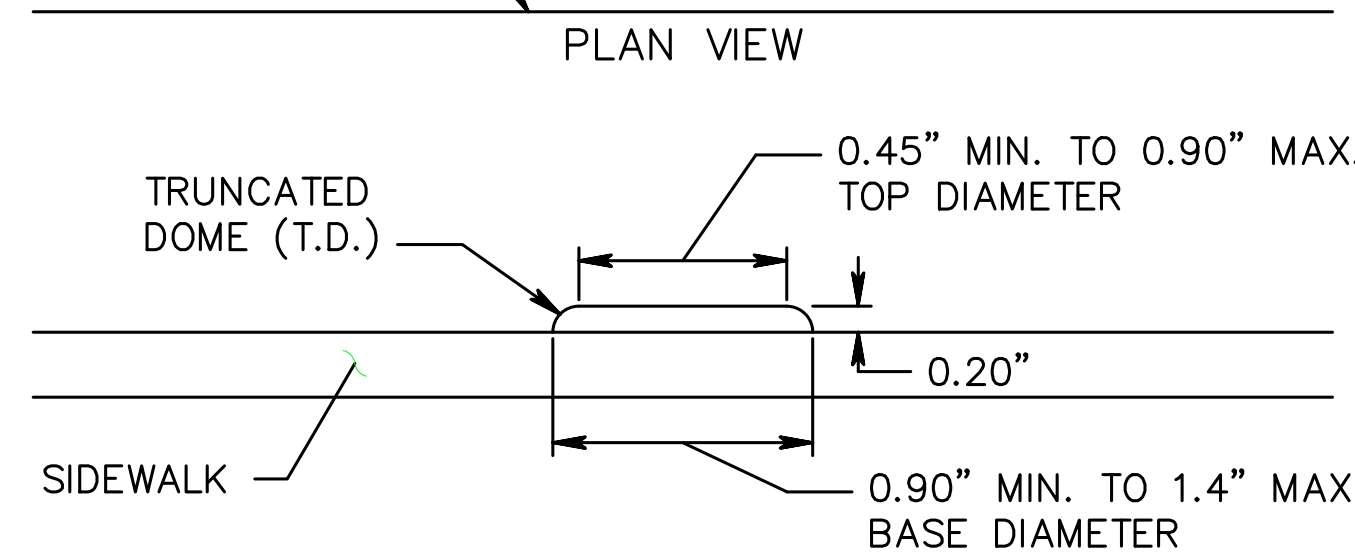
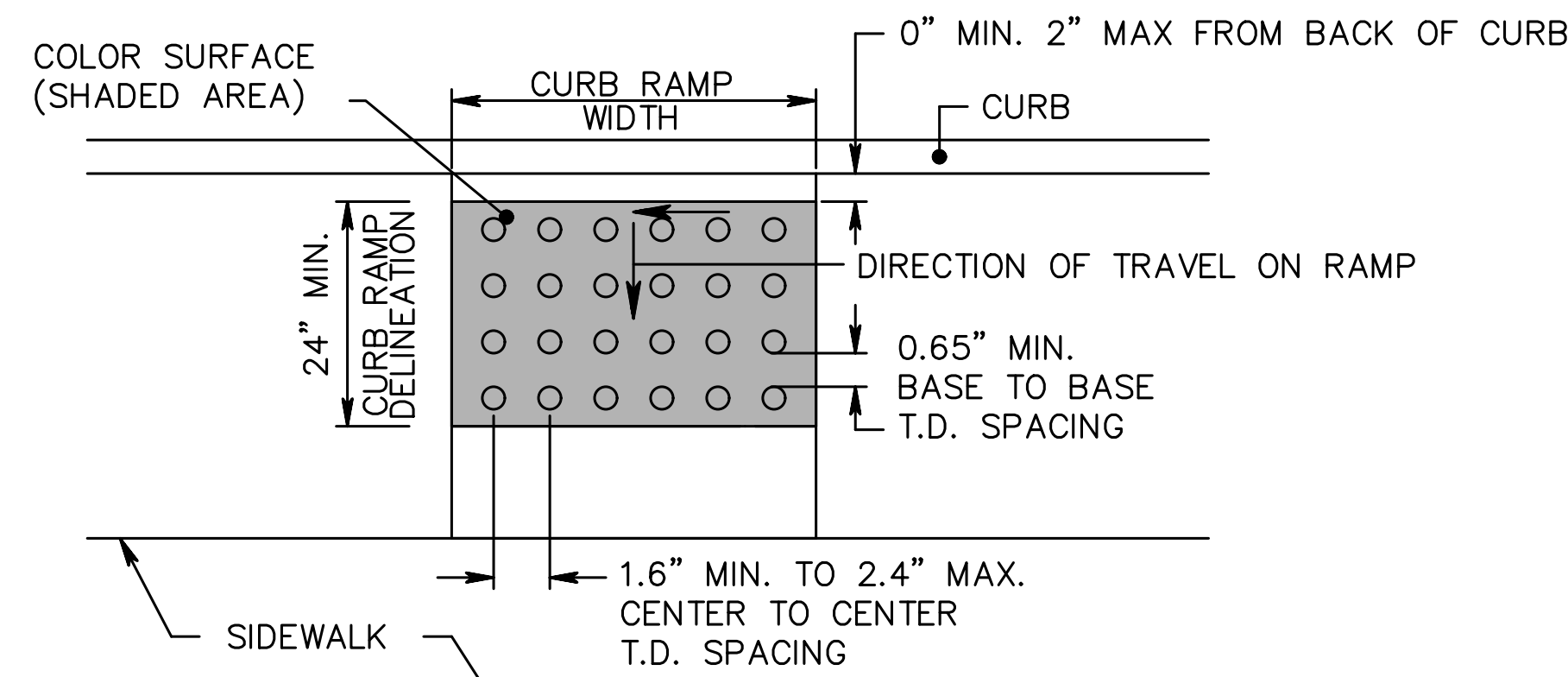
NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

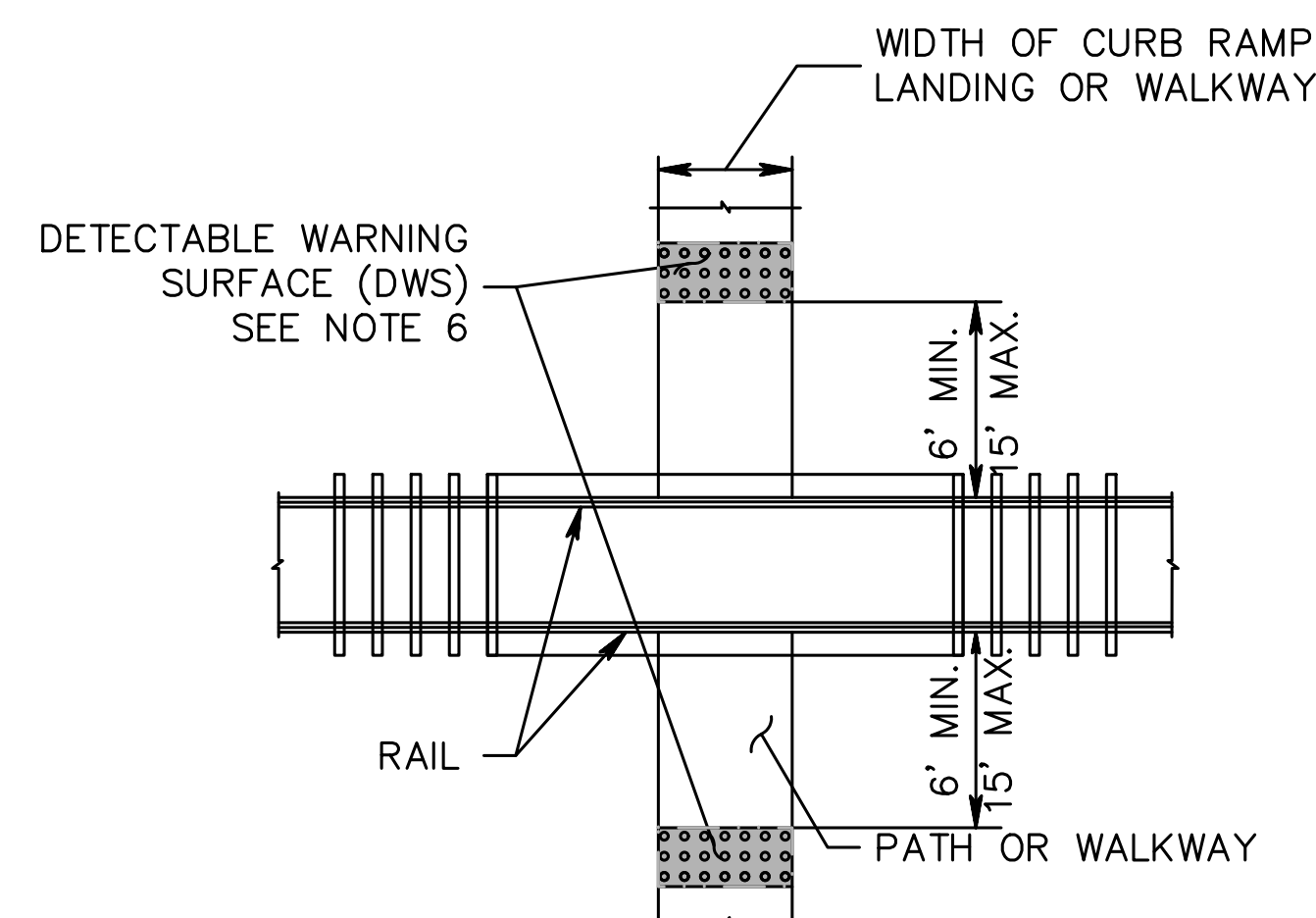
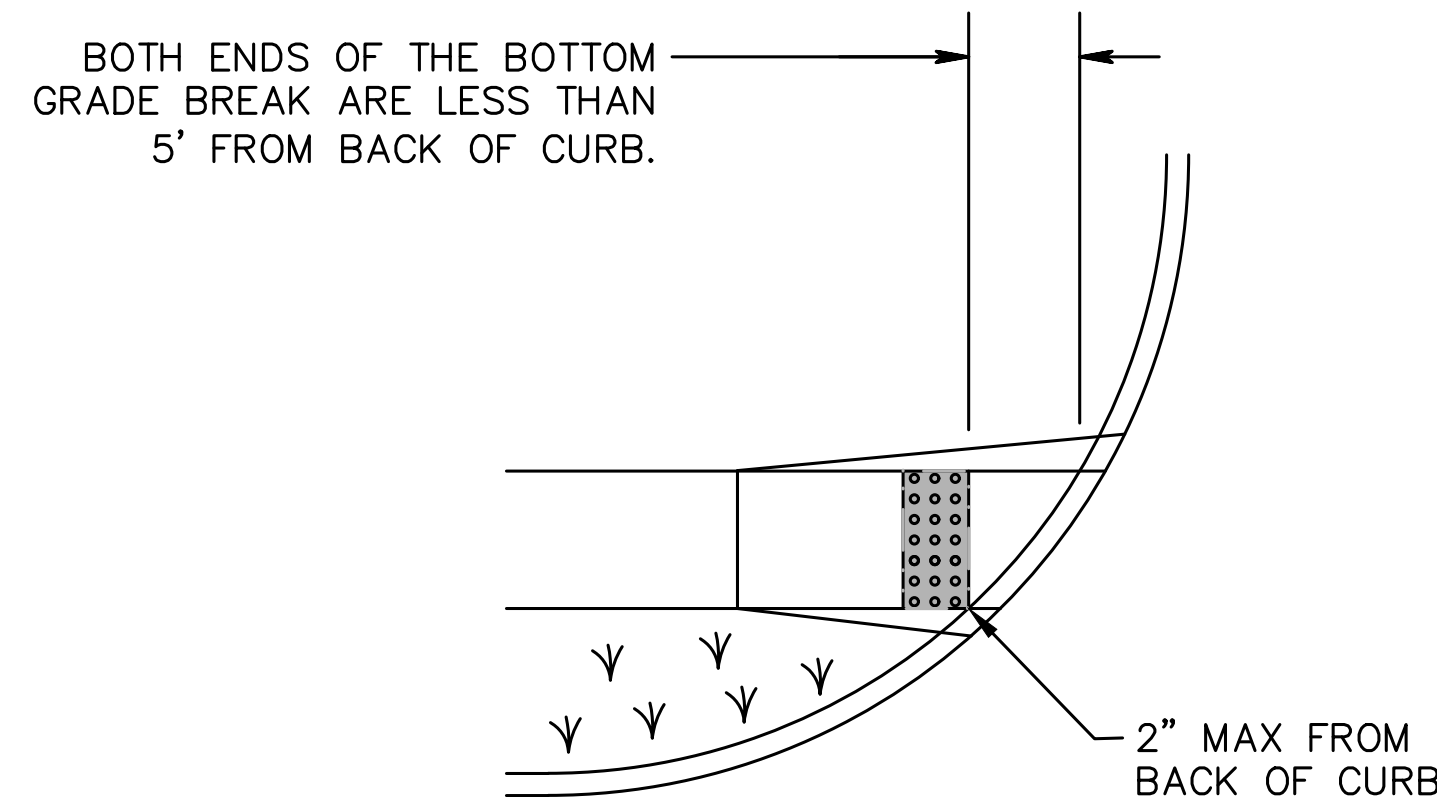
CURB RAMPS

CD-606-1.1

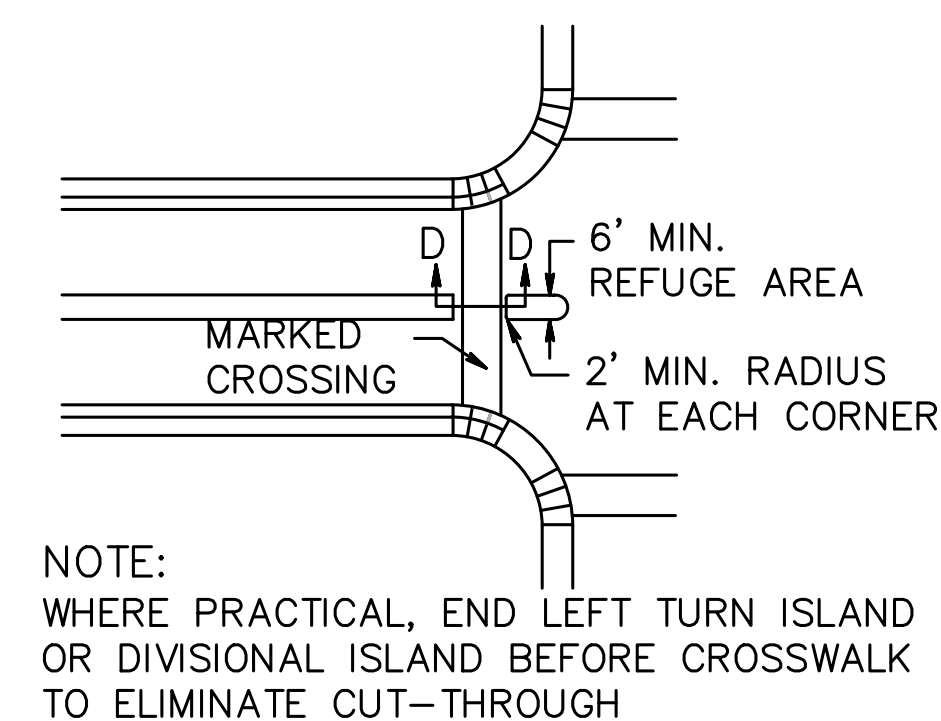
31
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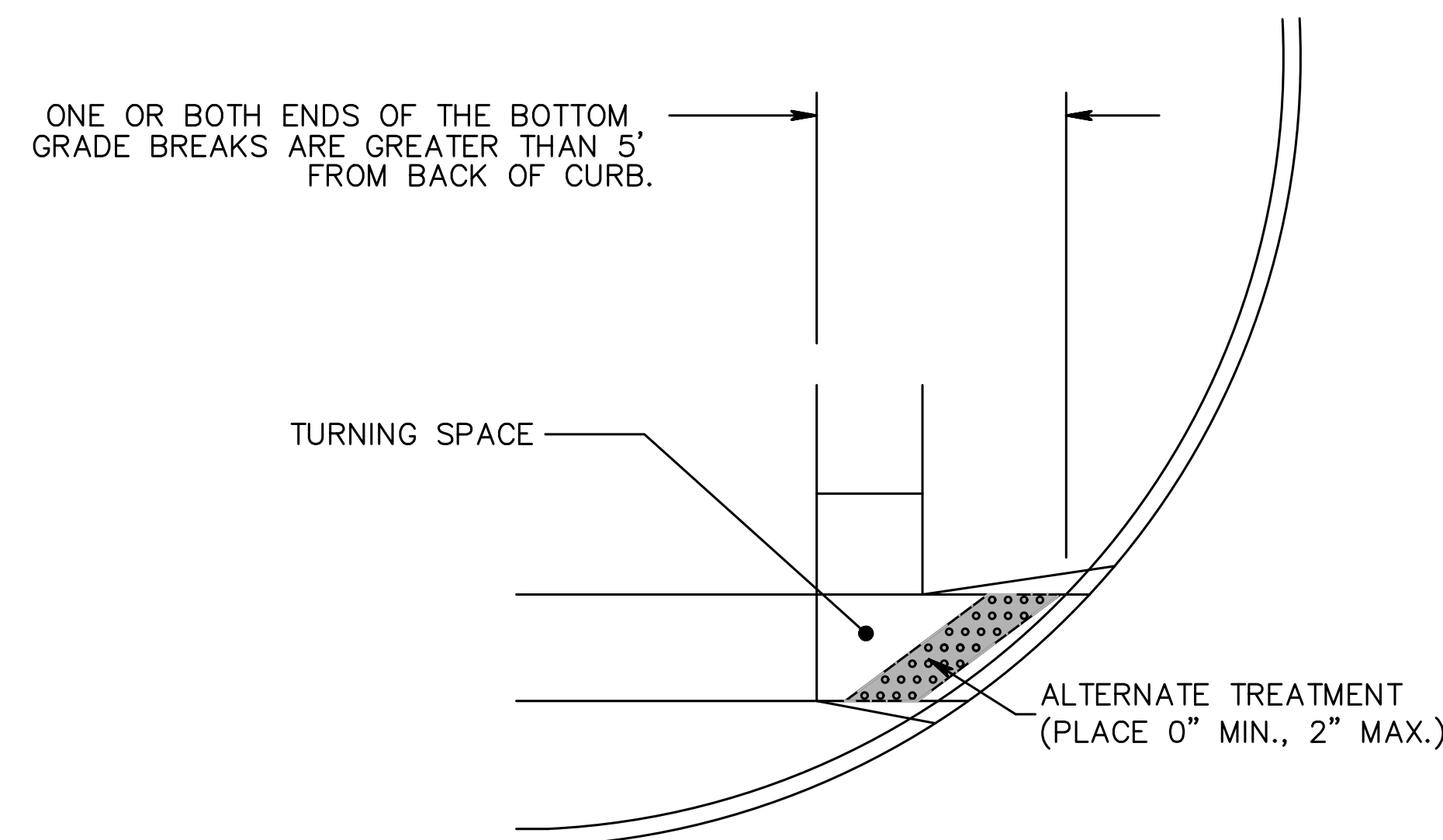
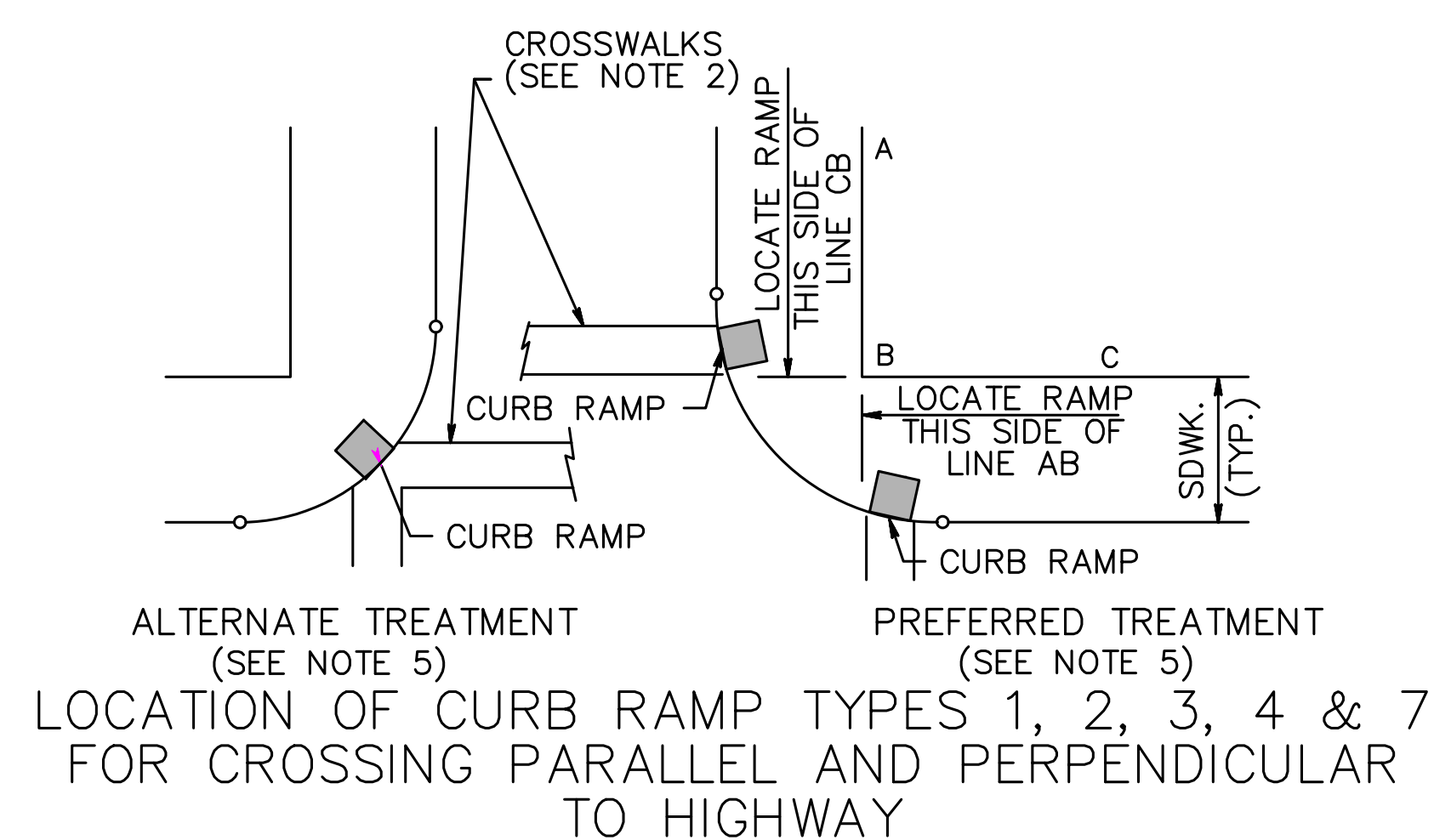
ELEVATION
DETECTABLE WARNING SURFACE



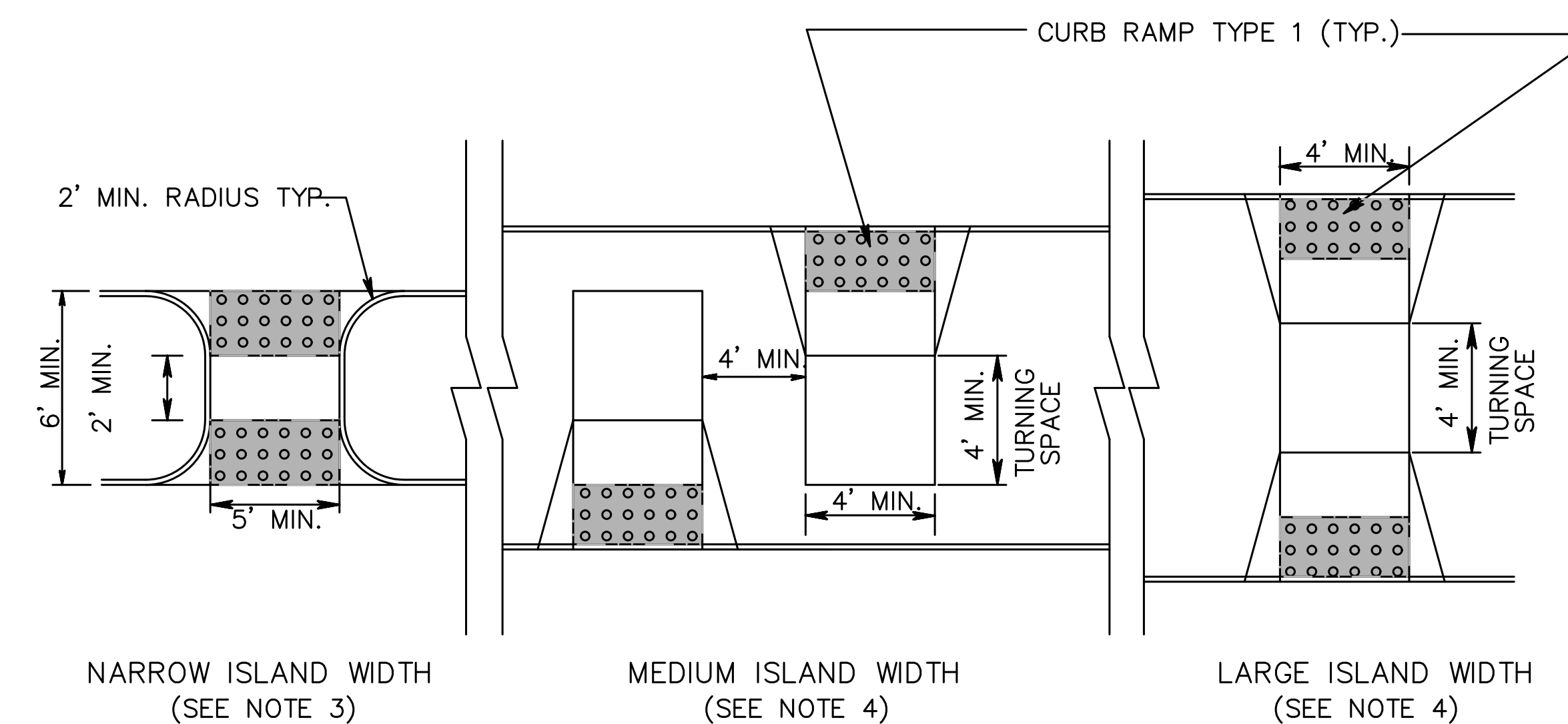
PEDESTRIAN RAILROAD CROSSING



PEDESTRIAN REFUGE ISLAND WALKWAY
OPENING AT INTERSECTIONS



PLACEMENT OF DETECTABLE WARNING SURFACE
FOR CURB RAMP TYPE 5 AND 6



PEDESTRIAN REFUGE ISLAND

DETECTABLE WARNING SURFACE
N.T.S.

- NOTES:
1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
 2. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
 3. FOR NARROW ISLAND WIDTH, SEE PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS DETAIL.
 4. FOR MEDIUM AND LARGE ISLAND WIDTH, SEE CURB RAMP TYPE 1 ON CD-606-1.
 5. CONSTRUCT CURB RAMP TYPES 1, 2, 3, 4 & 7 PERPENDICULAR TO CURBLINE, AS SHOWN.
 6. IF A CURB RAMP IS REQUIRED, THE LOCATION OF THE DETECTABLE WARNING SURFACE MUST BE AT THE BOTTOM OF THE RAMP AND WITHIN THE REQUIRED DISTANCE FROM THE RAIL.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-606-1.1A

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CURB RAMP TYPE 1

0.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	2.50	2.50	9.00
4	4	3.33	3.33	10.67
5	5	4.17	4.17	12.33
6	6	5.00	5.00	14.00
7	7	5.83	5.83	15.67
8	8	6.67	6.67	17.33
9	9	7.50	7.50	19.00

1.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	2.78	2.27	9.05
4	4	3.70	3.03	10.73
5	5	4.63	3.79	12.42
6	6	5.56	4.55	14.10
7	7	6.48	5.30	15.78
8	8	7.41	6.06	17.47
9	9	8.33	6.82	19.15

2.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	3.13	2.08	9.21
4	4	4.17	2.78	10.94
5	5	5.21	3.47	12.68
6	6	6.25	4.17	14.42
7	7	7.29	4.86	16.15
8	8	8.33	5.56	17.89
9	9	9.38	6.25	19.63

3.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	3.57	1.92	9.49
4	4	4.76	2.56	11.33
5	5	5.95	3.21	13.16
6	6	7.14	3.85	14.99
7	7	8.33	4.49	16.82
8	8	9.52	5.13	18.65
9	9	10.71	5.77	20.48

4.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	4.17	1.79	9.95
4	4	5.56	2.38	11.94
5	5	6.94	2.98	13.92
6	6	8.33	3.57	15.90
7	7	9.72	4.17	17.89
8	8	11.11	4.76	19.87
9	9	12.50	5.36	21.86

5.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	5.00	1.67	10.67
4	4	6.67	2.22	12.89
5	5	8.33	2.78	15.11
6	6	10.00	3.33	17.33
7	7	11.67	3.89	19.56
8	8	13.33	4.44	21.78
9	9	15.00	5.00	24.00

6.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	6.25	1.56	11.81
4	4	8.33	2.08	14.42
5	5	10.42	2.60	17.02
6	6	12.50	3.13	19.63
7	7	14.58	3.65	22.23
8	8	15.00	4.17	23.17
9	9	15.00	4.69	23.69

0.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	8.33	1.47	13.80
4	4	11.11	1.96	17.07
5	5	13.89	2.45	20.34
6	6	15.00	2.94	21.94
7	7	15.00	3.43	22.43
8	8	15.00	3.92	22.92
9	9	15.00	4.41	23.41

CURB RAMP TYPE 2

0.0% GUTTER LINE PROFILE										
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET		
3	2.5	2.50	2.50	9.00	2.5	1.10	1.10	6.20		
4		3.33	3.33	10.67		2.10	2.10	8.20		
5		4.17	4.17	12.33		3.10	3.10	10.20		
6		5.00	5.00	14.00		4.10	4.10	12.20		
7		5.83	5.83	15.67		5.10	5.10	14.21		
8		6.67	6.67	17.33		6.10	6.10	16.21		
9		7.50	7.50	19.00		7.10	7.10	18.21		
3		3.0	*	*		*	3.0	*	*	*
4			3.33	3.33		10.67		1.72	1.72	7.44
5	4.17		4.17	12.33	2.72	2.72		9.44		
6	5.00		5.00	14.00	3.72	3.72		11.45		
7	5.83		5.83	15.67	4.72	4.72		13.45		
8	6.67		6.67	17.33	5.72	5.72		15.45		
9	7.50		7.50	19.00	6.72	6.72		17.45		
3	3.5		*	*	*	3.5		*	*	*
4			3.33	3.33	10.67			1.34	1.34	6.68
5		4.17	4.17	12.33	2.34		2.34	8.68		
6		5.00	5.00	14.00	3.34		3.34	10.69		
7		5.83	5.83	15.67	4.34		4.34	12.69		
8		6.67	6.67	17.33	5.34		5.34	14.69		
9		7.50	7.50	19.00	6.34		6.34	16.69		
3		4.0	*	*	*		4.0	*	*	*
4			*	*	*			*	*	*
5	4.17		4.17	12.33	1.96	1.96		7.92		
6	5.00		5.00	14.00	2.96	2.96		9.93		
7	5.83		5.83	15.67	3.96	3.96		11.93		
8	6.67		6.67	17.33	4.96	4.96		13.93		
9	7.50		7.50	19.00	5.96	5.96		15.93		

4.0% GUTTER LINE PROFILE								
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3	2.5	4.17	1.79	9.95	2.5	2.12	0.74	6.86
4		5.56	2.38	11.94		4.04	1.42	9.46
5		6.94	2.98	13.92		4.85	2.28	11.13
6		8.33	3.57	15.90		6.41	3.02	13.43
7		9.72	4.17	17.89		7.98	3.75	15.73
8		11.11	4.76	19.87		9.54	4.49	18.03
9		12.50	5.36	21.86		11.10	5.22	20.33
3	3.0	4.17	1.79	9.95	3.0	1.39	0.49	5.88
4		5.56	2.38	11.94		3.31	1.16	4.48
5		6.94	2.98	13.92		5.24	1.84	11.08
6		8.33	3.57	15.90		5.24	2.52	13.68
7		9.72	4.17	17.89		9.09	3.19	16.28
8		11.11	4.76	19.87		11.02	3.87	18.88
9		12.50	5.36	21.86		12.94	4.54	21.48
3	3.5	*	*	*	3.5	*	*	*
4		5.56	2.38	11.94		2.58	0.91	7.49
5		6.94	2.98	13.92		4.51	1.58	10.09
6		8.33	3.57	15.90		6.43	2.26	12.69
7		9.72	4.17	17.89		8.36	2.93	15.29
8		11.11	4.76	19.87		10.28	3.61	17.89
9		12.50	5.36	21.86		12.20	4.29	20.49
3	4.0	*	*	*	4.0	*	*	*
4		5.56	2.38	11.94		1.85	0.65	6.50
5		6.94	2.98	13.92		3.78	1.33	9.10
6		8.33	3.57	15.90		5.70	2.00	11.70
7		9.72	4.17	17.89		7.62	2.68	14.30
8		11.11	4.76	19.87		9.55	3.35	16.90
9		12.50	5.36	21.86		11.47	4.03	19.50

CURB RAMP TYPE 2

0.0% GUTTER LINE PROFILE				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	1.50	1.50	7.00
4	4	1.50	1.50	7.00
5	5	1.50	1.50	7.00
6	6	1.50	1.50	7.00
7	7	1.50	1.50	7.00
8	8	1.50	1.50	7.00
9	9	1.50	1.50	7.00

1.0% GUTTER LINE PROFILE								
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3	2.5	2.78	2.27	9.05	2.5	1.25	0.98	6.24
4		3.70	3.03	10.73		2.39	1.18	8.27
5		4.63	3.79	12.42		3.53	2.77	10.30
6		5.56	4.55	14.10		4.66	3.66	12.33
7		6.48	6.06	15.78		5.80	4.56	14.36
8	3.0	7.41	6.06	17.47	3.0	6.94	5.45	16.39
9		8.33	6.82	19.15		8.07	6.34	18.42
3		2.78	2.27	9.05		0.82	0.64	5.46
4		3.70	3.03	10.73		1.96	1.54	7.49
5		4.63	3.79	12.42		3.09	2.43	9.52
6	3.5	5.56	4.55	14.10	3.5	4.23	3.32	11.55
7		6.48	6.06	15.78		4.23	4.22	13.58
8		7.41	6.06	17.47		5.37	5.11	15.61
9		8.33	6.82	19.15		7.64	6.00	17.64
33		*	*	*		*	*	*
4	4.0	3.70	3.03	10.73	4.0	1.53	1.20	6.72
5		4.63	3.79	12.42		2.66	2.09	8.75
6		5.56	4.55	14.10		3.80	2.98	10.78
7		6.48	6.06	15.78		4.94	3.88	12.81
8		7.41	6.06	17.47		6.07	4.77	14.84
9	4.0	8.33	6.82	19.15	4.0	7.21	5.66	16.87
33		*	*	*		*	*	*
4		3.70	3.03	10.73		1.09	0.86	5.95
5		4.63	3.79	12.42		2.23	1.75	7.98
6		5.56	4.55	14.10		3.37	2.65	10.01
7	4.0	6.48	6.06	15.78	4.0	4.50	3.54	12.04
8		7.41	6.06	17.47		5.64	4.43	14.07
9		8.33	6.82	19.15		6.78	5.32	16.01

CURB RAMP TYPE 4

0.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.10	1.10	6.20
4			2.10	2.10	8.20
5			3.10	3.10	10.20
6			4.10	4.10	12.20
7			5.10	5.10	14.21
8			6.10	6.10	16.21
9			7.10	7.10	18.21
3	3.0	3.0	**	**	**
4			1.72	1.72	7.44
5			2.72	2.72	9.44
6			3.72	3.72	11.45
7			4.72	4.72	13.45
8			5.72	5.72	15.45
9			6.72	6.72	17.45
3	3.5	3.5	**	**	**
4			1.34	1.34	6.68
5			2.34	2.34	8.68
6			3.34	3.34	10.69
7			4.34	4.34	12.69
8			5.34	5.34	14.69
9			6.34	6.34	16.69
3	4.0	4.0	**	**	**
4			**	**	**
5			1.96	1.96	7.92
6			2.96	2.96	9.93
7			3.96	3.96	11.93
8			4.96	4.96	13.93
9			5.96	5.96	15.93

4.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	2.12	0.74	6.86
4			4.04	1.42	9.46
5			5.97	2.10	12.06
6			7.89	2.77	14.66
7			9.82	3.45	17.26
8			11.74	4.12	19.87
9			13.67	4.80	22.47
3	3.0	3.0	1.39	0.49	5.88
4			3.31	1.16	8.48
5			5.24	1.84	11.08
6			7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3	3.5	3.5	0.66	0.23	4.89
4			2.58	0.91	7.49
5			4.51	1.58	10.09
6			6.43	2.26	12.69
7			8.36	2.93	15.29
8			10.28	3.61	17.89
9			12.20	4.29	20.49
3	4.0	4.0	**	**	**
4			1.85	0.65	6.50
5			3.78	1.33	9.10
6			5.70	2.00	11.70
7			7.62	2.68	14.30
8			9.55	3.35	16.90
9			11.47	4.03	19.50

1.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.25	0.98	6.24
4			2.39	1.88	8.27
5			3.53	2.77	10.30
6			4.66	3.66	12.33
7			5.80	4.56	14.36
8			6.94	5.45	16.39
9			8.07	6.34	18.42
3	3.0	3.0	0.82	0.64	5.46
4			1.96	1.54	7.49
5			3.09	2.43	9.52
6			4.23	3.32	11.55
7			5.37	4.22	13.58
8			6.50	5.11	15.61
9			7.64	6.00	17.64
3	3.5	3.5	0.39	0.30	4.69
4			1.53	1.20	6.72
5			2.66	2.09	8.75
6			3.80	2.98	10.78
7			4.94	3.88	12.81
8			6.07	4.77	14.84
9			7.21	5.66	16.87
3	4.0	4.0	**	**	**
4			1.09	0.86	5.95
5			2.23	1.75	7.98
6			3.37	2.65	10.01
7			4.50	3.54	12.04
8			5.64	4.43	14.07
9			6.78	5.32	16.10

5.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	2.76	0.69	7.44
4			5.26	1.31	10.57
5			7.76	1.94	13.70
6			10.26	2.56	16.83
7			12.77	3.19	19.95
8			15.00	3.81	22.81
9			15.00	4.44	23.44
3	3.0	3.0	1.80	0.45	6.26
4			4.31	1.08	9.38
5			6.81	1.70	12.51
6			9.31	2.33	15.64
7			11.81	2.95	18.77
8			14.32	3.58	21.89
9			15.00	3.87	23.20
3	3.5	3.5	0.85	0.21	5.07
4			3.36	0.84	8.20
5			5.86	1.46	11.32
6			8.36	2.09	14.45
7			10.86	2.71	17.58
8			13.37	3.34	20.71
9			15.00	3.96	22.96
3	4.0	4.0	**	**	**
4			2.41	0.60	7.01
5			4.91	1.23	10.14
6			7.41	1.85	13.26
7			9.91	2.48	16.39
8			12.42	3.10	19.52
9			14.92	3.73	22.65

2.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.45	0.89	6.34
4			2.77	1.69	8.46
5			4.08	2.50	10.58
6			5.40	3.31	12.71
7			6.72	4.12	14.83
8			8.03	4.92	16.95
9			9.35	5.73	19.08
3	3.0	3.0	0.95	0.58	5.53
4			2.27	1.39	7.65
5			3.58	2.20	9.78
6			4.90	3.00	11.90
7			6.22	3.81	14.02
8			7.53	4.62	16.15
9			8.85	5.42	18.27
3	3.5	3.5	0.45	0.28	4.72
4			1.77	1.08	6.85
5			3.08	1.89	8.97
6			4.40	2.70	11.09
7			5.72	3.50	13.22
8			7.03	4.31	15.34
9			8.35	5.12	17.46
3	4.0	4.0	**	**	**
4			1.27	0.78	6.04
5			2.58	1.58	8.16
6			3.90	2.39	10.29
7			5.22	3.20	12.41
8			6.53	4.00	14.53
9			7.85	4.81	16.66

6.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	3.94	0.64	8.58
4			7.51	1.22	12.74
5			11.09	1.80	16.89
6			14.67	2.38	21.05
7			15.00	2.97	21.97
8			15.00	3.55	22.55
9			15.00	4.13	23.13
3	3.0	3.0	2.58	0.42	7.0
4			6.16	1.00	11.16
5			9.73	1.58	15.31
6			13.31	2.16	19.47
7			15.00	2.75	21.75
8			15.00	3.33	22.33
9			15.00	3.91	22.91
3	3.5	3.5	1.22	0.20	5.42
4			4.80	0.78	9.58
5			8.37	1.36	13.74
6			11.95	1.94	17.89
7			15.00	2.52	21.52
8			15.00	3.11	22.11
9			15.00	3.69	22.69
3	4.0	4.0	**	**	**
4			3.44	0.56	8.00
5			7.02	1.14	12.16
6			10.59	1.72	16.31
7			14.17	2.30	20.47
8			15.00	2.89	21.89
9			15.00	3.47	22.47

3.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.72	0.81	6.53
4			3.28	1.55	8.83
5			4.85	2.28	11.13
6			6.41	3.02	13.43
7			7.98	3.75	15.73
8			9.54	4.49	18.03
9			11.10	5.22	20.33
3	3.0	3.0	1.13	0.53	5.66
4			2.69	1.27	7.96
5			4.25	2.00	10.26
6			5.82	2.74	12.55
7			7.38	3.47	14.85
8			8.94	4.21	17.15
9			10.51	4.94	19.45
3	3.5	3.5	0.53	0.25	4.78
4			2.10	0.99	7.08
5			3.66	1.72	9.38
6			5.22	2.46	11.68
7			6.79	3.19	13.98
8			8.35	3.93	16.28
9			9.91	4.66	18.58
3	4.0	4.0	**	**	**
4			1.50	0.71	6.21
5			3.07	1.44	8.51
6			4.63	2.18	10.81
7			6.19	2.91	13.11
8			7.76	3.65	15.41
9			9.32	4.38	17.71

7.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	Xzu FEET	XzL FEET	Lz FEET
3	2.5	2.5	6.90	0.60	11.50
4			13.16	1.19	18.31
5			15.00	1.69	20.69
6			15.00	2.23	21.23
7			15.00	2.77	21.77
8			15.00	3.32	22.32
9			15.00	3.86	22.86
3	3.0	3.0	4.52	0.39	8.91
4			10.78	0.94	15.72
5			15.00	1.48	20.48
6			15.00	2.02	21.02
7			15.00	2.57	21.57
8			15.00	3.11	22.11
9			15.00	3.65	22.65
3	3.5	3.5	2.14	0.19	6.32
4			8.40	0.73	13.13
5			14.67	1.27	19.94
6			15.00	1.82	20.82
7			15.00	2.36	21.36
8			15.00	2.90	21.90
9			15.00	3.45	22.45
3	4.0	4.0	**	**	**
4			6.03	0.52	10.55
5			12.29	1.07	17.36
6			15.00	1.61	20.61
7			15.00	2.15	21.15
8			15.00	2.70	21.70
9			15.00	3.24	22.24